



Critical Thinking in Economics

Dennis Patrick Leyden

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Contents

CHAPTER 1	Fundamentals	I
	Introduction	2
	Four Steps to Thinking Critically in Economics	6
	Critical Discussions	12
	Critical Reading	18
	Critical Writing and Speaking	21
	Summary	26
	Key Concepts	26
	Review Questions	27
CHAPTER 2	What's the Question?	29
	Introduction	30
	Facts, Tastes, and Reasoned Judgments	33
	Types of Economic Questions	36
	Numerical Data Questions	41
	Positive and Normative Data	47
	Writing for Clarity	50
	Summary	56
	Key Concepts	56
	Review Questions	57
CHAPTER 3	Thinker, Know Thyself	59
	Introduction	60
	Frames of Reference for Answering Positive Questions	62
	Is Your Positive Frame of Reference a Good One?	66
	Frames of Reference for Answering Normative Questions	70
	Is Your Normative Frame of Reference a Good One?	75
	The Mathematical Frame of Reference	78
	Writing to Persuade	82
	Summary	86
	Key Concepts	86
	Review Questions	87

CHAPTER 4	Searching for Answers	89
	Introduction	90
	Searching Begins at Home	92
	Designing a Search Strategy	95
	Reading Critically	103
	Create Your Own Source	110
	Keeping Track of Everything	112
	Summary	115
	Key Concepts	116
	Review Questions	116
CHAPTER 5	Finding the Best Answer	119
	Introduction	120
	Intellectual Courage	123
	Sorting Out Conflicting Arguments and Evidence	125
	Critical Writing (Redux)	133
	Summary	138
	Key Concepts	138
	Review Questions	139

Preface

Economic thinking is all about making difficult choices. *Critical* economic thinking is all about being *aware* of how you think about economic issues so that you can make the best decisions possible. All of us engage in economic thinking whether it is shopping for ourselves, making business decisions that affect our fellow workers, or deciding on government policies that affect the entire nation. Of course such decision making is not done solely from an economic perspective. Shopping decisions are affected by a variety of cultural influences. Many business decisions such as in the area of marketing or human relations are based on applied psychology. And, of course, government policies are typically the result of complex political calculations. Nonetheless, economics has a lot to contribute to such decision making. Economics provides a wealth of general principles and empirical results that serve as a foundation for decision making in a wide array of areas and helps people understand how their decisions fit into the broader economic environment in which they act.

The purpose of this book is to help you to become a more effective economic thinker regardless of whether your interests are focused on personal issues, business affairs, or government policy. This book looks at *how* economists think and can be used either as a complement to a standard economics textbook (which focuses on the *subject* of economics) or as a standalone text for those who already know something of economics and wish to improve their ability to use and apply that knowledge. To that end, this book lays out for you a description of the thinking process typical in economics and provides suggestions and rules of thumb to help you make that thinking process your own. In addition, because thinking is a skill, and because skills can only be learned with practice, this book provides a number of exercises that give you the chance to learn and to hone the skills discussed in this book.

This book is the product of nearly thirty years of studying, teaching, and conducting research in economics. It could not have been completed without the help of many people. The germ for this book began nearly a decade and a half ago when, with the aid of a summer research grant from the Bryan School here at UNCG, I developed a rudimentary workbook that many years later became the inspiration for writing this book. This book has also benefited from having participated many years ago in an AEA-NCEE-Kazanjian Active Learning Workshop in Chapel Hill, North Carolina and being introduced to theories of learning. To the staff of that workshop, Michael Salemi, Phillip Saunders, William Walstad, Ann Velenchik, and especially Patrick Conway, I offer my thanks. And here at UNCG, I owe a debt of gratitude both to my colleagues in

the Department of Economics and to the thousands of students whom I have had the privilege and enjoyment of teaching over the years. The countless conversations I have had with my colleagues have helped me to clarify my thinking about economics, teaching, and critical thinking; and the interactions with my students both inside and outside the classroom have been crucial in keeping me connected to the realities of the classroom and in motivating me to continually look for better ways to help my students become intelligent thinkers.

At on more personal level, my abiding interest in, and enjoyment of, the life of the mind can be traced to a childhood in which thinking for oneself was a moral imperative, and for that I am grateful to my mother Anne T. Leyden and my late father Dennis R. Leyden, who, incidentally was also an economist (at West Virginia University and Mississippi State University) and who was instrumental in putting me in touch with the critical thinking literature. And I would be remiss if I did not express my thanks to my wife Peggy and children Ben and Sarah who have provided me with support, encouragement, and feedback.

Lastly, I want to thank my editor Kyler Ferguson and copy editor Kimberly Burwick for having faith in this project, providing valuable guidance, and being patient throughout the process of bringing this book to fruition. Their support has been greatly appreciated.

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October 8, 2010

Fundamentals

INTRODUCTION

Economic thinking is all about making different choices. Critical economic thinking is all about being aware of how you go about making those choices so you can make the best choices possible. Success in today's global economy requires an ability to continually reevaluate your circumstances so that you may make the best decisions you can. Critical economic thinking allows you to do that.

FOUR STEPS TO THINKING CRITICALLY ABOUT ECONOMICS

To think critically about issues in economics, you need to begin by figuring out exactly what the issue is that you want to think about. Next take stock of "where you're coming from", and then gather relevant information and look for possible answers to the specific question you seek to answer. Finally, evaluate all the material you have gathered and decide what the best answer to your question is and what that implies.

CRITICAL DISCUSSIONS

Discussion is in many ways the most effective way to engage in critical thinking because it involves the whole person. In a classroom setting, a particularly useful way to engage in critical thinking is to focus on the analysis of a case study. To get the most out of a case, prepare ahead of time for the discussion and be ready to share your thinking with the rest of the class. In case discussions there are no wrong solutions, just solutions that must be compared and evaluated.

CRITICAL READING AND WRITING

The results of economic thinking are of little value if you can't communicate your thoughts to others and others can't communicate their thoughts to you. Because reading and writing is more detached than discussion, it requires a special effort to stay engaged. The solution is to pretend that the author of the work you are reading or the audience you are writing for is there in the room with you.

1.1

INTRODUCTION

Critical thinking is thinking about your thinking while you're thinking in order to make your thinking better.

RICHARD PAUL¹

Economic thinking is all about making difficult choices. Is this the best time to buy a house? Should I expand my business overseas? How should I respond to a new competitor? Is it worth cutting tax rates to stimulate the economy if this drives the deficit up? Critical economic thinking is all about being aware of how you go about answering such questions so that you can make the best choice possible.

If you want good answers to economic questions, you need to understand the nature of economic forces around you, gather the best information you can, and figure out the best answer to the question at hand. Only purposeful, clear-headed, rational thinking will give you the best answer to your question. The decision of when to buy a house, for example, is a highhinhwUL

BOX 1.1

promotion on the spot. "But Mary, I need you," her boss told her. Mary looked troubled. "Can I sleep on it?" she asked. Later that day, Mary went home early for the first time since she began working at August Bovin & Co.

When Mary got home, she was still troubled though not sure why. "After all," she thought to herself, "I could handle it. This is a great opportunity, especially for someone still under 30 and with a company that's on its way up. And I have no attachments or family to get in the way. This would be the perfect time to go after such an opportunity. And yet..."

Later that evening Mary called her parents. It seems Mary was going to college and working to help pay her own way. Not that her family didn't have money. But the first time, at an expensive, private liberal arts school in Pennsylvania, things hadn't worked out, and her parents were greatly disappointed. Still, her parents had offered her a deal. They would provide some support but in return Mary had to go to school full time and maintain at least a C+ average. When she told her parents what had happened that afternoon, they were non-committal about what she should do, but firm in their position. If the grades fell below a C+ average or if the number of hours in college was reduced to less than full time, no support now or ever again. Mary understood her parents when they argued for the value of a college degree. She could see there would be limits to her ability to move up in the company without a degree. She would never be able to become an office manager, and the idea of higher positions, well, it wasn't even imaginable. And, yes, there was the risk that the company could fold or be bought out (August Bovin & Co. was in a business notorious for failures and buyouts). But August Bovin & Co. was well run, and there was every prospect that it would be an industry leader some day. And the money! Boy, it would be nice to not have to worry about getting to the next paycheck and being able to get a new car and take an occasional vacation like her friends. Maybe she should take the promotion. After all, her co-workers had told her on numerous occasions that she'd succeed in anything she did. And her boss, who had taken a big risk in hiring her 2 years ago, was depending on her. "But Mary," Mary recalled her boss saying, "I need you."

At this point, you may be thinking that critical economic thinking is just common sense, and you'd be right. Unfortunately, common sense is often not very common, and the level of thinking used by people to answer such questions is often quite shallow. In part, this is because many have never been formally exposed to economics. However, even those who have studied economics often continue to have problems. The reason for this is that often times they learned the material by rote rather than understanding the logic of the material they have studied. To memorize what a supply and demand diagram looks like is not the same as understanding how market prices are determined. To be able to repeat back the definition of a recession is not the same as understanding the causes of economic downturns and the policies that might mitigate the damage they cause. And even if rote learning were acceptable in the past, it clearly is no longer. The nature of the workplace today no longer allows important decisions to be made by a select few at the top while the rest engage in standardized, repetitive activities that, while perhaps involving high levels of skill, do not

require active problem solving and decision making. As a result of the faster pace of technological innovation and the increased level of competition that has come about as a result of market globalization, companies today must be flexible and able to adapt quickly to the demands of the marketplace. Such flexibility and adaptability requires employees who can solve problems, who can think on their feet, and who are allowed to make important decisions on a daily basis. Clearly, success in the global economy today requires being able to think critically about economic issues.

This book provides you with the opportunity to learn how to think critically about economic issues. Like any skill, learning to think critically about economics requires both understanding the basics and plenty of practice. This handbook provides you with a description of these basics and a number of exercises that will allow you to practice your skills.

EXERCISE 1.1

Students in introductory economics courses sometimes treat the definition of economics as if it were fixed and never changing. But the definition of economics is far from fixed, and over time different economists have characterized it differently. Consider the following definitions of economics that have been suggested by two famous economists:

Writers on Political Economy profess to teach, or to investigate, the nature of Wealth, and the laws of its production and distribution : including, directly or remotely, the operation of all the causes by which the condition of mankind, or of any society of human beings, in respect of this universal object of human desire, is made prosperous or the reverse. • JOHN STUART MILL (1848)²

Political Economy or Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing. • ALFRED MARSHALL (1920)³

1. Reread the two quotes carefully and try to make sense of them. If you are confused by the odd use of words, feel free to discuss these definitions with fellow students or your professor. Then rewrite each of the above definitions in your own words so that its meaning would be clear to a bright high school student.
2. Explain in what way Mill's definition and Marshall's definition are different.
3. Explain what is common to Mill's definition and Marshall's definition.

²The quote is from John Stuart Mill's famous *Principles of Political Economy* book (Mill (1891, p. 13)), which was a standard text for learning economics for at least half a century.

³Marshall (1948, p. 1).

4. Which definition of economics is likely to be of greater value to a business person? Why did you conclude that?
5. Which definition of economics is likely to be of greater value to a government policy maker? Why did you conclude that?
6. Which definition of economics is likely to be of greater value to a consumer? Why did you conclude that?
7. Read the box that contains some details about the lives of Mill and of Marshall. Based on their personal histories, provide a possible explanation for why each chose the definition that he did.

BOX 1.2

JOHN STUART MILL

Born in London in 1806, John Stuart Mill was the son of a Scottish intellectual who home schooled his son with the intent of creating a brilliant philosopher who would further the cause of Utilitarianism. At age three Mill began learning ancient Greek and reading the classics in that language. At age eight, he began learning Latin and reading the classics in that language as well. Finally, at thirteen, he began an intensive study of various modern subjects including economics and the sciences (he knew the famous economist David Ricardo personally). According to Mill, this resulted in a nervous breakdown at the age of 20. He did not marry until the age of 45. Unfortunately, his wife Harriet Taylor, a philosopher and early advocate of women's rights, died seven years later. Mill never remarried and spent the remainder of his life as a writer of philosophy and economics, as a member of the British Parliament, and as an advocate for women's rights, labor unions, and extension of the right to vote. He died in 1873 at the age of 66 in Avignon, France where he was buried beside his wife.⁴

ALFRED MARSHALL

Alfred Marshall was born in an industrial section of London in 1842, the son of working class parents who aspired to membership in the higher classes. After his studies at Cambridge University, he launched a long and successful academic career as an economist. Marshall is noted for being the author of the first modern principles of economics text and for working to make economics more scientifically rigorous through the use of mathematics (though interestingly he believed that textbooks should focus on verbal translations of the mathematics to make the material accessible to a broader audience). He was married at the age of 35 to Mary Paley. Mary Paley was one of the first women to study at Cambridge University and an economist with whom he collaborated on a number of works, though not all of those works bear Paley's name. He had an especial interest in the economics of industry.⁵

⁴Photograph of John Stuart Mill courtesy of the Library of Congress, cph 3b23680.

⁵This biography is based on John Stuart Mill (2010). Interested students are encouraged to consult that source for access to links that provide details about Mill's life and his work.

⁷This biography is based on Alfred Marshall (2010) and Coase (1984). Interested students are encouraged to consult the first source for access to links that provide details about Marshall's life and his work.

1.2

FOUR STEPS TO THINKING CRITICALLY IN ECONOMICS

Despite what may seem like a difficult task, clear and effective economic thinking can be accomplished by taking four basic steps:⁸

- 1. DECIDE WHAT THE ISSUE IS** • If you have ever done any type of research, you have probably experienced the problem of spending enormous amounts of time and energy on some problem only to discover that you don't know what you're trying to do and that all your efforts have been wasted. Almost always, this problem of "spinning wheels" can be traced to not having a clear idea of what the issue is all about. To avoid that sinking feeling that comes from realizing all your efforts have been wasted, invest some time at the beginning of the thinking process to defining the question clearly and precisely and to noting why you care (that is, what your purpose is).

BOX 1.3

"WHAT DO YOU MEAN, MR. PRESIDENT?"

I had only been Chair of the Council of Economic Advisors for two days when the President burst into my office. "I need a report on international trade by Monday!" he exclaimed before running out of my office.

"Excuse me, Mr. President. Excuse Me! EXCUSE ME!" I yelled as I ran down the hall after him. Luckily, he had stopped at the receptionist's desk for a doughnut, and I was able to catch him. "Excuse me, Mr. President, but could I ask you a few questions before you go?"

"No problem," he replied. "What do you want to know?"

"First," I stammered trying to catch my breath, "do you want a status report on current trade activities or do you want a policy report?"

"A policy report."

"Second, do you want a list of possible policies, or do you want us to simply give you a recommendation on what we think should be done?"

"Just a recommendation."

"Third, should this recommendation deal with a comprehensive trade policy, or do you have something more specific in mind?"

"What do you mean?" It was clear the President wasn't aware of exactly what he wanted.

"Are you concerned with our trade with Europe?" "No."

"Japan?" "No."

⁸The nature of this four-step process and its general value is explored further by a variety of critical thinking authors. See, for example, Paul (1993) or Ruggiero (1996).

"Then with whom?"

"Actually, now that I think about it...", he paused to take a bite of his doughnut, "...it's China. I just got back from there, and it's clear to me that we need to develop a formal economic policy to deal with the Chinese government."

Finally, we were getting somewhere. "So you need a position paper on a China trade and investment policy?" I asked him.

"Yeah, that's it," he replied.

"And is this an overall trade policy or should we focus on a specific area?"

"What do you...", he took another bite of the doughnut, "...mean?"

"Well, is the issue one of stimulating or of restricting trade and investment?"

"Stimulating trade and investment, of course."

"And is this in general or do you have a specific industry in mind?"

"What did you say?" The President had turned away from me to grab another doughnut.

"Are you interested in a general increase in trade and investment with China or are you concerned with a particular industry?"

"With fast food," he mumbled as he ate the new doughnut. "When I was in China, I noticed that there are hardly any fast food restaurants over there. What can we do to get good ol' American fast food over there?"

"Great!" I responded. "I think I know what you need. We'll have the position paper by Monday."

"Thanks!"

"You're welcome, Mr. President."

2. BECOME AWARE OF YOUR INITIAL FRAME OF REFERENCE • In trying to answer an economic question, many people are under the mistaken impression that they begin with no particular view and that thinking simply means gathering information and constructing (or choosing) the view that makes the most sense. In reality, even if we have no initial opinion on the issue, all of us begin with a set of prior experiences, information, ways of thinking, and values that make up our initial frame of reference. While some of this initial frame of reference may be valuable in thinking about the issue at hand, some of it may actually get in the way of clear, effective thinking. What is important is to recognize that we all have an initial frame of reference and that after you have defined the issue, the next step to thinking effectively about that issue is being aware of "where you're coming from". To become aware of your initial frame of reference, ask yourself what, if

anything, you already know about the issue. Have you already come to any conclusions about this issue? What important values do you hold that are connected to this issue? Have you already come to any conclusions about this issue? What important values do you hold that are connected to this issue?

BOX 1.4**A ROSE BY ANY OTHER NAME... (PART I)**

There is no good, single word to describe the set of prior experiences, information, ways of thinking, and values that we start with when trying to answer an economic question. One possibility is to use the word *viewpoint* (the point from which a person views the world). Unfortunately, however, many people use that word to indicate a person's concluding opinion about an issue and not the point from which one begins to think about an issue. Another good candidate, the word *perspective*, suffers from the same problem. The phrase *where you're coming from* seems a good description but is too long to be generally useful. As a result, this book uses the somewhat awkward phrase *frame of reference* to indicate that set of prior experiences, information, ways of thinking, and values with which we view the world and think about an issue.

3. GATHER RELEVANT INFORMATION AND SEARCH FOR A VARIETY OF POSSIBLE ANSWERS

• Having decided what the issue is and having become aware of your initial frame of reference, you are now ready to look for relevant information and possible answers to your economic question. There are a number of sources for such material. The popular press, for example, includes a number of respected newspapers (such as *the New York Times* or *the Financial Times* of London) and magazines (such as *Business Week* or the international news magazine *the Economist*) that contain well written economic analyses of current issues. There are also a large number of academic journals (such as the *Journal of Economic Perspectives* and the *Journal of Economic Literature*) that provide a wealth of in-depth economic analysis of virtually every topic that comes under the definition of economics. Finally, there are a number of research institutes (such as the American Enterprise Institute, the Brookings Institution, and the Urban Institute) and government agencies (such as the Bureau of Economic Analysis and the Bureau of Labor Statistics) that publish short books and statistics on issues of contemporary interest. For basics facts about a variety of economic activities, the annual edition of *The Economic Report of the President* and the annual edition of the *Statistical Abstract of the United States* are especially valuable places to start.

BOX 1.5

CAVEAT LECTOR!*

In the old days, the primary source of economic information was found in books and periodicals located in libraries. Because of the expense of running libraries and of publishing books and periodicals, librarians and publishers had a strong motivation to assure that the information was accurate and reliable. As a result, librarians and publishers acted as the information police for us. But with that protection, library users became relatively passive and often did not think critically about whether the information they were encountering was accurate or reliable. They simply trusted the libraries and publishers.

Nowadays, libraries still provide access to all sorts of information. But for most of us, our first place to look is on the internet. And that has in many ways been for the good – economic information is now shared much faster and in much more convenient forms than ever before. But there is one downside – libraries and publishers no longer filter all the information we see. And as most students already know, while there is a wealth of accurate and reliable information on the internet, there is also a lot that is inaccurate, unreliable, and at times deliberately misleading.

So how do you separate the trash from the treasure? The key is to develop a general skepticism about everything you read, hear, or see and to not accept information just because it's on the internet or presented with assertive authority.

"That sounds fine," you may be thinking, "but I can't do original research to verify everything I come across." That's right, you can't. You do need to trust what you find. The problem, then, is to develop a method for figuring out when to trust and when not to trust.

To figure that out, first always ask who is providing the information. If it's a person, who are they? Do they have a name? (Nameless sources are always a bit suspicious.) Do they have a degree in the subject area? What type of degree? Is it from a reputable institution? Do they have work experience in the subject area? What is that experience? How long have they worked in this area? Is there reason to believe they are objective, or are they interested in advocating some particular position? If it is an organization, what is the name of the organization? Who runs it? Where is it located? Is it affiliated with other organizations? What is the organization's mission?

The second step to figuring out whether the information can be trusted is to look for additional sources that confirm that information. Search the internet, talk to people you trust, and use the library and established publishers (they still act as information police). In terms of talking to people, there are, of course, your professors. But you may want to search out others as well – professionals in the subject area who have more experience sorting through valid versus bogus information. And don't be shy. Most people love to talk about their work. Just be polite, introduce yourself, and explain why you need their help. And don't forget about using the phone or email to contact strangers whom you have reason to trust. They may not respond, but then again they may. And if you ask nicely and don't overdo it, it can't hurt!

*Have you figured out what "Caveat Lector" means? It is Latin for "Reader Beware".

4. COME TO A CONCLUSION • 1. Once you have gathered your information, decide what the best answer to your question is and what that means (that is, what the implications and consequences would be) if you are correct. You may find that the best answer is none of the answers you found but rather some more complicated, and perhaps unique, combination of several views that you have put together. Be careful that you don't too quickly dismiss any possible answers that conflict with initial views that you may have held. Consider the conflicting views honestly before deciding whether to keep them or toss them out.

A FINAL POINT • As you go through this process of thinking, do yourself a big favor and be sure that you put your thoughts down in writing. Write the question you're working on in a single sentence. Make note of why you're trying to answer this question. Jot down notes on relevant prior experiences, information, ways of thinking, and values that you bring to this issue. Summarize the material you come across in looking for more information and different views. Sketch out the answer that you finally decide is the best and note the implications and consequences of that answer were it true.

Don't be afraid to put things down because they might be silly or foolish. This is writing for yourself, not for others. Writing for yourself is a time-honored way to make sure that you don't lose that brilliant thought when your mind turns to the next task. It also is a way to make sure that your ideas really do make sense. Sometimes the mind plays tricks on itself. In writing your thoughts down, you give your mind the chance to reexamine its thoughts at a deeper level.

*Reading maketh a full man, conference a ready man,
and writing an exact man.*

FRANCIS BACON (1561-1626)⁹

EXERCISE 1.2

e purpose of this exercise is to give you a chance to practice three of the four basic steps that make up critical economic thinking (the choice of the issue has already been done for you!). Be sure to note that giving reasons for your views is just as important and necessary a part of the exercise as the views themselves.

For each of the issues listed below, think critically about each issue by answering the following questions (Special note: If you are using this book as part of a course, your professor may want to restrict your attention of those topics that are relevant to your course or to give you other issues to work consider.):

⁹The quote is from the essay "Of Studies" in Bacon (2003). Francis Bacon is considered by many to be the father of modern science and the scientific method. See Francis Bacon (2010) for an introduction to his life and links to further details.

1. Become aware of your initial frame of reference.
 - a) What do you believe the purpose of the policy to be?
 - b) Do you think this purpose is an appropriate function of government?
 - c) Do you already have any data that shows that the policy achieves or doesn't achieve this purpose?
 - d) Do you have an initial opinion about whether the policy is a good one? If so, what is that opinion and why do you believe that?
2. Look for a variety of possible answers and empirical evidence.
 - a) Find at least two sources that take different views of the policy.
 - b) Using the box *Caveat Lector* as guidance, describe your sources and explain on what basis you have decided to trust the information that it provides.
 - c) What is the overall conclusion of each source?
 - d) What is the main argument or line of reasoning that each source uses to support its conclusion? If it provides no clear reasoning, be sure to note that.
3. Decide what the most reasonable answer is.
 - a) Having researched this issue, what do you now believe is most reasonable answer to this question?
 - b) If this answer is different from your initial opinion, what led you to change your mind? If this answer is the same as your initial opinion, why were you not persuaded by the source(s) that argued for the opposite answer?

ISSUE 1: The Minimum Wage. The Fair Labor Standards Act established a national minimum wage of \$0.25 per hour in 1938. In 2007, the US Congress passed legislation to gradually increase the minimum wage from \$5.15/hour to \$7.25/hour by July 2009. Do you think the US Congress should have raised the minimum wage?

ISSUE 2: Health Care Reform. The purpose of the *Patient Protection and Affordable Care Act* and with *Health Care and Education Reconciliation Act*, both passed in 2010 by the US Congress, was to expand health care coverage and slow the growth in cost of health care in the US. Do you think the US Congress should have passed those acts?

ISSUE 3: Student Aid. The purpose of the *Student Aid and Fiscal Responsibility Act* of 1999, which was passed in 2010 as part of the *Health Care and Education Reconciliation Act*, was to increase the size and number of Pell Grants (used to help support students pay for post-secondary education). Because of that bill, the Federal government will no longer subsidize private higher-education loans. Should the US Congress have passed this act?

ISSUE 4: The Bank Bailout of 2008. The *Emergency Economic Stabilization Act* passed by the US Congress in fall 2008 was intended to keep financial markets from collapse. Do you think that this act kept financial markets from collapse?

ISSUE 5: The Stimulus of 2009. The *American Recovery and Reinvestment Act* passed by the US Congress in early 2009 was intended, in part, to reduce the level of unemployment associated with the recession occurring at the time. Do you think that this act succeeded in reducing unemployment?

ISSUE 6: Length of the Work Week. In part because of a desire to help families spend more quality time together and in part out of a desire to reduce unemployment, some countries have shortened the work week below the traditional 40 hours. Should the US do the same?

I.3

CRITICAL DISCUSSIONS

So far, it would seem that critical thinking is by its very nature an individual (and perhaps lonely) activity. Nothing could be further from the truth. If you have ever talked with a close friend about some shared concern and been unafraid to examine your deepest thoughts, you have engaged in critical thinking that involved more than one person. Indeed, great thinkers through the ages have argued that because face to face discussions involve the whole person (intellectually, emotionally, and physically) they are the best way to engage in critical thinking and are the stuff that true friendships are made of.

Of course, the critical discussions that you have had are not likely to have centered on economic issues. Nonetheless, discussions can and do play a large role in making sense of economic issues. Policy makers from the President of the United States down to your local city council often make decisions on the basis of discussions between various advisors, experts, and citizens. And in business, the team approach is now a time-honored method for developing strategies to solve problems or exploit new opportunities.

In college, such discussions can happen in a variety of ways. Perhaps the simplest way is through casual conversation among students or between a student and a professor. However, professors often use more formal methods to incorporate critical discussion into the classroom.

Truth springs from argument amongst friends.

ATTRIBUTED TO DAVID HUME (1711-1776)¹⁰

¹⁰Hume (n. d.). The source of this quote is not clear, and it may be a paraphrase of Hume's writings rather than an actual quote. However, it is consistent with Hume's work, and encapsulates the social nature of critical thinking. See David Hume (2010b). Hume is one of the giants of modern philosophy and a rough contemporary of Adam Smith. For an overview of Hume's life and work, as well as links for further details, see David Hume (2010a).

QUESTION AND ANSWER SESSIONS • The simplest form of discussion occurs through some sort of question and answer session. It may be as simple as the professor entertaining questions during a lecture. Or the professor may take a more active role by asking questions of students. In either case, however, the value of the discussion depends on the student. To get the most out of a question-and-answer session, don't settle for just asking the professor what something is or telling the professor what the answer is. Be assertive and insist on more. Follow up by asking why – Why is it important? Why is it true? Etc. Thus, for example, if you want to know what scarcity is, don't just ask for the definition. Follow up by asking why it is an important concept in economics. And if the professor is the one asking the questions, answer as best you can, and then follow up by asking the professor why it is important. Economic thinking is more than facts – it is about reasoning and making sense of things.

ECONOMIC CASE DISCUSSIONS • Informal discussions and question-and-answer sessions can be quite useful. But they have their limits. Often times, there is not enough time to fully explore an issue. And often times, informal discussions and question-and-answer sessions don't have enough structure to help students work methodically through an issue. As a result, professors sometimes use case discussions to engage in more structured, extended discussions. If the class is small enough, the whole class can be part of the discussion. If the class is larger, it can be done with several breakout groups (typically less than 10 students each) which discuss the case separately before presenting summaries of the results of their discussions to the whole class.

In either situation, an economic case discussion typically begins with a story that raises questions to be answered or problems to be solved. Accompanying the story may be related materials such as newspaper articles, tables, or graphs. The task for students is to analyze the situation, determine what the issue (or issues) is, and argue how to address the issue. Unlike working on problem sets or writing papers, however, cases require in-class discussion to identify the issue and to analyze the issue posed by the case. And because the case emphasizes a stylized real-life situation, it provides us with an example from which we can learn more general lessons.

Many students feel uncomfortable when first asked to participate in a case discussion. Common problems expressed by students include:

Preparing for a case discussion is frustrating • As in situations faced by real decision-makers, the information supplied in a case is frequently partial and, at times, even misleading. And sometimes students may find themselves overwhelmed by the volume of information. To complicate matters further, the problems presented are both ambiguous and complex. But that's the point – a case typically has no single “correct” answer. The purpose of the case is not to learn what answers to memorize; it about coming up with a variety of possible answers and then discussing the relative merits and faults with those answers.

Class discussions are intimidating • Learning through case discussions not only calls for your active participation, it demands it. Few people can learn how to ride a bicycle by reading a manual or listening to an explanation, and few can carry out effective economic thinking without participating in the process. Case discussions are useful because they force a level of participation and involvement that is not always present when students attend a lecture or study outside of class. Unfortunately, many students are initially unsure of themselves or don't like calling attention to themselves. As a result, they are often hesitant to jump into the discussion.

These problems, however, are not insurmountable. If you want to get the most out of an in-class case discussion, you should:

Read the case material before going to class • Conversation often moves quickly in a case discussion. As a result, there is little time for more than a quick glance at the case materials. To get the most out of the in-class case discussion, you should read all the material beforehand. Be sure to follow any instructions, and try to master the content of the case material.

Pay attention to any data that are presented in the case • This information, which may be included in the narrative but often is found in tables or graphs with no mention in the narrative, may have an important bearing on the case. Try to work out any quantitative analysis that might help you understand the problem. Make whatever calculations you might need and bring them to the in-class discussion.

Ask how economic analysis might help • Remember, the purpose of the class is to help you learn about how economic thinking can be useful in real world economic decision making. It may be useful to keep a short list of economic principles and concepts that you have learned and ask yourself while reading the case whether any of those concepts can be applied to the material you are reading.

Be prepared to share your analysis in the classroom • The purpose of the case is to learn how to critically think about economic issues. You may have the key that helps a fellow student, or you may be the one having problems thinking the issue out. In either case, by sharing your thinking, flaws and all, with the class, everyone in the class can benefit. In many case discussions, your role is simply to think out the case with the rest of the class. In other case discussions, however, you may be asked to role play by taking on the identity of a particular character in the case. This often takes a bit of imagination but can have big payoffs because it allows the class to consider a broader set of ideas than would otherwise be discussed.

So, how do you know if you did well in the case discussion? Don't worry about whether you solved the problem; the key is that you were an active, contributing part of the discussion:

You understood the case's content • You contributed relevant information from the case. Your comments indicated that you read the case carefully, that you understood the situation, and that you understood how the case connects to previous material in the course.

You supported the thinking of others • Your comments showed that you listened to others by building on the ideas of others, responding to their questions, providing constructive criticism of those ideas when you disagreed, and asking questions of your own when you were confused or thought additional clarity was needed.

You offered quality arguments of your own • Your comments were reasonably clear, accurate, relevant, logical, and exhibited some understanding of the breadth and depth of the issue being discussed.

And how will you know if things didn't go well? Your participation resulted in only one- or two-word answers to questions without elaboration, in making remarks that were irrelevant, that showed insensitivity to others, or that rambled incoherently. But it's not hard to do well. Try to participate even if you do not feel what you have to say meets the criteria of a good contribution. And remember that sometimes the best contribution to a discussion is simply asking a question. You've heard it before, but it is true – sometimes a “dumb” question or answer may advance the discussion and clarify things in other people's minds far more than a brilliant speech. Don't hesitate to admit confusion, ask for clarification, or simply be wrong. In short, don't worry! You're among friends. Speak up. If you were already an expert in critical economic thinking, you wouldn't be taking the class. Case discussions are one of the few places where you can try out new ideas and ways of thinking without penalty.

In case discussions there are no wrong solutions – There are only solutions that must be compared and evaluated. Your contribution to identifying and evaluating solutions is the important feature of a case study.

EXERCISE 1.3

Case discussions range from very simple discussions that only take up part of a class to elaborate, extended discussions that take place over the course of several classes, if not an entire semester. This exercise gives you the opportunity to practice participating in a relatively simple case discussion.

Analyze one or more of the cases below (your professor may have further instructions about this) by discussing them with your fellow students. Each case

will have specific questions to get you started. However, you may find the following general questions to be a useful guide to your analyses.

- What are the issues raised by the case?
- Is there a single, overall issue, problem to be solved, or question to be answered?
- Who are the characters in the case? Describe them, and determine what their motivations and perspectives are.
- What information is presented in the case (data, facts, circumstances, etc.)?
- Is there additional information that you can use that is not presented in the case but which it would be reasonable to use? If so, what is that additional information? And why is it reasonable to use it?
- What economic ideas, concepts, and theories would be useful in making sense of the case?



VACCA NURSERIES

Date: 2/9/11

To: Walter McCarthy, Director of Marketing
Christina Napiorski, Director of Product Development

From: Neal Vacca, President

RE: Company Direction

As I am sure you are aware (just do a web search of the words “recession” and “gardening”), current economic circumstances have been a boon for the nursery business. But while business has been good lately, I think it could be better. As a result, I want to explore proposals for a new business initiative that would further solidify Vacca Nurseries’



CASE 2 – UNEMPLOYMENT VERSUS LONG-TERM ECONOMIC GROWTH

You are the primary economic advisor to the current President of the United States. Congress is currently debating two bills, one of which would reduce unemployment, the other of which would stimulate long-term economic growth, and each of which would cost \$5 billion. The President has asked you to lay out his options on these two bills, provide an assessment of each option, and give your advice as to which option in your estimation would be best. Finally, in considering your advice, the President also asks you to consider the following recent headlines:



- What are the options that you should give the President?
- What are the pros and cons for each option?
- What is, in your estimation, is the best option?

1.4

CRITICAL READING

Gathering information and understanding the arguments of others is an important part of thinking critically. In economics much of that process takes place through reading. Particularly at the introductory level, most students think in terms of textbooks, but even at that level a course can often be enhanced by the inclusion of economic monographs (shorter, single topic essays or books) or economic articles written for an intelligent lay audience. Many students find economic writing to be difficult to make sense of, and it not uncommon for a frustrated student to give up trying.

Like the writing in any area, some economic literature is better written than others. However, often times it is not so much the writing as it is the reading strategies used by the student that are the problem.

Economic writing is not intended for pleasure. It is not something that one can casually read while watching TV, playing on the computer, or being actively involved in texting friends. Rather, it is a complex argument that is intended to lay out a claim and to persuade you through *conceptual argument* and *empirical evidence* that the claim is worth believing. To make sense of an economic argument, you need to approach it like an attorney interrogating a hostile witness or a food critic attacking a plate of food. In short, it has to be read critically.

So what is critical reading? Critical reading is essentially a form of critical discussion with whoever wrote the material. The only problem is that you can't directly talk to the author. Instead, everything the author has to say is already in front of you, and so it is up to you to carry the conversation. That may sound difficult, and it certainly requires more energy than an actual conversation. But the returns to those efforts are enormous. Just follow the following *Five Steps to Reading Critically*, and if they remind you of the *Fours Steps to Inking Critically* described earlier in this chapter, you've already started reading critically!

- 1. DETERMINE THE PURPOSE OF THE WRITING** • The first step is to figure out what the purpose of the writing is. Is it to answer a question? Then what is that question? Is it to persuade you to believe something? Then what is that something? To figure out what the purpose is, read carefully the beginning of the material (the introduction, the first few paragraphs, or the first section). If that doesn't tell you what the purpose is, skim through the reading (don't ignore the headings that accompany the text) and look for a conclusion or summary at the end. This first step is a bit of a detective problem. And don't be concerned with making a mistake. As you work through the reading in more detail later, if you've made a mistake, you'll have time to revise what you think the purpose is. But don't move to step two until you have some working hypothesis as to what the author is trying to do.
- 2. FIGURE OUT THE CONTEXT OF THE WRITING** • The next step is to figure out who the author is and what the author assumes is already in your head. Is the author an economist? Or does the author have some other profession?

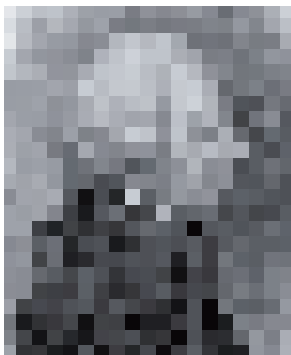
Where does the author work? Why, as best you can figure out, was the material written? Keep all that in mind later when you read the material in detail. Remember, this is a conversation, and it helps to know whom you are talking to. Once you've got a reasonable grip on the author, think a bit about what the author is assuming about you. Does the author assume that you already have a certain level of education? Does the author assume you already have a certain level of mathematical ability, or already have a particular set of personal or professional experiences? Does the author assume that you have a specific purpose in reading the material?

- 3. BREAK THE WRITING UP INTO PARTS** • The heart of economic writing is focused on fulfilling the overall purpose that you determined in Step 1. And typically, fulfilling a purpose is done through a sequence of arguments. So, now that you have a sense of the purpose of the material and its context, break the writing up into manageable parts. Sometimes the parts are easy to see because they are divided by headings that introduce each part. But sometimes it takes a bit more detective work. Skim through the material again and see if you can identify where the author moves from one argument to the next. Again, don't worry if you later discover you've made a mistake or two. You can always revise as you discover your mistakes. And don't forget to do this with smaller pieces of writing. Although you may be tempted to skip this step, even smaller pieces of writing progress through a sequence of arguments. It's just that the arguments are now a paragraph or two rather than longer pieces of writing separated by headings.
- 4. MAKE SENSE OF EACH PART** • Now (finally!) you can dig in and make sense of each part. What is the author trying to tell you? (Remember, this is a conversation.) Pay attention to the reasoning of each part (that is, figure out each time the author says, “*is* is true *because* ...”). Look for empirical evidence (data, examples, anecdotes, etc.).
- 5. PUT IT ALL TOGETHER** • Once you have made sense of each part, step back, take a look at all the parts in the order they were presented, and figure out if they work together to fulfill the overall purpose of the writing. If not, figure out what the problem is.
 - If you didn't understand certain parts, go back to those parts and work through them again. You may find it useful to talk to others (for example, your fellow students or your professor) about those parts that you are having difficulty with.
 - If you understand the parts, but don't see how they fit together, try going step-by-step from one part to the next to see if the connections start to make sense. It could be you missed something. But it could also be that the author left something out. Again, talking with someone may help.
 - Finally, don't rule out the possibility that the author has made a coherent argument, but you disagree. If you think this is the case, first think of

the argument from the author's perspective, keeping in mind what you figured out in step 2 above. Then ask yourself what are the reasons you disagree. Is it a mistake in reasoning? Do you have empirical evidence that doesn't fit with the author's argument? Do you have a different set of values than the author?

EXERCISE 1.4

This exercise gives you the chance to practice your critical reading skills with a classic piece of economic writing. The writing is a bit old fashioned, but if you're methodical about it, you may be surprised how much you end up understanding. And the payoff will be worth it. Not only will you learn a bit about a fundamental principle of economics, you will also learn how to read the works of the person who in many ways created the modern science of economics.



¹¹ Adam Smith published *The Wealth of Nations* in 1776. There are a number of places where you can find a copy of that work. See for example, Smith (1937) in the reference list at the end of this book. However, a little bit of searching in bookstores, in libraries, and on the web (just do a web search for “Adam Smith” and “Wealth of Nations”) will reveal how easy it is to find a copy. Smith divided *The Wealth of Nations* into sections that he called “Books”, and within each Book he included several chapters. Find Book I which has the long title: “Of the Causes of Improvement in the productive Powers of Labour, and of the Order according to which its

1. Produce is naturally distributed among the different Ranks of the People”. Then in Book I, find Chapter 1 (with the short title: “Of the Division of Labour”), and begin following the instructions below.
1. Using the *Five Steps to Reading Critically*, begin by determining the purpose of Book I, Chapter 1, and then write down that purpose. You may want to skim Smith's introduction (“Introduction and Plan of the Work”) that immediately precedes Book I, Chapter 1. And don't forget to look at the headings. Smith's headings are often rather long by modern standards. But they contain important information for those who want to understand what Smith is saying. Especially in those headings, every individual word has importance, so you may find you want to first consider the meaning of each word separately.
2. Now that you have a sense of where Smith is going with Book I, Chapter 1, figure out who Smith was and who he thinks you, his reader, is. Then write your conclusions down. The preface(s) to *The Wealth of Nations* may help. But you are also likely to need to look elsewhere for a brief biography. If you

¹¹Photograph of Adam Smith courtesy of the Library of Congress, LC-USZ62-17407.

- need to, refer back to the third step of the *Four Steps to Inking Critically* (“Gather Relevant Information and Search for a Variety of Possible Answers”).
3. The next step is to break Book I, Chapter 1 into parts. It’s a relatively short piece of writing, so you may find that each part is a single paragraph. Write down a description of how you divided up the material along with a brief explanation for why you did it that way.
 4. Read each part, make sense of what Smith is trying to tell you, and then write down a brief summary of that part. Refer back to the fourth step of the *Five Steps to Reading Critically* if you need a reminder of how to do this.
 5. Finally, look at the sequence of summary statements you wrote for each part. Then, using the fifth step of the *Five Steps to Reading Critically*, compare that sequence to the overall purpose of Book I, Chapter 1 that you wrote down in part 1 of this exercise. If you need to revise what you wrote in part 1 of this exercise, go ahead and do so. Then ask yourself if you understand what Smith is talking about and whether he has succeeded in fulfilling the purpose of that chapter. Write down a brief explanation of why or why not.

I.5

CRITICAL WRITING AND SPEAKING

One of the most important purposes of critical economic thinking is to focus your thinking so that you can clearly and effectively communicate with others. And that communication often requires writing your thoughts down or making presentations. Projects need to be completed. Problems need to be solved. Planning needs to take place. The communication may involve arguing for a particular strategy with your boss or explaining the importance of a project to subordinates. It may involve negotiating with a supplier or trying to sell your product to a customer. It may even involve defending your company against charges in the press or by government officials.

There are two types of critical writing and speaking. The first type is informal and intended only for yourself or for close associates who already understand the context of what you are working on. Exercise 1.4 in the previous section provides an example of informal writing. And if you had reported your results verbally to someone, that would have been informal speaking. Such communication is typically used not to report final thoughts and arguments, but to keep track of things while you are working things out. In short, it is an aid to the process of thinking critically.

The other type of critical thinking, and the main subject of this section, is more formal and is intended to communicate the results of your thinking clearly, effectively, and persuasively. It is the form of writing and speaking used for all the examples described above in the introductory paragraph. And to engage in formal communication, you need to do five things:

- 1. COMPLETE THE THINKING PROCESS FIRST** • Very few of us can think out loud and make sense to others. It is even more difficult when writing. Do yourself and your reader a big favor - don't start writing until you have thought the issue out and know what you want to say.
- 2. MAKE YOUR CONCLUSION THE MAIN POINT** • It may seem obvious, but many people fail to make their final position on the issue the main point. As a result, the reader is often left wondering what the point is. Make your conclusion the main point. Be sure that everything you write contributes to persuading your reader that you are correct. Often, the problem is that you don't know what your final position on the issue is. If you can't write your final position down as a single sentence, chances are that you haven't completed the thinking process (in which case, go back to step 1 above!). After you have written your final position as a single sentence, make it the dominant, controlling idea in your writing. Don't let minor issues or unrelated material clutter your writing. Remember, the point is to connect with your readers, not confuse them or drive them off.
- 3. CHOOSE A SUITABLE ORGANIZATION FOR YOUR WRITING** • The best organization for a piece of writing depends on how much you have to say and with whom you wish to communicate. A standard, useful form of organization common in economics and in business is to break your material into three distinct parts:
 - *Introduction* – Describe the *subject matter*, explain *why it is important* (so that your reader doesn't toss your work in the trash), and state your *conclusion* clearly and directly. In other words, tell your reader what you are writing about, grab the reader before they drift off, and hit the reader between the eyes with the point you wish to make! In economics and in business, readers are often impatient. If you don't tell them immediately what the subject is, explain to them why they should care, and give them the bottom line, your readers are likely to give up on you and move on to some other piece of writing that is clearly important and focused.
 - *Body* – Offer your empirical evidence and conceptual arguments as to why your conclusion (which you have already stated in the introduction!) is the correct one. You may also find it useful to present arguments why alternative views are not as good.
 - *Conclusion* – Briefly restate your conclusion (remember, that's what you first stated in the introduction), and finish with a brief discussion of the implications and consequences of your view.



*Tell them what you're going to tell them. Tell them.
en tell them what you told them.*

-- DAVID HOHMANN¹²

BOX 1.6

A RISING STAR IN ECONOMICS: ESTHER DUFLO



13

Esther Dufo, a French economist, is the Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics at the Massachusetts Institute of Technology, and 2010 recipient of the John Bates Clark Medal awarded by the American Economic Association to the one economist under forty who has made the most significant contribution to economic thought and knowledge. She is also the winner of a number of other awards include a MacArthur "Genius Award" in 2009. Dufo's research focuses on the economics of developing countries, with emphasis on household behavior, education, access to finance, and health and policy evaluation. She has been especially instrumental in bringing field experiments to better understand the nature of economics in developing countries. She is also an active and well respected writer, is co-editor of the *Journal of Development Economics* and of the *Review of Economics and Statistics*, and current and founding editor of *AJ: Applied Economics*.¹⁴

SUMMARY

Critical economic thinking is about thinking about your economic thinking while you are thinking in order to make your economic thinking better. There are four basic steps to critical economic thinking – figuring out what the purpose of your thinking is, becoming aware of your initial frame of reference, collecting information and developing possible answers, and choosing the best answer. In critical thinking, communication is key, whether it is in face-to-face discussions, reading the works of others, or writing and speaking.

KEY CONCEPTS

Body
 Conceptual Argument
 Critical Thinking
 Critical Discussion
 Empirical Evidence
 Five Steps to Reading Critically
 Implications and Consequences
 Issue at Hand
 Purpose
 Skepticism
 Why It Is Important

Case Discussion
 Conclusion
 Critical Reading
 Critical Writing
 Four Steps to Thinking Critically
 Frame of Reference
 Introduction
 Logic
 Question-and-Answer Session
 Subject

¹³Photograph of Esther Dufo, AFP, Getty Images

¹⁴This biography is based on Esther Dufo (2010) and 2010 John Bates Clark Medal Winner: Esther Dufo (2010).

REVIEW QUESTIONS

1. What is the difference between economic thinking and *critical* economic thinking?
2. What is Mary's difficult choice problem in the story "The Curse of Good Fortune"?
3. Explain what is meant by the phrase "frame of reference."
4. Explain the four steps to thinking critically about economics.
5. Why do you think Hume believed that "Truth springs from argument amongst friends"?
6. What is the value of a case study?
7. How should you prepare for a case if you wish to get the most from the in-class discussion?
8. Explain why it is important to complete your thinking process before beginning to communicate with others in writing.
9. Describe the standard way to organize your economic writing in order to effectively communicate.
10. Why is it important to put the subject, an explanation of why the subject is important, and a statement of the main point you wish to make in an introductory paragraph?

What's the Question?

INTRODUCTION

This chapter examines the process of defining economic questions, explains how to distinguish good economic questions from poor economic questions, and explains why it is important to be aware of the purpose behind those questions.

FACTS, TASTES, AND REASONED JUDGEMENTS

Knowing the distinction between facts, tastes, and reasoned judgments gives you the ability to make good economic arguments and make sense of the arguments of others.

TYPES OF ECONOMIC QUESTIONS

Economic questions are either positive or normative. Positive questions deal with figuring out what was, is, or will be. Normative questions deal with figuring out what is good or bad, desirable or undesirable, or should or should not be done.

NUMERICAL DATA QUESTIONS

Many economic questions involve, or ask for, numerical data. One of the simplest and useful ways of employing economic data is to describe economic behavior, and the primary way descriptive economic data are presented is in the form of tables and graphs. Like non-quantitative economic thinking, economic data can be facts, reasoned judgments, or tastes.

POSITIVE AND NORMATIVE DATA

Just as the concepts of facts, taste, and reasoned judgment are relevant when thinking about questions involving numerical data, so too the concepts of positive and normative thinking are relevant.

WRITING FOR CLARITY

The key to keeping your reader's attention is making it easy for the reader to make sense of your writing. Being careful about how you motivate your economic thinking and breaking your writing into well-defined sections separated by headings are useful ways to help make it easy for your reader to care about what you write and to follow your argument.

INTRODUCTION

The wise man doesn't give the right answers, he poses the right questions.

- ATTRIBUTED TO CLAUDE LÉVI-STRAUSS (1908-2009)¹

The first step to clear, effective economic thinking is defining what the issue is that you want to think about. Sometimes it's easy because the issue is given to you, as it is when a boss gives us a task. However, often times the issue is up to you. In either case, you need to reduce the issue to a single question that you want to answer.

So what makes a good question? In general, a good question is one whose answer will fulfill some purpose, that is, one whose answer you care about. If the that is, one way

of marketing plan. Or it could be that your company is in a fierce fight with a competitor, and that this new product is simply an attempt to open up another front in the competition and thereby make it harder for the competitor to function. That would lead to still another type of marketing plan. So, even if the task was given to you, it is important to ask why the task is important. What benefit does your boss expect to get from an answer to the question? Until you can answer those questions, it's hard to put the question in proper context, and that makes it hard to answer the question properly.

This chapter is a guide to the types of questions that you will encounter when dealing with economic issues and how to know what the difference is between a good and a bad question. This material is useful because it can help you become a clearer, more effective economic thinker who is able to distinguish good economic thinking from bad.

BOX 2.1**THE NOBEL PRIZE FOR GOOD QUESTIONS**

The Nobel Prize in Economics is not awarded to individuals who are just excellent at economic analysis. Instead, it is awarded to individuals who ask and answer penetrating and profound economic questions that change the way those who follow see the world. Two economists who received awards for particularly profound questions are Gary Becker and Elinor Ostrom.

GARY BECKER

Gary Becker received the Nobel Prize in Economics in 1992 for asking how people make decisions in non-market situations. While that may not seem like a remarkable question, it had not been methodically investigated by economists until Becker. Born in 1930 to Canadian and Eastern European immigrants, his childhood was filled with family discussions about politics and justice that led him to an interest in doing something useful for society. He completed his undergraduate degree at Princeton (in three years!) before studying under Milton Friedman at the University of Chicago where he earned his PhD in economics. Since then, he has spent his time as professor and researcher at such places as Columbia University, the University of Chicago, and the National Bureau for Economic Research. The breadth of his work is quite remarkable. He developed what is now the general theory for understanding why worker incomes are distributed the way they are and the role that such things as education and job training play in determining that distribution. He has investigated

the economic determinants of marriage, divorce, and having children, thus explaining for example why birthrates in Europe have declined over the past half century. And he has asked how we might better deter crime, finding for example that increasing the amount of prison time has less of an effect on reducing crime than increasing the probability of being caught. Though his work has been considered controversial by many (and still is by some), his contributions have fundamentally expanded the range of subjects that economists investigate and even changed the way many sociologists and political scientists approach issues. The best seller book *Freakonomics* is the product of a student of Becker and likely would not have been written in the absence of Becker's work and influence.³



ELINOR OSTROM

Elinor Ostrom won the Nobel Prize in Economics in 2009 for asking how people dealt with natural resource problems in the absence of markets or government. Born in 1933 into a family where serious discussions and a wide range of experiences were the rule, she attended the University of California, Los Angeles where she earned her bachelor's degree, master's degree, and PhD in political science, and then joined the faculty at Indiana University and began her career as a professor and researcher with a focus on natural resource use. At the time, the conventional wisdom was that people when left to their own devices would inevitably over-exploit natural resources. Examples of this include fishermen who catch so many fish that eventually there are no longer enough fish to sustain the industry, ranchers who over-graze common pasture land until the land is barren, and farmers who suck underground aquifers dry. The only solution to this outcome, so the conventional argument went, was to make the natural resource into private property so that users would have to pay to use it, or to put government regulations into place to control the problem. Ostrom's research, however, by carefully modeling the way people actually behave, found that people can in fact be quite ingenious at figuring out how to deal with the conflicts of interest that the conventional thinking had believed always led to over-exploitation of natural resources. The implications of her work are quite startling. Sometimes the best solution to natural resource problems is neither privatization nor government regulation, but rather letting those involved work out their own solution. And that idea, that there is a third way between government regulations and private markets, has transformed the way economists think about issues beyond natural resources.⁵

³This biography is based on Frängsmyr (1993), Gary Becker (2010), and Nobelprize.org (1992). *Freakonomics* was written by Steven Levitt, the student of Becker who is now a professor of economics at the University of Chicago, and the journalist Stephen Dubner. See Levitt and Dubner (2005).

⁴Photograph of Elinor Ostrom courtesy of the Nobel Foundation. Photo credit: U. Montan.

⁵This biography is based on Elinor Ostrom (2010), *Herald-Times* (2009), and Nobelprize.org (2009).

FACTS, TASTES, AND REASONED JUDGMENTS

Before turning to a discussion of the types of questions that you will encounter when dealing with economic issues, it is useful to look at the distinction between facts, tastes, and reasoned judgments.

The key to the ability to think clearly and effectively about economic issues, whether it concerns a personal matter, a production or marketing problem, or an issue of governmental policy, is being able to separate truth from fiction. There is a belief in the common culture today that there are no truths and that what people call truths are personal and up to the individual to choose. But clearly, simply believing something does not make it true. You may believe, efut t8overe

BOX 2.2

Statements that describe the truth are called *factual statements*. Factual statements are either true or false. The statement, “The earth is round” is a true factual statement; the statement, “The earth is flat” is a false factual statement. The statement, “The use of fossil fuels has resulted in climate change” is either true or false, but we do not know which.

Not all statements, however, are factual ones. Some statements deal with *personal preferences* (or what economists call *tastes*). “I like anchovies on my pizza” is a statement of taste. Unlike a statement of fact which is either true or false, statements of taste are all true (assuming the speaker is honest!). *Much of the confusion over whether truth is relative or not comes from confusing factual statements with statements of taste.* In part, this occurs because many people make taste statements in the form of a fact. “Anchovies are good on pizza” sounds like a factual statement. However, it is clearly one of personal preference presented in the form of a factual statement.

Finally, some statements, like the one about fossil fuels causing climate change, are neither facts nor expressions of taste but are instead what may be called *reasoned judgments*. Most of the interesting questions in economics can only be answered by reasoned judgments. Unlike factual statements, however, reasoned judgments cannot be categorized as either true or false. And unlike statements of taste, reasoned judgments are not all equally valid. Rather, reasoned judgments must be ranked according to whether they are better or worse depending on the standards for good reasoning (clarity, accuracy, relevance, depth, breadth, and logicalness).⁶ Take, for example, the question of whether you should pursue a graduate degree in economics. Clearly, the answer to this question is debatable. Good arguments can be made both for and against the decision to get a graduate degree in economics. As a result, there is no single, objective answer to the question, which is why this is an issue of reasoned judgment. Of course, some answers are better than others. If I tell you that you should pursue a graduate degree in economics because individuals with graduate economic degrees have higher salaries than individuals who do not have graduate degrees, this is a reasoned judgment. But it is not as good a judgment as one that takes account of your ability to actually earn that graduate degree, your professional goals, and the time and monetary cost of getting the degree.

⁶The specific list of the criteria that can be used to judge how good a reasoned judgment is varies a bit according to who puts the list together. This list is based on the writings of Richard Paul (see, for example, Paul (1993)) and Vincent Ruggiero (see Ruggiero (1996)).

BOX 2.3

A ROSE BY ANY OTHER NAME ... (PART 2)

The word **opinion** is used in a variety of ways and, as a result, often obscures the distinction between factual statements, statements of taste, and reasoned judgments. The most common mix-up is between statements of taste and reasoned judgments. If, for example, you say, "That's your opinion" in response to someone saying that the restaurant down the street has the best pizza, the opinion that you refer to is a statement of taste. On the other hand, when a judge issues an opinion about some trial, that opinion is a reasoned judgment based on conceptual arguments and evidence. As a result, when someone identifies something as an opinion, stop and think for a moment: Is it a factual statement, a statement of taste, or a reasoned judgment?

EXERCISE 2.1

While the distinction between facts, tastes, and reasoned judgments is in general fairly clear, in particular situations it is sometimes difficult to figure out. This exercise gives you a chance to reflect on the distinction between facts, tastes, and reasoned judgments in a variety of situations.

Indicate for each statement below whether it is a:

- Factual statement,
- Statement of taste expressed as a statement of taste,
- Statement of taste incorrectly expressed as a fact or as a reasoned judgment, or
- Reasoned judgment.

Then go back through the statements and do the following:

- For the factual statements, note a source where you would look for verification of the statement.
 - For the statements of taste incorrectly expressed as a fact or as a reasoned judgment, re-write them correctly as statements of taste.
 - For the reasoned judgments, provide a conceptual argument in support of that statement or note a source where you would look for support for that statement.
1. Today the price of a share of IBM stock is higher than the price of a share of Xerox stock.
 2. The US would be economically better off were NAFTA to expand to include all the countries in the western hemisphere.
 3. Foreign investment has been good economically for North Carolina.
 4. The Federal Reserve accurately predicted the financial crisis of 2008.
 5. I like the upright seating of Toyotas more than the low seating of Hondas.
 6. Pasta made in Italy tastes better than pasta made in the United States.
 7. Businesses fail because of mismanagement.
 8. The minimum wage creates unemployment.
 9. Spending on health care has risen as a share of total income over the past two decades.
 10. Most Americans believe government is too big.

2.3

TYPES OF ECONOMIC QUESTIONS

Despite the wide variety of economic questions that people think about each and every day, all economic questions can be grouped into two broad categories that depend on whether the question is concerned with figuring out what was, is, or will be; or is concerned with figuring out what is good or bad. You may, for example, want to know what caused housing sales to fall last month (what *was* going on), or want to know how much interest rates will change in the next 6 months (what *will* be going on). On the other hand, you may be interested in determining whether you should have opened that new store on the other side of town (was it a *good* decision?), or in determining whether a baseball stadium will be a net benefit to the community (would it be a *good* thing for the community?).

These two types of questions (that is, figuring out what was, is, or will be, and figuring out what's good or bad) reflect two different purposes or goals. When you ask what's going on with no concern for whether the situation is good or bad, you are asking a positive economic question. Good thinking about a *positive* economic question is accurate. Ideally, for matters concerning the past or present, positive thinking is about making true factual statements. "The US has fifty states" is a true factual statement and an example of a positive statement. Unfortunately, not all of the past, not all of the present, and certainly none of the future, can be known with certainty. As a result, thinking about positive questions often takes the form of making reasoned judgments despite the fact that it often deals with past, present, or future facts. Reasoned judgments cannot be characterized as true or false, but must instead be characterized as better or worse depending on the conceptual arguments and empirical evidence you use to arrive at your reasoned judgment. Suppose, for example, you are interested in managing a local business's retirement fund and are currently negotiating a contract to do that with the business. Suppose further that as part of that negotiating process you want to know whether the business would accept a particular offer that you are thinking of making. Clearly, you don't know for sure what will happen. However, based on the business's current circumstances, based on the current state of the financial services industry, and based on your experience with prior negotiations involving other businesses, you can come to a reasoned judgment as to whether the business will accept the offer.

Normative questions, on the other hand, ask how well a situation or decision conforms to standards of desirability or proper behavior. Is the situation good or bad? Should the action be taken? Is one circumstance better or worse than some other circumstance? Thinking about normative questions involves making value judgments based on conceptual arguments and empirical evidence. Thus, all normative questions, like many but not all positive questions, require reasoned judgments. Particularly important to thinking about normative questions are the values that define what is desirable/undesirable, good/bad, or better/worse. Take for example the normative problem of determining

whether you should lay off 10% of your workers. The solution to that problem depends on your values. If you primarily value making profits, then the decision will be based on what happens to your profits if you lay those workers off. On the other hand, if you value being part of the community and providing work for local people, you may decide not to lay off any workers even if that results in lower profits. Note, finally, that normative thinking requires that you first do some positive thinking in order to understand the situation that is being judged. Thus, for example, a positive analysis of the effects of laying off 10% of your workers would be the first step to engaging in the normative task of deciding whether such layoffs are a good thing.

BOX 2.4

THE BIG DEBATE

One of the big debates currently taking place in the US focuses on capitalism, socialism, and the US economy. There are many “avors” of capitalism and socialism. But in brief, **capitalism** is an economic system in which the means of production are privately owned, decisions are primarily made by people in the private sector who participate in markets, and incomes accrue to the owners of the means of production commensurate with the price they can get for selling those means of production. **Socialism**, by contrast, is an economic system in which the means of production are owned by some form of public organization, decisions are made primarily by those organizations, and income accrues to people based on some publicly established criterion such as the amount of labor time contributed.

As recent elections and protests over legislation have shown, this is an issue that many people feel passionately about. The question here is whether this is a positive or normative issue, and why does our answer make a difference.

If the question is whether the US has a capitalist or socialist economy, then it is a positive issue. You might think that it is a factual positive issue at that. After all, given a particular definition of capitalism and socialism, we should be able to look at how the economy functions and quickly determine the answer. The problem is, however, is that economies are complicated. As a result, it is likely that there will some aspects of the economy that match up with our definition of capitalism, and other aspects that match up with our definition of socialism. As a result, we are going to have to balance these conflicts to come up with an answer to our positive question, that is, we are going to have to make a reasoned judgment. Moreover, this is all based on a given definition of capitalism and of socialism. It turns out that there is considerable disagreement about the details of what capitalism and socialism are, and the solution to that disagreement is itself a normative issue: How **should** we define capitalism and socialism? And that leads us to an extended exploration as to why we care, that is, what the purpose is of defining those terms.

If we return to the original question of whether the current debate is a positive or normative one, we can also think of it in normative terms if we define the question as being whether the US economy **should** be capitalist or socialist. If that is the question that we care about, then we clearly need to think in reasoned judgment terms. And that requires us to think about why we care about the issue, what our fundamental values are, and what

particular definitions we wish to use. As this discussion of the capitalism/socialism debate shows, there is ultimately no way to avoid the normative question of what definitions we wish to use regardless of whether we are thinking in positive or normative terms.

Finally, how has the above discussion helped us? It has helped us by narrowing the issue to two key problems that must be dealt with if we are to make any progress with the current debate. We must decide what definitions we want to use, and we must figure out why we care, that is, what we want the ultimate purpose of the economy to be.

Understanding the difference between positive and normative issues is crucial to thinking in economics. Sometimes the difference between the two is obvious:

e Dow-Jones Industrial Average rose last year.

This is a positive statement because it describes a factual situation that is either true or false. In contrast, consider the statement:

e government should eliminate the minimum wage.

This is a normative statement because it makes a value judgment concerning what is good for the government to do, that is, it states what *should* happen.

Sometimes, however, it is more difficult to tell the difference. Consider the statement:

e Federal government's budget deficit fell between 2009 and 2010.

This statement is not true, but is factual in form and therefore a positive statement. While the Federal government did run a deficit, it was actually larger in 2010 than it was in 2009. Positive statements may be true or false! Likewise, consider the statement:

e Federal government's budget deficit will be smaller in the coming year than it was this year.

Because the coming year is not here yet, this clearly has to be evaluated as a reasoned judgment. You might think, therefore, that it cannot be a positive statement. But no sense of desirability, no sense of good or bad, is contained in the statement. Eventually, the statement will be proven to be either true or false. As a result, this too is a positive statement (whose truth is currently unknown).

Now consider the statement:

Air pollution is a major problem in many US cities.

This is a normative statement, but because so many believe it to be true, many consider it to be a positive statement. To see why it is normative, notice that the word *problem* often implies the notion that a situation is *bad*, *undesirable*, or *should* be dealt with in some manner. Essentially, this statement makes the claim that urban air pollution is bad (and needs to be dealt with in some manner).

On the other hand, if this statement had been written:

Many people believe that air pollution in many US cities is a major problem.

we *would* have a positive statement, not about the nature of air pollution, but about the beliefs of people.

Finally, consider the statement:

You should get out of the restaurant business.

This is clearly a normative statement because it makes a value judgment about your behavior, that it would be *good* for you to get out of the restaurant business. On the other hand, if it had read:

You have to get out of the restaurant business if you want to put a stop to your losses.

then you would be dealing with a positive statement. Why? Because it makes no judgment about what you ought to do. Instead, it makes the *positive* claim that there is no other way for you to stop losing money except to get out of the restaurant business. While this positive reasoned judgment may not be accurate, it makes no *normative* judgment about what you should do. It takes no stand based on a set of values as to what is good or bad for you.

The value of being able to distinguish positive thinking from normative thinking is that it allows you to focus your mind on the appropriate set of tools and standards needed to make good arguments and evaluate the arguments of others. Positive thinking is all about what simply is and requires sound reasoning and evidence for support. Normative thinking is all about what is better or worse and requires sound reasoning based on values.

EXERCISE 2.2

As with the distinction between facts, tastes, and reasoned judgments, the difference between positive and normative statements is clear enough in the abstract, but may be hard to figure out in particular situation. This exercise gives you a chance to reflect on the distinction between positive and normative statements in a variety of situations.

For each of the following statements, indicate whether the statement is a positive one or a normative one, and briefly explain why you came to that conclusion.

1. Major league baseball teams generate millions of dollars in additional income for the local economies they are located in.
2. Trade restrictions hurt the nations that impose them.
3. Normalizing international trade between Cuba and the US is unlikely to happen.

4. Minimum wage laws are the result of labor unions interested in protecting their position by driving up the cost of hiring non-union labor.
5. Government has no business regulating the sale of medicine.
6. If you want to increase the return to your investments, then you will have to switch your investments to no-load mutual funds.
7. China has the right policy when it comes to foreign trade.
8. North Korea will have to improve its human rights record if it hopes to increase trade with the rest of the world.

EXERCISE 2.3

e statements in Exercise 2.2 are relatively simple. But sometimes the distinction between positive and normative thinking can be quite hard to determine. This exercise gives you a chance to test your skills by looking at more subtle examples of positive and normative statements.

For each of the following statements, indicate whether the statement is a positive one or a normative one, and briefly explain why you came to that conclusion.

1. [S]tate capitalism may be the only viable system in low-trust societies, in places where decentralized power devolves into gangsterism.
• DAVID BROOKS⁷
2. Individualism ... is the most powerful instrument to better the future.
• JOHN MAYNARD KEYNES⁸
3. Democracy is the road to socialism. • ATTRIBUTED TO KARL MARX⁹
4. The greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgment with which it is any where directed, or applied, seem to have been the effects of the division of labour.
• ADAM SMITH¹⁰
5. There should be a standard phrase for the construction of anti-strawmen — for attributing to your intellectual opponents sophisticated, reasonable positions they do not in fact hold, ignoring the nonsense they actually espouse. • PAUL KRUGMAN¹¹
6. And so, my fellow Americans: ask not what your country can do for you—ask what you can do for your country. • JOHN F. KENNEDY¹²

⁷The quote is from the New York Times columnist David Brooks. See Brooks (2010, June 14).

⁸Keynes (1936, page 380). If you are looking for the quote in an ebook version of this source, it is located in Chapter 24, Section III.

⁹This quote is, as noted in the text, said by many to be from Karl Marx. See, for example, Marx (n. d). However, I have yet to be able to find it in an original source.

¹⁰Smith (1937, page 3). If you are looking for the quote in an ebook version of this source, it is located at the beginning of Book I, Chapter 1.

¹¹The quote is from the Nobel Prize winning economist Paul Krugman. See Krugman (2010, June 12).

¹²This famous quote is from President Kennedy's inaugural address. See Kennedy (1961).

2.4

NUMERICAL DATA QUESTIONS

Many economic questions involve, or ask for, numerical data. Because this is often a sticking point with students, let's begin by talking about how economists use such data as part of their critical thinking process. Then we can turn to the issue of how the notions of facts, tastes, and reasoned judgments show up in the case of numerical data questions.

Numerical data are used in a variety of ways by economists ranging from simply expressing the quantity of something (the price of a good, the marginal cost of production, the inflation rate, nominal GDP, etc.) to engaging in sophisticated statistical methods (called *econometrics* in economics). For all that, however, one of the simplest and useful ways of employing quantitative data is to describe a given economic situation, that is, to employ descriptive economic data. And the primary way of representing such descriptive quantitative data is with *tables* (sometimes known as *schedules*) and *graphs*.

In microeconomics these tables and graphs tend to focus on snapshots (or what economists call *cross-sectional data*) that describe how consumers, firms, and other individual decision-makers are acting at any given time. Thus, for example, we have demand schedules that describe the quantity of a good that consumers would buy at various market prices, supply schedules that describe the quantity of a good that firms would produce at various market prices, and cost curves that describe the nature of the costs that a firm would incur were it to produce various quantities.

In macroeconomics, by contrast, we construct tables and graphs to describe how an entire economy behaves over time (or what economists call *time-series data*). Thus, for example, we have tables of real and nominal Gross Domestic Product (GDP) over time, *charts* (another way of saying graphs) of the unemployment rate over time, and tables of the levels of private aggregate investment over time.

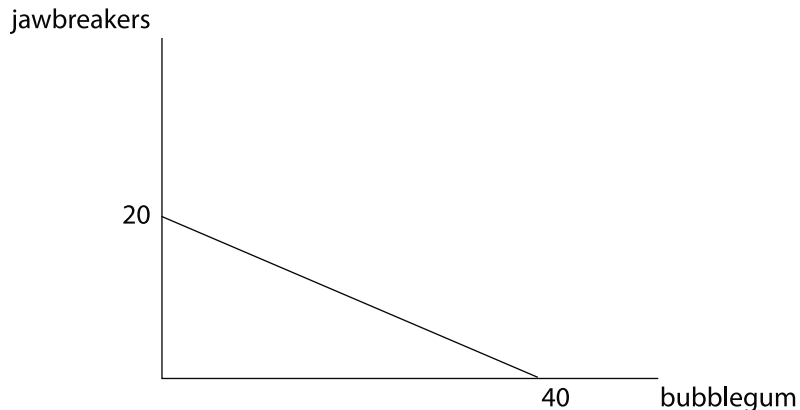
Of course, microeconomics sometimes looks at time-series data (I might, for example, care very much about what has happened to the price of gasoline over time), and macroeconomics sometimes looks at cross-sectional data (for example, inflation rates across different countries in a given year). And both may even want to look at *panel data*, that is, data that is both cross-sectional and time-series in nature (for example, annual income data for a large number of individuals over a number of years). But generally speaking microeconomics is more concerned with cross-sectional data, and macroeconomics is more concerned with time-series data.

In all these situations, the concepts of fact, taste, and reasoned judgment apply just as much as they do when thinking more conceptually about economics. Take, for example, the economic problem of how you might spend \$10 in a candy store that sells jawbreakers at a price of \$0.50 each and bubblegum at a price of \$0.25 each. There are clearly four facts here: (1) you have \$10, (2) the store sells jawbreakers and bubblegum, (3) the price of a jawbreaker is \$0.50,

and (4) the price of a piece of bubblegum is \$0.25. From these facts we can deduce the following table:

Option	Quantity of Jawbreakers	Quantity of Bubblegum
A	0	40
B	1	38
C	2	36
.	.	.
.	.	.
.	.	.
S	18	4
T	19	2
U	20	0

and its associated graph (which is known as a *budget constraint* because it tells you what the maximum amount of various goods is that you can buy given your budget):



Because the table and its associated graph accurately reflect how the \$10 can be spent, they are types of factual statements, and true ones at that. However, if I tell you that you ought to spend half your money on jawbreakers and half your money on bubblegum, this would be a reasoned judgment. There is, after all, no objective best way to spend \$10 on candy. And if you reply that you hate jawbreakers, you would be engaged in making a statement of taste.

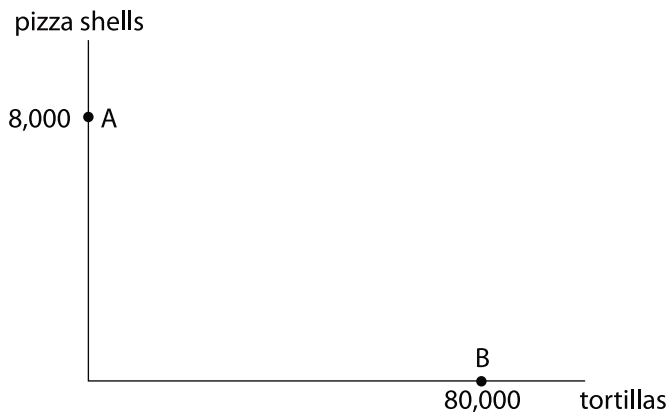
BOX 2.5

TABLES VERSUS GRAPHS

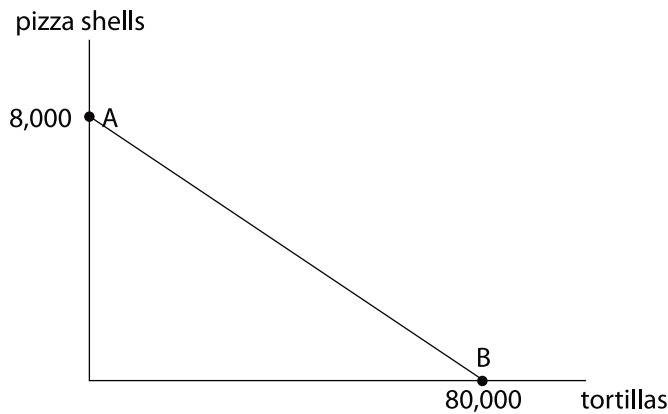
Did you notice an important difference between the table and the graph that we used to describe the various ways to spend \$10? The table did not actually contain every possible way to spend the \$10, but the graph did. We could, of course, try to list every possibility in the table, but as a general matter that is often unworkable because there are too many possibilities to list. Hence, the advantage of graphs is that they can efficiently describe the complete set of possibilities. But that advantage comes at a price because with graphs we cannot easily figure out specific numbers. And so tables have their advantages as well. So which should you use? That is a critical thinking question, and the answer will depend on why you care, that is, what your purpose is in describing the data. It always comes down to purpose!

Of course, data analysis can become more complicated. Consider, for example, a company that has just purchased a machine that can make either 1,000 pizza shells or 10,000 tortillas in an hour, and suppose that you have been asked to determine what its production capabilities are for an eight-hour day. Clearly, there are three facts here: (1) the machine can make pizza shells and tortillas, (2) it can make 1,000 pizza shells in an hour if all it does is make pizza shells, and (3) it can make 10,000 tortillas in an hour if all it does is make tortilla shells. These facts would seem to support the following *factual* conclusions:

PRODUCTION CAPABILITIES OVER 8-HOURS		
Option	Quantity of Pizza Shells	Quantity of Tortillas
A	8,000	0
B	0	80,000



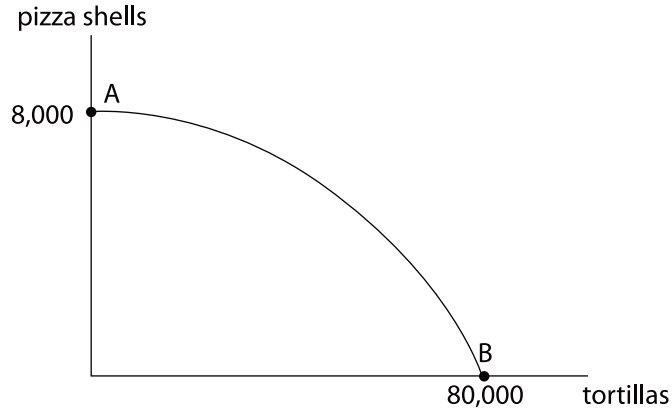
The table and its associated graph are certainly factual and true. However, they both miss the point that the machine, if it can make either pizza shells or tortillas, can also probably make both products by making pizza shells for part of the day and making tortillas for the remainder of the day. As a result, the machine might be able to make, for example, 4,000 pizza shells and 40,000 tortillas over an eight-hour day if it spent hour hours making pizza shells and four hours making tortillas. If we wish to describe all the possible combinations of pizza shells and tortillas that might be possible under this scenario, we could do so with the following graph (which is called a *production possibilities frontier* or *production possibilities curve* because it tells you what combination of production outputs you can make):



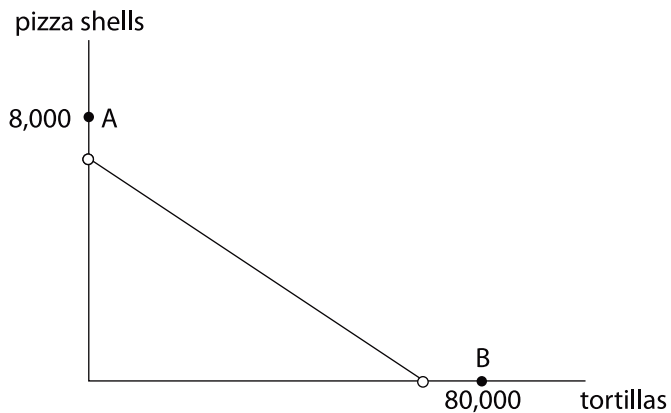
Notice, however, that except for points A and B, the graph is not factual, it is a reasoned judgment: We have reasoned to get the line in that graph.

To see that it is a reasoned judgment, notice that there are other possible reasoned judgments. One possible, alternative judgment is based on the *assumption* (called a *premise* in philosophy) that the more the machine is used to make either output, the more the machine gets clogged with dough, and eventually the less productive it becomes. This is what is known in economics as diminishing marginal productivity, that is, the machine is more efficient at the beginning of making a batch of a particular output than it is as total production of that output goes up. If we hold that assumption about the production

process, then our reasoned judgment about the tradeoff between pizza shells and tortillas can be described the concave production possibilities curve below:



And, of course, there are other assumptions that might reasonably be made and that result in still different reasoned judgments about the tradeoffs between pizza shells and tortillas. Thus, to give just one example, it could be that there is no diminishing marginal productivity, but that it takes time to convert the machine from making pizza shells to making tortillas. As a result, every time we change from making pizza shells to tortillas or vice versa, the total amount of time available for production is cut. The result, then, is the graph below where, except for points A and B (which do not require the conversion process), the ability to produce is somewhat less than our original reasoned judgment:



BOX 2.6

SO WHERE DID TASTES GO?

In all this discussion about economic data, facts, and reasoned judgments, you might get the sense that tastes are irrelevant. And strictly speaking, you are right: The analysis of economic data is not an issue in which tastes play an important role (except perhaps to the extent you use your own tastes to write down tables or sketch graphs that are “pretty!”). But economic data are used all the time to represent the tastes of the economic decision makers like consumers and firms, and it is common to use reasoned judgment to determine what the tastes are for those decision makers. Thus, for example, in the story about how to divide \$10 between jawbreakers and bubblegum if you were asked to note on the diagram the actual quantity of jawbreakers and bubblegum that you would buy, that would be a matter of taste. And if you were asked to do the same for some other person in the same situation, that would be a matter of a reasoned judgment about the tastes of that other person. Finally, not all choices on a diagram are matters of taste. Thus, for example, if you were asked to note what combination of pizza shells and tortillas to make, it is unlikely that you would make that decision based on taste. Rather, it is more likely that you are producing those products to make a profit, and so the quantities of pizza shells and tortillas that you would choose to make would depend on the nature of the market you were selling them in, who your customers were, and how much those customers were willing to pay.

EXERCISE 2.4

It's one thing to appreciate an argument such as that made above. It's another to actually use that reasoning. This exercise gives you a chance to reflect on the distinction between facts, tastes, and reasoned judgments when thinking about questions involving economic data.

1. Suppose that you have just inherited a chemical manufacturing company and are trying to figure out what to produce. You talk to the plant manager and discover that the company can produce formaldehyde and sulfuric acid. You also find out that the maximum amount of formaldehyde that the company can produce in a month is one million liters, while the maximum amount of sulfuric acid it can produce in a month is 5 million liters. Finally, you learn that the production of both products is characterized by diminishing returns.
 - Given these facts, graphically represent the production possibility frontier for your chemical company, and label that frontier with the letter **A**.
 - Now suppose that you invent a process for making formaldehyde more efficiently from the same amount of raw materials and human effort. Given this fact, graphically represent on the same graph the new production possibility frontier for your chemical company and label that frontier with the letter **B**.

- Does your first frontier (labeled **A**) represent facts, reasoned judgments, or some combination of the two? Justify your answer with reasoning that involves the definitions of what facts are and reasoned judgments are.
 - Does the second frontier (labeled **B**) represent facts, reasoned judgments, or some combination of the two? Again, justify your answer with reasoning that involves the definitions of what facts are and reasoned judgments are.
2. Suppose that your favorite aunt has just given you a \$100 gift certificate for your birthday that can be used at a local bookstore. Suppose further that you have decided to divide the money between books and coffee, that the price of a book is \$20, and that the price of a cup of coffee is \$2.
- Given these facts, graphically represent your budget constraint, and label that frontier with the letter **A**.
 - Now suppose that a year later your aunt informs you that she is going to send you another gift certificate for use at the same bookstore. However, she does not tell you how much the certificate will be worth. Furthermore, you know that the price of a book and the price of a cup of coffee have not changed. Given these facts (and there is no other information available), do your best to graphically represent on the same diagram the budget constraint that you will have when the gift certificate arrives and label that frontier with the letter **B**.
 - Does the first budget constraint (labeled **A**) represent facts, reasoned judgments, or some combination of the two? Justify your answer with reasoning that involves the definitions of what facts are and reasoned judgments are.
 - Does the second frontier (labeled **B**) represent facts, reasoned judgments, or some combination of the two? Again, justify your answer with reasoning that involves the definitions of what facts are and reasoned judgments are.
 - Explain how tastes might come into play in the graph above.

2.5

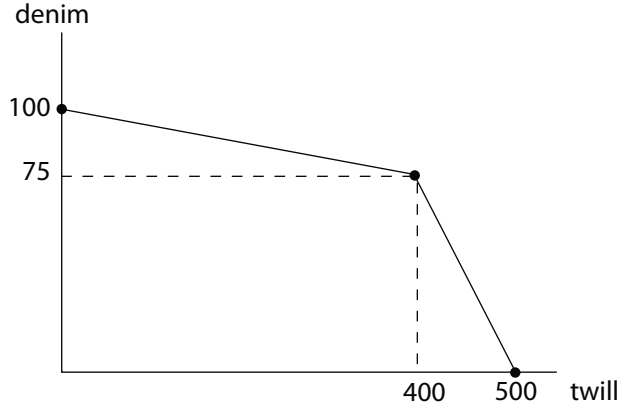
POSITIVE AND NORMATIVE DATA

Just as the concepts of facts, taste, and reasoned judgment are relevant when thinking about questions involving numerical data, so too the concepts of positive and normative thinking are relevant. Consider, for example, a textile manufacturer that can produce denim and twill (two different types of fabric), and suppose that you know from past experience that the firm can produce 100 bolts of denim an hour, 500 bolts of twill an hour, or a combination of 75 bolts of denim and 400 bolts of twill in an hour. Your job is to determine what production possibilities this firm has and how much of each fabric the company should produce.

To accomplish this job, the first step is to represent the facts of the situation. Because this first step is not an issue of better/worse, good/bad, or should/shouldn't, this first step is clearly an act of positive economic thinking with the result being the following table:

FACTS ABOUT HOURLY PRODUCTION		
Option	Bolts of Denim	Bolts of Twill
A	0	500
B	75	400
C	100	0

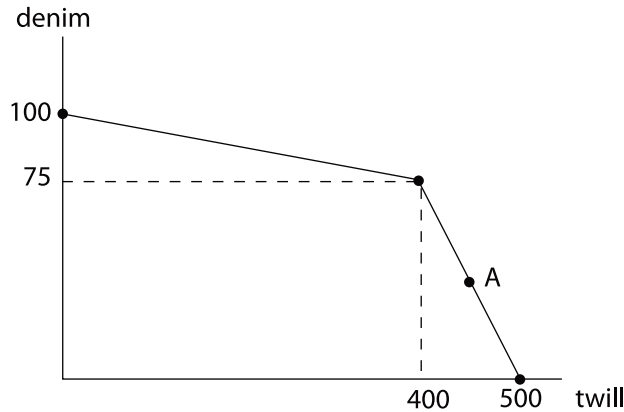
The next step is to determine what output levels are possible. To do that you have to make a reasoned judgment about the entire production possibilities curve. As mentioned earlier in this chapter, there are a variety of possible outcomes here depending on what other reasonable assumptions you decide to use (and clearly you have to make some or you can't complete this step!). One such outcome is represented by the graph below.



Notice that despite having made a judgment about the production possibilities frontier, the graph above is still a result of positive thinking and not normative thinking. There are no *value* judgments embodied in the graph above, just judgments concerning the actually physical production capabilities of the firm.

So is there any role for normative thinking? In fact, there is. Given all the above, we may next be interested in what level of production would be in the best interests of the firm. But this is an issue in which we are being asked to make a reasoned judgment about what the firm *should* do, that is, we are now thinking in normative terms. There are lots of possible answers here, one such

possibility being represented by the graph below where we have made the reasoned judgment (based on our own sense of what is best for the firm) that the best thing to do would be to produce 37.5 bolts of denim and 450 bolts of twill (point **A** in the graph). That point **A** is a normative judgment!¹³



EXERCISE 2.5

Practice makes perfect! is exercise gives you a chance to reflect on the distinction between positive and normative thinking when it comes to questions involving economic data.

1. Suppose that your neighbor has a \$60 gift certificate from a local pizza parlor that can be used for pizza and soft drinks. Suppose further that pizzas cost \$10 each and that soft drinks cost \$5 a pitcher. Given all this, follow the directions below, and then note whether you were engaged in positive or normative economic thinking. In noting that, be sure to justify your answer with reasoning that involves the definitions of what facts are and what reasoned judgments are. And if you engage in normative thinking, describe the values/norms that you used in doing your analysis, and explain how those values/norms led to your response.

¹³Some of you who know something about the rules used to determine the profit maximizing level of output for a firm may wonder why point A isn't the result of positive thinking. The reason that isn't the case here is that we never specified what the objective of the firm. As a result, choosing point A requires that we make a normative judgment as to what the objective of the firm should be. If the problem had been to determine the profit maximizing levels of denim and twill (and we knew something about the types of markets the firm participates in), the problem would have been a positive economic issue. This is, to be sure, a fine point. But the distinction is important, because recognizing that a question is a positive versus a normative one tells us what type of thinking will be needed to answer the question. The question presented in the text is normative and demands that we make a value judgment about the values of the firm; if the problem were one of determining the profit maximizing levels of denim and twill, the values of the firm would have already been determined and our problem would have been the positive one of using logic to figure out those profit maximizing levels of output.

- Graphically analyze what combinations of pizza and pitchers of soft drinks that your neighbor can purchase. Label your budget constraint with the letter **A**, state whether you used positive or normative thinking, and justify your answer.
- Now suppose that before your neighbor has a chance to use your gift certificate, the pizza parlor raises the price of a pizza to \$12. Given this fact, re-analyze the situation and label the new budget constraint the letter **B**, state whether you used positive or normative thinking, and justify your answer.
- Finally, note on the diagram the combination of pizzas and soft drinks that your neighbor would be best to choose, state whether you used positive or normative thinking, and justify your answer.

2.6

WRITING FOR CLARITY

To finish this chapter, let's take a look at the issue of writing and clarity. In Chapter 1, we learned that the purpose of critical economic writing is to communicate the results of your thinking to others, and that to communicate clearly and effectively it is important for your writing to have a well-defined and separate introduction, body, and conclusion. In addition, because your reader is likely to be impatient, we learned that your introductory paragraph must contain a brief description of the subject, an explanation of why that subject is important and worth reading about, and a direct and clear statement of your main conclusion, that is, a direct and clear statement of what you want the reader to believe by the end of your writing. Finally, we learned that to make sure your reader gets the main point, your writing should end with a final paragraph that restates your main conclusion and notes the implications and consequences of that conclusion.

All of the above goes a long way to making sure that your reader understands your main point. However, sometimes it is not enough. Consider two issues.

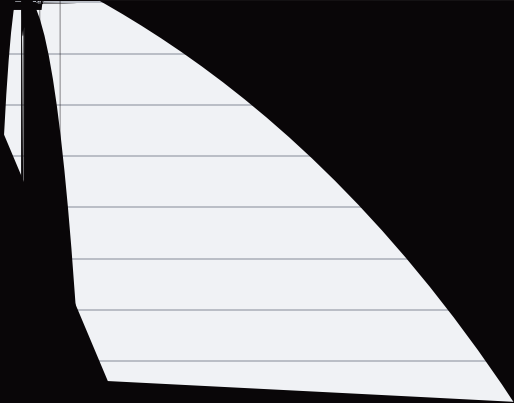
The first issue centers on the requirement that the introduction include an explanation of why the subject of your writing is important and worth reading about. Now that we understand how defining a good economic question requires being aware of why we are asking the question (that is, being aware of its purpose), we can see that providing an explanation of why the subject of your writing is important is all about linking your writing to a purpose that your reader believes in. Ideally, your reader shares your purpose for asking the question so that all you have to do is to describe it and why answering your question will be beneficial. But sometimes this requires a bit of persuasion. And always it requires trying to see the issue from your reader's perspective.

Consider, for example, the parents of a child trying to persuade their four-year-old child to eat vegetables. From the parents' perspective, the purpose of raising this issue might be to further the child's nutrition so that the child grows up to be a healthy adult. So if the parents were writing to other parents, that would be what they would write to explain why eating vegetables is important. But the four-year-old is unlikely to understand or share this motivation. So what do parents often do? They resort to cajoling the child with reasons that they think will resonate with their child: eating an airplane full of vegetables, attractive color, sweetness, etc. Your writing is like feeding vegetables to a child. Your first task is to figure out what will motivate your reader to stick with you.

The second issue centers on the overall structure of your writing. Many economic analyses are sufficiently complex that even the above structure is not enough to keep your reader from getting confused. Suppose, for example, that your boss asks you what your company should charge for some new product. In order to persuade your boss, you decide to first describe all the relevant options (that is, give a positive analysis of the situation), and then to argue why one of those options is best (that is, give a normative analysis). Given the length of what you wish to say, it is unlikely that a brief introductory paragraph and a short concluding paragraph will be enough to keep your boss's attention long enough to make your point.

This problem can be solved by separating your positive arguments from your normative arguments, putting those positive arguments first, and breaking the entire work into distinct sections separated by headings. For people used to writing in outline form, this may seem a natural way to write. However, for many used to the more elegant flow of English literature, this structure is likely to appear choppy. Remember, however, that economic writing is functional writing that seeks to convey information and persuade people of particular points through rational economic arguments. By separating your positive arguments from your normative arguments analysis, putting your positive arguments first, and breaking your work into labeled sections, you break your overall argument into smaller pieces that will be easier for your reader to follow. And, of course, an easier argument is a more understandable and therefore a more persuasive argument.

The number of sections you divide your work into and the particular headings you use will, of course, depend on the subject matter and for whom you are writing. However for the situation discussed here, a minimum of four would be needed to let the reader know where the introduction, the positive analysis, the normative analysis, and the conclusion are located.



BOX 2.7

A RISING STAR IN ECONOMICS: ROLAND G. FRYER, JR.



Roland Fryer Jr. is the Robert M. Beren Professor of Economics at Harvard University, CEO of Harvard's Education Innovation Laboratory, and a research associate at the prestigious National Bureau of Economic Research. The recipient of numerous awards including a Sloan Research Fellowship and the inaugural Alphonse Fletcher Award, he is particularly insightful in raising questions others never have and teasing answers from data through the use of psychology, sociology, and even behavioral genetics mixed with economics. Among the wide array of topics he has researched include the racial achievement gap, affirmative action, the impact of the crack cocaine epidemic, acting "white", and the consequences of distinctively black names. What unites all these topics is his desire to understand the causes of black underachievement. The issue is a sensitive one that raises strong emotions, but Fryer believes that economics with its insistence on precise, logical modeling and data analysis is ideally suited to making progress.¹⁴

EXERCISE 2.6

Now's the chance for your to show your stuff. This exercise gives you a chance to practice putting together a sophisticated economic analysis in which positive and normative thinking is required and to communicate the result of your analysis clearly and effectively.

You are the special assistant to Dr. Greta Tayshunn, the President of Itzaphour University. As is detailed in the memorandum below, Dr. Tayshunn has asked three administrators at IU for help in putting together a proposal:

- Dr. Dora Torey, Dean for Residential Life – Dr. Torey is in charge of the residence halls as well as all non-academic student activities, including cafeterias, recreational facilities, university sponsored student social activities, etc.
- Mr. O. Penn Dadors, Director of Admissions – Mr. Dadors is responsible for recruiting students, processing applications, and deciding who is admitted to IU. Admission is based on SAT scores and high school GPAs.
- Dr. Stan Dhards, Vice-President for Academic Affairs – Dr. Dhards is responsible for the quality of all academic programs as well as the requirements that students must meet to graduate.

Finally, President Tayshunn is responsible for the entire university. Her particular concerns are alumni donations, making sure the university maintains its accreditation with the national accreditation agency, the overall size of the university's budget, and keeping the IU Governing Board happy.

¹⁴ Photograph of Roland Fryer, Bloomberg, Getty Images

¹⁵ This biography is based on Dubner (2005, March 20), Emerging Economists: International Bright Young Things (2008, December 30), and Roland Fryer Bio (2010).

ITZAPHOUR UNIVERSITY

Date: 5/15/11

To: Dora Mitt Torey, Dean for Residential Life
O. Penn Dadors, Director of Admissions
Stan Dhards, Vice-President for Academic Affairs

From: A. Greta Tayshunn, President

RE: Company Direction

Recent years have seen a rise in the number of students at IU who have either failed out or transferred. As a result, the proportion of entering freshmen who eventually graduate from IU has been falling and now stands at 65%. From a financial perspective,

SUMMARY

Defining economic questions is the first step to engaging in good critical economic thinking. Good economic questions are precise, focused, and linked to a higher purpose or goal. In asking (and answering) economic questions it is important to know the distinction between facts, tastes, and reasoned judgments because knowing these distinctions gives you the ability to construct arguments that properly address the question you have raised and to make sense of the arguments of others. Economic questions may be either positive or normative. Positive questions deal with figuring out what was, is, or will be. Normative questions deal with figuring out what is good or bad, desirable or undesirable, or should or should not be done. And all this is true as well for economic questions that involve numerical data. Numerical data are used in a variety of ways in economics, but perhaps the most common is to describe economic behavior. Descriptive data are typically presented in the form of tables and graphs. And like non-quantitative economic statements, economic data can be facts, tastes, or reasoned judgments. Finally, good economic thinking isn't of much value if you can't communicate it to others. The key to keeping your reader's attention is making it easy for the reader to make sense of your writing. Being careful about how you motivate your economic thinking and breaking your writing into well-defined sections separated by headings are useful ways to help make it easy for your reader to care about what you write and to follow your argument.

KEY CONCEPTS

Assumptions	Budget Constraints
Capitalism	Charts
Cross-Sectional Data	Descriptive Economic Data
Econometrics	Facts
Good Economic Questions	Graphs
Content of an Introduction	Normative Economic Questions
Opinion	Panel Data
Paper Structure	Personal Preferences/Tastes
Positive Economic Questions	Premises
Production Possibilities	Purpose/Goal
Curves/Frontiers	Schedules
Reasoned Judgments	Tables
Socialism	Time-Series Data

REVIEW QUESTIONS

1. What makes an economic question a good question?
2. Explain why understanding the purpose of a question is important to defining and answering an economic question.
3. Explain the difference between facts and reasoned judgments.
4. Explain the difference between reasoned judgments and tastes.
5. Explain the distinction between positive and normative thinking.
6. Why is it important to separate your positive analysis from your normative analysis when engaged in critical economic writing?
7. Explain how economic data can be facts, reasoned judgments, or tastes.
8. What are the most common forms of presenting descriptive economic data? Give a few examples.
9. What factors are important in deciding how to motivate the importance of economic writing?
10. Describe the typical structure of a piece of economic writing, and explain why it has that structure.

Thinker, Know Thyself

INTRODUCTION

Your frame of reference is the foundation of experiences, information, ways of thinking, tastes, and values from which you think about other things. Individuals who are not aware of frames of reference are limited in their ability to effectively answer economic questions or understand the thinking of others.

POSTIVE THINKING FRAMES OF REFERENCE

Frames of reference for answering positive economic questions are based on facts, assumptions, and theoretical models. A good positive frame of reference is relevant to the question, is accurate and logical, and allows you to think both deeply and broadly.

NORMATIVE THINKING FRAMES OF REFERENCE

Frames of reference for answering normative economic questions are commonly based on notions of efficiency, fairness, and ethical behavior. A good normative frame of reference is relevant, accurate and logical, and allows you to think both deeply and broadly.

THE MATHEMATICAL FRAME OF REFERENCE

Mathematics is commonly used in economics to supplement positive thinking frames of reference. The mathematics can take a variety of forms ranging from numerical analysis to more sophisticated forms such as equations and graphs. While a mathematical frame of reference cannot be used in all cases of economic thinking, it is quite useful and even has been used to represent normative economic concepts.

WRITING TO PERSUADE

Persuasive economic writing requires that you make a connection between what your reader believes initially and what you want your reader to believe. Organizing your writing clearly and supporting your claims with conceptual arguments and empirical evidence will increase your chance of success.

3.1

INTRODUCTION

Gnothi seauton.

- INSCRIPTION AT THE TEMPLE AT DELPHI¹

In thinking about any issue, we all begin with a set of prior experiences, information, ways of thinking, tastes, and values that form the foundation of our thinking. If, for example, you start thinking about whether to go to graduate school, you begin with a set of values. You may, perhaps, come from a family that encourages getting as much education as possible or that places a great emphasis on increasing your income. You may also know people who went to graduate school. If so, your knowledge of their experiences is also part of your beginning mindset. Likewise, an economist asked to evaluate a state's current mix of taxes begins with a set of economic models that explain the workings of taxes in an economy. That economist also begins with knowledge about the experiences of other states. Moreover, that economist may have strong views on the relative merits of different types of taxes. In short, we all begin our economic thinking with an initial *frame of reference* that guides and colors much of our later thinking about issues.

The importance of a person's frame of reference can be seen in the caricature of the absent minded professor. The absent minded professor's frame of reference is narrow. While he may be brilliant in his field, he hasn't a clue when it comes to anything else. We laugh at the caricature because it points to his imperfections. Clearly, he would be a better person, a better thinker, if he could learn to switch from his "professor" frame of reference to a "normal person" frame of reference when the situation called for it. Unfortunately, the absent minded professor hasn't a clue to his imperfection. As a result, he is trapped and unable to interact with others.

So how do we avoid being narrow minded in economics? The key is to become aware of our frames of reference so that we may broaden them in ways that are appropriate to the issue we are thinking about. It is for this reason, for example, that a number of businesses today require that their upper management spend time working abroad. Clearly, working abroad is not to simply gather information, for if it were, there are much more efficient ways to gather information without the cost and disruption of moving abroad for months or even years. The real value of living abroad is that it provides you with the opportunity to broaden your frame of reference. Travel abroad, especially if you are immersed in other cultures, gives you new ways of looking at the world and forces you to examine your old frame of reference. Executives who have worked abroad think differently and, most would agree, make better decisions that they would have in the absence of the experience. They have a broader, more insightful frame of reference and more clearly recognize the importance that a frame of reference plays in decision-making.

¹The phrase means, "Know thyself" and has been attributed to a number of ancient Greeks. See Scholtz (2006).

This chapter describes the variety of frames of reference commonly used in economic thinking. It turns out that just as there are significant differences between positive and normative thinking, there are also significant differences in the types of frames of references used for positive and normative thinking. So we will look at each in turn, being sure to also develop some standards so that you can judge for yourself the quality of the frames of reference that you use. This material is useful both because it allows you to think more clearly and effectively about economic issues and because it allows you to better distinguish good economic thinking from bad economic thinking when listening to or reading the economic arguments of others.

A society incapable of exploring the roots of its own thought and action is not a free society.

- RICHARD PAUL²

BOX 3.1

IT ALL DEPENDS ON HOW YOU LOOK AT IT

Sometimes profound insights come from looking at the same questions from different perspectives. Two economists who have done just that are Amartya Sen and George Akerlof, both of whom are recipients of the Nobel Prize in Economics.



AMARTYA SEN

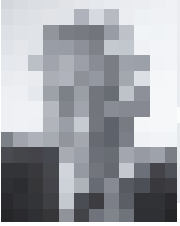
Amartya Sen was born in 1933 in Dhaka (now the capital of Bangladesh but then part of British India) to a chemistry professor and a college educated mother who was from a well known family of academics. Though his early life was economically comfortable, he was deeply affected by the economic misery of such things as the Bengal Famine of 1943 (three million people died) and the sectarian violence leading up to the partition of British India and the creation of the independent states of India and Pakistan. As a result, he has dedicated his entire adult life to trying to understand and ameliorate the type of extreme poverty that he argues results in its victims falling prey to others who violate their fundamental freedoms. He has engaged in research at some of the world's most prestigious universities (Cambridge University's Trinity College, Delhi University, the London School of Economics, Oxford University, and Harvard University to mention a few). However, what has made his work special is not his interest in poverty and famine. Many others have also been concerned those problems. Rather, his work is special because of his ability to look at those issues from remarkably different perspectives, an ability that he traces to the breadth of experiences he had growing up and to the rigorous exposure to different points of view

²Paul (1992, p. 64).

³Photograph of Amartya Sen, The India Today Group, Getty Images

that he got in his formal education. From all this he has developed a rich frame of reference that makes more sense of the problems of poverty and famine than standard economic, political, and philosophical perspectives can do individually. And as a result of this rich frame of reference, he has developed an economically rigorous understanding of poverty and famine that recognizes the political realities of policy making and that is based fundamentally on notions of morality and ethics.⁴

GEORGE AKERLOF



Born in 1940, George Akerlof is the son of a Swedish immigrant father and a mother of American and German Jewish background. Early on, his interests gravitated toward economics because of his father losing his job a few times and toward history perhaps due to his mother's influence. He earned his undergraduate degree at Yale University where he majored in economics and mathematics and took a wide array of liberal education courses. Interestingly, he also had the opportunity to serve as a reporter for the student newspaper and as a result interviewed a number of civil rights leaders in the South during the early part of the sit-in movement. After Yale, he went to graduate school at the Massachusetts Institute of Technology where he earned his PhD, after which he took a faculty position at the University of California Berkeley. Early in his career he also had the opportunity to join a research project in India for a year and credits that experience as a significant one because it solidified his view that one could not rely on conventional economic thinking to make sense of many economic decisions. Since then, he has continued to work at Berkeley as well as numerous other prestigious institutions such as the London School of Economics, the Federal Reserve Board in Washington, and the Brookings Institution. What distinguishes his work are his insights that come from the broad perspective he uses to think about economic behavior. Whether it is the use of psychology and sociology to make better sense of macroeconomics or the use of psychological theories of identity to understand labor markets better, his insights have transformed how economists think. And in recent years he has also taken the time to share his thinking with popular press books such as *Animal Spirits* and *Identity Economics*.⁶

3.2

FRAMES OF REFERENCE FOR ANSWERING POSITIVE QUESTIONS

Answering positive economic questions requires using positive thinking, which you may recall from the prior chapter is all about determining what is, was, or will be. Occasionally, positive thinking may simply entail accurately describing some event, that is, in determining the facts of a situation. More often, however, positive thinking involves constructing reasoned judgments about what caused

⁴This biography is based on Frängsmyr (1999) and Nobelprize.org (1998). See also Amartya Sen (2010) for an introduction to his life and work as well as links to further details.

⁵Photograph of George Akerlof courtesy of the University of California-Berkeley. Photo credit: Peg Skorphinski.

⁶This biography is based on Frängsmyr (2002) and Nobelprize.org (2001). The two books mentioned at the end of the biography are Akerlof and Shiller (2009) and Akerlof and Kranton (2010).

some past event or about what will happen in the future as a result of some set of events. Regardless of the particular problem, however, constructing reasoned judgments always begins with some sort of frame of reference, that is, with a particular perspective.

In thinking positively about economic issues, frames of reference can be grouped according to the set of facts, assumptions, and theoretical models that are employed in that positive thinking. Some of the more common frames of reference that economists use are those based on:

MICROECONOMICS • A *microeconomic frame of reference* focuses on the economy from the bottom up with particular emphasis on the individual behavior of buyers and sellers. Depending on what assumptions we use when using a microeconomic perspective, we may engage in a *partial equilibrium frame of reference* (which typically looks at an individual market or two in isolation from other connected markets), a *general equilibrium frame of reference* (which looks at the complete set of connected markets), or even a *game-theoretic frame of reference* (which focuses on the strategic thinking of decision makers). Most microeconomic frames of reference are based on the assumption that the people making economic decisions are interested in maximizing their own wellbeing and that these same decision makers make their decisions using marginal thinking.

BOX 3.2

WHAT IS MARGINAL THINKING?

Students new to economics sometimes have difficulty getting their brain around the notion of *marginal thinking*. After all, in common language the word “margin” refers to the blank edge of a piece of paper, and the word “marginal” means it is not important. But for the economist, the word “marginal” refers to a way of thinking that helps the decision maker get the most out of a situation. Take, for example, eating grapes. You could estimate how many you want to eat, pull that number off the bunch, and eat them. But often times you don’t know how many you want to eat. Marginal thinking solves the dilemma. Just pull one off, eat it, and repeat until you are satisfied. And that’s the way economists think about how consumers decide how much to buy and how firms decide how much to produce. Of course, consumers and firms aren’t always conscious of this process, but it turns out that economists are pretty good at predicting the decisions of consumers and firms using this theory of marginal decision-making.

MACROECONOMICS • A *macroeconomic frame of reference* focuses on the economy as a whole and typically ignores the individual behavior of consumers and firms. There are in fact a number of macroeconomic frames of reference that differ according to their assumptions about how the economy as a whole works.

Some of the better known perspectives include the *Keynesian*, the *Classical*, the *Monetarist*, and the *Real Business Cycle* frames of reference. Compounding this variety, macroeconomics as a subject matter can be divided according to whether it focuses on short-term fluctuations or long-term sustainability and economic growth. Hence, each of the above macroeconomic frames of reference has both a short-term and a long-term variant.

THE BUSINESS SCIENCES • Economic issues can also be viewed from a *business frame of reference*, that is, through the lens of the various business sciences such as accounting, finance, management, marketing, and information systems. The overlap between these business sciences and microeconomics is quite large. Finance, for example, at many universities is part of a joint economics/finance department. The difference between microeconomics and the business sciences is in part one of emphasis. Microeconomics tends to place greater emphasis on developing an understanding of the general behavior of individual firms and consumers. The business sciences tend to place a greater emphasis on an understanding of the specific tactics employed by those individual firms and consumers. Thus, for example, finance focuses on the management of a business enterprise's wealth in financial markets, while microeconomics focuses less on the specifics of managing a business's wealth and more on the general behavior of businesses in financial markets and the implications of that behavior on the overall levels of investment, prices, and interest rates. It should also be noted that while the business sciences have a strong foundation in economics, they also borrow from other academic disciplines, though economics itself is increasingly doing that as well. Thus, for example, marketing has a strong foundation in psychology and information systems have a strong foundation in computer science.

OTHER NON-ECONOMIC PERSPECTIVES • Although the microeconomic, macroeconomic, and business science perspectives are the most common ones used by economists to think about economic issues, they are not the only ones. And sometimes (as the biographies of Amartya Sen and George Akerlof above demonstrate) they are not enough if we are want good answers to our economic questions. As a result, microeconomic, macroeconomic, and business science perspectives are supplemented with *other perspectives*:

- **Psychology** – Psychology studies the functioning of the human mind both from a behavioral perspective and from a biological perspective. Given the importance to economics of such things as human behavior, preferences, and assessment of risk, psychology has a lot to offer economists in making sense of economic questions. Indeed, there is even a new area of economics called neuroeconomics!
- **Sociology and Anthropology** – Although the subjects of sociology and anthropology overlap that of economics, they are in many ways broader in their focus. From an economic perspective, what these disciplines offer is a richer understanding of human social activity and culture. A society's

culture is the set of behaviors that are shared by individuals in that society. Typically, culture shows up in a variety of ways including language, religion and values, and manners and customs. From a positive economic thinking perspective, sociology and anthropology have, for example, given economists a richer understanding of the process of human immigration. And from a more practical perspective, analyzing an economic issue from the appropriate cultural frame of reference may make the difference between business success and failure. Thus, for example, it is well known that soft drink companies alter their formulas in different countries to suit the tastes of the local culture.

- **History** – While not all economic questions involve the past, many do. And some economic subject matter, such as macroeconomics, almost by definition has a significant historical dimension to it. Whenever the economic issue has a historical dimension or has occurred in the past, a historical perspective can be a valuable complement to standard economic thinking. Thus, for example, in thinking about whether the gold standard is a good idea, an understanding of how the gold standard actually functioned in the 19th and early 20th centuries provides a useful complement to economic theories of the gold standard.
- **Law and Politics** – It is not uncommon to find a legal frame of reference when examining economic issues that have legal implications. Thus, for example, if two large corporations are interested in merging, an analysis from a legal perspective will often be asked for. Moreover, when economic decisions require governmental action, a political frame of reference may be useful in analyzing the

BOX 3.3

WHY DO I HAVE TO TAKE ALL THOSE OTHER COURSES?

A common complaint of many college students is, “Why do I have to take all those *other* courses? They’re boring, and I just want to take courses in my major.” Whether the specific course requirements at your own institution are good ones is a separate issue, but in general, one of the purposes of these *general education* requirements is to give you a variety of perspectives that you can use in the future. Indeed, because the ability to think from a variety of perspectives can be liberating, these requirements are sometimes known as *liberal education* requirements. And certainly in economics having some understanding of psychology, anthropology, sociology, history, law and politics can be quite useful.

IS YOUR POSITIVE FRAME OF REFERENCE A GOOD ONE?

So how do you know if you have a good frame of reference for thinking about positive economic questions? A good frame of reference is one that is useful in coming to the best understanding possible of the issue at hand. Different issues are likely to require different frames of reference. Thus, for example, if you are interested in figuring out the effect of an increase in the government’s budget deficit on the national unemployment rate, a macroeconomic frame of reference is likely to be the most valuable, while if your interest is in figuring out the effect of an increase in the government’s budget deficit on a local restaurant’s profits, you’ll want to supplement that macroeconomic perspective with a microeconomic perspective (What will be the effect on the demand for the restaurant’s product?), a business-science perspective (How can one manage any changes caused by the increased deficit?), and a legal and political perspective (What are the relevant tax and subsidy implications for the restaurant?).

So if the choice of frame(s) of reference is so important, how do you know when you’ve made good choices? It turns out that there are some basic standards for making that judgment:

RELEVANCE • Clearly the first and most important standard is *relevance*. After all, if the frame of reference isn’t relevant, there’s no sense considering

case, clearly a microeconomic frame of reference will be relevant, while a macroeconomic one will not. But what about a psychological perspective? It is true that with the new runway, there may be psychological issues (for example, the local community's feelings about the economic changes that occur), but if what we are interested in are changes in such things as local employment, average incomes, and the mix of businesses, then a psychological frame of reference probably isn't going to be terribly valuable. But notice that this is a reasoned judgment, not a finding of fact. Often, determining the relevancy of a frame of reference is one of degree rather than being simply right or wrong.

ACCURACY & LOGICALNESS • Assuming that the frame of reference is relevant, the next standard to apply is *accuracy and logicalness*. Does the frame of reference make sense? Is it free of mistakes? Are its assumptions valid? Thinkers who have illogical or inaccurate frames of reference often find themselves embarrassed when their mistakes are revealed.

One example of an inaccurate frame of reference arises from the fact that businesses are sometimes taxed on the value of their assets, and to calculate the value of those assets, tax law defines depreciation schedules that are used to convert past, original asset values into current, taxable asset values. But because these depreciation schedules are sometimes changed, an example of an inaccurate accounting frame of reference would be one that uses an outdated depreciation schedule. And for an example of an illogical frame of reference, consider the macroeconomic hemline theory of business cycles. In years past, some economists observed that hemlines tended to rise during booms and fall during recessions. Hence, so the theory argues, one can use hemlines to predict the business cycle. But a little bit of thinking reveals that this is illogical. Even if the observation that hemlines are correlated with the business cycle is true, it is likely to be a *result* and not a *cause* of the business cycle because of the fact that people tend to become more cautious in bad economic times (so they dress more conservatively) and tend to take more risks in good economic times (and so dress more daringly). Hence, as a macroeconomic frame of reference for predicting the business cycle, it is clearly not worth using despite its relevance to the issue.

DEPTH • Assuming that the frame of reference is relevant, accurate, and logical, the next step is to ask whether it will allow you to develop significant, or only trivial, conclusions. A good frame of reference has the *depth* to allow you to look at the important aspects of the matter at hand. Thus, for example, John Maynard Keynes is famously quoted as saying, "In the long run, we are all dead." However, the context of that quote is his criticism of what is known as the Quantity Theory of Money where he says, "Now 'in the *long run*' this is probably true.... But this long run is a misleading guide to current affairs. In the long run we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the

ocean is flat again.” In other words, Keynes was arguing that using the Quantity Theory of Money as a macroeconomic frame of reference when dealing with immediate concerns is wrong because it is shallow and only allows us to make trivial conclusions.⁷

BREADTH • Finally, you should also consider the *breadth* of the frame of reference. Does the frame of reference allow you to examine the issue from more than one relevant perspective or is your frame of reference so narrow that you fail to assess important aspects of the issue? Often breadth requires using several frames of reference simultaneously. In international business, for example, this is often of great importance. The economic question of what will happen if a business relocates one of its manufacturing plants abroad requires several frames of reference. Obviously there is the management perspective. However, there are also likely to be significant accounting and information system aspects to the problem. Finally this decision has implications for the business’s general ability to compete, thus requiring a microeconomic perspective. Failing to evaluate this issue from all these perspectives may make the difference between success and failure.

BOX 3.4

IS THERE A PERFECT FRAME OF REFERENCE?

You may have noticed that there is still considerable ambiguity in deciding which frame of reference is best. So what happens if you and a friend use different frames of reference? Who is right? In many cases it depends on how you interpret the question. Suppose, for example, that you and your friend have been hired by your city to determine the effect on the area of building a new highway. After some reflection, you decide that microeconomic and legal/political frames of reference would be best. Your friend, while agreeing that a microeconomic frame of reference would be appropriate, believes that a cultural frame of reference would be better than the legal/political perspective. In discussing why the difference, it turns out that you were thinking that political and legal issues associated with building the highway would be important, while your friend was thinking in terms of the longer-term disruption of the communities where the highway would be located. In other words, you and your friend had a disagreement about the appropriate breadth of the issue. Why not just include all three perspectives? In fact, that might be a solution. However, remember that economic thinking is purposeful, and there is limited time and resources to address the issue. If those limits are sufficiently tight, you and your friend may not have the luxury of analyzing the issue from all three perspectives, and therefore will have to choose which perspective(s) to ignore. And because this problem is essentially due to not having defined the question precisely enough, you may want to go back to the city to ask what exactly they mean by the effect of the highway.

⁷If these criteria look familiar, you’re right. They are drawn from the same general list that we used in Section 2.2 of Chapter 2 to evaluate how good reasoned judgments are.

EXERCISE 3.1

Learning to identify and evaluate different frames of reference for thinking about positive economic issues requires practice. This exercise gives you the chance to do some of that by using material from a variety of internationally reputed newspapers that range politically from conservative to liberal.

Choose an opinion column from each of the following sources that focuses on an economic issue, read the article, and follow the directions that follow. Note that the subject of each article does not have to be the same, though you'll get a better sense of their different perspectives if they do.

- *The Economist* (<http://www.economist.com/leaders/>). This self-styled newspaper (Americans would call it a news magazine) has a 19th century, free market liberalism editorial perspective. In modern terminology, most people would describe it as conservative leaning with a libertarian slant. Note also that its major opinion pieces are called "Leaders".
- *The Guardian* (<http://www.guardian.co.uk/commentisfree>). This newspaper has the most left-wing editorial policy of the four here.
- *The New York Times* (<http://www.nytimes.com/pages/opinion/index.html>). This newspaper also has a left of center editorial policy but not as much as *The Guardian*. It might best be described as having a liberal editorial policy.
- *The Wall Street Journal* (<http://online.wsj.com/public/page/news-opinion-commentary.html>). This newspaper has a conservative editorial policy that is more in keeping with what people think of as traditional and business oriented. It differs from *The Economist* in not necessarily adhering to 19th century liberal views.

1. Describe the economic question/issue that the column addresses.
2. Describe why, according to the author, this subject is important. Make sure that this is what the author says, not what you think is a reason why this issue is important.
3. Describe what the main conclusion of the article is, that is, what point is the author trying to persuade you to believe.
4. Now your analysis gets more difficult. It is possible that the main conclusion of the article is normative. If it is, think about what positive economic conclusion is used to provide support for that normative point. Now describe that positive economic conclusion. (If the main point described in (3) above is already a positive statement, simply state that here.)
5. Describe the frame(s) of reference that the author uses for looking at the positive economic issue that you described in (4) above and provide an explanation of what the author says that leads you to conclude that.
6. Now evaluate the author's frame(s) of reference. To what extent is it/are they relevant, accurate and logical, deep, and broad.
7. Finally, describe an additional frame of reference that would be relevant to the positive economic issue described in (4) above but which the

author did not use. Explain why it is relevant, and evaluate the extent to which it is accurate and logical, deep, and broad. Finally, decide whether this additional frame of reference should have been used by the author and explain why or why not.

3.4

FRAMES OF REFERENCE FOR ANSWERING NORMATIVE QUESTIONS

Answering normative economic questions requires making value judgments about what is good or bad, desirable or undesirable, or what should or should not be done. The values and standards (that is, the norms) that you use when doing normative thinking make up your frame of reference and play a dominant role in the conclusions that you come to. Thus, for example, if your normative frame of reference includes the norm that government should not interfere with markets that work efficiently, you may conclude through a process of reasoned judgment that the minimum wage should not be raised. On the other hand, if you believe that every individual has a right to receive a minimum amount of compensation for their efforts, you may conclude that the minimum wage should be raised.

Differences in the normative judgments that people make can sometimes be traced back to disagreements about fundamental values. Interestingly, however, there are a surprising number of norms that most people share. More often than not, differences in normative judgments are due not so much to disagreements about fundamental values as to disagreements about the specifics of those norms and the relative importance of those norms. You and I may agree, for example, that our company should pursue profits and help out the local community yet disagree on the extent of that community involvement or how much in the way of profits should be sacrificed to pay for that community involvement.

In broad terms, the norms that most people use when thinking about economic issues can be divided into two broad categories:

EFFICIENCY • In general, *efficiency* requires that resources be used with minimal waste to produce the goods and services that are desired. Thus, for example, a business concerned about production would be efficient if it produced as much as possible from a given set of inputs. Of course, if the business wishes to produce two goods, the notion of efficiency becomes more complicated. In general, efficiency in the production of two (or more) goods requires that it be impossible to increase the amount of one good without having to cut back on the production of the other good. An examination of virtually any publication in economics reveals that the desire for efficiency is quite common in the normative analysis of economic and business issues.

FAIRNESS • While efficiency may or may not involve others, *fairness* by its very nature is concerned with the relative treatment of different individuals. Virtually

everyone believes that fairness is an important norm. What disagreements there are center on the fact that there are sometimes considerable disagreements about how to define fairness.

Fairness can be thought of as either a process or an outcome. Thought of as a process, fairness focuses on such things as how people are treated, what opportunities they have, and what restrictions are placed on their actions. Two examples of a process view of fairness are the conflicting views that businesses have a right to refuse to sell to potential customers, and that customers have a right to buy any product that is for sale if they are willing to pay the price. Likewise, thinking of fairness in terms of an outcome, fairness focuses on what people eventually get in the way of goods, or services, or even happiness. Believing that everyone who works has a right to some minimum level of food, clothing, and shelter is an example of an outcome based notion of fairness.

Most of us tend to have views of fairness that are both process and outcome based. This combination of views results, for example, in a court system where we expect that people for whom there is evidence that demonstrates that they are guilty are in fact declared to be guilty (outcome fairness) and that all people are tried using the same rules (process fairness). Interestingly, and despite the sometimes heated debates about economic policy, Edward Zajac argues that there is a surprising amount of agreement about what fairness means in the US. In particular, his research finds that the following five norms are common to most individual's notion of fairness:⁹

- *Right to Necessities* – People have a right to the necessities of life (such as food and clothing). Thus, society has an obligation to make sure such necessities are provided.
- *Horizontal & Vertical Equity* – Equals should be treated the same; unequals should be treated differently according to the way they differ. Thus, for example, higher income people should pay more tax than lower income people.
- *Right to the Status Quo* – People have a right to continue to enjoy any benefits they currently have. Thus, businesses should not be allowed to pollute a currently clean stream.
- *Right to Insurance* – People have a right to be insured against economic losses that are not their fault. Thus, for example, society has an obligation to help those hurt by natural disasters or recessions.
- *Right to Competitive Markets* – The fewer the substitutes there are for a good produced by one firm, and the more the good is considered a necessity, the more society has a right to control its production. Thus, for example, society has a right to regulate the production of electricity which is not produced in competitive markets and which is a necessity for which there are only poor substitutes.

⁹Zajac (1995).

Beyond these basics, however, there may be as noted above considerable disagreement about exactly what these general views of efficiency and fairness mean. Moreover, you may have noticed that all the norms that Edward Zajac found to be commonly held by most people in the US are all outcome notions of fairness. But there are also process notions of fairness that many consider to be important. One that is strongly held by many people in the US is the norm of *liberty*. In simple terms, liberty can be thought of as an absence of coercion. Most people believe in some degree of liberty for themselves and others, but there are often strong disagreements over the appropriate amount of liberty and where it should be exercised. Thus, for example, there is considerable disagreement about the appropriate level of liberty with respect to purchasing health care insurance, to owning and using guns, and to the ability to get married.

Often times when thinking about a normative issue, there are several norms that could apply. Sometimes, these norms don't conflict and, if we are lucky, will actually reinforce each other. Thus, for example, in the economic question of whether we should impose stricter zoning laws on a residential neighborhood, the norm of a *right to the status quo* and the norm of a *right to liberty* reinforce each other. On the other hand, there are many situations where the norms come into conflict. Thus, for example, in the economic issue of whether to regulate the price of gasoline, the consumers' *right to necessities* comes into conflict with the gasoline stations' *right to the status quo*.

BOX 3.5

UTILITARIANISM AND LIBERTARIANISM

Two ethical philosophies that are at the heart of current debates about economic policy are Utilitarianism and Libertarianism.

Utilitarianism, which comes from the works of two early economists Jeremy Bentham and John Stuart Mill, argues that people are ultimately motivated by a desire for a type of outcome based happiness which can be called *utility*.¹² Hence, because the utility of one person is tied to the utility of another, the proper goal for society is to seek to maximize some measure of the total utility of all people or, as it is sometimes described, "the greatest good for the greatest number". An example of this principle in practice is the Compensation Principle. Also known as the Kaldor-Hicks Criterion, the Compensation Principle is a commonly used standard for evaluating economic policies and argues that economic policies that are a net benefit in the aggregate should be adopted even if there might be some individuals who are worse off as a result of the policy.

Libertarianism, by contrast, argues that individuals and not groups (families, communities, societies, governments, etc.) are primary from a moral standpoint and that individuals

¹²A good source for learning about *Utilitarianism* is Mill's *Utilitarianism* first published in 1861. It is available in a number of forms, both hard copy and online. An example of a free, online version that is available in a number of formats is Mill (2007).

have the right to not be coerced so long as they do not try to coerce others.¹³ Libertarians do not believe that the Compensation Principle is a proper standard for deciding on economic policy because it can sometimes result in individuals being harmed (which they argue is a form of coercion) by an adopted policy. As a result, Libertarians argue that society needs to have a system of property rights and guarantees of economic liberty to avoid such problems. From an economic perspective, these two views of ethics present a problem. If we follow a Utilitarian perspective and adopt the Compensation Principle, the aggregate utility may increase but possibly at the expense of particular individuals; if we follow the Libertarian perspective, no individual will be hurt, but possibly at the expense of the rest of society foregoing a potential benefit.

Finally, a few words about the notion of ethics. *Ethics* can be thought of as a set of rules (often embodied in habits) that help people to achieve whatever is the fundamental goal or purpose of being human. Virtually all people share the belief that there are certain ethical habits that are good and desirable. However, exactly what those ethical habits are is often debated and may vary from one person to another, may vary across cultures, and may be based on religious or secular foundations. Religious traditions typically derive their ethics from supernatural beings and the fundamental truths that those beings reveal. Thus, for example, Judaism, Christianity, and Islam base their ethical systems in part on the Ten Commandments. Secular traditions typically derive their ethics from human reasoning and intuition. Aristotle is a particularly interesting person with regard to the issue of religiously versus secularly based ethics. The ethics that Aristotle developed in his *Nicomachean Ethics* is decidedly secular.¹⁰ Arguing that the fundamental characteristic that distinguishes human beings from other animals is the ability to reason, Aristotle develops a system of ethics in which norms such as truthfulness, courage, and self control play a significant role. However, it turns out that Aristotle's ethics have been used by later thinkers as a foundation for both religiously and secularly based ethical systems. Thus, the medieval scholar Thomas Aquinas is famous for using Aristotle to develop a Christian system of ethics, while the 20th century writer Ayn Rand used Aristotle as the foundation of a secular ethical philosophy she called Objectivism.¹¹

¹³Libertarianism today is often times subject to heated debate and strong feelings. For an overview of Libertarianism, see Vallentyne (2009).

¹⁰Aristotle's *Nicomachean Ethics* has been translated and published by a number of people and is available both in traditional book form and online. A particularly nice translation for the modern reader is Aristotle (2002). An example of a free, online version is Aristotle (2007).

¹¹For general information about Thomas Aquinas's life and work, as well as links to more scholarly sources, see Thomas Aquinas (2010). For background on Ayn Rand check out Ayn Rand (2010). Many, including Rand herself, point to her novel *Atlas Shrugged* (Rand (1992)) as being the fullest exposition of her ethical philosophy.

EXERCISE 3.2

Understanding the subtleties of different economic norms and how those norms sometimes conflict is an important part of knowing how to engage in good normative economic thinking. This exercise gives you the chance to think a little deeper about some of those economic norms and the conflicts that can sometimes arise in applying them.

1. For each of the following situations, identify relevant norms from the set of norms discussed in this chapter and explain whatever conflicts exist between them. Note that this question does not ask you to answer the question or resolve the issue.
 - a) A paper mill has been located on the banks of a river for more than 150 years, and for that entire time has been discharging its waste water into the river. In recent decades a town has developed downstream from the mill, and the river is that town's only source of water. As a result, it has been proposed that the mill be prohibited from polluting the river.
 - b) You and your neighbor have the same income and pay the same amount of income tax. However, you have large medical bills associated with the care of your elderly parents and are currently paying college tuition for your two children, while your neighbor has no children and no significant medical expenses. Is it right that you pay the same income tax as your neighbor?
 - c) Typically, individuals can collect unemployment insurance for some fixed period of time, and if they are still unemployed after that period of time has passed, they are no longer eligible to receive unemployment insurance. If a recession occurs that results in the unemployment rate being much higher than normal for a time period longer than the period for which people are eligible to receive unemployment insurance, should the period for receiving unemployment insurance be extended?
 - d) Many state and local governments prohibit the resale of tickets for such things as performances and sporting events. Should such restrictions on "scalping" be eliminated?
2. For each of the five norms that Zajac argues are commonly held by people in the US, state whether you agree or not, and explain why you do or do not agree. If you agree in general but have concerns, explain what your concerns are.
3. Using the set of norms discussed in this chapter, describe the advantages and the disadvantages of Utilitarianism.
4. Using the set of norms discussed in this chapter, described the advantages and the disadvantages of Libertarianism.

3.5

IS YOUR NORMATIVE FRAME OF REFERENCE A GOOD ONE?

Good normative thinking requires a set of norms that allows the thinker to come to the best judgment about what is good and what is bad. As with positive thinking, different issues may mean a need to employ different norms. Thus, for example, in thinking about the best way to manufacture a computer, it is probably only necessary to consider the issue from an efficiency perspective. However, if you have decided to expand your business to a foreign country, efficiency, fairness, and ethical behavior may all be important norms to keep in mind if you are to be successful. Good normative thinkers are aware of the different normative frames of reference that can be used to analyze a situation (whether they agree with them or not) and make their choice based on a set of accepted standards for good thinking. As with positive thinking, the most important standards are:

RELEVANCE • Does the frame of reference have a significant and demonstrable bearing on the issue at hand? This is often a difficult standard to assess because so many frames of reference have some bearing on the subject being studied. The key is that the connection is close and important. If, for example, we are concerned about the poor level of economic growth in our state and are debating whether to give tax breaks to attract business investment, an efficiency frame of reference is a better frame of reference than a right to insurance frame of reference. But in this situation it is less clear whether a right to the status quo ought to be part of our normative perspective. As with standards for good positive thinking frames of reference, relevancy is often one of degree rather than being simply right or wrong.

ACCURACY & LOGICALNESS • Does your frame of reference make sense? Is it free of mistakes? Is it internally consistent or there conflicts between the norms that make up the frame of reference? A good frame of reference is both free of mistakes and is internally consistent. Thinkers who have conflicting normative frames of reference are often criticized for wanting it “both ways” and for confusing the people they talk to.

DEPTH • Will your frame of reference allow you to come to significant findings, or will it only allow you to develop trivial conclusions. Is your frame of reference based on fundamental notions of good and bad or is it based on superficial and poorly thought out norms?

BREADTH • Does your frame of reference allow you to examine the issue from more than one normative perspective? While such breadth is not always necessary, those who can argue from several perspectives are often more successful at persuading others. Thus, in a large, diverse country such as the US, the adoption of national governmental policies often requires being able to argue the case from a variety of perspectives based on region, level of education, economic

interest, religion, etc. When a policy cannot be described as advantageous from a variety of perspectives, it is more likely that there will be significant conflicts and even stalemate.

EXERCISE 3.3

Just as was the case with positive economic frames of reference, learning to identify and evaluate different frames of reference for thinking about normative economic issues requires practice. This exercise gives you the chance to do some of that by using material from a variety of internationally reputed newspapers that range politically from conservative to liberal.

Return to the newspapers that you used in Exercise 3.1 and choose a new opinion column from each newspaper, being sure this time that each column focuses explicitly on a *normative* economic issue. Read each article, and for each article follow the directions that follow. As a reminder, here are the four newspapers:

- *The Economist* (<http://www.economist.com/leaders/>). This self-styled newspaper (Americans would call it a news magazine) has a 19th century, free market liberalism editorial perspective. In modern terminology, most people would describe it as conservative leaning with a libertarian slant. Note also that its major opinion pieces are called “Leaders”.
- *The Guardian* (<http://www.guardian.co.uk/commentisfree>). This newspaper has the most left-wing editorial policy of the four here.
- *The New York Times* (<http://www.nytimes.com/pages/opinion/index.html>). This newspaper also has a left of center editorial policy but not as much as *The Guardian*. It might best be described as having a liberal editorial policy.
- *The Wall Street Journal* (<http://online.wsj.com/public/page/news-opinion-commentary.html>). This newspaper has a conservative editorial policy that is more in keeping with what people think of as traditional and business oriented. It differs from *The Economist* in not necessarily adhering to 19th century liberal views.

1. Describe the normative economic question/issue that the column addresses.
2. Describe why, according to the author, this subject is important. Make sure that this is what the author says, not what you think is a reason why this issue is important.
3. Describe what the main conclusion of the article is, that is, what point is the author trying to persuade you to believe.
4. Now your analysis gets more difficult. All normative arguments use positive thinking as a foundation from which they make their point. Describe the positive economic issue(s) that lie behind the normative issue that is the focus of the article. Why is that positive economic issue(s) necessary to making the normative argument that the author makes?
5. Now return to the normative issue and evaluate the author’s normative frame(s) of reference. To what extent is it/are they relevant, accurate and logical, deep, and broad?

6. Finally, describe an additional normative frame of reference that would be relevant to the normative economic issue but which the author did not use. Explain why it is relevant, and evaluate the extent to which it is accurate and logical, deep, and broad. Finally, decide whether this additional normative frame of reference should have been used by the author and explain why or why not.

1. For each economist, what is the primary focus of economics? In answering this question, you may want to consider the following dimensions:
 - Is he more focused on the individual or society? Why do you conclude that?
 - Is he more concerned with economic outcomes or economic processes? Which outcomes or processes? Why do you conclude that?
 - Does he seem to think of economics as caring about people, or does he think of economics in more distant, scientific terms? Why do you conclude that?
 - Does he seem to think of economic decision making as a rational or an irrational process? Why do you conclude that?
2. Given your responses above, describe for each economist what values, norms, or normative philosophies might be behind his notion of what economics is. If you are finding it difficult to answer this question, you may want to do a little quick research on each of these economists and their background.
3. Finally, think about your own values and what purpose economics as an area of study might have in serving those values. Then write down what *you* think the definition of economics ought to be and explain why you chose the definition that you did as a function of your own values.

3.6

THE MATHEMATICAL FRAME OF REFERENCE

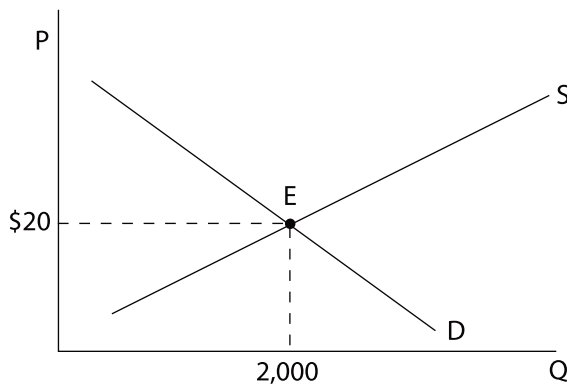
As you know, economics uses mathematics in a variety of forms (for example, numerical data, equations, and graphs) to represent economic ideas and to facilitate the process of economic reasoning. As a result, mathematics can itself be thought of as a type of positive frame of reference. However, while the other positive frames of reference can stand on their own (so that you can, for example, think about an economic question using a microeconomic perspective or using a psychological perspective), a mathematical frame of reference is never used on its own, and always is used to facilitate or help one of the primary frames of reference.

There are many examples of the use of mathematics as a “helping” frame of reference. Consider two such examples, the first associated with the microeconomic task of understanding how competitive markets function, the other associated with the macroeconomic task of understanding the nature of aggregate demand.

To understand how competitive markets function, economists typically use a microeconomic perspective. Demand is thought of as reflecting the willingness of consumers to purchase some good, supply is thought of as reflecting the willingness of firms to sell that same good, and the concept of equilibrium is used to explain how buyers and sellers interact with each other and come

to a decision as to how much will be traded and at what price. All this can be done verbally, as it was done initially in the development of economic thought. However, most students today typically learn about this with the help of a mathematical perspective. Thus, demand and supply are represented by schedules containing numerical data or by lines in a graph, the concept of equilibrium is interpreted numerically or graphically, and economic reasoning is then used to make conclusions about the behavior of the competitive market.

Price	Quantity Demanded	Quantity Supplied
\$50	500	5,000
\$40	1,000	4,000
\$30	1,500	3,000
\$20	2,000	2,000
\$10	2,500	1,000



Turning to the macroeconomic example, aggregate demand is typically taught with the aid of a mathematical perspective even though it was initially developed without formal mathematics. Aggregate demand represents the total willingness of all members of the economy to purchase final and investment goods, and at its simplest aggregate demand is reduced to the consumption purchases of households and the investments of businesses. In this simplest form, consumption and investment are represented by schedules containing numerical data or by lines in a graph. The behavior of those data or the lines is then investigated using macroeconomic thinking.

Income	C	I	AD
\$ 0 b	\$ 2 b	\$6 b	\$18 b
\$10 b	\$ 8 b	\$6 b	\$14 b
\$20 b	\$14 b	\$6 b	\$20 b
\$30 b	\$20 b	\$6 b	\$26 b
\$40 b	\$26 b	\$6 b	\$32 b
\$50 b	\$32 b	\$6 b	\$38 b

\$

AD

C

\$x

\$2 b

Income

BOX 3.6

LIMITATIONS TO THE MATHEMATICAL FRAME OF REFERENCE

The use of a mathematical frame of reference in economics has led to significant improvements in our understanding of economic issues. However, there are limits to the ability to use mathematics to express economic concepts or to answer economic questions. Thus, for example, you may have noticed that the examples of mathematics in representing normative ideas were restricted to the outcome notion of efficiency and outcome notions of fairness. However, it is much more difficult to represent process notions such as liberty. As a result, economists, such as those who adhere to Libertarian views and who believe that the process of economics is a significant normative issue, tend to have less use for mathematics.

Finally, while the above examples focus on the use of mathematics as a *positive* frame of reference, mathematics can also be used to represent a number of *normative* economic concepts. Among those normative concepts are:

EFFICIENCY • As was discussed earlier in this chapter, efficiency is a common outcome normative concept used by economists to assess how well people are doing in production, consumption, or distribution. For a single individual,

the norm is simply based on the preferences of that individual. But when we use the concept of efficiency to assess how well a whole market or economy is doing, it is typically based on some notion of Utilitarianism. Mathematically, the simplest way to represent efficiency is with a schedule or graph that represents a Production Possibility Frontier.

CONSUMER AND PRODUCER SURPLUS • These concepts represent a particular application of the concept of efficiency in the context of individual markets and are used to assess the impact of such things as market failure and government policies. In brief, they do that by calculating the total net benefit to market participants. Mathematically, consumer surplus is defined as the total utility of consuming a good minus the total cost of purchasing that same good, and it can be represented numerically or graphically. Producer surplus is defined as total revenue minus total variable costs and likewise can be represented numerically or graphically. Although these concepts can be applied to individual consumers or producers, typically they are applied to all the consumers or all the producers in a given market. As a result, the underlying normative frame of reference is that of Utilitarianism.

INCOME DISTRIBUTIONS • Income distributions describe the level of incomes for people in an economy. For example, we might note mathematically that the poorest 20% of the population have 5% of all income while the richest 20% of the population have 40% of all income. These data, which can also be represented by graphs called Lorenz Curves or by a single number called a Gini Ratio (which is a type of summary statistic) are, strictly speaking, positive economic concepts. However, they are often used as part of a larger normative investigation into the fairness of income distributions.

EXERCISE 3.5

Recognizing the value and the limitations of mathematics in economic thinking is a valuable skill. This question helps you to reflect on that value and those limitations.

1. Identify three economic concepts from your economics course that can be expressed mathematically. Verbally define each concept, explain the circumstances that each concept is used to investigate, describe verbally how each can be expressed mathematically, and provide an example for each of how it is expressed mathematically.
2. (More difficult) For one of the three economic concepts that you analyzed in the prior question:
 - Discuss how the use of mathematics allows the concept to be more useful or to provide additional insight, and
 - Discuss how this mathematical representation seems incomplete or seems to over-simplify the verbal version of the concept.

3.7

WRITING TO PERSUADE

When a particular answer to an economic question makes sense to you, it “connects” to other things that you already believe are true. As a result, we say that the answer seems reasonable to you and that it has a certain “logic” to it. Economic writing is all about getting others to accept our “logic” as their own, that is, economic writing is all about persuading others to accept our answer to some economic question. To do that, you need to make a connection between what your reader believes initially and what you want your reader to believe. Persuasive economic writing is, as a result, fundamentally writing that connects. Persuasive economic writing makes sense to others.

Because the rules for analyzing the economic writings of others that we developed in Chapter 1 reflect the way many people think about economic questions, and because the easiest way to communicate with people is to speak their language, the rules for critical reading can be used to construct a set of *Five Rules for Persuasive Economic Writing*:

RULE 1: DIVIDE YOUR WORK INTO SECTIONS • In particular, make sure that you divide your work into an introductory section, a section that contains the body of your thinking, and a concluding section, and that each section is separate from the other two and clearly identifiable. The length of each section will, of course, vary with what needs to be said. At a minimum, however, each should be a separate paragraph. In longer works, it is often very useful and is certainly common to give the different sections headings to help guide the reader.

RULE 2: STATE SUBJECT, IMPORTANCE, AND THE MAIN QUESTION IN THE INTRODUCTION • Because readers are busy and have little time for long-winded arguments, get to the point. Tell your reader what the subject is, explain to the reader why this is worth reading about, and then state the question you wish to answer. It is very common in economics to not state the question directly, but rather to assert the final conclusion at the very beginning of the paper. Although you may find this rather awkward at first, you will find that this will make your paper even more focused and persuasive.

RULE 3: EXPLAIN IN THE BODY WHY THE ANSWER TO THE QUESTION MUST BE TRUE • Don’t clutter the introduction with arguments and reasoning; tell your reader what is to come. Save your explanations for the body. The body should contain a sequence of claims that if accepted show why your main point is true. You may also want to consider including arguments why other answers are not correct. But remember that showing other answers are not correct is not enough to show that your answer is correct. So be sure to focus first and foremost on explaining why your answer is correct.

RULE 4: SUPPORT CLAIMS WITH REASONABLE ASSUMPTIONS, CONCEPTUAL ARGUMENTS AND EMPIRICAL EVIDENCE • Don't expect your reader to accept your claims simply because you say so. Explain why your claims are true by giving conceptual arguments and empirical evidence to support your claim.

RULE 5: STATE THE ANSWER TO THE QUESTION IN THE CONCLUSION • Don't leave the success of your writing up to chance. At the end of your writing, state your answer to the question that was posed at the beginning of the paper to make sure your reader has gotten the point. And if you included that answer in your introduction, make sure that your statement of the answer in the conclusion matches your statement of the answer in the introduction. Finally, finish the conclusion with a more casual description of the consequences and implications of your main point.

BOX 3.7

A RISING STAR IN ECONOMICS: JESSE SHAPIRO

Jesse Shapiro is an assistant professor of economics at the University of Chicago's Booth School of Business and a Faculty Research Fellow in Labor Studies at the National Bureau of Economic Research. The recipient of numerous awards and grants including an inaugural Becker fellowship, he can, in the words of a 2008 article in *The Economist*, "already boast a collection of eye-catching findings worthy of a sequel to *Freakonomics*." Shapiro earned both his bachelor's (in economics) and master's (in statistics) from Harvard University in 2001 before completing his PhD in economics at Harvard University in 2005. His research has already developed a reputation for using a variety of perspectives in imaginative ways to find answers to issues as wide ranging as predicting elections (he finds people are better at predicting outcomes if they watch the candidates on television with the sound turned down), the effect of jail conditions (harsher conditions do not deter recidivism and may encourage it), and the effect of television on preschoolers (more television is associated with better academic performance especially if their parents have little education or poor English).¹⁹

¹⁹This biography is based on Emerging Economists: International Bright Young Things (2008, December 30), Jesse Shapiro (2010), Prof. Jesse Shapiro (2010), and Shapiro (2010).

Having completed this chapter, now you have the opportunity to put all the lessons together by writing a persuasive piece of economic writing using a microeconomic or a macroeconomic perspective. If you are reading this book as part of a course, your professor might want to provide more specific directions.

Choose one of the topics below and then follow the instructions associated with the topic that you have chosen:

MICROECONOMIC TOPIC • With the advent of television and then the internet, newspaper readership, and therefore newspaper company revenues, have declined significantly over the past fifty years. The purpose of this assignment is

and the more general guidance on economic writing from prior chapters, write a paper that argues for your plan of action. In doing that, be sure to divide the body of your paper into at least two parts, the first part being positive analysis, the second being normative analysis.

MACROECONOMIC TOPIC • It is argued that hindsight is always 20-20. But is it? The purpose of this assignment is to assess the 2009 stimulus package that Congress passed and decide whether that package was too small, too big, or just right.

6. Learn What Others Think – Consult at least one article from each of the four newspapers that we have previously above (*the Economist*, *the Guardian*, *the New York Times*, and *the Wall Street Journal*) to get a sense of what others have been thinking on this topic. Write a brief summary of each article consulted and attach to each summary a copy of the article.
1. Positive Analysis (part 1) – Next, using a macroeconomic model that was developed in your class, illustrate with a diagram what happened in 2008 that led to the decision to adopt the stimulus package. (Note: Different introductory macroeconomic courses develop different types of macroeconomic models. A partial list of possibilities include an Aggregate Supply/Aggregate Demand Model, a Keynesian-Cross Aggregate Demand Model, and a combined Phillips Curve/IS-MP Model.)
2. Positive Analysis (part 2) – Now, based on your own understanding of the situation from Step 2 as well as what you discovered others think in Step 1, predict what you think would have occurred had the stimulus package not been adopted. Jot down those thoughts along with an explanation as to why you believe that, and use your macroeconomic model diagram to illustrate.
3. Normative Analysis – Now that you have completed your positive analysis, think about what the goal of the federal government should be (that is, what its norms should be). Once you have done that, decide whether the stimulus package was useful in pursuing that goal. Jot down a summary statement of what the goal of the federal government should be, how well or how poorly the stimulus package worked, and why the stimulus package had the effect it did.
4. Persuasive Writing – Finally, you are in a position to tell the public how well the federal government handled the situation. Using the *Five Rules for Persuasive Economic Writing* and the more general guidance on economic writing from prior chapters, write a paper that argues for your normative assessment. In doing so, be sure to divide the body of your paper into at least two parts, the first part being positive analysis, the second being normative analysis.

SUMMARY

Frames of reference are the foundation of experiences, information, ways of thinking, tastes, and values from which you think about other things. Being aware of frames of reference improves your ability to effectively think about economic questions and make sense of the economic thinking of others. Frames of reference can be divided into two broad groups, those for thinking positively and those for thinking normatively. Positive thinking frames of reference are based on facts, assumptions, and theoretical models. Normative thinking frames of reference are commonly based on notions of efficiency, fairness, and ethical behavior. For both groups, a good frame of reference is relevant to the question at hand, is accurate and logical, and allows you to think both deeply and broadly. Mathematics, in this regard, is a type of supplementary frame of reference that, while not applicable to all forms of economic thinking, is generally quite useful when doing positive economic thinking and can even be used to represent normative economic concepts. Finally, your economic thinking, no matter how good it is, will generally not be of much value if you cannot persuade others that it is correct. As a result, persuasive economic writing is a necessary skill to assuring the value of your thinking. To write persuasively, you need to make a connection between what your reader believes initially and what you want your reader to believe. Organizing your writing clearly and supporting your claims with conceptual arguments and empirical evidence will increase your chance of success.

KEY CONCEPTS

Accuracy and Logicalness	Liberal Education
Breadth	Libertarianism
Business Frames of Reference	Liberty
Classical Frame of Reference	Macroeconomic Frames of Reference
Depth	Mathematical Representation of
Efficiency	Positive Economic Concepts
Fairness	Mathematical Representing of
Five Rules for Persuasive Economic Writing	Normative Economic Concepts
Frame of Reference	Microeconomic Frames of Reference
Classical Frame of Reference	Marginal Thinking
Ethical Behavior	Monetarist Frame of Reference
Game-Theoretic Frame of Reference	Other Noneconomic Perspectives
General Education	Partial Equilibrium Frame of Reference
General Equilibrium Frame of Reference	Real Business Cycle Frame of Reference
Gnothi seauton	Relevance
Horizontal and Vertical Equity	Right to Competitive Markets
Keynesian Frame of Reference	Right to Necessities

Right to the Status Quo

Right to Insurance

Standards for Assessing Normative

Frames of Reference

Standards for Assessing Positive

Frames of Reference

Utilitarianism

Utility

REVIEW QUESTIONS

1. What is a frame of reference composed of, and what purpose does it serve in critical thinking?
2. What are the characteristics of a good frame of reference for answering positive economic questions?
3. Explain why individuals may differ in their normative judgments about some issue.
4. What does efficiency mean? How is it represented in economics?
5. What does fairness mean? Explain in what way and to what extent people share fairness norms.
6. Compare and contrast Utilitarianism and Libertarianism. What relevance do these philosophies have to economic thinking?
7. What is the basic principle for persuading people that your economic thinking is correct?
8. Describe what should be in a good introduction.
9. Explain why it is important to use conceptual arguments and empirical evidence to support your claims.
10. Why is it important to restate your main point in your conclusion?

Searching for Answers

INTRODUCTION

Because the answers to most economic questions are reasoned judgments, it is difficult to know if a proposed answer is the best without comparing it to other possibilities. As a result, critical economic thinkers gather a variety of views and empirical evidence about the question they are interested in.

SEARCHING BEGINS AT HOME

In searching for answers, always begin by taking stock of yourself and be particularly aware of possible initial biases that may hamper a full search. But don't overdo the searching. The amount of searching should be proportional to the importance of the question.

DESIGNING A SEARCH STRATEGY

Searching for answers to economic questions can be a difficult and frustrating task. To make sure that your time is spent productively, be sure you know what the question is before you begin searching. Then conduct a springboard exercise to identify what you need to know in order to answer the question. Finally, before you begin your search, invest some time identifying potential sources of information so that you don't waste your time looking for sources.

READING CRITICALLY

Critical reading requires an ability to analyze (that is, break apart) the author's material. To do that, begin by skimming the material to determine where the introductory material, the body, and the conclusion begin and end. Next, analyze each section using the components of logical thought. Finally, write a summary in your own words to ensure that you understand the material and to make it yours.

CREATE YOUR OWN SOURCE

In addition to searching for what others have written about, consider making yourself a source as well by using the theories, models, and methods of analysis that you have learned in your economics courses to analyze the issue at hand.

KEEPING TRACK OF EVERYTHING

Keeping track of what you find, where you found it, and who wrote it is one of the keys to being a good researcher. You'll get more out of your sources, and others will thank you for it!

4.1

INTRODUCTION

It is the mark of an educated mind to be able to entertain a thought without accepting it.

- ATTRIBUTED TO ARISTOTLE¹

Thinking critically about an economic question ultimately means weighing the pros and cons of various conceptual arguments and evaluating empirical evidence to arrive at the best possible reasoned judgment. Before the weighing and evaluation process can begin, however, you first need to collect the conceptual arguments and empirical evidence. On a personal level, we do this every day. Thus, for example, when asked, "What do you want to eat tonight?" we often respond with, "I don't know. What do you want?" Such a simple response is, in fact, a request for ideas and information about the other person's preferences. Why? It might be that you care about the person who asked you the question, or it might be that you would rather have the other person make the decision. But in either case, the purpose of your response is to arrive at a good outcome (that is, a good, normative, reasoned judgment) about what you should eat tonight.

When confronting economic issues, of course, the process is more formal, but the basics are the same. Economists, for example, are famous (or is it infamous?!) for debating alternative policy recommendations. And in business, it is common to see large corporations spend considerable sums on consultants and focus groups to help them formulate alternative business strategies that can then be evaluated. For example, when Mitsubishi Motor Manufacturing of America was charged, in a famous case, with sexual harassment by the US Equal Employment Opportunity Commission in the summer of 1996, it hired Lynn

¹A search of the internet will quickly reveal several sources that claim that this as a quote of Aristotle. See, for example, Aristotle (n. d. a) or Aristotle (n. d. b). However, the validity of the quote has recently been called into question. See the discussion at the end of this chapter for a fuller treatment of the issue and the reasoning that led to the judgment to include the quote at the beginning of this chapter.

Martin, former US Secretary of Labor, to advise it on strategies to address the problem within the corporation.²

Of course, collecting various arguments and evidence is not an end in itself. Such material is not gathered because all ideas are equally valid and therefore should be represented. Critical thinking is not an exercise in democracy; it is an exercise in finding the best possible reasoned judgment. It is precisely because not all ideas are equal that we need to search for a variety of ideas. In that way we are more likely to be able to find the best ones out there.

This chapter provides you with a guide to searching for alternative ideas and data about economic issues. And because making sense of what you find is so important to that process, it also takes a more detailed look at the notion of critical reading that was first examined back in Chapter 1. The primary value

BOX 4.1

of the American Economic Association and the American Statistical Association, and he was an active member of numerous other professional organizations including the Econometric Society, the American Philosophical Society, and the British Academy. In 1971, in recognition for his numerous contributions, he was awarded the Nobel Prize in Economics.⁴

VERNON L. SMITH

Vernon Smith's early childhood was, despite the economic hardships of the Great Depression, full of the adventure and delight that comes from growing up on a farm. Born in 1927 in Wichita, Kansas, his early education was in a classic rural one-room school house. Though his high school performance was not the best, he decided to set his sights on the California Institute of Technology for college, and so, after a year of dedicated preparatory study at Friend's University in West Wichita, he was admitted to Caltech and received a BS in electrical engineering in 1949. Three years later, he earned his master's in economics from the University of Kansas, and three years after that his PhD (again in economics) from Harvard University. His first year as a professor, at Purdue University, led to frustration trying to get his students to understand basic microeconomic theory. As a result, he began running experiments with his students and gradually began to realize that experiments were an excellent way of gathering information about how individuals really act in various market and non-market situations. His work spanned several decades and several universities, most notably the University of Arizona where he spent most of his time. Then in 2002 he was awarded the Nobel Prize in Economics for providing, in the words of the Nobel Prize citation, "the foundation for the field of experimental economics" through the development of methods and standards for using economic laboratory experiments to learn about empirical economic behavior. He is currently a research fellow at George Mason University, an adjunct scholar at the Cato Institute, and founder of both the Economic Science Institute at Chapman University and the International Foundation for Research in Experimental Economics.⁶

4.2

SEARCHING BEGINS AT HOME

Before searching for conceptual arguments and empirical evidence that can be used to construct an answer to the economic question at hand, remember the lesson from Chapter 3 and take a moment to think about what is already in your head. Are you interested in answering a positive question or a normative question? What prior experiences, information, ways of thinking, tastes, and values do you have that will affect your ability to search for alternative ideas? Do you have an *initial opinion* about the question you are thinking about? If you have an

⁴This biography was based on Lindbeck (1992a) and Nobelprize.org (1971). For a fascinating biography that speculates on the connection between Kuznet's work and his East European Jewish roots, and the impact of Kuznet's work on economics, see Weyl (2010, March).

⁵Photograph of Vernon Smith, Getty Images News. Getty Images.

⁶This biography was based on Chapman University (2010), Frängsmyr (2002), International Foundation for Research in Experimental Economics (2010), Nobelprize.org (2002), and Vernon L. Smith (2010).

initial opinion, is it the result of prior critical analysis based on conceptual arguments and empirical evidence or is it simply an opinion you have latched onto without serious thought? As perhaps can best be seen in small children who mimic the views of their parents, many people unthinkingly accept the opinions of others simply because they are fond of them. And we all know people who take a contrary view simply because they dislike a person and not because they have thought the issue out.

While reflecting on your initial state of mind, it is of course important to keep a sense of proportion. Opinions that are simply matters of taste (such as watching basketball because your mother liked to watch basketball) are fine. Likewise, there's not much harm in holding unreflective views about relatively trivial issues (such as whether it is best to pull into a parking space by going forward or by backing in). After all, life is too short to engage in critical thinking about every little issue. However, for the big issues, it is important to take stock of your initial beliefs about the question at hand. If you are ignorant of what is already in your head, you may unconsciously censor your search for additional ideas that conflict with your unrecognized view. It is a natural human instinct to be hesitant to look for alternative ideas, especially if you already have come to an initial judgment. However, if your objective is to make sure that you have made the best reasoned judgment, it is important to be able to withhold judgment until you have finished gathering ideas and evidence concerning the question at hand. After all, if your initial idea is a good one, it will ultimately stand the comparison with other ideas. And if it isn't the best idea, wouldn't you like to know rather than hold on to an inferior one?

So how do you figure out what you believe about an issue that you have never critically thought about? A simple but useful device is to write your thoughts down on paper or using a computer. It is unfortunate, but we often have thoughts that seem clear until we try to write them down. It is only after trying to write an idea down that we realize our idea is less clear or complete than we thought. By writing your opinion down along with why you hold that belief, you give yourself the opportunity to clarify your views and increase their value.

Finally, before beginning to search for possible answers to the question, think a bit about *how much effort to put into that search*. This is sometimes an issue that creates the most anxiety for students and leads to them putting off the task until there is no longer enough time to do the job well. How much searching should you do? How will you know when to stop searching and begin evaluating that information? Like many skills, the more you do it, the better you can become. However, it also helps to recognize that these are not objective (that is, positive) questions. These questions are normative ones, and the answers are themselves reasoned judgments. In broad terms, the searching should be in proportion to the importance of the question. If your boss has asked you to purchase a single box of continuous-feed computer paper, a quick call to a few office supply companies should be sufficient. You don't want the cost of your time spent searching to overwhelm any cost savings from finding a better buy. However, if your boss asks you

to decide whether your company should begin importing millions of dollars of raw materials from abroad, a deeper search for alternatives should be made because the value of the decision is so much higher. Thus, the decision as to how much to search is itself a reasoned judgment and requires that the benefits of a longer search

- If the issue is a normative one, what values do you hold that you think are relevant to it.
3. Now return to the article, finish reading it, and reflect on the author's argument:
- Describe what the main conclusion of the article is, that is, what point is the author trying to persuade you to believe.
 - Describe the positive frame(s) of reference that the author uses for looking at the positive aspects the issue.
 - If the issue is normative, describe the normative frame(s) of reference that the author uses for looking at the positive aspects the issue.

4.3

DESIGNING A SEARCH STRATEGY

Having taken stock of your own initial thoughts and beliefs, you can start looking for ideas and information that will eventually help you figure out the best answer to the question at hand. But just as an Olympic track team isn't made up of whoever happens to show up first, so too critical economic thinkers don't blindly accept whatever answer to an economic question that they first come across. They look for alternative answers, and they look for supporting reasons and evidence.

Many people find this part of the thinking process especially tedious. Typically, the anxiety is the result of not knowing where to look and what to look for. While to some extent knowing such things comes with experience, there are *see Searching Strategy Rules* that can keep you on track and help you move up the learning curve more quickly.

RULE 1: KNOW THE QUESTION • This may seem like a trivial point if you remember the material in Chapter 2, but in practice this is often a difficult rule to follow and is therefore worth emphasizing. Before searching, you need to know what the question is all about. Often times, we only have a vague sense of what the question is. As a result, we don't know where to look for ideas and end up wasting considerable time in unproductive activities. To ensure that you have a clear understanding of the question, write it down. What *exactly* and *speci cally* do you want to know? Unemployment, for example, is a poorly defined issue. What is it about unemployment that you want to know? Are you interested in the positive issue of what causes unemployment, the positive issue of what effect unemployment has on wage rates, or the positive issue of what effect unemployment has on the nation's growth rate? Or perhaps your interests are normative. If that's the case, are you interested in the issue of whether government should have programs to reduce unemployment, or the more narrow issue of whether current unemployment programs should be expanded? Every one of these questions is different and will lead you in a separate direction. You can't look for information about a question until you know what the question is.

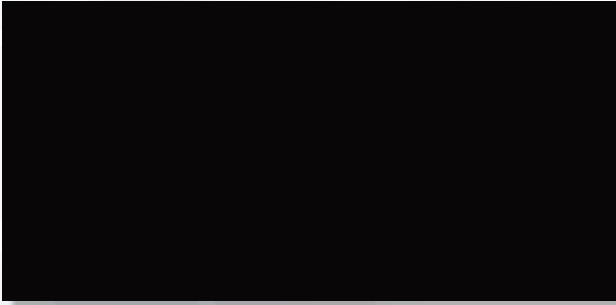
RULE 2: FIGURE OUT WHAT’S NEEDED TO ANSWER THE QUESTION • Having defined the question, the next step is to figure out what you need to know in order to answer the question. This often requires an understanding of important sub-issues. What information or data do you require to be able to start constructing a reasonable answer to the question? Of course, at the beginning you may know so little that your efforts seem fruitless. Nonetheless, if you don’t want to spend countless hours spinning your wheels in unproductive searching, it is important to make up a tentative list of things you need to know. Start by doing a little springboarding and then begin by looking for general information about the question. As you learn more, you can revise your list and make it more specific. For example, if your question concerns the causes of unemployment, and if you know virtually nothing about the issue, your initial attempt at identifying what you need to know might be simply to ask how is unemployment defined, what has been the level of unemployment over the past ten years, and how labor markets function. Once you have that information, you can try a little more springboarding, at which point important sub-issues will start to become apparent, and you can then move on to defining a more specific list of information needs.

BOX 4.2

SPRINGBOARDING

Springboarding is a useful exercise for figuring out what you need to look for when gathering ideas and information. To engage in springboarding, let your mind wander over the issue at hand and briefly jot down ideas on a piece of paper as the ideas come to you. Often times you may wish to connect the ideas by arrows or boxes. Don't worry about the appearance of the paper. The purpose is to generate ideas and record them before you forget. You can then make a more orderly list after the springboarding exercise is finished. Suppose, for example, you want to figure out what you need to know in order to decide whether voters in your town should raise \$50 million through a local tax in order to build a stadium for a minor league baseball team. After conducting the following springboarding exercise:

	BASEBALL-
	What's good about bb stadium?
	Bring in business-restaurants, hotels, etc.
	What's bad about it?
	But it just steals from local business
	Not the team's payroll.
	Community Spirit
	Advertising for area



You would be able to generate the following list of things to look for:

- What effect do minor league baseball stadiums have on a local economy?
- How important is community spirit?
- What are the effects on community development/congestion?
- What's the cost of having a tax?
- Should government be involved in things such as baseball stadiums?

RULE 3: IDENTIFY SOURCES • The final rule for making sure that your time is used productively is to work up a plan for where to search for the material that you need. You could, of course, just start wandering online or into your local library and hope that you find something. But that often results in lots of wasted time and frustration. A little bit of planning will go a long way to keeping your efforts focused in the right direction so you make better use of your time and energy.

Sources for basic information • For basic or general information in economics, a good starting place is often a textbook. Many principles of economics textbooks, for example, have specialty chapters that provide a broad introduction to a variety of subjects. In addition, there are upper-level textbooks that specialize in all sorts of topics. There are, just to list a few examples, textbooks on economic history, environmental economics, industrial organization, international economics, labor economics, law and economics, labor economics, monetary policy, and public finance. If you are new to a subject, these are often a good place to start your search. You may also find that an encyclopedia or other basic reference is a useful place to look. Traditionally, you had to go to the reference room at a library to find these materials. However, in recent years, more and more of these materials are online. As a result, college libraries are increasingly providing links to those materials through their website. And, as you know, there are lots of other non-traditional online sources, the most famous of which is Wikipedia.

Sources for more specific information • For more specific information about an issue, you will have to work a bit more to identify good sources.

- If it's information about recent economic events, there are a number of highly respected publications in the popular press. Among the weekly magazines, perhaps the best is *The Economist*. Despite its name, *The Economist* is a general news magazine on world politics, business, finance, science, culture, and (yes!) economics. Other, more specialized, news magazines that focus on business and economics include *Business Week*, *Fortune*, and *Barron's*. Among daily newspapers, *The New York Times*, *The Wall Street Journal*, and *The Financial Times* are perhaps the best sources for information about economic and business issues. All of these magazines and newspapers have websites, though some of them charge for full access to their content. And of course, there are more and more sources that can only be found online and that provide news about current economic events. Some, such as the Associated Press (<http://www.ap.org>), Bloomberg (<http://www.bloomberg.com>), and Reuters (<http://www.reuters.com>), are news services that traditionally sold their information to newspapers but now provide information directly to the general public. Others, such as Google News (<http://news.google.com>), MSN (<http://www.msn.com>), Yahoo News (<http://news.yahoo.com>), are simply distillations of material provided by a wide range of other sites. As a result, they do not have the depth of editorial control that the news services have and therefore may include sources that are unreliable.
- For information about what professional economists think about the question you're investigating, your sources are likely to be a mix of books and other monographs (that is, a shorter piece written about a single subject), online sources, and journal articles. These sources are unlikely to provide much in the way of up-to-date about events currently happening. What they can provide, however, are deeper and broader perspectives on economic issues that may help you make more sense of your topic. Books and other monographs are still published mostly in hard-copy form, though that is starting to change. As a result, you will need to check both online and in your library for these materials. In addition to the usual assortment of publishers, many books and monographs about economic issues are published by university presses and countless economic research institutes, among the latter of which include such places as the American Enterprise Institute (<http://www.aei.org>), the Brookings Institution (<http://www.brookings.edu>), the Urban Institute (<http://www.urban.org>), and the National Bureau for Economic Research (<http://www.nber.org>). Finally, there are hundreds (if not thousands!) of economic journal articles that are published every year. To search for journal articles, your best strategy is to start with a searchable database such as EconLit (<http://www.aeaweb.org/econlit>), JSTOR (<http://www.jstor.org>), and RePEc

(<http://ideas.repec.org>). While it is possible to gain access to such databases on your own, they are sometimes restricted and may charge a fee for access. Your best strategy is therefore to access them through your college library's website if possible. You should also be aware that the articles you find through such databases, because they are typically written for other professional economists, are likely to be more technical than the other materials described. But that should not stop you from doing at least a little searching. You never know what you will find, and developing the ability to search more technical economics literature is a useful skill.

Sources for facts, statistics, and data • While the above sources often have data and statistics, there are a number of publications that specialize in the reporting of such factual material. Perhaps the first place to stop is the *Statistical Abstract of the United States*. Published annually by the US Bureau of the Census, this book is available both in hard-copy and online (<http://www.census.gov/compendia/statab/>) form and contains a wealth of information ranging from basic population numbers to data on foreign trade and commerce. It is also valuable because it provides information on where to search for more detailed information. Another good starting point, especially if you are interested in a macroeconomic question, is the *Economic Report of the President*. This publication is issued every January in hard-copy form and online (<http://www.gpoaccess.gov/eop/>) and includes a large number of tables that describe the range of economic activities in the US and the world. Finally, there is an increasing amount of economic data available on the internet. While the material is sometimes difficult to find, there are a number of online sites that economists use frequently. Among the most commonly used are the Federal Reserve Bank of St. Louis's economic data site FRED (<http://research.stlouisfed.org/fred2>), Cambridge University Press's Historical Statistics of the United States (<http://hsus.cambridge.org/HSUSWeb/toc/showPart.do?id=A>), the US Department of Commerce's Bureau of Economic Analysis website (<http://www.bea.gov>), and the US Department of Labor's Bureau of Labor Statistics website (<http://www.bls.gov>). Like some of the economics literature databases, the Cambridge University Press's site charges for full access, and as a result your best strategy is to access it through your college library's website if possible.

BOX 4.3

DON'T FORGET THE FOOTNOTES!

In looking for statistical or other numerical data, be sure to read all headings, footnotes, and other labels carefully when looking at tables and graphs. Data are often presented in a variety of ways, and so things may not be what they seem like at first glance. Thus, for example, numbers may be in billions or millions, they may be in real or nominal values, they may be seasonally adjusted or unadjusted, etc. And if some of the labeling or footnotes don't make sense, don't be afraid to ask for help or look it up. Sometimes it doesn't make a big difference, but sometimes it does. And if you don't figure that out, you could make some big mistakes.

People • Finally, don't overlook the value of talking to real people! Particularly at the beginning of your search, a simple conversation with someone who is knowledgeable about the subject may save you enormous time figuring out where to start. While not everyone is going to be helpful, if you can state your question clearly and briefly, it is amazing how many people will take the time to talk about the issue, give you their views, and point you toward valuable sources of information. If, for example, you are looking for information about a proposed change in the laws governing individual retirement accounts, try contacting a local accountant or financial analyst, explaining what you want to know, and asking whether you could talk about the issue sometime. The key is to be clear, courteous, and not waste their time.

BOX 4.4

DON'T BELIEVE ANYTHING YOU HEAR, AND ONLY HALF OF WHAT YOU SEE!

My grandmother's advice may be a bit cynical, but it speaks to an important issue: How do you know which sources to trust? As first noted in Chapter 1, you can't do original research on everything. To a fair extent, you have to trust others and build on what they have already written about. The key to separating good sources from bad sources is to develop a healthy *skepticism* about everything you read, hear, or see. Don't simply accept information because it's in print or on the internet. Instead, use the following *Four Questions for Evaluating Source Reliability* for each source:

- Who are the authors?
- What evidence is there that they are in a position to know about the subject?
- What is their motivation in providing that information?
- Is there corroborating evidence from other credible sources?

If you can identify the authors (if you can't but it comes from a well established organization, that's also fine), have evidence that they know their stuff (education or training in the area, work or research experience in the area), and you can find other credible sources that say the same thing, it's generally going to be a good source. And as for motiva-

tion, be aware that all people and organizations do what they do out of some motivation. The key is that you are aware of it so that you know how to put what they say in the proper context. So, for example, if you come across two studies about the effects of the minimum wage, one from a labor union organization and the other from an industry trade group, you should know that the labor union study is likely to be motivated by a desire for higher wages, while the industry trade group will be motivated by a desire for lower costs. As a result, their analyses of the minimum wage are likely to focus more on how the minimum wage affects their desires and tend to ignore (or at least de-emphasize) other aspects of the minimum wage.

Finally, you should be aware that there is considerable disagreement among professors over the value of internet sources such as Wikipedia. While there are studies that indicate that Wikipedia in particular is generally as reliable as traditional encyclopedias, its reliability also seems to depend on the particular entry, with those that focus on controversial issues being much more likely to be biased.⁸ And if you think about the those four questions used to test reliability, the who question will be answered by answering the related question, “Who would care enough to contribute to a Wikipedia entry?” With neutral subjects such as how to calculate price elasticity of demand, it’s likely to be altruistic professors or students who have no ax to grind. But if it’s a more controversial subject, it’s likely to be those who feel passionately about the issue and therefore have a strong bias. As a result, if you use Wikipedia, or sources like it, do so with caution and be sure to look for confirmation from reliable other sources. And if you are doing course work, talk to your professor before spending too much time on such sites to see if such material will be allowed.

EXERCISE 4.2

Now is your chance to try out using springboarding to figure out what’s needed to answer an economic question. As you do this exercise, let your imagination wander and relax. Remember that this is ultimately writing for yourself.

For each of the following economic questions (your professor may wish to give you a different set of questions or restrict which one you do), do a springboarding exercise to explore the various aspects of the issue which the question addresses. Then use the results of your springboarding exercise to generate an outline list of sub-issues that you would have to investigate to answer the question.

- Should college students work while they are in college?
- Should a carbon tax adopted by the US government?
- Does antitrust policy improve the efficiency of markets?
- Was the fiscal stimulus passed by Congress in the Spring of 2009 effective?
- Has the Federal Reserve acted properly in response to the latest financial crisis and ensuing recession?
- What are the effects of deflation?

⁸For a flavor of the debate about the accuracy of Wikipedia, see the original study that argues in favor of Wikipedia (Giles (2005, December 15)), a description of the debate that followed (Wikipedia study “fatally flawed” (2006)), and a more recent but narrower study that provides additional support for Wikipedia (Study finds cancer information on Wikipedia is accurate, but not very readable (2010)).

- Does aid to developing countries help them develop?
- How should a retailer position itself in a recession?

EXERCISE 4.3

Part of knowing where to look for economic information and possible answers to economic questions is being familiar with standard sources of information. This exercise gives you the chance to become familiar with some of those sources.

1. Bloomberg – Bloomberg is an example of a private, for-profit company that specializes in providing economic news and data. Go to <http://www.bloomberg.com>, look around, and then answer the following questions:
 - Briefly describe the type of information that can be found on the homepage.
 - List the links that make up the navigation menu at the top of the homepage.
 - What would be the Bloomberg webpage address where you would find:
 - The current exchange rate between the US dollar and the British pound?
 - News about recent court cases?
 - Opinion columns?
 - The current interest rate on 3-month US Treasury bills?
2. NBER – The National Bureau of Economic Research is a private, non-profit, non-partisan research organization that engages and shares research on economic issues. Go to <http://www.nber.org>, look around, and then answer the following questions:
 - How is the NBER governed?
 - Where does it maintain offices?
 - What is the *NBER Digest*?
 - What is the *NBER Reporter*?
 - Find an NBER working paper that was issued since 2010 that deals with China, and write down the authors' names, where they work, the title of the working paper, and the NBER Working Paper number.
3. EconLit – EconLit is the American Economics Association's electronic bibliography. If you have access through your college library, go to EconLit and search for an article on tax saliency written by Raj Chetty and published in the *American Economic Review*:
 - Who are the authors?
 - What is the title of the article?
 - When was it published?
 - Read the abstract that describes the content of the article. Then describe the conclusion of the article in a single sentence.
4. Statistical Abstract of the United States – The Statistical Abstract of the United States is a statistical summary published annually by the US Census Bureau. Go to <http://www.census.gov/compendia/statab/>, look around, and then answer the following questions:

- What would be the webpage address for finding information about housing sales?
 - What would be the webpage address for finding information about crime rates?
 - What would be the webpage address for finding information about state and local government employment and payroll?
 - What would be the webpage address for finding information about the stock of money in the US economy?
5. BEA – The Bureau of Economic Analysis is an agency of the US Department of Commerce and is charged with collecting and sharing macroeconomic data. Go to <http://www.bea.gov>, look around, and then answer the following questions:
- What is the vision of the BEA? What is the webpage address where you found that information?
 - Finding data takes a little bit of work until you become familiar with the website. Look for the link “Current-dollar and ‘real’ GDP (Excel)”. Open that link, and find what GDP was in billions of current dollars for the first quarter of 2009. What was it? What was the name of the Excel file in which you found that information?
6. BLS – The Bureau of Labor Statistics is an agency of the US Department of Labor and is charged with collecting and sharing economic data about labor markets. Go to <http://www.bls.gov>, look around, and then answer the following questions:
- List the types of jobs that are available with the BLS. What is the webpage address where you found that information?
 - Finding data takes a little bit of work until you become familiar with the website. Click on the tab “Databases and Tables” that can be found at the top of the BLS homepage. Scroll down the page until you find links to the databases that have information on unemployment. Then click on the “Top Picks” link for the category “Labor Force Statistics including the National Unemployment Rate (Current Population Survey – CPS).” Find the box for the statistics “Unemployment Rate – 16-19 Yrs.”, click on that box, and then retrieve the data using the link at the bottom of the page. What was the unemployment rate for 16-19 year olds in December 2000? What was it in December of 2009?

4.4

READING CRITICALLY

Having established a plan for searching so that you can find materials to help you answer your economic question, the next step is to actually gather the materials. But then what do you do? Unfortunately, dissecting complex economic thinking and being able to separate good economic thinking from poor economic

thinking is a difficult task. If you don't know how to analyze the arguments of others, you are likely to read the material haphazardly and only get a poor sense of what the author was writing about. It's no wonder, then, that many find this process as difficult and confusing as the process of finding materials in the first place.

To make sense of all those materials you have gathered, you need to be able to analyze, that is, "pick apart" the reading material. But how do you do that?

All thinking can be thought of as being composed of nine basic building blocks called "elements of thought."⁹ When you think critically about (1) a *question*, you do so with (2) a particular *purpose* in mind (that is, why you care about the question), and you do so from (3) your own *frame of reference*. That frame of reference includes, among other things, a collection of (4) *assumptions* and (5) *concepts* that you use to think about the issue. Using your frame of reference, you can make (6) *inferences* from (7) *empirical information* that eventually lead to a (8) *conclusion*. Finally, your conclusion leads to further (9) *implications & consequences*.

BOX 4.5

ELEMENTS OF THOUGHT

Question – The point of the thinking, the issue that needs to be resolved.

Purpose – Why the thinking is occurring, the importance of the question.

Frame of Reference – The perspective used to do the thinking, the particular lens through which you work to answer the question.

Assumptions – Ideas that are used as a foundation for answering the question but which you don't prove.

Concepts – Ideas and thoughts that are used as building blocks to make inferences which lead to the conclusion.

Inferences – Ideas that follow logically from concepts, assumptions, and empirical evidence.

Empirical Information – Observations, descriptions, and data about what is.

Conclusion – The answer to the question.

Implications & Consequences – Ideas that must be true if the conclusion is true or which will follow as a result.

When writing about economic issues, writers often present these elements of thought in three major sections, the Introduction, the Body, and the Conclusion:

- **INTRODUCTION** – People who read about economic issues are often impatient and have little patience for poorly written material that does not get to the point. As a result, the introductory material must tell the reader quickly and directly what the material is about and why the reader should continue reading rather than put it aside and move on to more important matters. Introductions typically contain:

⁹There are a number of sources for learning more about these elements of thought. See, for example, Paul (1993).

- a general statement that describes the subject matter,
- a statement of that persuades the reader that the material is important and worth sticking with (here is the *Purpose*), and
- a statement of the question to be answered by the written material (here is the *Question*).

While this is a common structure, styles do differ from author to author, and as a result, some of this material (particularly the main point) may be buried later in the work. It may also be possible to figure out what the author's overall frame of reference is (here is the *Frame of Reference*). However, more often than not, figuring out the author's frame of reference is more of a detective problem and may not be apparent until you have read the entire work.

- **BODY** – The purpose of the body is to answer the question and persuade the reader that the answer that is proposed is in fact true. Persuasion is a tricky art, and what persuades one person may not persuade another. However, in general, a persuasive argument is composed of a number of claims and some sort of support to prove those claims. Thus, for example, to persuade someone that using a restaurant tax to pay for a major-league baseball stadium is bad, you might do so by claiming that such a tax would be unfair (here is a *Concept*) and inefficient (and here is another *Concept*). How, then, would you support those claims? For the fairness claim, you could begin by asserting that most people believe that taxes should be proportional to the benefit received and then argue conceptually that (here comes an *Inference*) because people who go to a stadium typically buy their food at the stadium, there would be few if any benefits for local restaurants. Likewise, for the inefficiency claim, you could support your view (here comes some *Empirical Evidence*) by showing what has happened to restaurants in communities where a restaurant tax has been imposed. Claims generally require some combination of conceptual argument and empirical evidence as support. Writers who provide a variety of support for their claims are typically more persuasive than those who simply bluster through with a series of unsupported claims.

- **CONCLUSION** – At a minimum, the written material must finish with a clear answer to the question initially posed (here is the *Conclusion*). However, many authors (here come some *Implications & Consequences*) go beyond that to include comments about what that answer means in the larger scheme of things and why that is important. For a long piece of writing, it may also be useful to briefly outline the logic that was used to come to the answer so that you are sure that the reader understands what has been shown and why it is important.

Good critical reading looks for these various elements of thought when reading the works of others. A useful way to ensure that you are reading critically is to follow the *Five Rules for Good Critical Reading* listed below:

RULE 1: SKIM THE READING MATERIAL • Begin the reading process by skimming the reading material to get a sense of the structure of the article. After skimming the material, you should have a sense of where the introduction ends and the body begins, and where the body ends and the conclusion begins.

RULE 2: ANALYZE THE INTRODUCTION • Next, return to the introduction and identify the subject of the reading material, see if the author tries to persuade you that this subject is important and worth reading about, and whether the author states the question (perhaps implicitly by asserting the conclusion) at the beginning of the material. While not all authors are so clear, make out as best you can the subject, importance, and especially the question from the introductory material. Remember that until you identify what the author's question is, it is hard to make sense of the arguments. This is an important step!

RULE 3: ANALYZE THE BODY • Identify the basic claims that the author uses to persuade you that the conclusion is correct. A useful way to make sense of the body is to actually list those claims and note for each whether any assumptions, conceptual arguments, or empirical evidence were provided in support.

RULE 4: ANALYZE THE CONCLUSION • Determine whether the author provides an answer to the question and whether the author extends the material by talking about the consequences or implications of the material.

RULE 5: SUMMARIZE YOUR THINKING • Finally, before you lose your insights, write a summary of what you have discovered through your analysis. This is not a condensation of what the author wrote. This is a summary of your analysis. Make note of the various parts you have identified. In addition, be sure to write the summary in your own words. If you find yourself groping for words or simply linking up a series of quotes from the reading material, chances are that you have not yet grasped the material fully.

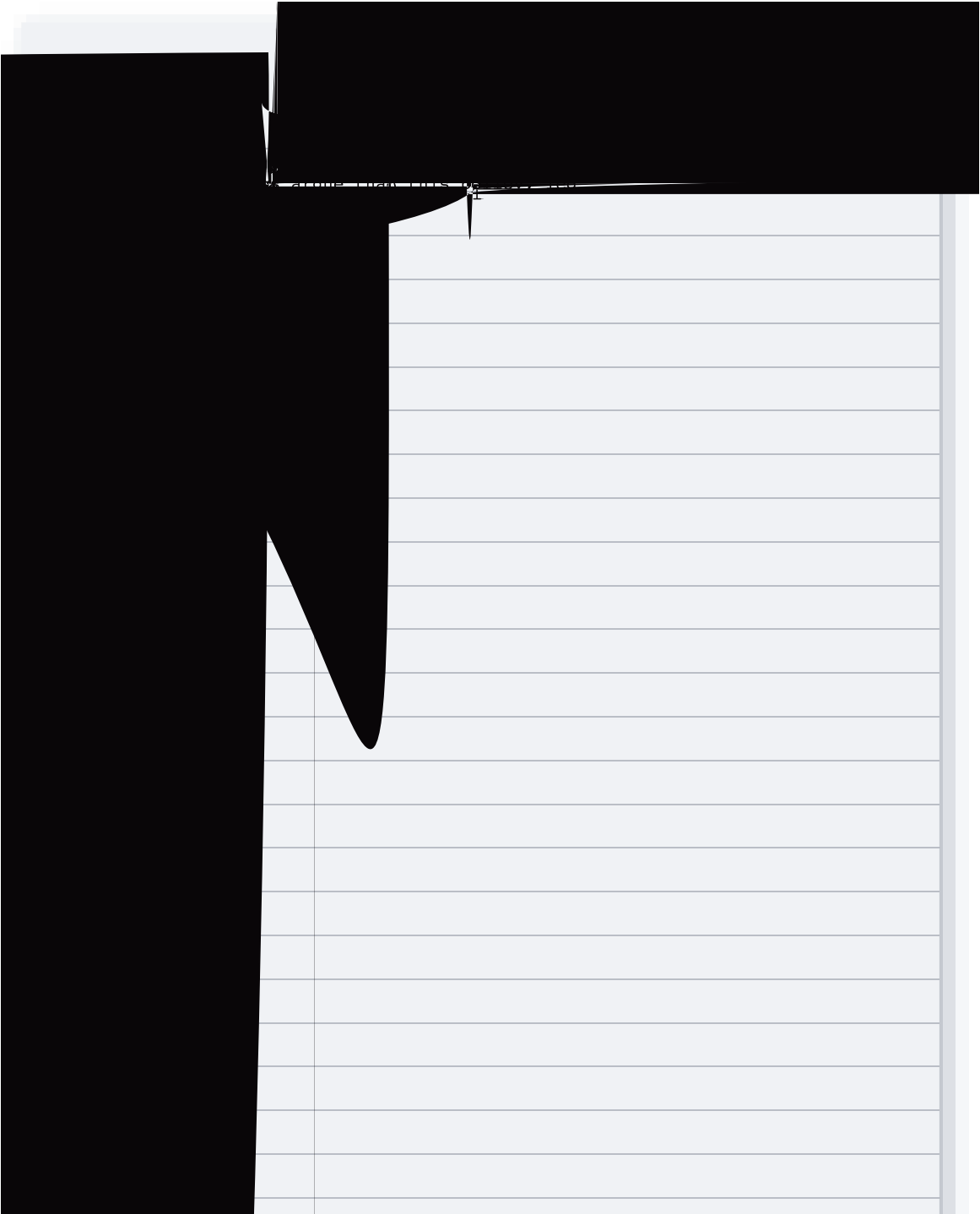
BOX 4.6

CAN YOU ANALYZE THIS KNOT FOR ME!?

People use the word analyze all the time. Sports commentators “analyze” a quarterback's performance during a football game. Political commentators “analyze” the latest rumors about the Congress and the President. Even people on the street “analyze” the behavior of their friends and acquaintances. But what does the word “analyze” really mean? In many cases, it just seems to be a fancy word for “describe” or “explain.” Actually, the word “analyze” comes from an ancient Greek word meaning to “loosen up,” to “pull apart,” or to “undo.” Hence, in economics to “analyze” means to take something complex and break it up into smaller, recognizable parts in order to identify its essential nature.¹⁰

¹⁰For an in depth analysis (!) of the word “analysis”, check out Beaney (2009).

Our city has for several years debated what to do about the city's empty, money losing parking garages. With today's tight budgets and the need to bring the downtown area back to life, it is clear that the best solution to this problem is to drastically reduce



EXERCISE 4.4

is exercise takes you through the Five Rules for Good Critical Reading so that you have a better understanding of how to use those rules and how those rules can help make sense of the economic thinking of others.

For this exercise, choose a substantive article from one the following publications (your professor may wish to point you to a specific article) and analyze it as described below:

- *e Economist* (<http://www.economist.com/leaders/>).
- *e Guardian* (<http://www.guardian.co.uk/commentisfree>) .
- *e New York Times* (<http://www.nytimes.com/pages/opinion/index.html>).
- *e Wall Street Journal* (<http://online.wsj.com/public/page/news-opinion-commentary.html>).

1. Rule 1: Skim the Reading Material – Skim the article to get a general sense of what it is about. Then look for where the introduction, body, and conclusion begin and end and state which paragraphs contain the introduction and which paragraphs contain the conclusion. For example, the introduction is in the first X paragraphs; the conclusion is in the last Y paragraphs.
2. Rule 2: Analyze the Introduction – Reread the introduction, and look for the subject, why the subject is important, and what the question investigated by the article is. Then answer the following questions:
 - What, according to the introduction, is the subject of this article?
 - What reasons does the author give to try to persuade you that this subject matter is important?
 - If the question examined by the article is stated explicitly in the introduction, what is it? If it is not explicitly stated in the introduction, what do you think it is? Note that the question may be stated implicitly by asserting the answer in the introduction.
3. Rule 3: Analyze the Body – Reread the body, and follow the instructions below.
 - Is the body divided into sections? If so, what are those sections?
 - List at least two claims/assertions that are made in the body.
 - What assumptions (if any) are used to support these claim?
 - What conceptual arguments (if any) are made in support of these claims?
 - What empirical evidence (if any) is provided in support of these claims?
4. Rule 4: Analyze the Conclusion – Reread the conclusion, and answer the following questions:
 - Does the author answer the question (stated implicitly or explicitly in the introduction) in the conclusion?
 - Does the author extend the material by writing about the consequences or implications of the material? State at least one consequence or implication that the author describes.

5. Rule 5: Summarize your thinking – Much of your thinking has already been summarized above. Now consider the bottom line. If you were persuaded by the article, explain what was key in persuading you. If you were not persuaded by the article, explain why you weren't persuaded.

4.5

CREATE YOUR OWN SOURCE

Looking for the various sources of information described above and making sense of what they say is an important part of answering economic questions. However, there is still another source that may not have occurred to you: your own economic thinking based on the economic theories, models, and methods of analysis that you already know. In many ways, this is at the core of what it means to be an economist: thinking for yourself using all the economic tools that you have learned and that are at your disposal.

The set of tools that are at your disposal will obviously depend on what economics courses you have already taken. The more economics courses you have taken, the wider the variety of tools that you will have and the greater will be your ability to use those tools. But even for introductory economics students with only a couple of months of study under their belt, there are a number of tools at your disposal.

The tools that you learn in a Principles of Microeconomics course, for example, typically include the basic model of supply and demand, the basic model of monopoly, and the concept of price elasticity of demand. (There are others, of course!) As a result, if you were investigating the effect of the minimum wage, you could work up your own theory by sketching out a model of the market for labor using the basic model of supply and demand. Then, if you wanted to push your thinking further, you could note the effect of the minimum wage on the wage rate, and use that observation to predict using another supply and demand diagram what effect the minimum wage would have on the prices of goods that are produced with workers who are paid the minimum wage. Finally, if you really want to do a comprehensive analysis, you would then repeat this last step using the basic model of monopoly (because, after all, not all markets are perfectly competitive).

Likewise, in a Principles of Macroeconomics course you develop a set of tools for making sense of macroeconomic issues. Because there is less consensus among economists about the appropriate models for understanding macroeconomics, the specifics will vary according to your textbook and what your professor thinks is best. However, in general, this typically includes the concepts of gross domestic product and of circular flow; various theories of unemployment, aggregate demand, and aggregate supply; and definitions for calculating real and nominal changes in prices and gross domestic product. Thus, for example, if you were investigating the impact of the Federal Reserve lowering interest rates, you could work up your model of aggregate demand

and supply and, using the logic of that model, figure out how lower interest rates affects the macroeconomy.

In both the examples posed above, the result of your own economic analysis of the question at hand would provide you with an important source of information that you could use along side the other sources you gather. And even if you end up concluding that your analysis wasn't quite right, your engaging in your own independent analysis has deepened your understanding of the issue and helped put the thinking of other sources in a better context.

BOX 4.7

WHAT'S THE DIFFERENCE BETWEEN A THEORY AND A MODEL?

The distinction between a theory and a model is one on which economics students get confused. There seems to be a general sense that a theory is somehow more important, more fundamental, or more general than a model, while a model is, again in some general sense, more in the way of a specific realization of a theory or even just a simplified but specific description of some economic circumstance or behavior. Thus, for example, we might talk about the **theory** of supply and demand as being the general statement that the market price in a competitive market is determined through the haggling of buyers and sellers and results in a price that is equal both to the value that buyers place on the marginal unit and to the marginal cost that sellers incur in making that marginal unit. By contrast, then, a **model** of supply and demand would be a specific diagram or set of equations that embodies the theory and illustrates what price will occur in a competitive market. Having noted that, however, it is important to note that economists as a rule do not pay much attention to the distinction between the two words, and indeed for those who do, there is no agreement as to how to define the terms. From a practical perspective, economists treat the words "theory" and "model" as essentially the same. So you were right to be confused!¹¹

EXERCISE 4.5

is exercise gives you the chance to put on your economist hat and actually do economics. The two issues below allow you to do so from a microeconomic and from a macroeconomic perspective. If this book is part of a course, your professor may wish to give you another issue or refine the nature of the issues below.

For each of the issues below, work up an analysis of that issue.

1. Who pays the sales tax on a good traded in a perfectly competitive market?
 - Start by sketching a supply-and-demand diagram for a perfectly competitive market. Then, sketch the effect of the tax assuming that the legal obligation for the tax falls on the firm who is producing and selling the

¹¹Some economists do care about the distinction. See for example Klein and Romero (2007). However, as the following references indicate, this is far from a settled issue (Warning: The following references may be a bit difficult to understand): Frigg (2006), Koperski (2006), and Mayes (2005).

taxed good. Next, determine whether consumers are better or worse off as a result of the tax by comparing the price they pay before and after the tax, and by comparing the quantity they buy before and after the tax. Lastly, determine whether firms are better or worse off as a result of the

will help you to think more clearly and effectively. In addition, for those whose livelihood depends on the thinking, analyzing, and developing new ideas, credibility is a terribly important asset, and once it's lost it's very difficult to get it back. Think, for example, of how you would react if you discovered that some favorite song writer/performer of yours was in fact stealing songs from other writers. Admittedly, doing a sloppy job on a college paper may not mark you for life, but it may have serious repercussions for your grade (most professors take the issue of *plagiarism* very seriously). And in any event, isn't college about taking the opportunity to develop those skills and habits that you can draw on later in your life? So take the time to invest in yourself rather than simply go for what is expedient.

In addition to personal reasons why you might care about this issue, there are also social reasons why it is important to keep track of your references and document them properly. Your thinking and writing does not occur in a vacuum. Your work both in college and beyond is part of a long conversation that has been going on long before you arrived on the scene and will continue long after you are gone. You build on the ideas and thinking of those who came before you, and those who come after you, in big ways and in small ways, will build on what you do. Just like an online chat room where things would fall apart if the various comments did not come with a label to indicate who said what, so it is important for the sake of the conversation that you document your work properly. And don't forget the value of courtesy. Suppose, for example, that you were talking directly to a group of friends about something that you did, and one of those friends had given you the inspiration to do it. Would you make note of that in the conversation? Perhaps not, but many would. It's just a small thing, but friendship is built on such small things. Indeed, the current slang "props" which is short for proper respect is recognition of that small but important connection between people. Economic thinking is, believe it or not, quite similar. You may not have personal friendships with the people whose work you have used (indeed some of them may be dead!), but you, all the people whose work you read, and all the people who read your work are part of a kind of virtual community. And just as you like to be recognized for your contributions to the conversation, so others do too.

So, how do you keep track of your research and cite the work of others properly? In part, it's a matter of context. In conversation, it might be a simple passing reference or, if the person is there, a simple nod of the head in that person's direction. In an informal blog, it might involve again a simple passing reference or pasting a link that would allow readers to find the material for themselves. And in a formal paper, there is typically a standard format that is expected. In economics, the generally acceptable style is based on the one developed by the American Psychological Association (hence, "APA Style").¹²

¹²A description of the APA style can be found in numerous places, and college libraries often write up their own summary and make it available to students on their websites or in hardcopy form. See, for example, APA Style. (2010, May 5) for a site produced by Purdue University.

But what they all share is a way of recognizing the work of others and helping the reader or listener find those other works. In conversation it can be more informal because you have the chance to explain further if there is interest. In writing, you have to be more formal because your reader can't talk directly to you. Using a specific style (such as the *APA Style*) is just a way of making it as easy as possible for the reader. Because all the parts of the citation or reference (author, title, date, etc.) are always in the same place, the reader can more easily find the information desired.

BOX 4.8**WHEN REFERENCES GET COMPLICATED**

Referencing printed materials are, for the most part, pretty straightforward. Internet sources are a bit more difficult, but standard referencing styles are slowly developing efficient ways to reference such material. But then what do you do when you come across something that just doesn't fit the standard case? A good case in point is the quote at the beginning of this chapter:

*It is the mark of an educated mind to be able to entertain
a thought without accepting it.*

--- ATTRIBUTED TO ARISTOTLE

I was already familiar with the quote before writing this book. Because it is a nice, succinct statement of an important point of the chapter, I wanted to include it in the chapter. But when I went looking for a source, I couldn't find one. Sure, I could find lots of online sites that claimed it was from Aristotle, but none of them told me where. I began to get suspicious, so I started roaming through some ebook versions of Aristotle. Still no luck even allowing for the fact that Aristotle wrote in ancient Greek and I was search through different English translations. Finally, I happened upon a blog by Jeremy McGinniss at Davis College and an attached comment by Robin Smith in the Philosophy Department at Texas A&M University.¹³ After investigating their credentials, I concluded that the quote was in fact a corruption of something Aristotle wrote, but not quite what he originally seems to have intended. So what to do? I decided that whether the quote was from Aristotle or not, it still had something important to say, it said so clearly, and therefore I would keep it in the chapter. But I also realized that I had to document the nature of the quote and give due credit to Jeremy McGinniss and Robin Smith.

¹³Both references (McGinniss, J. (2009, February 22) and Smith (2009, November 20)) are located at the same website.

BOX 4.9

A RISING STAR IN ECONOMICS: RAJ CHETTY

Raj Chetty received tenure and a full professorship in economics at Harvard University in 2008 at the age of twenty-nine, one of the youngest to do so in the department's history. Before coming to Harvard as a professor, he earned his bachelor's degree (2000) and PhD (2003) from Harvard, and was a professor at the University of California at Berkeley. He is also the director of Harvard's Lab for Economic Applications and Policy, co-director of the Public Economics Program at the National Bureau of Economic Research, and recipient of numerous awards including the 2008 Young Economist Award from the American Enterprise Institute. His research focuses on measuring the effect and effectiveness of public policies of all sorts: tax policy, unemployment insurance, education, etc. What distinguishes his work is his masterful use of economic theory and his ability to tease out of limited data the answers to questions that others may have asked but could not answer. And if the data aren't there, he designs the experiments to generate the necessary data. In a novel, recent study, for example, he found evidence that high quality teaching *at the kindergarten level* (!) results in substantial increases in adult earnings even if the effect of that teaching does not show up in higher tests scores in middle school or high school.¹⁵

EXERCISE 4.6

Final exercise for this chapter gives you a chance to practice writing references in a proper format. Enjoy!

Using the APA Style or an alternative style defined by your professor, write a list of references for the material you found and worked with in Exercises 4.1, 4.3, and 4.4.

SUMMARY

The answers to most economic questions are reasoned judgments. As a result, it is difficult to know if a proposed answer is the best without comparing it to other possibilities. Critical economic thinkers gather a variety of views and empirical evidence about the question they are interested in to assure that they end up with the best possible answer. In searching for answers, always begin by taking stock of yourself. Be particularly aware of possible initial biases that may hamper a full search, but don't overdo it. The amount of searching should be proportional to the importance of the question. To make sure that your time

¹⁵This biography was based on Emerging Economists: International Bright Young Things (2008, December 30), Chester (2007, September/October), Chetty (2010), Chetty, et al. (2010), and Zhang (2008, December 9).

is spent productively, be sure you know what the question is before you begin searching. Then conduct a springboard exercise to identify what you need to know in order to answer the question. Finally, invest some time identifying potential sources of information before you start so that you don't waste your time. Once you have the sources, read them with a critical eye. To do that, begin by skimming the material to determine where the introductory material, the body, and the conclusion begin and end. Next analyze each section using the elements thought. Finally, write a summary in your own words to ensure that you understand the material and to make it your own. Also be sure to include yourself as a possible source. You can do that by using the theories, models, and methods of analysis that you have learned in your economics courses to do your own analysis of the issue at hand. Finally, keep track of what you find, where you found it, and who wrote it. Good researchers get the most out of their sources by keeping accurate and full records, and others will appreciate your doing so.

KEY CONCEPTS

APA Style	Initial Opinion
Assumptions	Implications and Consequences
Concepts	People as Sources
Conclusion	Plagiarism
Creating Your Own Source	Purpose
Elements of Thought	Question
Empirical Information	Skepticism
Five Rules for Good Critical Reading	Sources for Basic Information
Four Questions for Evaluating Source Reliability	Sources for More Specific Information
Frames of Reference	Sources for Facts, Statistics, and Data
Good Record Keeping	Springboarding
How Much to Search	Three Major Sections of Economic Writing
Inferences	Three Searching Strategy Rules

REVIEW QUESTIONS

1. Why is it important to search for alternative answers to an economic question?
2. Why is it important to be aware of your own frame of reference before searching for answers to an economic question?
3. Why is it important to spend time making sure you know what the question is before beginning to search for possible answers?
4. What role does springboarding play in searching for possible answers to economic questions?
5. What good is the Statistical Abstract of the United States?
6. What is the meaning of the word "analyze"?

7. Why is important to write a summary when you analyze the writings of others?
8. Describe what should be in a good introduction.
9. Explain why it is important to use conceptual arguments and empirical evidence to support your claims.
10. Why is it important to restate your main point in your conclusion?

Finding the Best Answer

INTRODUCTION

The last step in thinking critically about an economic question is to sift through the various views and empirical evidence collected in order to put together the best possible answer to the question. In going through that process, it is important not to allow hidden biases and prejudices to cloud your ability to weigh the various arguments honestly.

INTELLECTUAL COURAGE

Intellectual courage means considering seriously and fairly all ideas, even those that you or others may find repugnant. While a noble ideal, it is sometimes difficult to put into practice because of our emotional attachment to ideas and to other people. The key is to recognize those attachments so that you can begin thinking how to deal with any conflict that you might have.

RESOLVING CONFLICTS

If you have done your work, the best answer to your economic question will be contained within the various views you have collected and analyzed. If there is no disagreement among those views, the task of putting together your best answer to the question is relatively straightforward. However, if there are disagreements, it is important to sort through the various views in a methodical way. Spreadsheets are a useful device for helping you conduct that process.

CRITICAL WRITING (REDUX)

Because so much economic thinking requires that you communicate the results of your thinking to others, it is important to be able to do so effectively. The first step is to make sure you have completed your thinking process first. Then, keeping your purpose always in mind, present your material in a clear and logical manner so that you have the greatest chance of getting your point across to your reader.

5.1

INTRODUCTION

When the facts change, I change my mind; What do you do?

- JOHN MAYNARD KEYNES¹

Finding an answer to an economic question is, of course, the point of critical economic thinking. Well-run businesses, for example, don't work up lists of possible answers for the fun of it. They work up such lists in order to come up with the best answer that can be used to take action. Ultimately, that is the point of your engaging in critical economic thinking – to answer economic questions through reasoned judgments that are based on the best logic and evidence you can muster so that you can use those answers to get on with your life. Unfortunately, two problems often arise in deciding which answer is the best. The first problem is that otherwise reasonable people sometimes revert to *hidden biases* when they make decisions, despite honest efforts to develop a good frame of reference and to search for answers without prejudice. In such cases, the ultimate decision is not the result of weighing all the gathered materials honestly and with an open mind. Despite all their initial efforts, their decision is predetermined. It is not the result of critical thinking.

The second problem arises out of how to sort through the confusion of conflicting answers and information. Suppose, for example, that your company's sales in South Korea are falling because of increased competition. Your marketing department may argue strongly for starting up an advertising campaign. On the other hand, the production department may argue for getting out of South Korea and concentrating on South Africa where it may be possible to establish some production facilities that could provide the foundation for future expansion throughout southern Africa. The marketing department responds by claiming to have numbers that show the South African option just won't work. You know that both the marketing department and the production department are filled with bright, hard working individuals. But you also know that while they care about the company, they care more about the success of their own department and so may have a biased view of the issue. How do you sort the issue out? If you make the right decision, your company prospers; if you make the wrong decision, your entire global strategy may be in jeopardy, and you may be out of a job!

Overcoming the first problem requires a certain degree of *intellectual courage* to pursue ideas wherever they lead, even if it means having to alter your initial view of the issue. While such virtue may sometimes be difficult to put into practice, the more you are aware of your own frame of reference the more likely you will avoid making decisions that are not supported by good reasoning and

¹The quote is from taken from Alfred Malabre's history of the complicated relationship between business people and politicians on the one hand and influential economists on the other. See Malabre (1994, p. 220).

BOX 5.1

2

macroeconomics. Soon thereafter, his health deteriorated as a result of a heart attack. However, with the advent of World War II, he turned all his energies to the problem of how to finance the war effort and how to deal with the eventual transition to a peacetime economy. Among the institutions that came about as a result of his work was the International Monetary Fund and the World Bank. In 1946 he died at the age of sixty-two as a result of another heart attack.³

BOX 5.2

ARTHUR LEWIS



Arthur Lewis was born in 1915 in St. Lucia to Antiguan parents who both taught school. Though his father died when he was only seven, leaving his mother to raise him and his four brothers alone, he was a bright child and finished high school at the age of fourteen. After working several years as a civil service clerk, he won a scholarship in 1932 to study at a British university. That, however, created a dilemma for him. He wanted to study engineering, but only careers in law or in medicine were open to blacks in British colonies at the time. Colonial governments and white firms would not hire black engineers. Determined to follow his mind, he decided to study business administration at the London School of Economics (an area that blacks could get jobs in and that kept future career options open). However, he did remarkably well at the London School of Economics, and in 1937 upon graduation he was offered a scholarship to continue on for a PhD in economics. By 1940 he had completed his PhD, and by 1948 he was a full professor at the University of Manchester. After that, his career accelerated with him eventually writing several books, numerous articles, and holding a number of academic and professional positions: economics professor at Princeton University, president of the University of the West Indies, founder of the Caribbean Development Bank, and several other positions with the United Nations. In 1963 he was knighted by Queen Elizabeth II, and in 1979 he received the Nobel Prize in economics. His contributions to economics are in several areas: industrial economics, world economic history, and development economics. One contribution in particular is telling of his intellectual courage. In his work on world economic history and economic development, one of the things that perplexed him was the fact that the early industrial revolution in Britain was characterized by rising profits for capitalists but stagnant wages for workers. The reason for the confusion was that standard economics argued this couldn't happen, that economic growth would inevitably lead to a gradual fall in profits and a rise in wages. Eventually it occurred to him that the accepted theory was wrong because it failed to take account of the enormous population growth that had occurred at the same time. And though many were outraged by his view when he published his thinking in 1954, he stuck to his argument. Eventually, the economics profession came around to his view and now sees it as one of several lasting contributions to economic understanding. In 1991 he died and was buried on the grounds of the St. Lucian community college that bears his name.⁵

³This biography is based on Bloomsbury Group (2010), John Maynard Keynes (2010), and New York Times (2010). Keynes has been the subject of a number of biographies. Two recent books include Clarke (2009) and Skidelsky (2005).

⁴Photograph of Arthur Lewis, Hulton Archive, Getty Images.

⁵This biography was based on Arthur Lewis (economist) (2010), Lindbeck (1992b), and Nobelprize.org (1979).

5.2

INTELLECTUAL COURAGE

Intellectual courage in the words of Richard Paul can be defined as, “the willingness to face and fairly assess ideas, beliefs, or viewpoints to which we have not given serious hearing, regardless of our strong negative reactions to them.”⁶ It all sounds good. Who wouldn’t argue for the fair assessment of all ideas, beliefs and viewpoints? But putting it into practice is more difficult than one might realize.

Perhaps a short story will help illustrate. When I was very young, my mother used to remark occasionally that the soda Dr. Pepper had a disgusting taste. As is typical of small children, I accepted this opinion of my mother’s as fact and without question. Indeed, I even adamantly argued the point with friends despite the fact that I had never actually tasted Dr. Pepper. Then one day at some sort of Scouting event where I was visiting with my family at the local National Guard armory, I got thirsty. So I went off to a side room where there were vending machines, and on a lark bought a Dr. Pepper. I opened the can and with some trepidation tasted it. At first I wasn’t sure what it tasted liked. So I took another sip. It wasn’t bad. In fact, it tasted pretty good! Wow, I thought – my mother was wrong! Later on, mustering up my courage, I told my mother who remarked rather casually (this was after all not really that big a deal in the larger scheme of things) that she disagreed and repeated her view that it was disgusting.

This issue was obviously a trivial one, and I know now that it is simply an example of a difference in taste (literally!) which as we know is not relevant to reasoned judgments. But the fact that I have such a strong memory of the event (I even recall the soda room had yellow walls) points to its real significance – it was one of my first experiences with intellectual courage.

The difficulty with intellectual courage is that it requires considering seriously and fairly ideas that others (perhaps even yourself) find repugnant. And with that comes the fear of losing the approval of others like parents, friends, or colleagues whose opinions you care about. And that fear is not without reason. Think about the repercussions of deciding (through reasoned judgment) that the “wrong” political party is actually advocating the better policies. Or, consider the hostility or even ostracism that might greet your decision (again after reasoned judgment) to leave the religion of your childhood. Clearly, there are issues where following the logic of one’s own mind, if it leads to a conclusion that is different from the one that others whom you care for hold, can create significant conflict.

Of course, economic issues typically don’t rise to the level of political or religious identity, but it is still common for people to have strong economic views that they have never really thought out. Examples of such views include being in favor of or against free markets, government regulation, labor unions, and taxation. And while there may be conflicts with loved ones, it is more likely with economic issues that the conflicts are with friends or with co-workers. The case of whistleblowers is a classic example. What do you do if after critical thinking you conclude that your company is doing something that is seriously wrong,

⁶Paul (1993, p. 470).

either for the company's economic future or for society? To become a whistleblower is to risk alienating co-workers and losing your job. But to say nothing can create enormous internal conflict and stress as well.

So what's a clearheaded critical thinker to do? Many hide from the problem by never thinking about potentially controversial issues. A better solution is to recognize that the problems stems from the fact that you have two potentially conflicting values – arriving at the best solution to the issue at hand and maintaining ties (which may include employment) with people whose opinions you care about. To solve the problem, take stock of your views about the issue (this was the lesson of Chapter 3) as well as the views of others (that was the lesson of Chapter 4); determine as best you can where those views come from and to what extent they are based on reasoned judgments; and finally put the issue in the broader context in which you weigh the importance of coming up with the best solution to the economic issue versus your relationship with those whose views you care about. In short, the solution is to realize that the problem that you need to think critically about is bigger than originally realized. But having made that realization, you can then begin thinking out the answer to that bigger issue, of which the original economic question is now just a part.

EXERCISE 5.1

is exercise asks you to think about the nature of intellectual courage in an economic thinking context and why it is sometimes a difficult issue. is exercise only asks you to explore two fictitious cases. However, if you are interested in developing further insights about the nature of intellectual courage, you may want to reflect at a later time on your own experiences with conflicting values and intellectual courage.

Case 1: Personal Circumstances – Suppose a healthy, recently retired couple has approximately \$800,000 in retirement investments with 75% of it in stocks and the remaining 25% in bonds and money market funds. Because of recent macroeconomic problems, they are adamant that they should reduce their holdings in the stock market to 10% so that 90% will be in bonds and money market funds. Suppose further that you are the child of this couple, have recently graduated with a master's degree in finance, and believe that your parents' decision is a foolish one based on your knowledge of how financial markets work and the fact that it is likely your parents will need retirement income for at least another twenty years. Finally suppose that your parents are set in their ways and don't take kindly to criticism about how they manage their affairs.

- What is the argument for raising this issue with your parents? What would be gained by doing so? What would be the cost of doing so?
- What is the argument for not raising the issue with your parents? What would be gained by not saying anything? What would the cost of not saying anything?

- Given the conflict, describe a plan for thinking out whether to raise the issue or not.

Case 2: At Work – Suppose you work for a major corporation in its marketing division. Without any internal discussion, the head of marketing has chosen to launch a new ad campaign, has informed the CEO of the campaign, and chosen you to present the details of the campaign to the CEO. There are, however, some in the division whom you respect and who are arguing that the campaign is wrongly focused, poorly designed, and therefore likely to fail.

- What is the argument for you seriously looking at this issue before your presentation? What would be gained by doing so? What would be the cost of doing so?
- What is the argument for not investigating this issue? What would be gained by not investigating the issue? What would be the cost of not investigating the issue?
- Now suppose that you go ahead and investigate the issue and become convinced that that the campaign would do serious damage to the company. What are your options at this point? Which option should you choose? Explain why you think that is the best choice?

5.3

SORTING OUT CONFLICTING ARGUMENTS AND EVIDENCE

If you have done your work well, the best reasoned judgment will be contained in the various views (which, you should recall from Chapter 4 includes using your own economic thinking as a source) that you have collected and analyzed. If all the materials that you have collected are in agreement, and assuming that you have made an honest attempt to find competing views, you are done. Simply make that common view the answer to the question. Indeed, what else can you do if there is only one answer that can be imagined!

Unfortunately, it is much more common to find that your collection of various views is not in agreement and that there are some important conflicts among those views. If that is the case, your job becomes more difficult.

To deal with such conflict, begin by taking a step back to get a general perspective. What is the nature of the disagreements? Is it over matters of fact? Or are there more subtle reasons for the disagreements tied to such things as logic, different normative or positive perspectives, or differences in the breadth or depth of the arguments? Clearly, if you are to sort out the issue, the first step is to understand the nature of such disagreements.

A useful device to make sense of all this confusion is a *spreadsheet*. Suppose, for example, that the question you are interested in is “Are competitive markets fair?”, and you have four sources for views on that question: Adam Smith’s *Wealth of Nations*, Karl Marx’s *Capital*, John Maynard Keynes’s

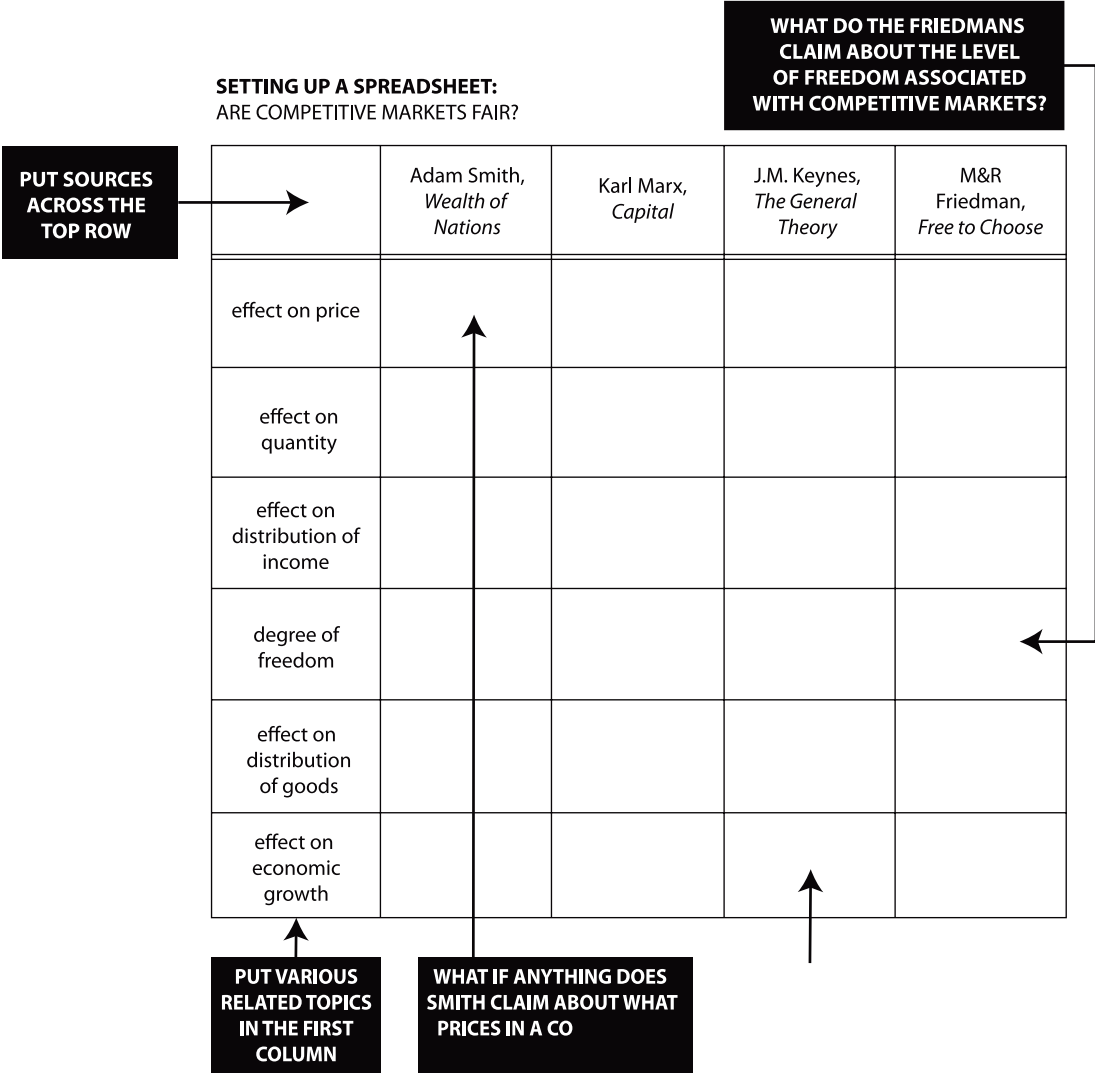
e General Theory, and Milton and Rose Friedman's *Free to Choose*.⁷ Suppose further that after doing a little springboarding and after critically reading your sources you decide that in order to answer this question, you need to know what effect competitive markets have on prices, output quantities, the distribution of income, the degree of freedom people have, the distribution of goods among people, and the level of economic growth. To construct a spreadsheet to help sort out these six sub-issues and figure out whether competitive markets are fair, take a big piece of paper, and list the four sources you have consulted across the top of the piece of paper. Then on the left side of the paper list the six sub-issues (that is, the things you need to know) that are connected to your question. In general, the list of sub-issues that you need to know about before answering an economic question may come from a variety of areas. You may find, for example, that returning to your original springboarding can provide you with the list. You may also be able to generate the list by scanning the results of your analyses of the various authors. Finally, draw a grid so that you have a box for every sub-issue/author combination.

Having set up your spreadsheet, briefly note the claims of the various sources on each of the sub-issues on your sheet. Such an effort allows you to quickly identify where there are conflicts and where there are not. Scan your spreadsheet from left to right for each sub-issue. If there is no difference of opinion about the sub-issue, you're done with that sub-issue. Make note that there is no conflict, and move on. If there is a disagreement about the sub-issue, make note of that conflict for future reference, and move on to the next sub-issue. If you have done your work well in identifying the major sub-issues that are connected to the question that you are concerned about, then the spreadsheet should give you a good overview of where the conflicts exist.

The next step is to return to each sub-issue where there were conflicting opinions and consider in more detail the assumptions, conceptual arguments, and empirical evidence used by each of your sources to support their claims. There are no simple rules for sorting out such disagreements. However, all claims need to be supported by some mix of assumptions, conceptual arguments and empirical evidence. To determine how good the different opinions are, you can also use the *Six Standards for Evaluating Conflicting Claims* – *clarity, accuracy, relevancy, depth, breadth, and logicalness* for assessing how well someone argues for their claim.⁸ Finally, be sure to use your own theoretical and empirical knowledge of economics to help sort out the disagreements and come to a decision as to who has the better view. After reviewing each argument, ask

⁷These books are available in hardcopy form as well as in a variety of other formats. See, for example, Friedman and Friedman (1980), Keynes (1936), Marx (1867), and Smith (1937). The Friedmans' *Free to Choose* was also a 10-part PBS television series and is available online and on DVD (Latham and Filkin (1980)). Marx's *Capital* is actually composed of four volumes, three of which were completed after Marx's death by Friedrich Engels based on drafts that Marx had left. For details see Das Capital (2010).

⁸A list like this is common in many descriptions of critical thinking. See, for example, Paul (1993).



BOX 5.3

SIX STANDARDS FOR EVALUATING CONFLICTING CLAIMS

CLARITY • Is the author's purpose, conceptual arguments, empirical evidence, and conclusions clearly presented? It's difficult to accept views that are not clearly understood, and it may in fact be quite risky to do so. Do you really want to make a business decision, for example, based on a view you don't understand?

ACCURACY • Is the information presented by the author accurate? How do you know? Often times we accept information and data based on the reputation of the author or because the information and data don't conflict with our own understanding of the issue. But be careful. Even the best of authors can make mistakes, and our own casual assessment of accuracy may be clouded by a desire to keep our initial opinion. A good writer will provide references for information whose accuracy is not obvious.

RELEVANCY • Is the information provided by the author relevant to the topic? Sometimes information is provided that is clear and accurate but has no bearing on the topic at hand. Thus, for example, in deciding whether to build a factory in Malaysia, information about labor productivity in nearby Singapore may be irrelevant because of the vast difference in the average level of education in Singapore compared to Malaysia.

DEPTH • Is the author's claim supported by careful reasoning and strong empirical evidence, or does the author simply move from one assertion to another with no support? Does the author's view address the complexities of the topic or only address the topic superficially? Can you trace out important and far reaching implications with the author's view, or are you left wondering, "So what?"

BREADTH • Is the author's claim supported with a variety of arguments and empirical evidence, or does the author argue from a single, narrow perspective? Does the author address alternative views and explain why those views are not as good?

LOGICAL • Is the author's thinking reasonable? Does the author's claim follow from the information and arguments given? Are the author's empirical information and conceptual arguments consistent with each other? Are the assumptions used by the author reasonable?

Consider, for example, the issue of whether the US government should subsidize firms that export goods to foreign countries, and suppose that you decide to consult four sources: an economics textbook, the local newspaper the *Herald Times Dispatch*, and a couple of trade magazines, *Exporter Journal* and *Tomorrow's Entrepreneur*. Suppose further that from those sources you conclude that there are four basic sub-issues that need to be resolved in order to answer the question as to whether the US government should subsidize firms that export goods to foreign countries:

- Are exports good for the economy?
- Do subsidies interfere with market efficiency?
- Is aid for corporations fair?
- What is the cost of export aid?

So how do you sort this all out?

Begin by setting up a spreadsheet in which you list the sub-issues in the first column on the left and your sources in the first row on the top. Then critically reread your sources and note in the various spreadsheet boxes what each has to say about each issue. See the nearby box for an illustration of this spreadsheet.

USING A SPREADSHEET:

SHOULD FIRMS THAT EXPORT BE SUBSIDIZED?

Economics Text

Are exports
good for the
economy?

Exports contribute
to the size of the
economy.

Unless there is a
market failure,
subsidies will
reduce efficiency

Not addressed.

Not addressed

Not addressed.

The distortions
due to taxes.

Cost is lower
aid for poor.

Cost is small.

No real cost
to aid.

Now comes the final step. How do you resolve that exports are good, but that subsidies create inefficiencies and are unfair (despite being low cost)? Using your economic knowledge of competitive markets and your knowledge of the level of exporting in the country, you might conclude that while exports are good, export subsidies are bad. Hence, given exports occur without aid, there is no need for the US government to subsidize companies that export goods to foreign countries. Of course, you might have come to a different conclusion. The question, after all, calls for a reasoned judgment; this is not a matter of fact. Nonetheless, critical economic thinkers will follow much the same process regardless of the conclusion they come to.

EXERCISE 5.2

Although the general process of using a matrix to resolve conflicting arguments is simple enough, it's often difficult to put that method into practice. However, the more you work with this method, the easier it becomes. This exercise gives you a chance to practice sorting out conflicting arguments so that you can begin improving your abilities.

For each of the three issues below, read the two conflicting arguments. Then create a spreadsheet like the one below in which you list the important sub-issues in the first column, and note the claims of the two arguments in the next two columns. Then use your spreadsheet to figure out the best answer to the question at hand. Be sure to note for each sub-issue whether there is agreement or disagreement. If there is disagreement, decide which position is better argued based on your knowledge of economics and the six standards for evaluating conflicting claims. Finally, answer the issue based on your spreadsheet analysis.

SUB-ISSUE	ARGUMENT 1	ARGUMENT 2	CONFLICT?	WHICH IS BETTER?
OVERALL ANSWER —				

ISSUE 1: THE MINIMUM WAGE**ARGUMENT 1**

The minimum wage should not to be raised for several reasons. First, it will increase the average wage paid. Using supply and demand analysis, we know that this increased cost of labor will reduce the willingness of businesses to hire workers. Hence, total employment will go down. Second, because the minimum wage will be set higher than the free market wage, supply and demand analysis tells us that the minimum wage will increase unemployment. Finally, the last time the minimum wage was raised my aunt had problems finding good workers for her store. The people she hired never showed up for work on time. When they did come to work, they loafed around all day till quitting time.

ARGUMENT 2

The minimum wage should be raised for two reasons. First, most businesses do nothing but exploit their employees and pay them less than they are willing to work for. It's about time that government steps in and fixes the problem. Second, every person in the US who is willing to work hard, full time, should be able to support themselves. The current minimum wage is too low to do that. Finally, there is no evidence that an increase in the minimum wage actual reduces employment. Every time the minimum wage has been increased in the past, total employment either stayed the same or increased.

ISSUE 2: NAFTA**ARGUMENT 1**

NAFTA has been a big mistake. Thousands of US jobs have been lost to Mexico. Just the other day, there was an article in the paper about a US broom factory which is going out of business because they can't compete with Mexican broom factories which pay much lower wages. Moreover, NAFTA has resulted in thousands of unsafe Mexican trucks crossing the border. I certainly don't want to be driving behind one of those trucks. What if it broke down? If I've got to keep my truck in shape, so should they. And what's more, because of those Mexican trucks, the US has also lost lots of trucking business. The result is a poorer US economy full of unemployed workers and unsafe roads. It wouldn't surprise me if hundreds of new repair shops spring up all over southern Texas, New Mexico, Arizona, and California just to fix those broken down trucks.

ARGUMENT 2

It isn't clear yet whether NAFTA has been good or bad for the US. There have been jobs lost as the papers have mentioned. However, the economic notion of comparative advantage and just plain common sense tells us that if you make it easier and less costly to trade, there will be some smart business people who will figure a way to expand their companies. What I don't know is whether this increase in US employment has actually happened. Moreover, while the US obviously must help its people first, it also has an obligation to help the rest of the

world. With NAFTA, Mexican companies have a bigger market to sell in. For those with a good product, that means more business. As a result, Mexico is likely to become more stable and more democratic.

ISSUE 3: TRADE WITH CHINA

ARGUMENT 1

The US should prohibit any US firm from doing business in China until China stops violating the human rights of its citizens. All individuals have a fundamental right to life, property, and freedom of expression. Though the massacre in Tiananmen Square received the most attention, China has been violating those human rights for decades. We have a moral obligation to do what we can to stop those violations.

In addition, conducting business in China does not make good business sense. As the troubles during the Cultural Revolution in the 1960s revealed, a totalitarian regime like China's is unpredictable. A business can spend years slowly cultivating a business and have it stolen or destroyed by the government in a second. No human rights means no property rights, and no property rights means no ability to conduct business.

To be sure, it has been argued that stopping trade with China would only hurt the US and not change China's ways. Such a view is shortsighted. As the experience with South Africa shows, consistent economic boycotts do make a difference. While it may take time to get other countries to go along, someone has to be first. If not the US, who? If not now, when?

ARGUMENT 2

Rudyard Kipling, who spent a considerable part of his life in Asia, once wrote, "East is East, and West is West, and never the twain shall meet."⁹ While we in the West may lament the actions of the Chinese government toward its people, we should not be so arrogant as to suppose that our view of human rights is correct or the only view. For many countries, issues of survival are more important than the niceties of free speech and democracy. As a result, it would be improper for us in the US to try to manipulate the internal policies of China.

Beyond being improper, such an attempt is ultimately doomed to fail and with it a worsening of international relations. International boycotts do not work. From the British embargo of the American colonies to the UN embargo of Iraq, history has shown that such efforts ultimately fail. When changes do occur, it is because of internal forces, not the external pressures of other nations. Moreover, the experience of suffering under an embargo reduces the willingness of the country to cooperate in other ways. Witness, for example, Iran's reaction to the West's attempt to control its internal affairs.

⁹The quote is taken from Kipling's poem *The Ballad of East and West*. If you'd like to read the full poem, see Kipling (2009). Kipling led an interesting life, and his writings continue to be popular in the West. You may, for example, be familiar with the Disney cartoon movie *The Jungle Book* (Disney and Reitherman (1967)) which was based on his book by the same name (Kipling (1928)). However, his writings are not without controversy, particularly in India. For an introduction to his life and work as well links to more details, see Rudyard Kipling (2010).

Finally, prohibiting trade with China would violate our own norms of economic freedom. It would reduce the competitive ability of US firms and give the firms of other countries a unique chance to gain an economic foothold in China. Opportunities only come around once. If we tie US firms down, we may not have another chance for decades to come.

ISSUE 4: THE FISCAL STIMULUS PACKAGE OF 2009

ARGUMENT 1

Sometimes doing a good thing means simply reducing the size of a bad thing. The severity of the recession was much greater than predicted by even the administration. But if the fiscal stimulus package had not been passed, unemployment would have risen much higher. Think 15% or more! Some worry about the stimulus creating inflation and damaging national debt. But when interest rates are at zero, there's no chance of inflation, and the history of the US after World War II shows that you can't save your way to reduce the national debt, the only way to do that is to get the economy growing. And that's precisely what the stimulus does. Indeed, if anything, the problem with the package is that it was too small, not that it was too big.

ARGUMENT 2

The fiscal stimulus package passed by the Congress not only did nothing to help the economy pull out of the recession, it created enormous debt that is now keeping the country from recovering from the worst recession since the Great Depression. By the administration's own account, unemployment was predicted to rise to roughly 10% without the stimulus. But what happened after the stimulus? Unemployment rose to more than 10%, and the prospect is for it to stay that high for many years. And along the way, the deficit rose to a trillion and a half dollars and national debt is now almost equal to 100% of GDP. As the calamity in Greece demonstrates, this can only lead to economic collapse and uncontrolled inflation.

5.4

CRITICAL WRITING (REDUX)

Congratulations! You have finally come to the end of this book. If you have seriously studied this book and worked through the many exercises, you have spent considerable time learning how to think critically about economic questions and how to effectively communicate the results of your thinking to others. As noted in Chapter 1, economic thinking is all about making difficult choices, and critical economic thinking is all about being aware of how you go about making such choices so that you can make the best choices possible.

Typically, such decisions, regardless of whether they concern government policy, business plans, or purely personal matters, require communicating the results of your critical thinking to others. Of course, how you communicate your

thinking depends on your audience. When communicating with a busy boss who has given you considerable autonomy to make decisions, the communication may simply take the form of a brief memorandum outlining your conclusions. On the other hand, it may be that you are communicating with a committee that holds divergent views. In that case, your communication is more likely to require a full description of the issue, your conclusions, and the reasons for your conclusions. Regardless of the type of communication, however, effective communication requires the following *Five Steps to Effective Communication*:

COMPLETE YOUR THINKING FIRST • Be sure that you have finished your analysis of the alternative views and have come to a conclusion, and that you know *why* you came to that conclusion. Persuading others is difficult enough. The last thing you need is to still be thinking about what conclusion is best while trying to craft your words into a presentable document.

DON'T LOSE SIGHT OF YOUR PURPOSE • Remember, your purpose is to persuade your audience that your conclusion is the best reasoned judgment. Everything you write or say should contribute to making that case. Don't let pride in your ability to craft words or your fascination with side issues distract you. If the topic is minor or unrelated to persuading your audience, then leave it out.

ORGANIZE YOUR WRITING IN AN EFFECTIVE WAY • Remember, all thinking is made up of common building blocks called "elements of thought." *Effective organization of writing* means presenting those elements in the best way. In economics, it is generally important to make your main point quickly and persuade your reader that the issue is worth reading about. A useful form of organization that does that is to break your material into the following three parts:

- Introduction - Describe the subject matter, explain why it is important, and state the question you intend to answer clearly and directly. A particularly useful method is to simply state your conclusion at the beginning (the implicit question thus being "Why is my conclusion true?"). Be precise and direct. Don't use two words when one will do.
- Body - This is where you argue why your answer to the question is the best one. Typically, the body is a sequence of claims supported by assumptions, conceptual arguments, and empirical evidence. A more persuasive case can be made by arguing both why your answer is good, and why alternative answers are not as good. Note, however, that only cutting down other arguments is not sufficient to persuade others that your answer is the best.
- Conclusion - This is where you should let the reader know that you have answered the question. Briefly state your answer and finish with a brief discussion of the broader consequences and implications of that answer.

DON'T MAKE CLAIMS WITHOUT SUPPORT • Obviously, how much support you need to provide depends on your audience. An audience well versed in Mexican-American international trade will not require proof of the claim that NAFTA has resulted in increased trade between the two nations. That fact is well documented and well known. However, if claiming the same thing to local politicians, you may need to provide support. Sometimes claims can be supported by empirical evidence (or citations where the empirical evidence can be found). In other cases, claims require conceptual arguments for support. Thus, for example, if I want to assert to a general group of economists that because of information problems, the demand for labor may be upward sloping, I will need to provide a strong conceptual argument because that claim contradicts the general and well established conclusion that demand slopes downward. When in doubt about whether your audience knows why your claim is true, provide the support.

OBSERVE PROPER STANDARDS BUT DON'T BE A BORE • Again, the purpose of your writing is to persuade, and persuasion means speaking a language your audience is comfortable with. Especially in business and economics, people are unlikely to put up with a writing style that is odd and difficult to read. While not always exciting, the use of standard conventions of style and punctuation make it easier for your audience to follow what you write. In following style conventions, however, don't get so bogged down that your message is lost. Bored readers don't pay attention, and readers that don't pay attention can't be persuaded.

BOX 5.4**MATH, GRAPHS, AND DATA**

Mathematics, graphs, and data (in tables or otherwise) are used quite a bit in economics to support various claims. But don't insert such things just to give your work the appearance of sophistication. If those materials don't help you make your argument, leave them out. Remember who your audience is. Some may find such material indispensable to making sense of your arguments. But others may be turned off by such things or thoroughly confused. And lastly, don't depend on mathematics, graphs, and data to make the argument by themselves. If you are going to use them, be sure to refer to them in your text, provide verbal summaries of what they mean and how they fit into your broader argument, and explain to your reader why that material is of value in making your argument. Thus, for example, if you think that a graph would be a nice way to help make your argument, they you should include some verbal discussion before the graph is used that says something like "As Figure 1 shows, an upward shift in the aggregate demand curve in the face of a steep aggregate supply curve (which exists when unemployment is below full-employment levels) will result in a large increase in the inflation rate but with little change in GDP."

BOX 5.5

A RISING STAR IN ECONOMICS: SUSAN ATHEY

Susan Athey is a professor of economics at Harvard University, chief economist for Microsoft, research associate at the National Bureau of Economic Research, and the first female recipient of the John Bates Clark Medal awarded in 2007 by the American Economic Association (which is awarded to that economist under forty who has made the most significant contribution to economic thought and knowledge). The winner of numerous scholarships, grants, and other awards, she earned her undergraduate degree (triple major) from Duke University at the age of twenty before moving to Stanford University where she completed her PhD in four years. Sought by two dozen universities, she chose the Massachusetts Institute of Technology for her first position, quickly rose to the rank of full professor, returned to Stanford (this time as a member of the faculty) for five years, and finally moved to Harvard in 2006. Though she also does applied work, she is best known as a theoretical economist who, beginning with her PhD dissertation, has already revolutionized the way economists think about the role of information in economic decision making both theoretically and in policy. Her dissertation, for example, solved a problem senior theorists had worked on for years without success and revealed a flaw in the way the US government ran auctions. The US government has since corrected its auctions policy.¹¹

A RISING STAR IN ECONOMICS: IVÁN WERNING

A native Argentine born in 1974, Iván Werning earned his bachelors and masters degrees in Buenos Aires before coming to the US to study for the PhD at the University of Chicago. After earning that degree in 2002, he took a position with the Massachusetts Institute of Technology where he is a full professor. His work, which others describe as elegant, focuses on macroeconomic issues, sometimes with startling conclusions. Thus, for example, a standard argument is that efficiency conflicts with equality. If you want more growth, you must put up with increasing income inequality, and vice versa. Werning argues, however, that this argument is short sighted. Over several generations the increased inequality actually ends up reducing growth, and so the problem is how to keep the inequality in check. The traditional solution offered is to tax the rich, but that too reduces growth. As a result, he argues that a better solution would be a plan that subsidizes the ability of parents (especially lower income ones) to leave bequeaths to their children. And how does he manage to figure all this out? In the words of one of his co-authors, "With Iván, there's always a very central question [which] he distills it into very sharp results." In short, he begins by defining the issue clearly and precisely. And that, as you know, is where critical economic thinking always starts.¹³

¹¹This biography was based on Gans (2007, April 23), Nasar (1995, April 21), Susan Athey (2010), and Susan Athey Biography (2010).

¹³This biography was based on Chester (2007, November/December), Emerging Economists: International Bright Young Things (2008, December 30), and Werning (2010).

EXERCISE 5.3

is last exercise gives you the chance to put all your critical thinking skills together to address an economic issue. If this exercise is being done in a course, your professor may wish to provide more detailed instructions on what topic to work on or how to address the issue.

Choose a normative economic question for which you can find three editorials or opinion columns (NO letters to the editor!) taken from reputable sources such:

- *e Economist* (<http://www.economist.com/leaders/>).
- *e Guardian* (<http://www.guardian.co.uk/commentisfree>).
- *e New York Times* (<http://www.nytimes.com/pages/opinion/index.html>).
- *e Wall Street Journal* (<http://online.wsj.com/public/page/news-opinion-commentary.html>).

Then follow the directions below:

- First write down the question you seek to answer (*your Question!*) and note why you wish to answer that question (*your Purpose!*).
- Now summarize what you already know about this issue and what your views on the issue are (*your Frame of Reference!*). Be sure to also include what economic models and ideas (*your Assumptions, Empirical Information and Concepts!*) you believe will be useful in figuring out the answer to your question? Feel free to use data or diagrams to help illustrate these economic models and ideas.
- Next critically read each of the three editorials /opinion columns (*more Assumptions, Concepts, and Empirical Information!*). After having read and analyzed each of the three articles, write a summary paragraph describing the results of your analysis for each editorial/opinion column (*your inferences!*).
- After analyzing the three editorials /opinion columns, create a spreadsheet in which you list the important sub-issues in the first column and note the claims of the three sources in the remaining columns. Then use your spreadsheet to figure out the best answer to the question at hand (*your Conclusion!*). Be sure to note for each sub-issue whether there is agreement or disagreement. If there is disagreement, decide which position is better argued based on your knowledge of economics and the *Six Standards for Evaluating Con icting Claims*. Finally, answer the question at hand based on your spreadsheet analysis.
- Finally, write your own editorial for someone who has never read the material you have analyzed and in which you present your view of the issue and your arguments why you believe you are correct. Be sure to organize your editorial in the typical economic style (including headings). At the end of your editorial, be sure to write down a full reference for each of the three editorials /opinion columns you have used. The references should be in a

standard APA format and should be full enough that an educated stranger could find the materials with those references. If it will help you make your argument, feel free to include data or diagrams.

When you turn in the above material, also be sure to include a copy of each of the three editorials /opinion that you used.

SUMMARY

The last step in thinking critically about an economic question is to sift through the various views and empirical evidence collected in order to put together the best possible answer to the question. To avoid allowing hidden biases and prejudices to cloud your ability to weigh the various arguments honestly, you need to practice intellectual courage. But intellectual courage means considering seriously and fairly all ideas, even those that you or others may find repugnant, and sometimes this is difficult to do because of our attachment to ideas and to other people. The key is to recognize those attachments so that you can begin thinking out how to deal with any conflict that you might have. In working out the best answer to your economic question, it helps to know that it will be contained within the various views you have collected and analyzed. If there is no disagreement among those views, the task of putting together your best answer to the question is relatively straightforward. However, if there are disagreements, it is important to sort through the various views in a methodical way. Spreadsheets are a useful device for helping you conduct that process. Finally, because so many economic decisions require communicating the results of your thinking to others, it is important to be able to communicate effectively. To do that, make sure you have completed your thinking process first. Then, keeping your purpose always in mind, present your material in a clear and logical manner so that you have the greatest chance of getting your point across to your reader.

KEY CONCEPTS

Accuracy	Intellectual courage
Breadth	Logicalness
Clarity	Math, graphs, and data in economic writing
Depth	Relevancy
Effective organization of writing	Six Standards for Evaluating
Five Steps to Effective Communication	Conflicting Claims
Hidden biases	Spreadsheets

REVIEW QUESTIONS

1. What are the two problems that typically arise when sorting through the views of others?
2. Explain why intellectual courage is sometimes difficult.
3. How can you resolve the conflicts between conflicting views?
4. List the *Six Standards for Evaluating Conflicting Claims*.
5. Why is it important to complete your thinking before communicating with others?
6. In communicating with others about economic issues, what typically is the purpose?
7. Describe the typical organization used for writing about economic issues, and explain why that form is useful.
8. Explain the distinction between a claim and support for a claim.
9. What are the two types of support that can be used to back up a claim?
10. Explain why the use of standard forms of style and punctuation is useful when communicating with others.

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Index

A

accuracy
 conflicting claims, evaluating, 126, 128
 information, determining, 9
 normative frame of reference, 75
 positive frame of reference, 67
AEI: Applied Economics, 26
aggregate demand, 78, 79–80
Akerlof, George, 61, 62
Alphonse Fletcher Award, 54
American Psychological Association (APA) style, 113–114, 113n
analysis, defined, 106, 106n
Animal Spirits (Akerlof), 62
answers, finding the best
 chapter summary and key concepts, 138
 conflicts, resolving, 119, 120, 121, 125–133
 critical writing, 119, 133–138
 intellectual courage, 119, 120–121, 122–125
 introduction, 119, 120–122
 review questions, 139
answers, searching for
 chapter summary and key concepts, 115–116
 critical thinking for economic questions, 8
 information search, beginning, 89, 92–95
 introduction, 89, 90–92
 oneself, using as a source, 90, 110–112
 reading critically, 89, 103–110
 record keeping, 90, 112–115
 review questions, 116–117
 search strategy, designing, 89, 95–103
anthropologic perspective, 64–65
APA (American Psychological Association) style, 113–114, 113n

Aquinas, Thomas, 73, 73n
Aristotle
 educated minds, 90, 90n
 ethics, 73, 73n
 assumptions
 elements of thought, as, 104
 production possibilities curve, 44–45
 reasonable, in persuasive economic writing, 83
Athey, Susan, 136
Atlas Shrugged (Rand), 73n

B

Bacon, Francis, 10, 10n
Becker, Gary, 31–32
Bentham, Jeremy, 72
body, of written work
 analyzing, in good critical reading, 106, 107–108
 effective communication, 134
 elements of thought, in, 105
 organization of critical writing, 22, 23–24
 persuasive economic writing, 82
 structure of, and writing for clarity, 51, 52–53
breadth
 conflicting claims, evaluating, 126, 128
 normative frame of reference, 75–76
 positive frame of reference, 68
budget constraints, 42
business frames of reference, 64

C

capitalism
 defined, 37
 U.S. economy, in, 37–38
caveat lector, defined, 9
charts, 41. See also graphs
Chetty, Raj, 115

citations, keeping track of, 113–114
claims, supporting, 135
clarity
 conflicting claims, evaluating, 126, 128
 writing for, 30, 50–55
Classical Frame of Reference, 64
communication. *See also* writing
 Five Steps to Effective Communication, 134–135
 formal writing, 21, 22–24
 informal writing, 20–21
Compensation Principle, 72, 73
competitive markets
 microeconomic perspective, 78–79
 right to, 71
concepts, as elements of thought, 104, 105
conceptual arguments
 body of writing, in, 105
 collecting, 90–91
 critical reading, 18
 effective communication, 135
 organization of critical writing, 22, 24
 persuasive economic writing, 83
conclusion, in written work
 analyzing, in good critical reading, 106, 108
 clarity, writing for, 51, 53
 effective communication, 134
 elements of thought, in, 105
 organization of critical writing, 22, 24
 persuasive economic writing, 83
conclusions
 critical thinking about economic questions, 10
 critical writing, main point of, 22
 elements of thought, as, 104, 105
conflicts, resolving
 answers, finding the best, 119, 120, 121, 125–133
 exercises, 130–133

spreadsheets, 125–130
 standards for evaluating conflicting
 claims, 126, 128
 consumer surplus, mathematical
 representation of, 81
 context, determining, in critical
 reading, 18–19
 critical discussions. *See* discussions,
 critical
 critical reading. *See* reading, critical
 critical thinking. *See* thinking, critical
 critical writing and speaking. *See*
 writing, critical; writing and
 speaking, critical
 cross-sectional data, defined, 41

D

data
 cross-sectional, 41
 descriptive quantitative data,
 representations of, 41
 effective communication, 135
 numerical data questions, 41–46
 panel data, 41
 positive and normative, 29, 47–50
 time-series data, 41
 depth
 conflicting claims, evaluating, 126,
 128
 normative frame of reference, 75
 positive frame of reference, 67–68
 discussions, critical
 economic case discussions, 13–17
 importance of, 12
 question and answer sessions, 13
 Dubner, Stephen, 32n
 Duflo, Esther, 26, 26n

E

econometrics, defined, 41
 economic case discussions
 evaluation of, 15
 exercises, 15–17
 problems, preventing, 14
 problems with, 13–14
e Economic Consequences of the Peace
 (Keynes), 121
 economic tools, learning and using,
 110–111
 economics, definitions of, 4
 efficiency

mathematic representation, 80–81
 normative frame of reference, 70,
 80–81
 elements of thought
 described, 104–105
 organization of writing, 134
 empirical evidence
 collecting, 9–91
 critical reading, 18
 effective communication, 135
 element of thought, as, 104, 105
 organization of critical writing,
 22, 24
 persuasive economic writing, 83
 positive thinking, 39
 ethics, defined, 73

F

facts
 defined, 33
 exercises, 35, 39–40
 numerical data questions, 41–46
 factual statements
 defined, 34
 positive economic questions, 36
 tables and graphs, represented in, 43
 truth of, impossibility of
 determining, 33
 fairness, in normative frame of
 reference, 70–72
 finance perspective, 65
 Five Rules for Good Critical Reading,
 105–108
 Five Rules for Persuasive Economic
 Writing, 82–83
 Five Steps to Effective Communication,
 134–135
 Five Steps to Reading Critically, 18–20
 footnotes, information in, 100
 formal communication. *See also* writing
 and speaking, critical
 defined, 21
 steps in, 22–24
 Four Questions for Evaluating Source
 Reliability, 100–101
 Four Steps to Thinking Critically, 6–12
 frame of reference. *See also* thinking
 and frames of reference
 awareness of, in critical thinking,
 7–8
 element of thought, as, 104, 105
 importance of, 60–61

Freakonomics (Levitt and Dubner), 32n
 Fryer, Roland, Jr., 54
 fundamentals of economic thinking
 chapter summary and key concepts,
 26
 critical discussions, 1, 12–17
 critical reading, 1, 18–21
 critical thinking in economics, steps
 to, 1, 6–12
 critical writing and speaking, 1,
 21–26
 introduction, 1, 2–5
 review questions, 27

G

game-theoretic frame of reference, 63
 general education, importance of, 66
 general equilibrium frame of reference,
 63
 general microeconomic perspective, 65
e General eory of Employment,
 Interest and Money (Keynes),
 121
 Gini Ratio, 81
gnothi seauton, defined, 60
 goals. *See* purposes
 good economic questions, defined,
 30–31
 graphs
 descriptive quantitative data,
 representing, 41
 effective communication, 135
 fact, taste, and reasoned judgment,
 42
 factual conclusions, 43
 production possibilities frontier or
 curve, 44–45
 tables, comparison to, 43

H

hidden biases, overcoming, 120–121
 historical perspective, 65
 Hohmann, David, 25, 25n
 horizontal equity, and fairness, 71
 Hume, David, 12, 12n

I

Identity Economics (Akerlof), 62
 implications and consequences
 critical thinking about economic

- questions, 10
- elements of thought, as, 104, 105
- income distributions, mathematic representation of, 81
- independent thinking, and finding the best answers, 121–122
- inferences, as elements of thought, 104, 105
- informal writing
 - defined, 21
 - exercise in, 20–21
- information
 - accuracy of, determining, 9
 - relevance, and normative frame of reference, 75
 - relevance, and positive frame of reference, 66–67
 - relevance, for evaluating conflicting claims, 126, 128
 - relevant, for critical thinking, 8
 - search for, 89, 92–103
- information sources
 - basic information, 97
 - exercises, 111–112
 - facts, statistics, and data, 99
 - footnotes, information in, 100
 - more specific information, 98–99
 - oneself, using as a source, 90, 110–112
 - people, 100
 - reliability of sources, evaluating, 100–101
- initial opinion on economic questions, 92–93
- insurance, right to, 71
- intellectual courage
 - described, 119, 123–124
 - exercise, 124–125
 - hidden biases, overcoming, 120–121
- introduction, in written work
 - analyzing, in good critical reading, 106, 107
 - clarity, writing for, 50–51, 52
 - effective communication, 134
 - elements of thought, in, 104–105
 - organization of critical writing, 22, 23
 - persuasive economic writing, 82
- issues
 - defining, for economic thinking, 30–31
 - defining, in critical thinking, 6–7

J

- John Bates Clark Medal
 - Athey, Susan, 136
 - Duflo, Esther, 26
- Journal of Development Economics*, 26

K

- Kaldor-Hicks Criterion, 72
- Keynes, John Maynard
 - independent thinking, 121–122
 - positive frame of reference, depth of, 67–68
- Keynesian Frame of Reference, 64
- Kuznet, Simon, 91–92

L

- legal perspective, 65
- Lévi-Strauss, Claude, 30, 30n
- Levitt, Steven, 32n
- Lewis, Arthur, 122
- liberal education, importance of, 66
- Libertarianism, described, 72–73, 73n
- liberty, right to, 72
- logic of material, understanding, and critical thinking, 3
- logicalness
 - conflicting claims, evaluating, 126, 128
 - normative frame of reference, 75
 - positive frame of reference, 67
- Lorenz Curves, 81

M

- MacArthur “Genius Award,” 26
- macroeconomics
 - aggregate demand, 79–80
 - Keynes, John Maynard, 121–122
 - macroeconomic frame of reference, and positive thinking, 63–64
 - persuasive economic writing
 - exercise, 85
- marginal thinking, and microeconomics, 63
- marketing perspective, 65
- Marshall, Alfred
 - biography, 5
 - economics, definition of, 4
- mathematical frame of reference
 - exercise, 81
 - limitations to, 80

- macroeconomic perspective, 79–80
- microeconomic perspective, 78–79
- normative frame of reference, 80–81
- positive frame of reference, 78–80
- mathematics, and effective communication, 135
- microeconomics
 - competitive markets, 78–79
 - microeconomic frame of reference, and positive thinking, 63
 - persuasive economic writing
 - exercise, 84–85
- Mill, John Stuart
 - biography, 5
 - economics, definition of, 4
 - Utilitarianism, 72, 72n
- model and theory, comparison of, 111, 111n
- Monetarist Frame of Reference, 64

N

- necessities, right to, 71, 72
- Nicomachean Ethics* (Aristotle), 73, 73n
- Nobel Prize in Economics
 - Akerlof, George, 61
 - Becker, Gary, 31–32
 - Kuznet, Simon, 91, 92
 - Lewis, Arthur, 122
 - Ostrom, Elinor, 32
 - Sen, Amartya, 61
 - Smith, Vernon L., 91, 92
- normative data
 - exercise, 49–50
 - explained, 47–49
- normative frame of reference
 - economic questions, answering, 70–74
 - efficiency and fairness, 70–72
 - ethics, 73, 73n
 - evaluating, 75–78
 - exercises, 74, 76–78
 - mathematical frame of reference, 80–81
 - standards for assessment of, 75–76
 - utilitarianism and libertarianism, 72–73, 72n, 73n
- normative questions, defined, 36–40
- normative thinking
 - positive thinking, distinguishing from, 39
 - values, 36–37, 39, 48–49
- numerical data questions

exercise, 46–47
 fact, taste, and reasoned judgment, effects of, 41–46
 tables and graphs, comparison of, 43
 uses for, 41

O

objective truths, defined, 33
 Objectivism, 73
 opinion
 defined, 35
 initial opinion on economic questions, 92–93
 organization of written work
 clarity, 51, 52–53
 effective communication, 134
 standard form, 22–24
 Ostrom, Elinor, 32
 outcome notion of efficiency, 80
 outcome notion of fairness
 described, 71–72
 mathematical frame of reference, 80

P

panel data, defined, 41
 partial equilibrium frame of reference, 63
 Paul, Richard, 2, 2n
 people, as information sources, 90, 100, 110–112
 personal preferences, statements of, 34
 persuasive argument, in body of written work, 105
 persuasive writing. *See* writing, persuasive
 plagiarism, avoiding, 113
 political frame of reference, 65
 positive data
 exercise, 49–50
 explained, 47–49
 positive economic questions, defined, 36, 37–40
 positive frame of reference
 best frame of reference, choosing, 68
 business sciences, 64
 economic questions, answering, 62–66
 evaluating, 66–70
 exercise, 69–70

general education courses, 66
 macroeconomics, 63–64
 marginal thinking, 63
 mathematical frame of reference, 78–80
 microeconomics, 63
 non-economic perspectives, 64–65
 standards for assessment of, 66–68
 positive thinking, distinguishing from normative thinking, 39
 premise, defined, 44
 process notions of fairness, 71–72
 producer surplus, mathematic representation of, 81
 production possibilities frontier/curve
 graphs, represented in, 44–45
 mathematic representation of a normative frame of reference, 81
 psychologic perspective, 64
 purposes
 determining, in critical reading, 18
 economic questions, of, 36
 effective communication, 134
 element of thought, as, 104, 105

Q

Quantity Theory of Money, 67–68
 question and answer sessions in critical discussions, 13
 questions
 defining, for search strategy, 95
 element of thought, as, 104, 105
 information needed to answer, determining, 96–97
 questions about economics
 chapter summary and key concepts, 56
 clarity, writing for, 30, 50–55
 facts, tastes, and reasoned judgments, 29, 33–35
 introduction, 29, 30–32
 numerical data questions, 29, 41–47
 positive and normative data, 29, 47–50
 review questions, 57
 types of, 29, 36–40

R

Rand, Ayn, 73, 73n
 reading, critical

answers, searching for, 89, 103–110
 breaking into parts, 19
 context of writing, 18–19
 defined, 18
 elements of thought, 104–105
 exercise, 20–21, 109–110
 Five Rules for Good Critical Reading, 105–108
 making sense of each part, 19
 parts, putting back together, 19–20
 purpose, determining, 18
 steps in, 18–20
 reading material, skimming, 106
 Real Business Cycle Frame of Reference, 64
 reasoned judgments
 defined, 34
 exercises, 35, 39–40
 factual statement, truth of, 33
 normative questions, 36
 numerical data questions, 41–46
 positive economic questions, 36
 positive frame of reference, 62–63
 reasoning
 positive thinking, 39
 standards for, 34, 34n
 record keeping
 citations and references, 113–114
 exercise, 115
 importance of, 90, 112–115
 plagiarism, avoiding, 113
 references, keeping track of, 113–114
 relevance of information
 conflicting claims, evaluating, 126, 128
 information for critical thinking, 8
 normative frame of reference, 75
 positive frame of reference, 66–67
 religion-based ethics, 73
Review of Economics and Statistics, 26
 right to competitive markets, and fairness, 71
 right to insurance, and fairness, 71
 right to liberty, 72
 right to necessities, and fairness, 71, 72
 right to status quo, and fairness, 71, 72

S

schedules, 41. *See also* graphs
 search for information
 beginning, 89, 92–95
 effort spent on search, 93–94

- exercise, 94–95
- search for information, strategy for
 - designing, 89, 95–103
 - exercises, 101–103
 - searching strategy rules, 95–101
- secularly based ethics, 73
- Sen, Amartya, 61–62
- Shapiro, Jesse, 83
- Six Standards for Evaluating Conflicting Claims, 126, 128
- skepticism
 - information, about, 9
 - information sources, 100–101
- Sloan Research Fellowship, 54
- Smith, Adam, 20–21
- Smith, Vernon L., 91, 92
- socialism
 - defined, 37
 - U.S. economy, in, 37–38
- sociologic perspective, 64–65
- sources of information. *See* information sources
- spreadsheets, using to resolve conflicts, 125–130
- springboarding
 - conflicting claims, sub-issues in, 126
 - information and ideas, gathering, 96–97
- Standards for Assessing Normative Frames of Reference, 75–76
- Standards for Assessing Positive Frames of Reference, 66–68
- status quo, right to, 71, 72
- subject matter, organization of, in
 - critical writing, 22, 23

T

- tables
 - descriptive quantitative data,
 - representing, 41
 - fact, taste, and reasoned judgment, 42
 - factual conclusions, 43
 - graphs, comparison to, 43
- tastes
 - exercises, 35, 39–40
 - numerical data questions, 41, 42, 46

- statements of, 34
- theory and model, comparison of, 111, 111n
- thinking
 - completing, for effective
 - communication, 134
 - critical writing, 22
 - summarizing, in good critical reading, 106
- thinking, critical
 - critical economic thinking,
 - described, 1
 - defined, 2
 - exercises, 10–12
 - steps to, in economics, 6–12
- thinking and frames of reference. *See* *also* frame of reference
- chapter summary and key concepts, 86–87
- introduction, 59, 60–62
- mathematical frame of reference, 59, 78–81
- normative thinking frames of reference, 59, 70–78
- positive thinking frames of reference, 59, 62–70
- review questions, 87
- writing to persuade, 59, 82–85

Three Major Sections of Economic Writing, 104–105

time series data, defined, 41

U

- Utilitarianism
 - described, 72, 72n
 - mathematic representation of
 - a normative frame of reference, 81
- Utilitarianism* (Mill), 72n
- utility, defined, 72

V

- values, and normative thinking, 36–37, 39, 48–49
- vertical equity, and fairness, 71

W

- e Wealth of Nations* (Smith), 20–21
- Werning, Iván, 136
- Wikipedia, accuracy of, 101, 101n
- writing, critical
 - answers, finding the best, 119, 133–138
 - exercise, 137–138
 - Five Steps to Effective Communication, 134–1135
 - mathematics, graphs, and data, 135
- writing, persuasive
 - exercise, 84–85
 - importance of, 59
 - persuasive argument in body of work, 105
 - rules for persuasive economic writing, 82–83
- writing and speaking, critical
 - conclusion as main point, 22
 - exercise, 25
 - organization of writing, 22–24
 - steps in, 22–24
 - thinking process, completing, 22
 - types of, 21
 - views, supporting with evidence and conceptual arguments, 22, 24
 - writing style, 24
- writing for clarity
 - body, structure of, 51, 52–53
 - conclusion, 51, 53
 - exercise, 54–55
 - importance of, 30
 - introduction, 50–51, 52
 - organization, 22–24, 51, 52–53, 134
- writing style
 - effective communication, 135
 - organization of critical writing, 24

Y

- Young Economist Award, 115

Z

- Zajac, Edward, 71, 72