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Section VI

Why You Should Buy This Book

Chapter 22

Final Words

One defect of many economics textbooks, especially at the elementary level, is that they teach you about economics instead of teaching you economics. The result is to produce students who may be equipped to talk about economics but certainly not to do any--a sort of academic equivalent of learning what names to drop at cocktail parties.

You have now spent 22 chapters learning to do economics. In this final chapter, I shall try to tell you something about economics: what it is good for, how it is done, and to what degree economists know anything.

WHAT IS ECONOMICS GOOD FOR ANYWAY?

Looking at the title of this section, it may occur to you that it belongs in the first chapter of the book, not the last. As a believer in rational behavior, I should perhaps have explained to you why economics was worth learning before expecting you to spend a lot of time and trouble learning it. Unfortunately, if I had told you what economics was good for before you read the book, you might reasonably enough have dismissed my claims as no more than deceptive advertising. You may still conclude that, but at least you now have some evidence on which to base your conclusion.

There are at least four different reasons to learn economics. The first is that economists, in the process of developing a theory of human behavior based on rationality, have done quite a lot of useful thinking about how it is rational to behave. While we may know very little about what your objectives are or should be, we know quite a lot about how, given a set of objectives, they can best be attained. Once you understand concepts such as marginal cost, marginal value, sunk cost, and present value, you should find them to be useful tools in making decisions about how to organize your life. When you finally realize that you have invested six months of effort and heartache pursuing a member of the opposite sex who has no interest at all in you, you can sum up your situation--and reluctantly reach the correct conclusion concerning

what to do about it--with the observation that "Sunk costs are sunk costs." When deciding whether to spend another few weeks looking for a better buy in a house or a car, you can put the issue more clearly by asking, not whether you have found the best possible buy, but whether the expected return from additional search is greater or less than its marginal cost.

A second reason to learn economics is in order to understand and predict the behavior of other people, especially the effects of the behavior of large numbers of people, in order to take account of it in planning your own life. This should be useful whether you are an investor trying to make money on the stock market, a general trying to keep his soldiers from running away, a homeowner trying to discourage burglars, or a student trying to predict future wages in different professions. In none of these cases will a knowledge of economics by itself be enough to answer your questions--you always need facts and judgment as well. But in all of those cases and many more, economics provides the essential framework within which knowledge and judgment can be combined to reach, perhaps, a correct conclusion--or at least a better conclusion than could be reached without economics.

A third reason to study economics may be that you expect to be a professional economist: someone employed to teach economics, to create economic theory, or to apply economic theory to questions that your employer wants answered. Obviously I believe that being an economist is an attractive profession; if I did not, I would be doing something else for a living. As a missionary, I hope some of you have come to the same conclusion. Of course, as an individual concerned with his rational self-interest, I hope that I have not persuaded enough of you to become economists to reduce my income significantly--or that if I have, you will have the consideration not to enter the field until after I have retired, or at least signed a long-term contract.

The fourth reason to learn economics is that it is fun. Once you understand the logic of economics, you can make sense out of elements of the world around you that you could not otherwise understand, which is entertaining as well as useful. You can also make the process of extracting a rational pattern from apparent chaos into a game played for its own sake--even in cases where it is likely enough that there is no pattern there to be extracted.

It may occur to you that I have omitted a fifth reason to learn economics, one that many textbooks would put first: to make yourself a better citizen and a better informed voter. It is true that understanding economics makes you much more likely to perceive correctly the consequences of actual or proposed government policy. But while that may be a good reason for me to teach you economics, it is not, unless you are quite an extraordinary individual, a good reason for you to learn it. In a society as large as ours, your vote, as I have pointed out several times, has a very small chance of affecting anything. If you are extraordinarily altruistic, the large number of people benefited by an improvement in government policy may balance, for you, the tiny chance that your

actions will produce such an improvement. If you expect to be unusually influential--perhaps because your name is Kennedy or Rockefeller--you may conclude that the public benefit of making yourself an informed citizen justifies the cost. If neither is the case, it is unlikely that the effect on you of the public benefits produced by your improved understanding of economics will be worth the private costs.

WHAT ECONOMISTS DO

So far as I can tell, economists employed in business or government have two functions. One is to use economic theory to answer questions their employers want answered--to tell Ford what the demand for autos will be next quarter or to estimate for the Treasury what effect a change in the tax laws will have on tax revenues. The other is to use economic language to construct plausible and professional-sounding arguments in favor of whatever their employers want.

Since I am myself an academic economist, I have a somewhat more detailed picture of what academic economists do. What academic economists do is to teach courses like the one you are taking, write books such as the one you are reading, and write articles and do research designed to use economics to explain, predict, and prescribe.

Of the three activities, research is the one with which you have had the least contact. I commented in an earlier chapter that doing economics involves a continual balance between unrealistic simplification and unworkable complication. I might have added that striking that balance--producing pictures of reality simple enough so that they can be analyzed and understood and accurate enough, in their essential structure, to tell us something useful about the real world--is an art, not a mechanical process that can be learned from this book or any other. One discovers whether the attempt has been successful by seeing whether the theory generates predictions about the real world that are not obvious and are true.

This raises a problem: How can we distinguish between things a theory logically implies and things it "predicts" only because its author knew they were true before constructing the theory? There is a fine line between using knowledge of the real world to construct a correct theory and constructing a theory that is no more than a complicated restatement of things you already know.

One solution to this problem is to predict things you do not know--preferably things you cannot know because they have not happened yet. This is a very convincing way of demonstrating the usefulness of your theory, especially if other people with other theories are making different predictions, and theirs turn out to be wrong and yours right. Unfortunately, this way of testing a theory only works for theories whose implications can be tested over a fairly short period of time and under conditions that currently exist. The first article I ever published in an economics journal was entitled

"An Economic Theory of the Size and Shape of Nations." Its predictions were tested against the changing political map of Europe, from the fall of the Roman Empire to the present. If I had restricted myself to testing my theory against future events, the first tentative results might have come in during the lifetime of my great grandchildren.

One way to stay on the right side of the line dividing prediction from description is to only predict the future. Another way is to adopt what appears to be an unreasonably rigid insistence on following out the logic of complete rationality. Most of us believe that actual behavior is a mixture of rational and irrational elements. It is tempting, in constructing an economic theory, to start with a model based on rationality and then introduce elements of irrationality whenever they are needed to resolve a conflict between the predictions of the model and what is actually observed. The resulting "theory" looks more like a description of the real world than would a theory that assumed rationality everywhere, but it is very much less useful. If you feel free to assume irrationality wherever convenient, you can explain anything--and having done so, there is no easy way for either you or anyone else to know whether your theory works because it is right or because you knew the answers before you started and modified the theory accordingly.

If, instead, one insists on assuming rationality everywhere, even in the behavior of small children deciding whether or not to kick their siblings, one has much less freedom to alter the predictions to fit the facts. Once the basic assumptions have been set up, the model is driven by its own internal logic. It takes you wherever that logic leads, whether or not you want to go there. One advantage of this is that it may take you to conclusions that you know are false, providing evidence that the initial model was wrong. Another advantage is that it may take you to conclusions you thought you knew were false--thus showing you something you did not already know and would never have learned from a "theory" constructed to fit what you thought were the facts.

Seen in this way, the economist's assumption that individuals are rational is in part, as I argued in Chapter 1, a way of deducing the predictable element in human behavior and in part a way of keeping the economic theorist honest.

MODEL, MODEL, AND MODEL

The term "model" is used, in economics, to describe three quite different things. Explaining the different sorts of models prevents confusion among them; it is also a way of sketching out three quite different things that economists, especially but not exclusively academic economists, do.

One kind of model is a simplified picture designed to make it easier to analyze the logic of a situation while ignoring inessential complications. Models of this sort have been used repeatedly in the previous 22 chapters. One example is the discussion in Chapter

7 of the effect on landlords and tenants of legal restrictions on rental contracts. I assumed that all landlords were identical, that all tenants were identical, and that the restriction affected cost (to the landlord) and value (to the tenant) in a way similar to the effect of a tax or subsidy. I made these assumptions not because I believed they were true, but because they made the problem simple enough to be analyzed, without changing the essential logic of the situation. Once one has used this sort of model to figure out what is happening in the simple situation and why, one is prepared to analyze more realistic--and difficult--cases. Other examples in this book would be the barbershop problem in Chapter 11, the analysis of the effect of tariffs--in a world where wheat is the only export and autos the only import--in Chapter 19, and the two models of the marriage market in Chapter 21.

A second and different sort of model is used in mathematical economics. A typical example might start by assuming "a world of N commodities and M consumers"--where the numbers could be 10, 100, or a billion. Simplifying assumptions are then made, not about the number of goods or participants but about the mathematical characteristics of elements of the model such as utility functions and production functions. These assumptions are useful not to solve the model--nobody expects to solve that sort of model anyway, in the sense of plugging numbers in and getting numbers out--but to prove theorems about what the solution must be like. I have not done any of that sort of rigorous mathematical economics in this book, but I referred to it in Chapter 8, when I explained how, in principle, one would solve an economy, and again in Chapter 16, when I suggested that my proof of the efficiency of a competitive market could be translated into a more precise form. One of the things mathematical economists prove theorems about is under what circumstances an economy is efficient.

The third sort of model, which I have not used at all in this book, is a large-scale econometric model. Unlike the other two, this sort of model attempts to give a quantitatively accurate picture of a particular economy--say, the U.S. in January of 1991. It does this by first simplifying the real situation--rather as I simplified it in Chapter 14 when I reduced everything to three factors of production, although not quite that drastically--and then using real-world data and statistics to estimate actual numbers for the quantities and relationships of the model. It is thus a crude picture of a real economy. Its objective is not so much understanding as prediction.

As you probably realize by now, a real economy--say, the U.S. in January of 1991--is an enormously complicated interacting system. Econometric models generally take the form of computer programs, run on very large and expensive computers. Even with the best computers available, any model simple enough to produce a prediction of what will happen next year and take less than a year producing it has to ignore most of what is really happening in the economy being modeled. Econometric modeling is then the art of building models simple enough to be useful but with enough resemblance to the real economy being modeled to be of some use for predicting what will happen. Seen from the perspective of an economic theorist, it is an art made up in roughly equal parts of

economics, statistics, and witchcraft.

Econometric modeling survives and prospers, despite the difficulty of doing it and the unreliability of its predictions, because of the immense value of the information it is trying to generate. If you knew what was going to happen to interest rates for the next year, you could make a very large fortune playing the bond markets. Even if the predictions of such models are not very good, knowing a little bit, having a prediction that may well be wrong but has a slightly better than random chance of being right, is worth enough to pay the cost of many hours of computer time and the salaries of many econometricians and programmers.

IS ECONOMICS A SCIENCE?

One side effect of econometric modeling, unfortunately, is to encourage the idea that economists are people who spend their time trying to predict what the economy will do next and that economics is either a confidence game or a very primitive science, since "economists never agree with one another." It would make about as much sense to say similar things about physics and physicists and to cite as evidence the poor performance of weather forecasters. On questions of economics, economists often, perhaps even usually, agree with each other. They disagree about quantitative predictions of the outcomes of systems much too complicated to be solved in any other than a very approximate sense.

A second cause of the popular belief that economics is a highly unscientific endeavor is that economic theory often concerns issues of considerable real-world importance. An economist who says that we would be better off if tariffs were abolished is making a statement that several large and wealthy organizations--General Motors and the United Auto Workers, for example--would like to believe is false, or would at least like other people to believe is false. In such a situation, the publicity given to opposing views has very little relation to the percentage of the profession that supports them. If 99 percent of all economists agree that tariffs should be lowered (only a slight exaggeration of the real situation), the supporters of tariffs will surely be able to find at least one articulate member of the remaining one percent to represent their views. The public impression will then be that "some economists are for tariffs; some are against them."

The same thing happens in other fields. Physics is generally regarded as the hardest of the hard sciences. But when it comes to issues about which many people feel deeply it rapidly begins to seem as though physicists too "never agree with each other."

Consider the controversies over whether nuclear reactors are safe, what the long-term effects are of nuclear war, or whether space-based defenses against a nuclear attack are practical. For all I (or, probably, you) know, there is a right answer to each of these questions, subscribed to by the great bulk of those competent to hold an opinion. But as long as there are at least a few people on the wrong side equipped with the right

credentials, and as long as large and influential groups support both sides, the impression received by the general public will be that the profession is more or less evenly divided.

Several years ago, the *American Economic Review* published the results of an opinion poll sent to a large number of economists, some academic, some employed by business or government. The questions--and the results--divided fairly clearly into three categories. One consisted of reasonably straightforward issues of price theory: the effect of rent control, of minimum wage laws, of tariffs. On those questions, there was general agreement, often by more than 90 percent of those polled. The second category involved questions, mostly "macroeconomic" questions, in areas where there is considerable professional controversy; as one would expect, opinion on those questions was divided. The third category consisted of questions where the answer depended in large part not on economics but on issues of moral philosophy--what one believes to be a good or just world. An example would be the question "Should the income distribution of the U.S. be made more equal?" In this category too, there was widespread disagreement. My conclusion from the results of the poll was that economists, like physicists, generally agreed about the solved questions of their science, disagreed about areas where work was still going on, and disagreed on issues where their conclusions depended largely on things other than economics.

PROBLEMS

1. In discussing reasons for learning economics, I asserted that making you a better informed voter was not a good reason for you to learn economics but might be a good reason for me to teach it. Explain. You may have to assume that I take a very optimistic view of how successful this book is going to be.
2. Apply economics in an original way to something that has not been analyzed in this book. Ideally, your analysis should use one or more of the ideas developed in this book to provide some non-obvious explanations of or predictions about real-world phenomena. Some possible subjects are: professional sports, college sports, intramural sports, sex, mental illness, dieting, the relation between students' GPA's and other characteristics, religion, landscaping of different campuses, attractiveness of female students at different campuses with different majors, attractiveness of male students at different campuses with different majors, dorm food, climates and the people who live in them, pet ownership, the notorious inability of Americans to speak foreign languages, why drivers are more courteous in some cities than in others, relation between amounts of partying engaged in by students and other characteristics of themselves or their campuses, and differences between the attitudes and behavior of residents of small towns and those of inhabitants of big cities.
3. In the course of reading this book, you have been learning two things--a general