Chapter 6

Chicago Price Theory

From his arrival at the University of Chicago in 1946 until his retirement in 1977, Milton Friedman did more than anyone to set the intellectual agenda of the Chicago economics department. Though Friedman was primarily known as a monetary economist, the subject he chose to teach was *price theory*, or *microeconomics*. Microeconomics was a required first-year graduate-level course and it shaped the thinking of generations of students, giving them an extraordinarily rich set of tools for analyzing problems in all areas of economics.

What exactly is microeconomics, and what was unique about the Chicago variety? It might be best to answer that question with some examples. In the 1950s, Friedman's counterpart at MIT was the enormously influential future Nobelist Paul Samuelson, who also taught microeconomics. Here are a few sample questions pulled almost at random from Samuelson's final exams and problem sets:

- Write a 45-minute essay explaining what Hicks does in Books I and II of Value and Capital, relating the parts to each other.
- In 45 minutes, state the fundamental problems of bilateral monopoly, duopoly and/or game theory. What solutions have been advanced? Appraise them.
- In 45 minutes, discuss the principal theories relative to capital and interest. Appraise.

At around the same time, Friedman at Chicago was posing exam questions like these:

- Will a specific tax of, say, $1 per cup of coffee raise the price of coffee by more or less than an equivalent tax equal to a specified percentage of the price?[21]
- True or false: Technological improvements in the production of rayon, nylon, and other synthetic fabrics have tended to raise the price of meat.
- If soybean farmers receive a subsidy of a fixed number of dollars per acre, will the yield per acre rise or fall?
- It's been alleged that the Kodak company's highly profitable film business allows it to undercut its competitors' prices in the market for cameras. Under what circumstances would it make sense for Kodak to behave in this way?

Perhaps you've stopped to ponder one or more of Friedman's questions. I'm guessing that unless you're a professional economist, you weren't tempted to ponder any of Samuelson's. To Friedman, economics was always about the sort of real-world problems that might be asked by a homemaker planning a budget, a business owner formulating a pricing strategy, a policymaker formulating a tax plan, or a citizen reading the news. Theories were interesting when they made concrete predictions that could be tested. Should General Motors instruct its subsidiaries to buy parts where they can get them the cheapest, or to favour other GM subsidiaries? What would happen if every licensed cab driver were issued a second license and permitted to sell it to the highest bidder? If the Alcoa Corporation has a worldwide monopoly on freshly mined aluminum, does it matter (for aluminum prices) whether they have a monopoly on second-hand aluminum as well?[22] What would happen if the publishing industry were subject to the same sort of regulations faced by television broadcasters?

It might appear that the answers to such questions could be anything at all, depending on a great deal of information that isn't given. But Friedman

[21] Here an *equivalent tax* is a tax designed to raise the same amount of revenue for the government.

[22] This was in reference to a then-current antitrust case against the aluminum industry, where the court had accepted the argument that it does not matter; the answer that Friedman was looking for was that it might matter very much or not at all depending on a great many external factors, which a successful student would at least partially list and analyze.

taught the skill of arguing to a conclusion by focusing on the implications of rational choice and incentive-driven behavior, making auxiliary assumptions as necessary, and keeping careful track of how the conclusion might change if those assumptions prove to be incorrect.

Over time, well-trained Chicago students graduated, got jobs, and disseminated these skills to their own students, so that Chicago Price Theory became a standard part of the curriculum in economics departments worldwide.

In Friedman's hands, Chicago Price Theory was not only a powerful and innovative subject in its own right, but the key to *all* of economics. Outside Chicago, subjects like macroeconomics and monetary theory were often treated as quite separate from price theory. But in Friedman's Chicago, price theory was at the center of everything, including Friedman's own work in monetary theory. Indeed, one thing that strongly distinguishes Friedman from his contemporaries is that his monetary theories depend crucially on a close analysis of why people hold money in the first place—an analysis that in turn depends crucially on the deft application of the tools of price theory.

Because Chicago Price Theory demands concrete answers to concrete questions (as opposed to 45-minute ruminative essays), it invites a lot of argument. Being at Chicago meant constantly being drawn into arguments between very smart people who defended opposing answers to some of those Friedman-style exam questions. Those arguments (among the graduate students and among the faculty) were huge learning experiences, where the participants unraveled each other's' logic, and, more often than not, came away understanding how different assumptions had led to different conclusions, and how those assumptions might be put to the test.

This culture of argument was carefully cultivated by Friedman and his colleague George Stigler, another future Nobelist who shares credit with Friedman for the edifice of Chicago Price Theory. The remarkable thing about those arguments is that, after hours or weeks or sometimes months of back-and-forth, they tended to get settled, and from those settlements came great ideas.

A legendary instance occurred in 1958 when Professor Ronald Coase, then teaching at the University of Virginia, visited Chicago to present a paper on the theory of *externalities*—costs imposed on others without their consent.

There's an externality, for example, when I have to breathe your second-hand smoke. As a result, you tend to smoke more than I'd like you to, and more than would be justified by an impartial cost-benefit analysis.[23] The solution, according to all the textbooks in 1958, was to tax the harmful activity—in this case smoking—so that there would be less of it.

Professor Coase's radical take on the matter was that just as your smoking harms me, my complaining about it (and convincing my government to tax it) harms *you*. So if the textbook logic were correct, we'd have to tax you for smoking, tax me for making that tax necessary, tax *you* for making *that* tax necessary, and thereby descend into madness. Professor Coase therefore proposed an entirely novel analysis of the externality problem, the details of which are fascinating but, alas, off-topic here.[24]

Here is what I wrote about Coase's visit to Chicago in my book *The Armchair Economist*:

> Coase's seminar has become legendary among economists. It drew the most brilliant and intellectually relentless audience imaginable. George Stigler, one of the four future Nobel laureates in the room, recalled the audience as a "simply superb" collection of theorists and the occasion as one of the most exciting intellectual events of his life. Before the talk, a vote was taken. There were 20 votes for Arthur Pigou [the architect of the generally accepted theory] and one for Ronald Coase. Stigler later commented that "If Ronald had not been allowed to vote it would have been even more one-sided."
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> Stigler's recollection continues: "As usual, Milton did much of the talking... My recollection is that Ronald didn't persuade us. But he

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[23] If your third cigarette brings you 5 cents worth of pleasure (net of what you paid for it) and causes me 3 cents worth of distress, then an impartial cost-benefit analysis says it's a good thing for you to smoke that cigarette, because 5 is greater than 3. If your fourth cigarette brings you an additional 4 cents worth of pleasure and causes me 6 cents worth of distress, then the same impartial cost benefit analysis says it's a bad thing.

[24] The key to that novel analysis is to recognize that your smoking imposes a cost on me, my attempts to restrain your smoking impose a cost on you, and that a well-designed policy should aim to minimize the total of all such costs.

> refused to yield to all our erroneous arguments. Milton would hit him from one side, then from another. Then, to our horror, Milton missed him and hit us. At the end of the evening the vote had changed. There were 21 votes for Ronald and no votes for Pigou." Soon the entire profession had been won over, and eventually Coase was awarded a well-deserved Nobel prize for ushering in a new era in the economic analysis of law.

It should perhaps be added that Stigler's reference to "the end of the evening" is a bit of a euphemism. According to the recollections of some who were there, the seminar began in mid-afternoon and wrapped up at around 3 a.m., following a change of venue from the classroom to the living room of Aaron Director (a Chicago law professor and Milton Friedman's brother-in-law). The Chicago style—the Friedman style—was to never close the door on a subject until you'd nailed down every detail.

To that end, Friedman introduced a new kind of seminar: Each week in his "money workshop," an invited speaker would submit in advance a written account of some research project he was currently working on. All participants were expected to read this paper carefully in advance. When the seminar met, the speaker was given a few minutes to introduce himself before the action got under way. Then Friedman asked, "Are there any comments on page 1?" If those comments, and the disputes they generated, did not fill the allotted 90 minutes, he would then ask, "Are there any comments on page 2?" Speakers typically left feeling simultaneously chastised and inspired, and revamped their research agendas for the better, frequently including profuse thanks to Friedman and his crew in the final versions of their papers.

Emboldened by the successes of Chicago Price Theory, its practitioners soon sought to extend its scope by applying their methods to issues previously thought to be beyond the scope of economics. Friedman's brilliant disciple Gary Becker encroached deeply into the field of sociology, using price theory to analyze the causes and effects of racial discrimination, criminal behavior, family sizes, power struggles in interpersonal relationships, and divorce rates. Harry Markowitz and Eugene Fama used price theory to understand portfolio investment decisions and thereby revolutionized the theory of finance. Robert

Fogel employed price theory to illuminate the persistence of slavery in the American south. Everybody mentioned in this paragraph was directly inspired by Friedman, and every one of them was eventually awarded a Nobel Prize.

Friedman's disciples also garnered another form of glory through the illustrious contributions of their own students and their students' students and so on through the generations, with no end in sight. After many decades, Chicago Price Theory—Milton Friedman's Chicago Price Theory—remains one of the most successful disciplines in intellectual history.