How Economists Choose Their Theories

In Chapter 2 we discuss how economists use models to organize their thinking about economic phenomena and how they use data from the real world to test the predictions generated by these models. Even though all (or nearly all) economists would agree with the discussion in Chapter 2, they often disagree about what constitutes a "good" economic model and how they should choose between models. Here we outline the nature of one such debate between two outstanding economists, Ronald Coase and Milton Friedman, both of whom were awarded Nobel Prizes for their contributions to the field.

Ronald Coase, who for many years has been a professor at the University of Chicago, is one of the most influential economic theorists of this century. You will encounter some of his ideas in Chapter 6, where we discuss why firms exist, and in Chapter 16, where we discuss the importance of property rights in dealing with what economists call "externalities." In 1991, Ronald Coase was awarded the Nobel Prize. Milton Friedman, a long-time professor at Chicago who is now at the Hoover Institution in California, is one of the most influential macroeconomists of his generation. As you will see in Chapters 28 and 30, his thinking has had a significant influence regarding the way economists think about the causes of inflation and the conduct of monetary policy. He was awarded the Nobel Prize in economics in 1976.

These two outstanding economists have quite different views about what constitutes a good economic model. Friedman's view, outlined in his now-famous 1953 paper "The Methodology of Positive Economics," argues that a theory ought to be judged on the quality of its predictions, independent of whether the theory helps us to understand the economic system under consideration. Thus, even if a theory does not help us to think more clearly about the specific aspect of economics under consideration, Friedman judges the theory to be a good one as long as its predictions are not rejected by the data. Coase openly disagrees with Friedman's position. Coase argues that the central motivation behind economists' desire to build abstract economic models is to organize their thinking about complex issues. Predictions are important, ultimately, but are not necessary in order for the model to be useful and valuable. In Coase's view, a theory that does not help us to think about and understand underlying economic behaviour is not a very useful one. The passage below is from Coase's 1981 paper entitled "How Should Economists Choose?" and is a direct response to Friedman's view.

> Many economists, perhaps most, think of economics as the science of human choice, and it seems only proper that we should examine how economists themselves choose the theories they espouse. The best-known treatment of this question is that of Milton Friedman, who, in "The Methodology of Positive Economics," his most popular paper...tells us "how to decide whether a suggested hypothesis or theory should be tentatively accepted as part of" the positive science of economics. As you all know, the answer he gives is that the worth of a theory "is to be judged by the precision, scope, and conformity with experience of the predictions it yields....The ultimate goal of a positive science is the development of a 'theory' or 'hypothesis' that yields valid and meaningful...predictions about phenomena not yet observed."
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> I should say at once that I do not consider Milton Friedman's answer satisfactory....The view that the worth of a theory is to be judged solely by the extent and accuracy of its predictions seems to me wrong. Of course, any theory has implications. It tells us that if something happens, something else will follow, and it is true that most of us would not value the theory if we did not think these implications corresponded to happenings in the real economic system. But a theory is not like an airline or bus timetable. We are not interested simply in the accuracy of its predictions. A theory also serves as a base for thinking. It helps us to understand what is going

on by enabling us to organise our thoughts. Faced with a choice between a theory which predicts well but gives us little insight into how the system works and one which gives us this insight but predicts badly, I would choose the latter, and I am inclined to think that most economists would do the same. No doubt it would be their belief that ultimately this theory would enable us to make predictions about what would happen in the real world; but since these predictions would emerge at a later date (and probably would also be about different things), to assert that the choice between theories depends on their predictive powers becomes completely ambiguous.

Friedman enlarges his argument by maintaining that theories are not to be judged by whether their assumptions are realistic. Let me quote what he says:

> Consider the density of leaves around a tree. I suggest the hypothesis that the leaves are positioned as if each leaf deliberately sought to maximize the amount of sunlight it receives, given the position of its neighbors, as if it knew the physical laws determining the amount of sunlight that would be received in various positions and could move rapidly or instantaneously from any one position to any other desired and unoccupied position....Despite the apparent falsity of the "assumptions" of the hypothesis, it has great plausibility because of the conformity of its implications with observation.

Let us suppose that it is true that the assumption that a leaf subscribes to *Scientific American* and the *Journal of Molecular Biology* and that it understands what is contained therein enables us to predict what the distribution of leaves around a tree will be. Such a theory nonetheless provides a very poor basis for thinking about leaves (or trees). Our problem is to explain how leaves come to be distributed on a tree given that a leaf does not have a brain. Similarly, to take an example in economics, we could have predicted over the last few years what the American government's policies on oil and natural gas would be if we had assumed that the aim of the American government was to increase the power and income of the OPEC countries and to reduce the standard of living in the United States. But I am sure that we would prefer a theory that explains why the American government, which presumably did not want to bring about these results, was led to adopt policies which harmed American interests. Testable predictions are not all that matters. And realism in our assumptions is needed if our theories are ever to help us understand why the system works in the way it does. Realism in assumptions forces us to analyse the world that exists, not some imaginary world that does not.

It is, of course, true that our assumptions should not be completely realistic. There are factors we leave out because we do not know how to handle them. There are others we exclude because we do not feel the benefits of a more complete theory would be worth the costs involved in including them. Their inclusion might, for example, greatly complicate the analysis without giving us greater understanding about what is going on. Again, assumptions about other factors do not need to be realistic because they are completely irrelevant. If we wish to show that enforcement of a minimum wage will lead to unemployment among less productive workers, it is unnecessary to be accurate about the exact way in which capital gains are taxed. There are good reasons why the assumptions of our theories should not be completely realistic, but this does not mean that we should lose touch with reality.[1]

[1.] This passage is taken from "How Should Economists Choose?," in *Essays on Economics and Economists* (Chicago: The University of Chicago Press, 1994). The quoted passage by Milton Friedman is from "The Methodology of Positive Economics," in *Essays in Positive Economics* (Chicago: The University of Chicago Press, 1953). With permission from the American Enterprise Institute.