Is Anything Worth Keeping in Microeconomics?

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Abstract

Microeconomics' notions of "market supply" and "market demand" do not exist in real-world markets. Its models give a central place to equilibria, implying that they are predictions. It distracts from more essential aspects of economic behavior and exchange and encourages inventing absurd tales, especially concerning production. We should consider society as it is organized, with different social groups, norms, and customs, and then concentrate on decision making and choice.

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We both teach microeconomics. Teaching has two objectives: to transmit knowledge, facts, and results, and, more important, to teach students how to think and reason. Thus, the first thing that we ask ourselves is: what do we believe that students should absolutely know and how can their way of thinking and reasoning be improved by a course in microeconomics? We have concluded that microeconomics does not provide knowledge that could not be obtained otherwise and that, as it is usually taught (or presented in textbooks), it encourages an erroneous way of thinking.

When we speak of microeconomics, we mean the neoclassical approach, which starts with consumer and producer choice, continues with "market equilibrium," and ends with efficiency. Our aim here is not to criticize the *homo œconomicus* assumption (selfish agents), since without a simplifying assumption, as John Stuart Mill ([1874] 2007) pointed out in his *Essay on Political Economy,* economics cannot be a science different from other social sciences. Indeed, our main criticism is not directed at the assumption about the behavior of individuals but at the way microeconomics describes their relations among themselves, and at what it calls "the market."

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are price takers, a theory that Vernon Smith qualifies as a "nonstarter": "As a theory the price taking parable is also a nonstarter: who makes prices if all agents take prices as given? If it is the Walrasian auctioneer, why have such processes been found to be so inefficient?" (15). By inefficiency, he means that repeated testing of such processes shows that prices do not converge to the intersection of demand and supply curves. Should we tell our students that there is, as Vernon Smith says, a "social mind" that solves complex organizational problems without conscious cognition (52)? Should our students throw away their microeconomic textbooks? We think that they could, but even more we believe that they should reject this magical way of thinking (the "social mind" replacing the "invisible hand").

4. Imperfect Competition and Equilibrium

Some people say that microeconomics is not only about perfect competition, that in some models agents are not all price takers. Sure, but in this case the existence of at least one general equilibrium is no longer guaranteed. This is why even advanced textbooks—such as Mas-Colell's *Theory of General Economic Equilibirum* (1985) or Mas-Collel, Whinston, and Green's *Microeconomic Analysis* (1995)—do not say a word about general equilibrium outside the perfect competitive case. Textbooks generally start thus with a "given" demand function—at least in models about firms—with one good. They thus adopt a partial equilibrium approach, and then focus on equilibrium. Jane could here again ask, why equilibrium? Is it a prediction of what will happen, of what the outcome will be? The answer is, again and without any doubt: *no*.

To understand why, let us take the example of the most popular model on "imperfect" competition: the Cournot duopoly. Duopolists compute a reaction curve, given their conjectures about their competitor's reactions. Typically, textbooks represent *both* reaction curves together, in *the same* figure. The readers' attention is thus spontaneously attracted to the point where the two curves intersect: the equilibrium point. Is the theory predicting that this will be the outcome? No, since each duopolist does not know the other's reaction curve, the probability that equilibrium strategies are (or will be) chosen is practically nil. If we draw the duopolists' reaction curves separately, in two different boxes, *A* and *B*, and ask students to predict the production of firm *A* (or *B*), without knowing *B's* (or *A's*) reaction curve, they can only guess at random. To avoid this unpleasant issue, textbooks often suggest an "adjustment process of decisions": *A* starts with an offer, *B* reacts to it, *A* reacts to *B's* reaction, and so on, until equilibrium is reached. But, in so doing, textbooks make the same logical mistake as the one in the supply-demand cross diagram model: reaction curves are computed *assuming* "Cournot conjectures"; that is, duopolists think their competitors will not change their production if the duopolists change their own. Now, during the adjustment process, *A* and *B notice* that their competitor *reacts* to their own offer; both conclude then that their initial conjectures were false. If they are rational, they should change their conjectures during the process. Consequently, duopolists' reaction curves should change or move at each step of the process. Equilibrium would then be unpredictable since, here again, it would be path dependent.

The situation is even more striking in the case of the Bertrand model, where the equilibrium price equals constant marginal cost, *c*. A rational player should choose a price higher than *c*, because if the player's price is lower than the competitors', the player then

makes a strictly positive profit: higher than equilibrium one, which is zero. Consequently, the only prediction of the model is that rational players *never* choose equilibrium strategies! As David Kreps (1990) notes: "In the great majority of the applications of noncooperative game theory to economics, the mode of analysis is equilibrium analysis. And in many of those analyses, the analyst identifies a Nash equilibrium (and sometimes more than one) and proclaims it as 'the solution.' I wish to stress that this practice is sloppy at best, and probably a good deal worse" (405).[2] What then is the justification for deducing a lot of "results" in the comparative static mode? Why should one talk about "solutions" when speaking of equilibrium points that *are not* predictions of the theory?

5. Marginal Reasoning and Utility and Production Functions

The last point we would like to stress in our presentation concerns the "importance of marginal reasoning," often put forward to justify the importance of microeconomics. We all understand that consumers substitute pears for apples, or vice versa, if their relative prices change. What can students learn from a course in microeconomics that they do not intuitively already know or observe in their everyday lives? The idea of marginal utility? No, since—as we all know—utility is an ordinal concept and thus marginal utility has no sense in itself. The idea of utility functions? Forget it! Preference relations are enough.

In fact, the cardinal approach makes sense if one considers the production side. But production is not like "tastes": one cannot assume anything about it. Inputs (or technologies) cannot be substituted to obtain the same good as pears can be substituted for apples to obtain the same utility. Here again, unfortunately, textbooks strongly suggest the contrary. Some of them—the majority?—try to convince students by giving absurd "real" examples: shirts produced with labor and "cloth" (Hirshleifer, Glazer, and Hirshleifer [1992] 2005), strawberry jam produced with labor and "tanks" (Schotter 1981), or "cars' bodywork" produced with labor and machines (Stiglitz 1995). Others do not try to be "realistic" and give imaginary goods as examples: "snarks" produced with labor and "machines" for Begg, Fischer, and Dornbusch (2005); and a narcotic stimulant called "pfillip" obtained combining a special chemical "kapitose" and a common vegetable "legume" for Kreps. Hal Varian (2004) is more cautious: he gives real life examples in which there is no substitutability (a man and a shovel) or when there is "perfect substitutability" (blue and red pencils for writing a text), but only a Cobb–Douglas relation $y = x_1^{\,a}\, x_2^{\,b}$ for the other cases, without a word about the meaning of x_1, x_2, and y!

Textbooks often confuse *intertemporal* substitution with (more or less) instantaneous substitution. No one doubts that machines replace men, but this occurs in the course of time, and it is practically *never* the other way around! Everyone knows this without having to take a course in microeconomics. Why do textbook authors desperately try to hide the obvious fact that, in real life, many inputs are complementary and not substitutable? There are many reasons. The most important, probably, is that complementary inputs imply null marginal productivity: output cannot be increased by increasing only one input. Intermediate goods in particular are almost always complementary. For output in goods-producing industries to

2. Kreps admits, in a footnote, that he, too, adopts this "sloppy" practice.

increase, the quantity of intermediate goods used to produce the output must also be increased (e.g., cloth to produce a shirt, ham to produce a ham sandwich). However, the concept of the marginal product of labor (or capital) requires that as the input of labor (or capital) is increased, *all other inputs must be held constant*. But this is not possible for intermediate inputs in goods-producing industries. Therefore, the concept of the marginal product of labor (or capital) is not possible when there are intermediate goods in the production function. Again, we prefer not to teach such logical errors to our students.

What about U-shaped cost curves? They, too, are misleading. As inputs are complementary, marginal costs are constant, or almost. They are represented by a horizontal line, and average costs by a decreasing one (when capacities of production are not saturated). The main problem for real life firms is thus to decide the size of their production capacities, that is of their fixed (or sunk) costs. To take such decisions, firms have to make expectations about future demand. Yet, microeconomics has nothing to say about these expectations, since it only pays attention to uncertainty resulting from the realization of exogenous "states of nature" in a complete system of markets. This is far away from real economic situations (including financial ones), where uncertainty is essentially endogenous.

6. What Is to Be Done?

In an uncertain world, making sophisticated calculations before making each decision is nonsense. People generally adopt routines; they respect traditions and norms, and that is why their behavior is predictable. Regulations and government interventions are also necessary to reduce uncertainty (and do not only aim at compensating "market failures"). To illustrate this, let us consider the "pollution rights" markets. They are organized, by economists, in a pragmatic way, far away from the theory one finds in textbooks, even the "advanced" ones. In these markets, at least at the beginning, prices are very volatile because of uncertainty about the future. Governments try to find rules and establish quotas that stabilize these prices around the level considered as the "good level" (i.e., which sufficiently reduces pollution). But this task is not easy. This example is interesting, as it is a sort of "real life experiment," which tries to reach a target without a theory (indeed, double auction theory is very complicated and does not make definite predictions). Obviously, there are a lot of other kinds of markets, with their own rules and organization.

We must encourage students to observe markets and to try to understand how they actually work, to discover how prices are really set and changed, or, in other words, to study how capitalism actually functions nowadays. To do so, one has to forget the "invisible hand" and, more generally, utility or production functions, marginal rates of substitution, and all kinds of curves that do not describe real data. In a word, to understand the real world, one has to forget microeconomics.

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