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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1. General Equilibrium

The general equilibrium approach starts with individual decisions. It assumes that trades are voluntary and that there exist mutually advantageous opportunities of exchange. Up to here, everyone can agree. The problem lies in the next step. At this point, let us follow David Kreps's (1990) reasoning in his *A Course in Microeconomic Theory.* Kreps asks the reader to "imagine consumers wandering around a large market square" with different kinds of food in their bags. When two of them meet, "they examine what each has to offer, to see if they can arrange a mutually agreeable trade. To be precise, we might imagine that at every chance meeting of this sort, the two flip a coin and depending on the outcome, one is allowed to propose an exchange, which the other may either accept or reject. The rule is that you can't eat until you leave the market square, so consumers wait until they are satisfied with what they possess" (196).

Kreps "imagines" other models of this kind. In each of them by the word "market" he means a "market square," and he introduces rules ("flip a coin," "nobody can leave before the end of the process"). He is aware that "exploration of more realistic models of markets is in relative infancy." And when he speaks of "more realistic" models, he means more realistic with respect to perfect competition.

But the problem with perfect competition is not its "lack" of realism; it is its "irrelevancy" as it surreptitiously assumes *an entity* that gives prices (present and future) to price taking agents, that collects information about supplies and demands, adds these up, moves prices up and down until it finds their equilibrium value. Textbooks do not tell this story; they assume that a *deus ex machina* called the "market" does the job.

Sorry, but we do not want to teach these absurdities. In the real world, people trade with each other, not with "the market." And some of them, at least, are price makers. To make things worse, textbooks generally allude to some mysterious "invisible hand" that allocates goods optimally. They wrongly attribute this idea to Adam Smith and make use of his authority so that students accept this magical way of thinking as a kind of proof.

Perfect competition in the general equilibrium mode is perhaps an interesting model for describing a central planner who is trying to find an efficient allocation of resources using prices as signals that guide price taker households and firms. But students should be told that the course they follow—on "general competitive analysis"—is irrelevant for understanding market economies.

2. Partial Equilibrium and Demand and Supply Curves

Some people say: "OK, you are right. But we don't need general equilibrium analysis; partial equilibrium is enough to get insights about what happens in real life economies, without mathematics." Introductory courses in microeconomics thus spend a lot of time drawing the demand and supply curves of a hypothetical good (often some kind of food) from hypothetical price taking individuals (Anna, Clarence, Greg, . . .). They define market demand (supply) as "simply" being the sum of individual demands (supplies). They thus elude the main question: *who* adds up these demands and supplies? Suppose that a clever student, call her Jane, wants to know who does this. She will, unfortunately, not find the answer in textbooks. She will also probably wonder why these textbooks put prices on

the ordinate (vertical) axis since they assume that prices are given and use formulas as $d(p)$ and $s(p)$; usually, when you write $f(x)$, x is on the abscissa (horizontal) axis. But this is a just a small detail, compared with what follows.

After drawing the "market" demand and supply curves of price taking agents, microeconomists focus all their attention on the intersection of these curves, the so-called "equilibrium point." Clever Jane will then ask why textbooks focus on this intersection point? Their authors suggest an explanation, and, here again, they fall into logical error. Joseph Stiglitz (1995), in his *Principles* for example, explains that when the price of a commodity is higher than its "equilibrium price," some producers "start to lower their price expecting to pick up customers of other producers." The same with Mankiw (2006) who writes: "Suppose that price is higher than equilibrium price . . . . Sellers will try to increase their sales by lowering the price of the good. Prices lower until equilibrium price is reached." In these examples, Stiglitz and Mankiw apparently forget that they had initially deduced their demand and supply curves (and the equilibrium point where they intersect) from *price taking* agents' choices. If they then decide that some sellers will "lower their price," then they suddenly become *price makers*: the initial supply-demand curves (and the intersection of these) are no longer relevant. The equilibrium point has become path dependent, since it depends on trades made out of it, at "false prices" as Walras called them (and that is precisely why he assumed that trades should not be allowed during *tâtonnement*). Everybody should know this, at least since 1971, when Arrow and Hahn published their *General Competitive Analysis*. We thus ask: does teaching elementary economics authorize elementary faults of logic? If clever people, like Stiglitz and Mankiw, make such a gross mistake, it is because they succumb to an analogy from reality: "I lower the price of my house or my car until I find a buyer." This helps convince students that the model is relevant. But it is not. Some textbooks allude to auctions—English, Dutch, eBay, or others—but auctions have nothing to do with price taking agents generating supply-demand cross diagrams.[1]

3. Experimental Economics

"Experimental economics" tells us that when trade is organized using the "continuous double auction" protocol with price making agents, prices converge to the point where supply and demand curves intersect, that is, equilibrium. Why? Nobody knows. As Vernon Smith notes in his Nobel Prize lecture (www.nobelprize.org), "we have not a clue, any more than the so-called 'naive' subjects in experiments, how it is that our brains so effortlessly solve the equilibration problem in interacting with other brains through the continuous double auction institution. We model not the right world to capture this important experimental finding" (15, note 29; see also notes 14, 38, 45). This "experimental finding" was made more than forty years ago, but textbooks still cling to the assumption that agents

1. Demand and supply curves are invariably used to show the "deadweight loss" that necessarily results from taxes on goods. Nobody really draws the conclusion that we should abolish taxes. The problem is that in a perfect competitive world, the *only way* to obtain all those things that taxes pay for without "distorting" prices is to change "initial endowments," that is, property rights. We have never seen a textbook proposing this (sole) "efficient" way of providing roads, policemen, and firefighters, but the idea is out there that "non-distorted" prices are better.

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.