The End of Economics

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If Australian economist Steve Keen's book, Debunking Economics, doesn't end, once and for all, the terminally convoluted discourse that afflicts mainstream economics, nothing will. Although the book's purpose is to show that neoclassical economics is all bunk, however, it is also, remarkably, as good an introduction to neoclassical economics as any you're likely to find.

Unlike textbooks that introduce economic models with terse statements of assumptions like "marginal cost is increasing" and simple examples to illustrate them, Keen's book takes these assumptions apart, discusses why they are often incorrect, and explains why such errors matter a great deal. In an ordinary economics textbook, assumptions are advanced uncritically, or with an example illustrating why they are true – but never explaining how far from universally true these assumptions really are.

For instance, a typical assumption that economists take for granted but Keen exposes is "that the perfectly competitive firm is so small, relative to the overall market, that its impact on the market can be treated as zero." But Keen expresses a thought that may glimmer in the mind of a student at this point: "infinitesimals ain't zero." Somehow, in the economic models, the zeros add up to an aggregate impact that is much greater than zero. Major conclusions are drawn in economic theory from both of these contradictory assumptions.

This kind of thing leaves economics students wondering if they have missed something; perhaps there was a prerequisite they haven't studied, or perhaps something was said in class that everybody else heard, except them. The fact that there are many exceptions to the assumptions – indeed, that they are more honored in the breach than in the observance – is obscured in footnotes or abstruse disclaimers. Learners are left wondering, why can we even call this a "rule"?

The problem, of course, is that like white lies, the near-truths and untruths compound until after a while the whole edifice is on shaky ground. Let me propose a slight rewording of Sir Walter Scott's famous line: "Oh what a tangled web we weave, when first we practice to *assume*." That tangled web is the structure of contemporary economics. As Keen says, "If you believe you can use unreality to model reality, then eventually your grip on reality itself can become tenuous."

An old Monty Python routine, The Royal Society for Putting Things on Top of Other Things, shows a meeting of stiff-upper-lipped English gentlemen discussing their continuing

mission of ensuring that as many things are put on top of other things as possible. When one of the polite but self-important gentlemen (played by John Cleese) tentatively advances the opinion that the whole thing is a bit silly, the chairman agrees and abruptly announces, “OK, meeting adjourned forever.” At conferences I’ve attended (mostly on financial theory, not economics), I have found myself anticipating a similar pronouncement at any moment, though it never comes.

Such farce comes to mind when reading discussions of economic theory that seem thoroughly unmoored from reality. Although Keen is obviously extremely well-versed in economic theory, he hasn’t come unstuck from the real world, as many economists have.

The indoctrination of an economist

Keen’s book exposes the willful blindness of economists when it comes to such basic foundations as, for example, the meaning of the word “capital.” There’s a chapter devoted to this issue, entitled “The Holy War Over Capital,” which begins by pointedly exposing a basic absurdity any student would encounter in Economics 101:

> The term ‘capital’ has two quite different meanings in economics: a sum of money, and a collection of machinery. Economists assume that they can use the two terms interchangeably, and use the money value of machines as a proxy for the amount of machinery used in production. They prefer to abstract from the complexity that there are many different types of machines, many of which (such as, for example, blast furnaces) are solely suited to producing one particular commodity, and instead work with the generic term ‘capital’ – as if there is some ubiquitous productive substance which is just as suited to turning out sheep as it is to producing steel.

I recall my own frustration when first struggling to understand what economists mean by “capital.” Referring to several different textbooks did little to overcome the confusion.

Take Paul Krugman’s and Robin Wells’ textbook, *Economics*, for example. The first time they mention the word capital, their explanation is that “capital refers to ‘created’ resources such as machines and buildings.” Later, in Chapter 7, the term is officially defined, with a marginal definition that says, “The capital of a business is the value of its assets – equipment, buildings, tools, inventory, and financial assets.” Later, in the section called “The Economy’s Factors of Production,” it says, “In Chapter 7 we defined *capital*; it is the assets that are used by a firm in producing its output. There are two broad types of capital. **Physical capital** – often referred to simply as ‘capital’ – consists of manufactured resources such as buildings and machines.” (The second type of capital is human capital.)

This formulation is far more likely to confuse a student than Keen’s. In Krugman’s and Wells’, one wonders whether they really mean to lump all those disparate things together as “capital,” and what can be the purpose of doing so. One also wonders if the category “financial assets” is the mere afterthought that it seems to be – coming in last in Krugman’s

list in his official definition, and not appearing at all in the other two definitions. Why, then, do we hear the word “capital” used so much to mean just a quantity of money?

The purpose of teaching economics in this way is, I suspect, to train the students to understand that “this is the way we think in the economics profession.” That is, after all, one of the purposes of education – to familiarize students with each field’s mode of thinking. It is actually a form of deliberate indoctrination, to get the students to develop a facility for thinking easily in the terms of abstraction that those in the profession do – kind of a “welcome to the club.” It also draws students into the professional’s collective pact to ignore reality. Once a budding economist has been graciously welcomed to these new ways of thinking and talking, it would seem a little traitorous to call the whole basis into question. Hence John Cleese’s timorousness as he questions the purpose of the Royal Society for Putting Things on Top of Other Things.

That is why, if I were teaching a course in economics, I would assign two required textbooks – a conventional one, like Krugman’s and Wells’, and one that tells the real story, in common-sense language, like Keen’s.

I actually teach a course in energy and environmental economics to graduate students with science and engineering backgrounds. When those students don’t understand how you can abstract from millions of people buying and selling to get overarching laws, like supply and demand, I can explain in this way: “It’s like ideal gas theory – there, you have trillions of trillions of molecules each going in a random and unpredictable direction, and yet you can predict with a high degree of accuracy what the resulting temperature, pressure and volume of the aggregate will be; the only difference between that and economics is that the assumptions of ideal gas theory correspond to the real world very well, and the predictions of the model are accurate, while the assumptions of economics correspond to the real world extremely poorly, and the predictions of its models are mostly wrong.”

How wrong it is

In almost every chapter of Keen’s book, one of the theoretical models of mainstream economics is taken apart and shown to be invalid, either for theoretical reasons, or because empirical results do not agree with it, or both. The assumption of rising marginal cost is a good example – Keen shows that it may not be valid both for theoretical reasons and because we often observe the opposite in practice. As he does throughout the book – greatly enhancing his credibility – Keen quotes here from the results of a survey by another, and better-known economist, Alan Blinder, who found that “only 11 percent of GDP is produced under conditions of rising marginal cost.” Keen then expounds on the implications of Blinder’s statement. “The neoclassical model of … rising marginal cost is thus wrong in theory and wrong in fact,” Keen writes. “That it is still taught as gospel to students of economics at all levels of instruction, and believed by the vast majority of neoclassical economists, is one of the best pieces of evidence of how truly unscientific economics is.”

Keen also finds plenty wrong with the assumption of a downward-sloping demand curve and particularly with the aggregation of demand curves to get downward-sloping aggregate demand. Demand for a good is supposed to decline as its price rises, but in many cases demand for a good will not slope downward. If you only drink cheap wine and the price of cheap wine falls, you'll buy less cheap wine, because you'll have more money available and can substitute a little expensive champagne for some of the cheap wine. Many other examples can be found. Because of the cumulative effect of all these exceptions, Keen argues that the demand curve can take any shape, and equilibrium could be found anywhere. What's more, he says, neoclassical economists have known this for a long time, but they ignore this inconvenient fact because it would upend their simplistic models.

Keen is on particularly firm ground when he critiques the assumption of upward-sloping individual and aggregate labor supply curves. If a person doesn't have enough money to engage in leisure, why would they choose *more* leisure and less work if the wage rate falls? And a *higher* wage, he says, "means that the same total wage income can be earned by working *fewer* hours." Why would you work more hours if the wage was higher? In fairness, Krugman and Wells point out the same thing in their textbook, though there it is explained as a result of the income effect. Keen, in other places, has criticized economic theory's practice of adding theoretical shims – to explain situations that don't accord with fundamental theory – as like adding Ptolemaic epicycles, the strange movements of planets that the Greek astronomer Ptolemy had to assume in order to preserve the theory that the sun revolved around the earth.

Keen is especially critical of the development of Dynamic Stochastic General Equilibrium models (a successor to "real business cycle" models) and their assumption of a representative agent – a single hypothetical actor who can stand in for us all. Again he quotes a better-known authority, Nobelist Robert Solow, who has himself complained about how unrealistic the assumptions of these models are. Solow put it this way:

> The prototypical real-business-cycle model goes like this: There is a single, immortal household – a representative consumer – that earns wages from supplying labor. It also owns the single price-taking firm, so the household receives the net income of the firm. The household takes the present and future wage rates and present and future dividends as given, and formulates an optimal infinite-horizon consumption-saving (and possibly labor-saving) plan…

Furthermore, Keen elaborates, this supposedly representative consumer "decides how much labor to supply by solving a utility function that maximizes his utility over an infinite time horizon, which he rationally expects and therefore correctly predicts."

The least that can be said about this is that it is a whale of a set of assumptions. What is most striking about the assumption of a representative agent is how out-of-keeping it is

with what we might suppose to be the primary virtue of capitalism – that it can satisfy the widely-varying tastes of a broad spectrum of disparate individuals.

It cannot be overlooked by the economics profession that its models are unrealistic, so economists fall back upon a doctrine associated with Milton Friedman – that it doesn't matter whether the models accurately depict the real world or not; all that matters is that they "work" – that is, that their results fit reality.

This is a dangerous tenet when the models in question have many adjustable parameters and can be programmed into a computer. Thus, through data-mining and trial and error, an economic researcher has more or less free reign to design completely unrealistic models and then to tweak their inputs until they meet Milton Friedman's criterion for validity.

Keen also dresses down economists for their reliance on static calculations. Neoclassical models unrealistically model the economy statically at a point in time, supposedly because doing so is a step toward the much more difficult problem of modeling dynamically over time; and anyway, neoclassicists tacitly assume, the model over time is just a lily-pad process of jumping from equilibrium to equilibrium. But if you learn to ride a bicycle by first learning to sit on it and stay upright, then learn movement through time and space second, it won't work because the dynamics of sitting on a bicycle statically and moving dynamically are different. So, too, Keen analogizes, with the economy – you can't just assume it jumps from equilibrium to equilibrium, and each equilibrium can be taken as separate, because in between each point there is disequilibrium; in fact, a process of disequilibrium over time is really what it's all about.

What are Keen's alternatives? He does a brief, but informative survey at the end of the book of the alternative economic theories that have been proposed, from Austrian economics to complexity theory. Somewhere in these may lie a better path forward. Keen also makes an argument for his own post-Keynesian views. These, however, do not seem sufficiently out of the mainstream to challenge the whole edifice of economics commensurate with his scathing attack. He proposes, for example, that part of the change in aggregate demand is the change in debt. This kind of suggestion has significant implications for central bank policy, but it doesn't adequately address all of the fundamental criticisms that Keen has leveled against the field.

The institution of mainstream economics is under attack, and it is faltering. Multiple heterodoxies have arisen, accumulating adherents who debate endlessly. Similar periods in history gave birth to new intellectual models and paradigm shifts. Will all this ferment fundamentally alter the field of economics itself? It is possible, but first economists will have to find a way out of their tangled web of assumptions.

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