



# De-Mystifying Mainstream Economic Theory

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## Introduction

A critical feature of globalization rhetoric is what is often termed “Neo-Liberalism,” sometimes “The Washington Consensus.” It may also be called “the ideology of free market fundamentalism.” In this view, the global integration of markets is inescapable, but since markets are “efficient” only when they are “free,” standing in the way of “liberalizing” them is destructive. This ideology is accepted as fact by large numbers of decision-makers everywhere.

It is absolutely critical to see that this ideology depends upon a body of theory which has had tremendous influence despite the fact that it is easy to show that it lacks all the credentials of a valid scientific theory. In what follows, I give a sketch of this theory and try to show why it fails.

Economics has a long history beginning at least with Adam Smith’s account in *The Wealth of Nations* (1776). Smith argued that market outcomes could be explained as the joint product of the actions of persons interacting in society. The outcome of their activity was, for example, a market price. The idea was elegantly developed in so-called neo-classical theory (also termed “micro-economics”). It maintained the fundamental assumptions of the “classical” theory, but was able to develop the analysis by generalizing the idea of “marginal utility” to cover production as well as consumption. All of this could then be articulated in terms of

mathematical models which “represent” the key variables and the consequences of the assumptions laid down by the theory. The theory is meant to apply to any capitalist market economy, including the global economy.

It is easy to sketch the broad outlines of this model and to see how it seeks to give us both an understanding of economic process and an explanation of prices, levels of employment, investment decisions, and a host of other important economic outcomes. The problem, however, is that the assumptions of the theory are not true. This is acknowledged by economists.<sup>1</sup> But if so, one must ask why does it continue to have influence that it has? I return to this.

### The neo-classical model of the market

The theory assumes atomized, rational individuals engaged in interaction, either as consumers or producers (firms). Each is driven to maximize their interests (“utility”), which requires that they make rational decisions about their choices. All choices involve an “opportunity cost,” measured by the value of next best alternative sacrificed. This requires that we can order our preferences and that we can assess the “marginal utility”—the amount of “satisfaction” we get as consumers of each additional unit consumed. Thus, between beer and milk, if I am to maximize my utility, I determine the relative trade off between quantities of the two items—for example, how much beer will need to be sacrificed for each additional quantity of milk. At each point on the curve of combinations of milk and beer, the rational actor is “indifferent.” It assumes further that marginal utility diminishes in the sense that there is a decreasing satisfaction with each addition. (The fourth beer is much less satisfying than the first.) Finally, it assumes that choices are made pairwise, that we have full knowledge of the economic environment and that we act “freely” in making our choices. By aggregating each individual’s demand schedule we then develop a “demand curve” for any commodity. It shows how much will be demanded at varying prices.

A “supply curve” can then also be constructed which uses the same principles: producers are “rational,” each additional cost adds a *decreasing* amount of output produced, including the costs of adding additional units of labor, which, as above is subject to diminishing marginal returns.<sup>2</sup> The “supply curve” then reflects how much producers are willing to provide at varying prices. Perfect competition is assumed. The intersection of the two curves will be the market price of the commodity. If all the conditions are satisfied, there will be an “equilibrium.” The market “clears”: everything “produced” is “consumed” and at the price and quantity which is most efficient from the point of view of both consumers and producers: There is no unemployment, and the wage equals the marginal product of last worker added: that is, she earns precisely what she “contributes” to the final product. All interests have been maximized. This is, of course, Adam Smith’s “invisible hand.”

It directly follows that anything which interferes with the operation of a “free-market” is to be rejected. Policy thus requires “privatization”—putting the economy entirely in the hands of private enterprise, union-busting, and “liberalization”—the removal of government interference in *all* markets. Thus, the attack on regulatory agencies, and policies aimed at protection of the environment.

But rare is the economist who would not agree that *all* these assumptions are false. We draw on the well-known facts of the matter in what follows:

1. Persons are not indifferently interchangeable: CEOs of corporations, Mom and Pop Chinese restaurateurs, heart surgeons, immigrant farm workers—legal and illegal, non-unionized plumbers and unionized auto workers, part-time female salesclerks, public school teachers, NBA superstars, and drug dealers—one could go on, do not have the same motivations, beliefs or, even more important, the same capacities—either as “producers” or as “consumers.” That is, their social

situation is critical in determining both what they want to do and what they can do.

2. Accordingly, market choices are not “free” if that means that they are choosing without constraints, or that what they choose is what they want. To be sure, in contrast to slavery, serfdom and Soviet-style labor discipline, their choices are “voluntary “ in the sense that they are not under legal sanctions in choosing. But, it may be that *all* the alternatives actually available are undesirable and unwanted. Moreover, very few persons will have the capacity to determine what alternatives are concretely available to them. Consider here the sweatshop worker, or compare Donald Trump and the high school graduate who ends up working at McDonalds. As is obvious, the rich have more freedom than the poor. It is a virtue of markets that choices are voluntary but a good deal of the ideology of “free markets” depends upon confusing *acting voluntarily* and *acting freely*.
3. People are not rational in the relevant sense. They are often unable to say what are their interests and even if they can, they are often unable to arrange them in some rank order. They never have all the information they would need to make a “rational” judgment in the economist’s sense, and indeed, insofar as they often act either contrary to their “interests” or without even attempting to maximize them, they often do *not* act “rationally” as the economist understands that term.
4. “Perfect competition” requires that the industry is characterized by freedom of entry and exit, and that firms sell a nearly identical product and have a relatively small market share. But as is clear enough, in

a world of large corporations, this is the exceptional case. Remarkably, theory treats General Motors and the local Chinese restaurant equally as “firms.” But the real world is defined by “imperfect competition:” oligopoly, where there are few suppliers who do not engage in price competition, and its limiting case, monopoly. As theory acknowledges (incoherently with free market ideology), these “firms” are not “price takers” but are “price makers.” That is, once a leading corporation determines a price, comparable corporations, on pain of mutual destruction forego price competition. They shift, accordingly, to non-price competition: built-in obsolescence, “brand names,” “style,” “extras,” “service,” etc. This also explains the importance of huge consumer debt and the gigantic effort in marketing in advanced capitalism. The system will break down if needs and wants are not manipulated to ensure that goods produced get sold. As Schor put the matter, “consumerism is not an ahistorical trait of human nature, but a specific product of capitalism” (Schor 1992: 117).<sup>3</sup>

5. It follows that as regards a host of critical “commodities,” the supply and demand curves are nearly vertical (technically, they are highly “inelastic”). In a “free market,” the curves are supposed to slope, reflecting diminishing utility (or cost): For example, at higher prices, presumably, consumers will demand lesser amounts and the price, accordingly, will fall. But where the curves are vertical, changes in quantities do not produce changes in price. Thus, markets do not clear: there are always inventories, and, more generally, the market is a process in time in which equilibrium never occurs.

6. Oligopoly and monopoly are causes of what economists term “market failure.” As noted, a perfectly competitive market economy is presumed to be *economically* efficient since all resources (capital, labor, etc.) and all benefits (income, wealth) are allocated efficiently: There is no improved alternative allocation or distribution (“Pareto optimal”). (It can be shown that even if the strong conditions of the free market are met, the result may not be Pareto optimal.) But putting aside this objection, economic efficiency is defined in terms of exchange values. But surely this is not a reasonable notion. An economy could produce “efficiently” (as defined above) *and* wastefully *and* destructively (See externalities, below). Destructive but efficient production violates the environment, perhaps making it unfit for human life. Wasteful, but efficient production generates commodities which fail to serve human needs and wants, or fails to do so as well as it might. Star Wars technology is a good example of the former; poor quality housing an example of the latter.

In addition to oligopoly and monopoly, two additional causes of market failure are important:

“Transactions costs”: These include the cost of drafting, negotiating, and safeguarding an agreement, and the costs of maladaptation and adjustment that arise when contract execution is misaligned as a consequence of errors, omissions, and unanticipated consequences, or more generally, insufficient information. R.H. Coase (1995) has famously argued that the existence of transaction costs “implies that methods of coordination alternative to the market, which are themselves costly and in various ways imperfect, may nonetheless be preferable to relying on the pricing mechanism, the only method of co-ordination normally analysed by economists.” This was Coase’s 1991 Nobel Laureate Address.

“Externalities”: These are the side effects on third parties in market transactions, the intended or unintended costs (or benefits) that accrue to them. They may be negative, e.g., pollution created in production, or positive, in particular “public goods” (below). Thus, a firm may be profit maximizing, but while the pollution being produced is not a cost of production for the firm, the environmental degradation is imposing huge harm (and hence social costs) on the community.

“Public Goods”: A “private good” can be appropriated by an individual who alone gains the benefit of it. This is not true of public goods which include street lighting, police services, national defense, roads, flood defense systems, and public parks. Since these cannot be provided to one person without being available to all others, they will not be provided by private markets. (This is a consequence of the so-called “free rider problem”). Accordingly, government steps in to provide these goods, normally paid for by taxes. But public goods include a narrower set of goods (sometimes called “merit goods”) which while they can be privately produced and individually appropriated, generate “positive externality effects.” That is, the social benefit exceeds the private benefit. Education is an obvious good in this sense. While schools provide benefits to their students, they also and inevitably provide benefits to everyone in the community. As well, in the absence of public support to education, private markets would educate only those who could afford their services. The result would be not only increased inequality but a net loss to the community.

### **The labor market: an example**

The labor market offers an excellent example of a market where there are “crowds” of people seeking employment and there are employers who are seeking workers. There is, accordingly, competition, and supply and demand are critical to determining wages. Wages and salaries are real money: they are the primary means allowing for voluntary choices by employers as regards what wages attach to what jobs and what jobs potential

employees will accept. That is, everything, including labor-power, is a commodity—and thus has exchange value. But if supply and demand are pertinent to determining wages, the mechanism (or mechanisms) runs well beyond the one offered by neo-classical theory.

We can distinguish *ranking*, how jobs, and wages and salaries are created, transformed and destroyed, and *sorting*, the process whereby individuals get matched to jobs. As Granovetter and Tilly (1988), who I follow here, insist, ranking and sorting go on simultaneously and we must resist the temptation to reify skills, jobs and occupations as some abstract market process.<sup>4</sup>

For neo-classical theory, sorting is based on competition for available positions by workers who have different skills and competences. As the mythology goes, a worker's competences determine the job that he will get based on his marginal productivity to the firm. Presumably, employees have information on *all* jobs available, employers know exactly what they expect of potential employee and are able to assess the competences of the pool of potential employees. As rational, they hire "the best man (sic) for the job." Ranking depends upon the imperative of profit maximizing with firms paying wages equivalent to their marginal products. Wages and salaries are unequal because what people "earn" is commensurate with what they "contribute."

Unfortunately, employees are ignorant of job possibilities and even if known, they are often out of reach; employers may have only vague ideas of what skills are actually needed; and they are very often unable to assess the competences of potential employees. Employers are also often "irrational" regarding whom they hire—allowing their prejudices, or commitments to friends, etc. to get in the way, but perhaps most importantly, the idea of a concrete marginal product on which wages are based is a mathematical fiction. Where the "product" is a cooperative product, as in the case in almost all real world production, it is difficult, if not impossible, to assess the relative contributions of the co-operators. Indeed, this simple (and marvelously fair and efficient!) mechanism barely speaks to reality.



The reality of labor markets—as with all markets—is complicated and concretely specific. As Granovetter and Tilly show, talk of “markets” collapses a very complicated struggle by a host of parties: capitalists, workers, households, states and organizations, for example, the AMA, trade and labor unions, into a misleading abstraction. These actors have very different capacities, a function of their structural positions and relations in society. To take some obvious examples, one needs to explain why, for example, US school teachers with 15 years experience average \$36, 219 compared to Switzerland’s \$62,052 and among OECD countries (30 Nations including most of Europe, North America, Japan, South Korea, Australian and New Zealand) only the Czech Republic, Hungary, Iceland and Norway pay teachers less relative to national income (*New York Times*, 13 June 2001).

One needs to explain the stunning differences in the range of income inequality in the US and Japan, including inequalities in executive compensation, the critical importance of racism and sexism in the sorting processes, the flexibility in defining and redefining occupations, and thus requirements and wages, need to be explained in terms of the ways that parties have employed resources which are the product of historically developed structures and relations. All this is perhaps familiar enough. (Yet, if so, one may be rightly pressed to explain the grip of neo-classical assumptions on our thinking about markets?)

Yet, the labor market *is* indeed a market; prices provide information on choices, but neither jobs (nor wages) are “a function of” markets as these have been comprehended by neo-classical theory. If one wants to explain outcomes in labor markets, one needs to construct a model in which the beliefs, knowledge, motivations and capacities of typical people looking for jobs and of typical people hiring workers are identified. One needs also to identify the constraints imposed by history, gender and race relations, credentialing bodies, unions, etc. More generally, the outcomes in labor markets are the product of number of inter-connected social mechanisms, including pertinently, the political system and how it functions,

the mechanisms which explain racism and sexism, and the mechanisms which give credentialing bodies and unions capacities to influence outcomes.

### The theory of comparative advantage

The theory of comparative advantage is the theoretical lynch pin of arguments which celebrate *global* free trade policies. It too requires demystification. <sup>5</sup>

Suranovic points out that there are two sources of misunderstandings. "First, the principle of comparative advantage is clearly counter-intuitive. Many results from the formal model are contrary to simple logic. Secondly, the theory is easy to confuse with another notion about advantageous trade, known in trade theory as the theory of absolute advantage. The logic behind absolute advantage is quite intuitive." Adam Smith clearly put forward this idea: "If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it off them with some part of the produce of our own industry, employed in a way in which we have some advantage. " (Book IV, Section ii, 12).

The theory of comparative advantage allows, however, that a nation may nevertheless benefit from free trade even though it is assumed to be technologically inferior to another nation in the production of everything. The critical move was to show that a "comparative advantage good requires a comparison of production costs across countries". But one does not need to compare the monetary costs of production, or the labor, or other resource costs of production. Instead one must compare the *opportunity* costs of producing goods across countries. As noted, every choice has an opportunity cost, measured by the value of next best alternative sacrificed. Thus, "A country is said to have a comparative advantage in the production of a good (say cloth) if it can produce cloth at a lower opportunity cost than another country. The opportunity cost of cloth production is defined as the amount of wine that must be given up in order to produce one more unit of cloth. Thus England would have the comparative advantage in

cloth production relative to Portugal if it must give up less wine to produce another unit of cloth than the amount of wine that Portugal would have to give up to produce another unit of cloth.”

The modern version of the Ricardian model and its results are typically presented by constructing and analyzing an economic model of an international economy. In its most simple form the model assumes two countries producing two goods a labor as the only factor of production. Goods are assumed homogeneous (identical) across firms and countries. Labor is homogeneous within a country but heterogeneous (non-identical) across countries. Goods can be transported costlessly between countries. Labor can be reallocated costlessly between industries within a country but cannot move between countries. Labor is always fully employed. Production technology differences across industries and across countries are reflected in labor productivity parameters. The labor and goods markets are assumed to be perfectly competitive in both countries. Firms are assumed to maximize profit while consumers (workers) are assumed to maximize utility.

It is clear that the theory of competitive advantage employs the entire apparatus of neo-classical price theory—including, accordingly, the full range of essential assumptions regarding rationality, competition, equilibrium and timelessness.

Unfortunately, it is quite plain that these assumptions are all false. Accordingly, it is hard to see why we should accept the conclusions of the theory. Suranovic could not be clearer on this fundamental issue:

“Defending” against skeptics: the true meaning and intuition of the theory of comparative advantage

Many people who learn about the theory of comparative advantage quickly convince themselves that its ability to describe the real world is extremely limited, if not, non-existent. Although the results follow logically from the assumptions, the assumptions are easily assailed as unrealistic.

For example, the model assumes only two countries producing two goods using just one factor of production. There is no capital or land or other resources needed for production. The real world, on the other hand, consists of many countries producing many goods using many factors of production. Each market is assumed to be perfectly competitive, when in reality there are many industries in which firms have market power. Labor productivity is assumed fixed, when in actuality it changes over time, perhaps based on past production levels. Full employment is assumed, when clearly workers cannot be immediately and costlessly moved to other industries. Also, all workers are assumed identical. This means that when a worker is moved from one industry to another, he or she is immediately as productive as every other worker who was previously employed there. Finally, the model assumes that technology differences are the only differences that exist between the countries.

With so many unrealistic assumptions it is difficult for some people to accept the conclusions of the model with any confidence, especially when so many of the results are counterintuitive. Indeed one of the most difficult aspects of economic analysis is how to interpret the conclusions of models. Models are, by their nature, simplifications of the real world and thus all economic models contain unrealistic assumptions. Therefore, to dismiss the results of economic analysis on the basis of unrealistic assumptions means that one must dismiss all insights contained within the entire economics discipline. Surely, this is not practical or realistic. Economic models in general and the Ricardian model in particular do contain insights that most likely carry over to the more complex real world.

But indeed the problem is not “simplifications of the real world,” since all science requires abstracting from the concrete, nor is it there may be “insights that most likely carry over to the more complex world”—for example, that as prices rise, demand tends to fall. The problem rather is that because the simplifying assumptions are not only false, but essential to the conclusions drawn, many of these conclusions serve only to promote ideology. For example, according to the theory, with a fall in demand, a

new lower equilibrium price will be established—or, as in this case, that “freer trade may not result in a domestic industry’s decline just because the foreign firms pay their workers lower wages.” Sadly, if neo-classical “theory” says that “it may not,” history—and a better theory—says that it is almost certain that a domestic industry will decline “just because the foreign firms pay their workers lower wages”!!

### The persistence of the ideology of free market fundamentalism

One might legitimately wonder why “free market fundamentalism” has been able to maintain its dominance in the public discourse. There are, it seems, two parts to the explanation.

First, one needs to explain its dominance in mainstream economic theory. There are several parts to this answer. First, for many economists (and many others besides), economics is the paragon of social sciences exactly because it has been able to develop mathematical models of its fundamental theories. This propels a widely held, but ultimately distorted view of the nature of science in which “theory” is understood to be a deductive system in which (as noted by Suranovc), “the results follow logically from the assumptions.” The idea has a long legacy dating at least from Descartes, from Newton’s great work, and from the still older idea that that mathematics is the ideal of knowledge. But no real theory in the physical sciences can be fully expressed as a deductive system, with axioms and deductions therefrom. As Harré says:

In fact, in actual science, deductive systems are quite rare: fragments of such systems can be found in physics, but mostly scientists come up with descriptions of structures, attributions of powers and laws of change, related by having a common object, not being then and there deducible from a common set of axioms (Harre, 1970: 10).

It has not been easy to dislodge the widespread misunderstandings of scientific theory nor in consequence, the idea that economics is the

paragon of social science.<sup>6</sup> Wassily Leontieff, also a Nobel Prize winner in economics, said it all many years ago:

Page after page of professional economic journals are filled with mathematical formulas leading the reader from sets of more or less plausible but entirely arbitrary assumptions to precisely stated but irrelevant theoretical conclusions...Year after year economic theorists continue to produce scores of mathematical models and to explore in great detail their formal properties; and the econometricians fit algebraic functions of all possible shapes to essentially the same sets of data without being able to advance, in any perceptible way, a systematic understanding of the structures and the operations of a real economic system.<sup>7</sup>

It is also possible to suggest an explanation for this. Once a paradigm is established, especially one which has such “useful” policy implications, it is easy to see why conforming to the assumptions of the paradigm became critical. Surely, it *seemed* that neo-classical theory was a powerful “simplification” of reality. Similarly, the capacity to formalize the mechanism, reinforced by the prevailing philosophy of science, surely promoted disciplinary entrenchment. Although formalization has always been subject to widespread criticism (as noted above), a more cynical motive may well also have been at play. Davis (2004) writes that “a majority of AEA members” who responded to a survey he conducted, admitted, “at least privately, that academic research mainly benefits academic researchers who use it to advance their own careers and that journal articles have little impact on our understanding of the real world and the practice of public policy” (359).

Second, there is the question of “simplifying assumptions.” One simplifies by focusing on an attribute of a concrete many-faceted whole. For example, physics concerns itself only with the mass of a physical object and not (say) its color or chemical composition. But in the case of neo-classical theory, the simplifying assumptions are not only *not* true of reality but are essential to the conclusions drawn. As noted, most economics

acknowledge this. They tend to make two moves. First, as Suranovic says in his account of comparative advantage:

In this description, we do not predict that a result will carry over to the complex real world. Instead we carry the logic of comparative advantage to the real world and ask how things would have to look to achieve a *certain result* (maximum output and benefits). In the end we should not say that the model of comparative advantage tells us anything about what *will* happen when two countries begin to trade, instead we should say that the theory tells us some things that *can* happen.

To be sure, if the assumptions were true, theory would tell us what *would* happen, other things being equal. It cannot because the assumptions are false and other things are not equal. But indeed, *anything* can happen. This is sufficiently weak to be utterly uninteresting.

A stronger tack, paradoxically takes the opposite position. For many economists, the model is justified in terms of its putative predictive value. Thus, as Milton Friedman argued: "...theory is to be judged by the predictive power for the class of phenomena which it is intended to 'explain'" (1968: 512). As he says:

...the relevant question to ask about the 'assumptions' of a theory is not whether they are descriptively 'realistic,' for they never are, but whether they are sufficiently good approximations for the purpose at hand. And this question can be answered only by seeing whether the theory works, which means whether or not it yields sufficiently accurate predictions (517).

There are two problems with this defense. First, it is hard to see how false assumptions can yield explanations. It is an elementary feature of logic that if the premises entail the conclusions and the premises are false, the conclusions may be true *or* they may be false. On the other hand, if the predictive value of the theory—it yields true conclusions—is all one needs to be concerned about, then as nearly all economists

also acknowledge, making true non-trivial predictions is seldom possible—exactly because the world is far messier than the “simplifying” theory.<sup>8</sup>

Mainstream theory has a false authority, but much of this depends on the fact that it also has some very useful purposes. We have already noted many of them. Critically, if the theory is true, then capitalist market societies are the most efficient societies imaginable. They are also just since everyone gets what they deserve. Finally, they also require and promote individual “freedom.” Who indeed can argue with that?<sup>9</sup>

One does not need to be cynical to see the ideological usefulness of this system of belief. I conclude with some texts from the well-detailed argument against “the Washington Consensus” by George Stiglitz (2002), Nobel Laureate, former Chair of the Council of Economic advisors, and former vice president and chief economist of the World Bank. Thus:

Because under market fundamentalism—in which, by *assumption*, markets work perfectly and demand must equal supply for labor as for every other good or factor—there can not be unemployment, the problem can not lie with markets. It must lie elsewhere—with greedy unions and politicians interfering with the workings of free markets, by demanding—and getting—excessively high wages. There is an obvious policy implication—if there is unemployment, wages should be reduced” (35).

Trade liberalization is supposed to enhance a country’s income by forcing resources to move from less productive to more productive uses; as economists would say, utilizing comparative advantage. But moving resources from low-productivity uses to zero productivity uses does not enrich a country, and this is what happened all too often under IMF programs (59).

It is important not only to look at what the IMF puts on its agenda, but what it leaves off. Stabilization is on the agenda; job creation is off. Taxation and its adverse effects are on the agenda; land reform is off. There is money to bail out banks but not to pay for improved education



and health services, let alone to bail out workers who are thrown out of their jobs as a result of the IMF's macroeconomic mismanagement (80f.)

In reference to the string of manifestly disastrous policies of the IMF detailed in his book, policies which suggest a gigantic conspiracy, Stiglitz writes:

I believe that there is a simpler set of explanations—the IMF was not participating in a conspiracy, but it was reflecting the interests and ideology of the Western financial community (130).

Stiglitz is no radical, but one need not be a radical to notice that “the interests and ideology” of powerful banks and corporations are not only not identical with the interests of ordinary people, but that they are very often incompatible with the interests of ordinary people. And he is not altogether clear in his book whether the engineers of the Washington Consensus are altogether true believers, or whether they are a bit cynical in their pronouncements and politics. Similarly, as regards our politicians. The main point here, however, is that in either case, the set of beliefs sketched in the foregoing are used to justify policies which are manifestly destructive—to working people everywhere and, as regards globalization, to poor nations in particular.

### Notes

- 1 For some exceptional doubt offered by the discipline's most leading lights, see the AEA Presidential Addresses of Wassily Leontief (1971) James Tobin (1972), and Robert Solo (1980). Similar themes have been expressed by other notable insiders, e.g., Lester Thurow, (1983) and (Lord) Thomas Balough (1982), A.O. Hirshman (1985) and Amartya K. Sen (1977). For a variety of critical analyses, see also the Progressive Economics Forum ([www.web.ca/~pef](http://www.web.ca/~pef)).

There is a long history of criticism of the neo-classical model, beginning perhaps with the *Methodenstreit*, conveniently dated from the 1893 publication of Carl Menger's *Untersuchungen über die Method de Sozialwissenschaften und der de Politischen Ökonomie insbesondere*. One then needs to include Thorstein Veblen and a long line “institutionalists,” from John Commons to John Kenneth Galbraith to many contemporary

“economic sociologists.” Useful anthologies of essays by representative writers include: Etzioni and Lawrence (1991), Granoveter and Swedburg (1992), Swedburg (1993), Smelzer and Swedburg (1994), Biggart (2002). See also Dugger (1992).

Business school professionals are also critical as regards the usefulness of micro-economic models for business decision-making. For some examples, see Alfred R. Oxenfeld (ed.) (1963). For example, “market models admit time considerations only in a limited and contrived manner...But investment represents the concern of major executives, rather than clerks, for the very reason that markets are dynamic and are buffeted by many forces that vary over time...In other words, executives who are estimating of the pattern of revenues and costs over the life of an investment—and the length of its life—get relatively little help from market models of price theory” (63). See also Lazonick (1991).

- 2 This has dramatic consequences as regards the impossibility, in conditions of perfect competition, of increasing returns to scale. See Warsch (2006) and my assessment, “The Pin Factory and the Invisible Hand: A Critique of Mathematical Economics.”
- 3 As E.H. Chamberlin (1962) and Joan Robinson (1969) also saw, in conditions of “imperfect condition,” either monopoly or oligopoly, increasing returns to scale are possible. Indeed, they are essential if capitalism is to reproduce itself. See Baran and Sweezy (1968) and my “The Pin Factory and the Invisible Hand: A Critique of Mathematical Economics.”
- 4 As they emphasize, “skill” compounds personal capacities and substitutability: the ease and expense of replacing the worker. Skill, like productivity, is very difficult to measure, despite mythology to the contrary. Skill involves tacit knowledge and is not well-defined (contrary to human capital theory). Athletes are the exception, not the rule. Similarly jobs (and occupations) are continually being socially constructed (and reconstructed). As Granovetter and Tilly summarized matters: ‘What determines outcomes...are such matters as the resources, bargaining power, socialization, cultural and social structural patterns of negotiating groups, and the state of labor and product markets’ (209).
- 5 The following draws from Steven Suranovic’s account on the world wide web, *The Theory of Comparative Advantage – Overview*: <http://internationalecon.com/v1.0/ch40/40c000.html>©1997-2004
- 6 For a full-blown, account, see my *A Realist Philosophy of Social Science: Explanation and Understanding*. Cambridge University Press, 2006. Put briefly, “the marginalist revolution” of neo-classical theory provided a generalizable social mechanism, the competitive market with rational individuals. Formalizing the theory was a second step, taken in the 1930s and codified with the publication of Samuelson’s influential *Foundations of Economic Analysis* (1947). The mathematics required what neo-classical theory had already provided, that the social mechanism deliberately ignore the specific contextual and historical features of actual markets. Accordingly, calculus could, for example, easily represent the mechanism which shows that firms pay wages equivalent to their marginal

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products and that consumers optimize marginal utility. (Of course, neither of these conclusions are in fact true!) More recently, formalizing a theory which allowed for increasing returns to scale, required a new mathematics. See Paul Romer (1990) and my essay, "The Pin Factory and the Invisible Hand: A Critique of Mathematical Economics."

- 7 Leontief 1982:104, quoted by Lawson 1977: 4.
- 8 As Romer points out, regressions of cross-cultural data, for example, do not, in general, serve as a test of theory exactly because "many different inferences [from the competing models] are consistent with the same regression facts" (Romer, 1990. 10). Worse, with suitable assumptions about evidence and the tasks of theory, "we can thereby enshrine the economic orthodoxy and make it invulnerable to challenge" (20).
- 9 For a wonderful and accessible critical account see Fisher *et al* 1996.

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