Thinking outside the Walrasian box

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Abstract

This comment on Colander's chapter argues that the post-Walrasian program consistutes a synthesis of the Walrasian program and its formerly marxist/radical critics. Both now have a unique historical opportunity to redefine themselves at "heterodox" or post-Walrasian, focusing on positive and susbtantive contibutions to the evolution of economic theory in the 21st century.

If we could predict the future, then it wouldn't really be the future –Freeman Dyson

1. Introduction

Colander's chapter marks a potential turning point in the evolution of post-war economic theory. It includes a call for heterodox economists to join a wider methodological circle, alternative to, rather than simply critical of the Walrasian system. This comment argues that heterodox economists should consider the proposal carefully, as a guide to their own work, since if not they run the risk of increasing isolation. The methodological rigidity of the Walrasian system was in part responsible for its demise and the same may well apply to its radical critics, should they fail to adopt more flexible methods. The structure of the comment is dialectical: The *thesis* of Walras is seen to be opposed by a radical *antithesis,* which according to Colander is now neatly superseded, by the post-Walrasian *synthesis*.

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2. Thesis: The Walrasian System

Practically-minded economists know in their hearts why the Walrasian system was held so dear for so long. It is a generalization of what they have used every day of their analytical lives, the simple theory of *supply and demand*. "All the great general equilibrium systems, associated with the names of Walras, Cassel, Lindahl, Keynes, Hicks, Samuelson, Patinkin, Leontief, von Neumann and Solow...", wrote Bent Hansen in his *Survey of General Equilibrium Systems*, "...were a species of the same genus–the theory of supply and demand."[1] (Hansen, 1970). But of course the generalization to a multi-commodity and ultimately multi-period world was not entirely straight forward. Cornwall (1984) noted that when *all* prices, and therefore incomes, are endogenous, the excess demand functions can be very "messy" and he produced a simple example with a bizarre demand function, "not the demand function found in partial equilibrium analysis!" But these arcane problems hardly mattered to practical economists at the time. It was a convenient to have this arrangement; ordinary economists need not become tangled up in the details of exactly how and when the Walrasian system could be applied. But they could be secure in the faith that locked away somewhere in a secret vault were the documents that demonstrated existence, stability and uniqueness of the system of which they would only apply a small part. The sénéchaux were Debreu, Arrow, Malinvaud, among other familiar names.

There were, of course, serious problems. The theory of second best, strictly speaking, prevented the Walrasian system from making any claims whatsoever about welfare, except in a perfect world (Lipsey and Lancaster, 1956-7). Radicals viewed the theory of second best as an *internal* critique of the Walrasian system (Hahnel and Albert, 1990). Practical economists largely ignored it, with the exception of trade theorists, who showed that defects in the Walrasian structure could not possibly bring down the large and powerful arguments in favor of free trade (Bhagwati, 1969). Later on, Ng (1985) demonstrated that policies that removed distortions, improved welfare, but distortions had to be ranked according to severity, something that presumably only a simulation could achieve.

The extensions of the Walrasian system to time, space, state and risk left *uncertainty* lacking and it is this feature that is exploited essentially by the post-Walrasian synthesis discussed below. Initially, the Walrasian assumption of

[1] Hansen leaves Marx almost conspicuously out of the list, but goes back to pick him up later on the same page, noting that "Even Marx slipped back into supply and demand theory when, finally, he began to inquire into the concrete economic phenomenon of capitalist society."

perfect certainty had given theoretical space to the Keynesian system, which rested on the diametrically opposed assumption. Colander observes that many strands of thinking along Keynesian lines emerged and differentiated themselves. Their very existence stood as a implicit critique of the Walrasian system, but was not lethal. Rizvi (1994), among many others, locates an irreparable theoretical break in the 1980s, when Sonnenschein, Mantel and Debreu (SMD) and others concluded that there could be no rigorous microfoundations project. While the Walrasian system could serve as a *Holy Grail* for the microeconomists wielding partial equilibrium models, it could *never* serve in that capacity for macroeconomics. Many thought SMD theory signalled the end of macroeconomics as we know it; Colander may be interpreted to be arguing that the opposite, in fact, took place.

The third fissure was that when confronted with actual data, the Walrasian model did not perform or predict adequately Taylor showed that the Walrasian model or neoclassical closure systematically overpredicted investment in Brazil (Taylor, 1980). Others have witnessed shortcomings of applied computable general equilibrium models built on the Walrasian chassis in other contexts (Gibson and van Seventer, 2000). Few thought the Walrasian model was particularly realistic and forcing it to make predictions in actual policy settings was risky from the beginning. Dynamic models fared the worst since investment based on discounted future returns in a perfectly certain world convinced few policymakers.

3. Antithesis: The radical critique

The antithesis, in this brief account, was supplied by what are now called heterodox economists but were in the past known as radical economists. Radicals by and large accepted the principles of Marxism, but typically rejected its practice in the then socialist world. Radicals defined themselves in *opposition* to neoclassicism and because the Walrasian system embodied the purest principles of neoclassicism, it was rejected as matter of course. To radicals, the Walrasian system lacked various features considered essential to an understanding of capitalism, e.g., class and class conflict, imperialism, exploitation and crisis. (Akerman, 1999) This is not to mention a variety of cultural dimensions, such racism, sexism and homophobia that were linked to capitalist hegemony.

Radicals opposed the assumptions, the logical development as well as the conclusions of the Walrasian system. They rejected the assumptions largely because they seemed ahistorical, oversimplified and crass, embodying a sort of *turbo*-selfishness that violated even the most primitive sense of community. They

claimed to be oppressed by the mathematical presentation, referring to it as "mystifying." Indeed, some were suspicious of the very effect that the training to read the Walrasian literature would have on their outlook or world view. Above all, they rejected the idea that *welfare* could be defined in strictly individual rather than systemic terms. They became hostile to optimizing models generally, since that was the mechanism by which *socially* efficient outcomes could be reduced to unexamined self-interest. (Dutt, 2004) Orthodox economists were, of course, aware of the divergence of individual and social optima, but this was not considered to be the definitive critique of the Walrasian system, but more of an internal assessment that few radicals trusted.

Since radical economists defined their role in the negative, as critics, they made few lasting contributions, *qua* radicals. Classical Marxism was rewritten in language of modern mathematical economics by Samuelson, Morishima, Roemer, Steedman and others, but a number of propositions were unable to transition to the more rigorous environment, such as the falling rate of profit and even the beloved Marxian value theory (and with it the notion of exploitation). But to say that the radical contribution was in the main negative does not say that there was no contribution, and far from it. The arrows slung against the Walrasian model were frequent and sustained. The more generalized the Walrasian system became, the more it lumbered and the easier a target.

Radical thought did of course *resonate* with some very significant and lasting contributions in game theory, dynamics and international trade. Although there would not be wide agreement, it is worth at least listing some of the major themes that have withstood the test of time.

3.1. Class conflict

Class clearly mattered to radicals. Most radicals thought that workers were different people than nonworkers, or capitalists. It was not a cultural argument that spoke of attitudes toward risk or spending patterns, but rather the *relationship to the means of production.* (Cohen, 1978) More than asymmetric information, there were *asymmetric opportunity sets.* Roemer demonstrated that a capital limited economy would necessarily produce social classes if capital were unevenly distributed (Roemer, 1988). Roemer could identify class even in a Walrasian model, and validated the Marxist notion with his class-exploitation correspondence principle. Most radicals saw nothing critical of capitalism in his work, however, and rejected it along with the rest of the Walrasian orthodoxy. Class had to do with

power a concept that remained undefined until Bowles and Gintis linked it to wage rigidities and imperfect information (Bowles and Gintis, 1993). This was a generalization Marx's distinction between *labor* and *labor power,* and clearly a departure from the Walrasian framework of Roemer. As such, *class,* seemed impervious to changes in theoretical approach.

Further, most radical economists would probably agree that *class conflict* is an integral part, if not the motor of, capitalism and key to understanding its inadequacies. Crisis is a clear example, but even without crisis, everyone could have more were there no class conflict. Lancaster (1973) showed this in the "The dynamic inefficiency of capitalism," published in the *JPE.* Workers as a class faced a dilemma: as impecunious creatures, they could not accumulate on their own so they could either hand over the surplus to capitalists, or consume it themselves. The first strategy is risky; capitalists could just fritter away the surplus, leaving workers as a class worse off. The second reduces the risk, but leaves workers less well off in the future, since little capital accumulation would take place. The winning strategy is for workers to hand over the surplus, have it wisely invested by capitalists and then reap the rewards in the future. Whether this plays out or not, depends crucially upon the cooperation of capital, who also face a strategic dilemma. If they invest, aggregate demand will increase and the fruit of their investment might well fall into the hands of labor, who are now in a stronger bargaining position. To avoid this, capitalists could always just consume the surplus; but this strategy leaves no room for rising capitalist incomes in the future. Lancaster shows how this scenario forces risk averse players in a dynamic game to choose outcomes that are sub-optimal. It is a moving prisoners' dilemma in which class conflict is the enemy of efficiency.

Colander acknowledges that game theory drew first blood in the struggle to unseat the dominant Walrasians. After Nash, both radicals and nonradicals used games efficaciously in broad critique of the implications of the Walrasian system. Elster recast much of much of traditional Marxism as games and the implications of the prisoner's dilemma as a critique of the optimality of market based resource allocation became widely known (Elster, 1985).

3.2. Imperialism and free trade

The classical theory of imperialism, advanced by radicals, does not appear to have had lasting traction. Countries may well be better off as result of colonization, to the extent that some residual infrastructure is left in place and a democratic

foundation is laid. (Ferguson, 2003) The imperialism of free trade is perhaps another matter. It is now possible to rigorously argue that free trade *is* Pareto optimal, and that it is *not*. Rodrik among many others has shown that the superiority of trade depends on side payments and this seems to be widely accepted (Rodrik, 1997) as is the fact that side payments rarely materialize in the real world.

Radicals were among the first to note that capital mobility may require vastly larger side payments to achieve Pareto optimality than trade in goods. Emmanuel (1972) and others argued early on that differences in the international mobility of labor and capital would have profound effects on the evolution of the world system. In one of the most prescient articles of the period, de Janvry and Kramer (1979) noted that "unequal exchange" based on wage inequality would transfer surplus from poor to rich countries to the extent that they specialized in different branches of production. This explains why today, one barrel of oil trades for about 150 barrels of salad dressing. But more importantly, the authors went on to note that in the long run, unequal exchange would disappear since capital would flow abroad, equalizing wage rates. This last conclusion resonates with standard trade theory, of course, and has become focus of anti-globalization struggles world wide.

These two issues addressed by radicals may be integrally linked. If conflict causes inefficiency and globalization reduces conflict, we can conclude that openness may indeed improve the efficiency of capitalism at a world wide level. We return to this point, briefly below.

4. Synthesis: Post-Walrasian realism

As Colander argues, "Walrasian economics is the study of how infinitely rational individuals operate in a rich information environment." and as such is hardly an accurate picture of capitalism as it is observed. The Walrasian original sin is infidelity, a failure to have the look and feel of the system it tries to replicate in theory. In suppressing class conflict, uncertainty, frictions and externalities, it captures few of the key features of capitalism. But if Post-Walrasian theory is indeed to be a synthesis, it must not only *annul*, but also *preserve* what is coherent in the original Walrasian thesis. Post-Walrasian theory will not be completely divorced from the Walrasian any more than post-Keynesian theory is from Keynes.

Clearly, there is much in the Walrasian system that will survive the transition to the post-Walrasian world. The main theme of multimarket equilibria of supply and demand, as mentioned in the opening section, is obvious. But it might also

be worth thinking of the original Walrasian system as a *normative* goal rather than a positive description of reality. Models based on experimentally determined parameters could then identify the degree to which existing economies underperform relative to this ideal state. A simple thought experiment illustrates the point. Calibrate two models to the same underlying social accounting matrix, one a Walrasian and another a more realistic version that replicates an informationally poor, uncertain, institutionally constrained environment. In the first, wages are equal to marginal products. In the second, wages are given by inertia and unlike in the Walrasian model, there is some unemployment. The real wage is higher in the latter system since the wage must fall to employ all workers in the Walrasian. Simulate the two economies for twenty years, adjusting the exogenous growth of investment so that the two models show the same average GDP growth rate. We now have a metric by which the performance of the second, informationally poor system can be measured.

Run, for example, a restricted Rawlsian experiment in which a worker is behind the veil of ignorance and must choose the economy into which she is to be born. Statically, the choice depends on how risk averse she is: Dynamically the choice is much more difficult. Workers *as a whole* are better off in a Walrasian system versus its alternative, despite the higher wage rate in the latter. There, a given worker is either better off or worse off, depending on whether she is employed or not. But the Walrasian systems is Rawlsian superior since capacity is always full utilized and workers fully employed. We use the Walrasian model to measure the true cost to the economy of informational and institutional constraints. We could also use it to measure the cost of conflict or the gains from globalization as it reduces conflict.

The main point of post-Walrasian theory is that it is eclectic. "Put bluntly" Colander observes "...giving up the holy trilogy [of rationality, equilibrium and greed] means that almost *anything goes*..." and thus "...formal theory can no longer be used as a direct guide for policy." The reference to Feyerabend's legendary aphorism might be an apt methodological summary of what Colander has in mind. There is no ultimate or privileged methodology available to serve as an external judiciary, as indeed there is not in science generally. Radicals may be excused for skeptically retaining their critical outlook to the extent that post-Walrasian writers presume that models in which fully rational agents pursue goals with perfect certainty are inherently superior to *ad hoc* models. This may in fact be what motivates Dutt when he attacks post-Walrasian theory as essentially old wine in new bottles (Dutt, 2004). But this is just paranoia. To twist one of the

most well-known declarations in economics, post-Walrasians would say: "we are all *ad hoc* now."

But does *ad hoc* imply post-modernism? While method does not constrain post-Walrasian theory, reality does. Colander's project seems to be about science and as Sokal and Bricmont observe, *cultural myth* is not what science is about (Sokal and Bricmont, 1998). Myths easily persist despite reproducible evidence that they are false while scientific hypotheses (typically) do not. The ultimate arbiter of post-Walrasian theory is realism, what I have called else where, "the duck test." Gibson (2003). A model that is convincing to decisionmakers on the grounds that it realistically reproduces the data of the economy, or at least adequately so, in a way that would influence the outcome, is arguably a better model than that which more neatly conforms to first principles. Simulation models will do a better job of this than analytical models generally do and thus many of the methodologies identified by Colander such as agent based simulation models, chaos and complexity are grounded in the data of particular circumstance (Gibson, 2003). These models have an important feature in common; they have the look and feel of the real world, much more so than their Walrasian predecessors. It is to this call for realism that formerly radical economist must now respond.

The Walrasian model dialectically defined the radicals in the sense that without it, the radical critique would have, of course, meant much less. As the Walrasian Grail is revealed for what it is, superseded by a richer more realistic, more *ad hoc*, theory, so too will its critics be superseded. Radicals must now redefine themselves in the positive; with their evaluative, critical role complete, positive contributions await to be made. Renaming themselves as *heterodox* is a first step, but since rest of the profession is vastly more heterodox, they individually risk anonymity. As Mick Jagger recently observed the "establishment" against which such songs as *Street Fighting Man* railed, has largely disappeared. Colander may be saying the same thing; the orthodoxy in economic theory has not, of course, disappeared, but may be more difficult to see when one becomes part of it.

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