A MARX FOR POST KEYNESIANS

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1 Introduction

Post Keynesian Economics evinces a methodological paradox. On the one hand, it displays a far higher interest in questions of methodology than any other school of economic thought (with the possible exception of Austrian economics), and it has always been highly critical of the methodological foundations of rival schools, in particular the Neoclassical.[2] Yet, on the other hand, Post Keynesian economics has no accepted methodological foundations of its own.

This paper briefly considers recent attempts to rationalize this situation, as a prelude to putting forward the proposition that a methodological foundation for Post Keynesian Economics has in fact existed for over a century. This foundation is one of two sets of axioms developed by Marx, but lost to Marxian political economy by its slavish adherence to the Labor Theory of Value. This lost set of axioms both contradicts the Labor Theory of Value, and provides an axiomatic basis from which the bulk of the accepted tenets of Post Keynesian economics can be derived.[3]

2 Diversity, Philosophy, Axioms, and Deductive logic

The perceived wisdom amongst critics and proponents alike is that, while Post Keynesians have many shared *conclusions*--the importance of effective demand, the probability of under-full employment, the endogeneity of money, and so on--the sole feature unifying Post Keynesian *analysis* is opposition to neoclassical methodology. Harcourt and Hamouda 1988 made a virtue of this lack of a common analytic foundation, arguing that this enabled Post Keynesians to use whatever methodology is appropriate to a given problem. However, there is little to differentiate this

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[1]The author would like to thank J.E. King and Marc Levoie for comments on earlier drafts of this paper.

[2]In recent years, methodological warfare has even broken out with the once closely related Neo-Ricardians. See the papers by Steedman, Sawyer, Kriesler and Mainwaring (1992), and Steedman, Kriesler and Steindl (1993).

[3]The key references which establish the existence of this second set of axioms are *The Grundrisse* (Marx 1857, especially pp. 267-68), where Marx first developed the "Commodity Axioms"; the *Marginal Notes on A. Wagner* (Marx 1879), where he affirmed the unique role of use-value in his economics in response to a conservative critic's claim that he ignored it; “Böhm-Bawerk’s Criticism of Marx” (Hilferding 1904), where Hilferding employed these axioms to solve the puzzle of the reduction of skilled labor to unskilled (p. 145); *The Making of Marx's Capital* (Rosdolsky 1977), where the mainstream Marxist attitude that use-value was an irrelevance to Marxian economics was first challenged; “The active role of `use-value’ in Marx’s economics” (Groll 1980), which detailed the myriad uses of the concept by Marx; “Use-value, Exchange-value, and the Demise of Marx’s Labor Theory of Value” (Keen 1993a), which traces the development of these axioms and dissects Marx's attempts to avoid their consequences for the Labor Theory of Value; and "The Misinterpretation of Marx’s Theory of Value" (Keen 1993b), which details the historical process by which these axioms came to be lost to conventional Marxism.

"horses for courses" (p. 25) attitude from the instrumentalism championed by Friedman (1953), nor is methodological laissez-faire consistent with the strong methodological objections that Post Keynesians have to neoclassical economics. As Backhouse has pointed out (1988, p. 36), this implies that there should be some problems for which the neoclassical method is appropriate--a point that Post Keynesians are in general loathe to concede.

One consensus that appears to have emerged over Post Keynesianism concerns its philosophical perspective, with its roots in the evolution of Keynes's thinking. Several writers (Lawson, 1988, 1994; de Carvalho, 1988; Rotheim, 1988, 1989-90; Winslow, 1989; Lavoie, 1992) have argued that, by the time of *The General Theory,* Keynes had rejected his original *atomistic* view of logic and economic actors, which concluded that economic entities could be separately analyzed and understood in isolation from their relationships with other entities, in favor of a philosophy which postulates that the essential characteristics of an entity "are the outcome of its relations with other entities" (Winslow 1989, pp. 1173-74). This view, that Keynes's philosophy focused on the relations between things, whether characterized as "*organicism*" (Winslow, Rotheim, Lavoie), "*realism*" (Lawson 1988, Lavoie, Rotheim), or "*transcendental realism*" (Lawson, 1994), effectively places Keynes in the philosophical tradition of Hegel (Rotheim, 1989-90, p. 317) and hence Marx--though of course there is no suggestion of a direct lineage. Winslow instead attributes the change in Keynes's perspective to the influence of Whitehead (Winslow 1989, p. 1175-1179), whose concept of *internal relations* overcame the apparent difficulty that '"everything must depend upon everything else"', and that therefore '"we cannot know about anything till we equally well know everything else."' (Winslow 1989, p. 1175). Firstly, Whitehead proposed that internal relations form a nested hierarchy, with the wider contexts (that we are all human beings) being more stable than the narrower (that some of us are entrepreneurs), so that wider contexts can be treated as "given" in an analysis of the narrower ones. Secondly, the factors which are relevant in any given context are limited--given a particular interest (the evolution of the entrepreneurial function over the next 5 years), many aspects of reality can be ignored (the possible evolution of humanity over the same time period).

This version of organicism implies the ability to construct a systematic and yet organic analysis of reality. However, Lawson 1994 attempted to use a more elaborate version of organicism, Bhaskar's "transcendental realism", to philosophically justify the absence of such a system in Post Keynesian economics. Lawson associated the axiomatic-deductive method with an atomistic conception of reality, and contended that deductive reasoning necessarily leads to ergodic models (Ibid., p. 524). Since Post Keynesians reject ergodicity, they must also reject the axiomatic-deductive method, and hence there can be no foundation set of axioms, no common Post Keynesian methodology beyond the transcendental philosophical core.

However, Lawson's identification of axiomatic reasoning with atomism is misplaced. Axiomatic logic need not lead to atomistic, ergodic models if those axioms themselves embrace non-ergodicity, as Davidson 1994 illustrates. Even deterministic axioms do not necessarily lead to ergodic models, as chaos and complexity analysis have established: *nonlinear* deterministic analysis can generate models whose behavior is non-ergodic (Lorenz, 1993, pp. 5-25; Kelsey, 1988, pp. 19-23; Keen 1995). The identification of axiomatic reasoning with ergodicity is valid only for axioms which presume ergodic, linear and time-reversible relations between entities, or in other words, axioms which are themselves grounded in an atomistic vision of reality.

One consistent champion of the proposition that there is an axiomatic foundation to Post Keynesian economics is Davidson, who argues that Post Keynesian and neoclassical macroeconomics have *common* axiomatic foundations, and that neoclassical results are the consequence of three additional, special axioms that neoclassical macroeconomics adds to this common core: "(a) the axiom of the neutrality of money; (b) the gross substitution axiom; and (c) the ergodic axiom" (Davidson, 1994, p. 11; see also 1981, p. 168; 1984, p. 562). Since Post Keynesian economics is based upon less axioms, Davidson asserts that it is the more general and thus the superior theory.

Davidson maintains that the common foundations of the two schools are the macroeconomics of the *General Theory*, together with Marshallian microeconomics (Davidson 1994, pp. 24, 55, 66, et alia). However, this acceptance of Marshallian microfoundations puts Davidson at odds with many other Post Keynesian and heterodox economists, who have made developing alternatives to the Marshallian concepts of marginal cost pricing and the representative firm a major part of the non-neoclassical agenda (Sraffa 1926; Kalecki 1943, pp. 43-61; Eichner 1985, pp. 44-47, 151-152; Kriesler 1987, pp. 17-20; Reynolds 1987, pp. 53-82). Thus, though Davidson does show that fundamental Post Keynesian results--such as the possibility of an unemployment equilibrium--can be derived from these foundations, his "Keynes-Marshall synthesis" cannot be accepted as a methodological basis for Post Keynesian economics.

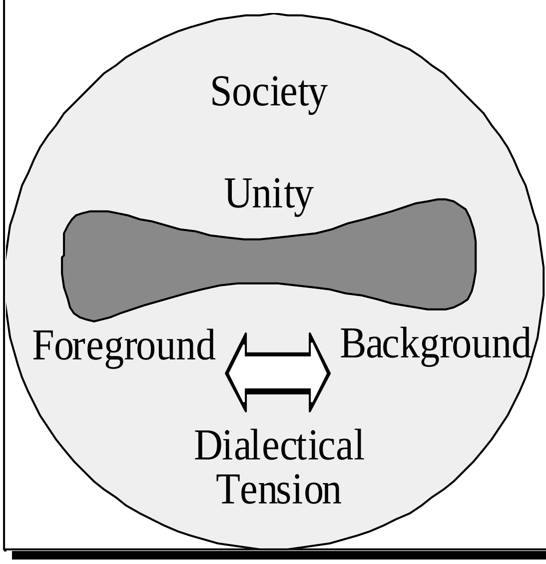
Elsewhere however, Davidson has argued that Keynes "knew that in order to transform the way the world thinks about economic problems, he had to displace the existing approach by a new set of axioms and logical analysis" (1981, p. 156), which indicates instead that an entirely *different* axiomatic foundation may be required for Post Keynesian economics. If so, then there may be no shared axioms at all, and therefore the decision between the Post Keynesian and neoclassical visions of economics cannot be made on the basis of the number of axioms alone. Instead, the realism of those axioms, and their ability to generate models which capture the major features of capitalism, must be assessed (Lavoie, 1992, pp. 48-49).

In what follows, I hope to establish that Marx's philosophy of dialectics, which is a kindred spirit to Keynes's mature philosophy of "organic unity, of discreteness, of discontinuity" (Keynes 1973, Vol. 14, p. 527), leads to axioms which are consistent with the non-ergodic vision of capitalism espoused by Post Keynesian economics.

3 Dialectics and Organicism

Marx's dialectical analysis starts by treating any component of a society (a human being, a commodity, money) as a social unity--a unity in that it has an existence in its own right, but a social unity in that it must exist in a society, and can only be understood from that context (Marx 1857, p. 485). He then argues that the material forces of society will initially bring one aspect of the unity to the foreground, and that this necessarily pushes the other aspects of the unity into the background. However, the unity can neither exist nor be fully understood with just the foreground aspect, so there will be a dynamic tension between foreground and background (its "opposite") which will propel the development of the unity (see Figure 1). If this dialectical conflict is sufficiently powerful, it may lead to a transcending of the limitations of this unity, to bring about another, greater unity, which will itself have its own dialectic. Marx's concept of a unity is akin to what Winslow called a "complex" (Winslow 1989, p. 1175), and can embrace separate but related entities (capitalist and worker) as well as a single entity. Dialectics thus sees things as being defined primarily by their relations with other things, and is, like organicism, a philosophy of endogenous change.[4]

Figure 1: Dialectics



While the merits of these two related philosophies could be debated, Marx's key advantage over Whitehead and Keynes is that he identified the crucial unity in capitalism, with its internal relations forming the outermost level of capitalism's "nested hierarchy" of social relations. This key unity is the commodity, and the dialectic of the commodity was the basis of Marx's second, lost set of axioms.

4 Marx's Two Sets of Axioms

Marx employed two distinct sets of axioms in his thinking. One set, which I will call Marx's Labor Axioms, has been treated as Marxism's sole intellectual foundation since Hilferding's 1904 rejoinder to Böhm-Bawerk. The other set, which I will call Marx's Commodity Axioms, was regarded by Marx as logically prior and superior to his Labor Axioms, though he believed--erroneously--that the two sets were consistent.

The Labor Axioms can be summarized as follows:

1) Value is "socially necessary abstract labor-time";

2) Under capitalism, when markets are in equilibrium, commodities exchange in proportion to the amount of value they contain;

3) Under capitalism, the ability to perform work, labor-power, has itself become a commodity;

4) In production, labor transfers its value directly to the product, while the commodities used up in production transfer their value indirectly;

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[4]The popular description of the dialectic as involving a thesis, its antithesis, and finally a synthesis, is in fact derived from Fichte rather than Hegel or Marx. Marx never clearly set out his perception of the dialectic, and his interpretation of it must be gleaned by analyzing his application of it to a multitude of subjects. The *Grundrisse* is the work of Marx's where dialectical logic is most evident, and perhaps the best section--for the purpose of seeing how he applies this logic--is pp. 471 to 514, where he discusses pre-capitalist societies, and the forces that led to the rise of capitalism (this section has been separately published as *Pre-Capitalist Economic Formations*, Hobsbawm E.J., (ed.), 1964). For informative discussions of the role of dialectics in Hegel and in Marx, see especially Wilde 1989, and George 1987. A useful introduction to Hegel is provided in Singer 1983, though he does use the thesis-synthesis-antithesis analysis.

5) Labor is unique because of the difference between the commodity sold by workers, labor-power, and the commodity consumed in production, labor itself.[5]

If these axioms are accepted, then the exchange of commodities at their values results in a surplus for capitalists solely because of the unique attributes of labor. Capitalists buy the commodity labor-power from workers for its value (*V*, for "variable" capital), a subsistence wage which itself consists of a number of commodities whose production might require, for example, six hours of direct socially necessary labor-time. However, the commodity capitalists then put to work is not labor-power (the capacity to work), but labor itself, and the wage contract allows work to continue for more than six hours--perhaps twelve hours in Marx's day. This distinction between the commodity sold and the commodity used exists with no other commodity, and the quantifiable difference between the two is surplus labor time, which generates surplus value (*S*), and this is the sole source of profit.

Capitalism cannot be successfully analyzed with these axioms alone, however, since capitalists are motivated to get the highest possible return on their entire investment in both labor-power (*V*) and capital (*C*, for "constant" capital), and this rate of profit ($S/(C+V)$) differs from the rate of surplus value (S/V).[6] If equilibrium prices were strictly based on values (axiom 2 above), and rates of surplus value were consistent across industries, then capitalists seeking the highest possible rate of profit would therefore abandon sectors with a high capital to labor-power ratio ("organic compositions of capital", C/V)--and thus a low rate of profit--in favor of those with a low C/V ratio, and thus a higher rate of profit. But no such tendency is evident in capitalism; hence equilibrium prices must not be strictly based on values, and this gives rise to two additional axioms:

6) In competitive capitalism, equilibrium prices differ from exchange values, and are set by a markup on total capital employed, both variable and constant.

7) Axioms 2 and 6 are reconciled by the transformation of values into prices.[7]

All of the above should be familiar to even passing students of Marx. The Commodity Axioms, on the other hand, will be unfamiliar to most Marxists, and involve a subtle but profound reinterpretation of the classical concepts of use-value and exchange-value. These axioms are:

1) The commodity is the essential unity in capitalism;

2) Commodities have two aspects: use-value and exchange-value;

3) Under capitalism, use-value and exchange-value are incommensurable, so that the use-value of a commodity plays no role in determining its exchange-value;

4) Use-value is an objective property of commodities, assessed however from the point of view of the consumer;

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[5] Axioms 1-4 are arguably to be found in Smith and Ricardo (though with qualifications dispensed with by Marx); in this sense Marx's chief contribution to classical political economy was axiom 5, which solved the paradox that axioms 1-3 were apparently inapplicable to the most important exchange of all, that between capitalist and worker.

[6] Steedman 1977 has of course shown that Marx's definition of profit is incorrect on several grounds; but this does not impinge upon the argument of this paper.

[7] The attempt to achieve an acceptable reconciliation has been a major, if not the major, intellectual focus of Marxian economics. See Desai 1988 for a recent survey; for a recent attempt to "solve" the transformation problem, see Mohun 1994.

5) The exchange-value of a commodity is the exchange-value of the commodities used up in its production;

6) Under capitalism, the ability to perform work, labor-power, has itself become a commodity;

7) Capitalism has two main circuits, the Circuit of Commodity Capital (C--M--C), where the objective is the consumption of use-values, and of the Circuit of Money Capital (M--C--M+), where the objective is the production of surplus value.[8]

Some 40 years after the publication of Marx's last work, Post Keynesian economics began its development in the works of Keynes and Kalecki, but without an axiomatic foundation comparable to the rival Walrasian program. However, as I will now argue, Marx's Commodity Axioms can effectively provide that foundation, since the major tenets of Post Keynesian economics flow logically from them.

5 Price Formation and the Dialectic of the Commodity

Post Keynesian and Neo-Ricardian theories base price formation on the conditions of production, and assign demand the role of determining the quantity of output sold. These propositions are effectively embodied in axioms 3 to 5 above, and their justification therefore requires an explanation of how Marx came to these axioms.

In part, the route was intellectual inheritance. While the distinctions between the utility, cost of production, and price of a commodity are common to all schools of thought, the Classical school was characterized by its focus upon costs of production as the main determinant of price. In distinguishing use-value from exchange-value, and arguing that use-value is irrelevant to price formation, Marx was initially merely following the precedents of Smith, Ricardo, and indeed the Canonists (Meek, 1973, p. 12). Where Marx transcended his classical forebears was in applying dialectical logic to the distinction between use-value and exchange-value, and as a consequence, greatly enhancing the role of use-value in political economy.

Marx argued that a product is a unity, which in all societies contains both the useful purposes to which it can be put, and the effort needed to produce it; but the ability to be exchanged for other products depends upon the nature of social relations. In early human society, "the economic aim is ... the production of use-values" (Marx 1857, p. 485), and social relations determine the distribution of products. Exchange, and the concept of exchange-value, develops from contacts with other communities, with the proportions in which one product is exchanged for another being "at first quite a matter of chance" (Marx 1867, p. 91). It is quite feasible that, in these initial transfers, perceptions of the utility of the alien products influence the exchange ratio. However, the repetition of this process leads to some quantity of goods being produced specifically for trade, and from then on relations of production dominate: "From that moment the distinction becomes firmly established between the utility of an object for the purposes of consumption, and its utility for the purposes of exchange. Its use-value becomes distinguished from its exchange-value." (ibid.)

Classical economists defined use-value itself in a fundamentally different fashion than the more familiar neoclassical concept of utility. For them, use-value was the objective function of a good or service, which depended upon the application made of the good by the purchaser, but *not* upon the

[8]Marx in fact referred to three Circuits of Capital, with the third being the Circuit of Productive Capital (Marx 1885, pp. 65-88); however, this third circuit is entirely contained within the second. While it is the basis for Marx's reproduction schema, and therefore an essential part of Marx's concordance with Post Keynesian and Neo-Ricardian analysis of production, this concordance is well-known, and I will therefore not discuss it further in this paper.

purchaser's subjective valuation of the good.[9] This contrasts with neoclassical economics, where utility is the subjective valuation of a good, which necessarily can vary from individual to individual. The neoclassical concept is of "abstract" utility as a general property of commodities, which is made commensurable--though not additive--via the contrivance of marginal utility. In contrast, use-value is "concrete": it pertains to a single commodity and is in no way additive across commodities.

This definition, which is contained in axiom 4 above, is buttressed by Marx's insistence that the purpose of exchange is not the maximization of utility. While he concedes that, "So far as regards use-values, it is clear that both parties may gain some advantage" (Marx 1867, p. 155), in general exchange under capitalism involves the seller parting with commodities which have no immediate use-value--"All commodities are non-use-values for their owners, and use-values for their non-owners" (ibid., p. 89). Secondly, the true purpose of capitalist exchange is to increase exchange-value.[10] With commodities being produced specifically for exchange, "the quantitative proportion in which the articles are exchangeable, becomes dependent on their production itself" (Ibid., p. 91). Marx's dialectics thus gave him a philosophical foundation for the classical propositions that exchange-value, not use-value, determines price, and that exchange involves the transfer of equivalents in value terms, leading to the definition contained in axiom 5 above.

The development of exchange thus gives rise to the concept of a commodity, and simultaneously pushes the use-value of the commodity into the background, while its exchange-value is pushed into the foreground, resulting in axiom 3 above, that "the exchange of commodities is evidently an act characterized by a total abstraction from use-value" (Marx 1867, p. 45). But while the use-value of a commodity is irrelevant to its price, this does not mean that use-value itself is irrelevant to political economy. Instead, the dialectical relationship between use-value and exchange-value allows Marx to explain everything from the source of surplus value itself, to the special status of money in

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[9]When Ricardo said that "If two sacks [of corn] be of the value that one was of before, he [the buyer] ... gets ... double the quantity of what Adam Smith calls value in use, but not double the quantity of value" (Ricardo 1821, p. 281) what he meant was that the buyer gets twice as many sacks, not twice the abstract satisfaction.

[10]Marx's analysis allows him to parody the neoclassical perspective on price formation as suiting a capitalist economy which, in effect, has no capitalists. Since neoclassical theory sees the primary role of trade as increasing utility, it focuses solely on the Circuit of Commodities, where commodities are exchanged for money, with which different commodities are purchased (C--M--C). It ignores the dominant aspect of capitalism, the Circuit of Capital, M--C--M+ where exchange is undertaken solely to achieve an increase in exchange-value. In this circuit, "what matters is not the immediate use-value but the exchange value, and, in particular, the expansion of surplus value. This is the driving motive of capitalist production, and it is a pretty conception that--in order to reason away the contradictions of capitalist production--abstracts from its very basis and depicts it as ... aiming at the direct satisfaction of the consumption of the producers." (Marx 1861, p. 495). The circuits are first discussed in Marx 1857, p. 201; see also 1867 Ch. 4. As is well known, this was about the only aspect of Marx's thought for which Keynes expressed admiration (Dillard, 1984, p. 424; Sardoni, p. 81), and the two circuits correspond to Keynes's division of total spending into D1 and D2 (see Davidson, 1994, pp. 23-27, 33-36). The formulation M--C--M was itself shorthand for M--C (L, MP)--P--C'+c'--M+m: money is used to buy inputs to production (labor-power and the means of production), which are then combined in production to produce new commodities of greater value than the inputs, which are sold for more money than the inputs cost. (Marx 1885 Ch. 1, especially p. 41)

capitalism. The following sections, on the origin of surplus, effective demand, wages, money, and technology, illustrate how the Commodity Axioms provide a logical basis for Post Keynesian perspectives on these issues.

6 Axioms and the Sources of Surplus Value

Marx's confidence that his two sets of axioms were consistent was based upon the ease with which part of the Labor Axioms could be derived from the Commodity Axioms--the proof that surplus value emanated from the exchange between worker and capitalist.

To apply his Commodity Axioms to labor-power and the origin of surplus value, Marx had first to identify labor-power's exchange-value and use-value. He argued that the exchange-value of labor-power was its value, the means of subsistence, which could be represented by a bundle of commodities, while its use-value was labor, the ability to perform work.[11] The former identification was hardly novel; however, the latter was revolutionary, in two senses. Firstly, in contrast to Smith or Ricardo, Marx gave use-value an active role in political economy. Secondly, he asserted that, under specific circumstances, use-value could be quantitative--though what was being quantified was not abstract satisfaction, as in neoclassical analysis, but the objective function of the commodity in question. In the case of labor-power, its objective function for its capitalist purchaser was to produce commodities for sale. Thus, in the case of this commodity, use-value and exchange-value could both be measured in the terms of the exchange-value of commodities.

He then applied axiom 4 above--that the use-value of a given commodity plays no role in determining its exchange-value--to conclude that these two value magnitudes would be *different*, and that this difference was the source of surplus value (Marx 1867, p. 188).

In the remainder of Capital, Marx proceeded as if this result meant the two sets of axioms were entirely consistent. However, they were not, as is illustrated by a subtle shift in the explanation of why labor generates a surplus. Whereas the Labor Axioms explained surplus on the basis of the *unique* characteristics of the worker-capitalist exchange--that labor, the service purchased by the capitalist, differed from labor-power, the commodity sold by the worker, and that this difference existed with no other commodity--the Commodity Axioms explained it on the basis of the characteristics that the exchange shared *in common* with all other commodities--that "the seller of labor power, like the seller of any other commodity, realizes its exchange-value, and parts with its use-value." (Ibid.)

Thus, while the Labor Axioms simultaneously proved that labor was a source of surplus value and the *only* such source, the Commodity Axioms at best made this a two stage process: firstly, show that the attributes that labor-power shares with all other commodities makes it a source of surplus; secondly, show that despite the fact that the commodity inputs to production had the same characteristics, nevertheless, they were not sources of surplus value.

However, axioms 3 and 7 imply that the use-value of all inputs to production is quantitative, since the only interest the capitalist purchaser has in them is their ability, in the M--C--M+ circuit, to produce commodities for sale. Axiom 5 asserts that "Exchange-value and use-value [are] intrinsically incommensurable magnitudes" (Marx, 1867, p. 506). Therefore, the conclusion that a difference can exist, which will generate surplus value, applies to *all* inputs to production, labor and

[11] "The past labor that is embodied in the labor power, and the living labor that it can call into action; the daily cost of maintaining it, and its daily expenditure in work, are two totally different things. *The former determines the exchange-value of the labor power, the latter is its use-value.*" Marx 1867, p. 188, emphasis added.

commodity alike (See Keen 1993a for a detailed discussion of this issue). As Marx himself put it when considering the contribution of machinery, "the use-value of the machine [is] significantly greater than its value; i.e. *that its devaluation in the service of production is not proportional to its increasing effect on production*." (Marx 1857, p. 383. Emphasis added).

The Commodity Axioms thus lead to the conclusion that surplus can be generated by all inputs to production, thus supporting the Neo-Ricardian and Post Keynesian approaches to production, and contradicting conventional Labor Theory of Value Marxism's insistence that labor is the only such source. Marx's attempt to avoid this conclusion in *Capital* was a logical failure, which nonetheless succeeded in convincing a century of Marxists (and their critics), chiefly by obscuring his Commodity Axioms, to leave only the Labor Axioms as his apparent legacy to economics (the historiography of this is covered in Keen 1993a and 1993b). Twentieth century Marxism thus developed--and foundered--on the basis of Marx's Labor Axioms.

7 Effective Demand--The Realization Problem and the Rejection of Say's Law

One of the defining features of Post Keynesian analysis is the proposition that, under conditions of laissez-faire capitalism, effective demand can be insufficient to provide employment to all those who wish to work, in contrast to the neoclassical catechism that laissez-faire capitalism will necessarily lead to full employment. While it is well known that Marx also considered questions of effective demand and rejected Say's Law, conventional Marxian economics, which is based on the Labor Axioms, has in contrast traditionally focused on long term crises in the generation of surplus, driven by irreversible forces innate to capitalism,[12] and it has even been argued that the insufficiency of effective demand is incompatible with Marx's basic schema (Sardoni 1987, p. 59).

No such criticism can be leveled at Marx's Commodity Axioms. In the distinctly monetary view of capitalism which emanates from them, the production of a surplus is only half the problem. The surplus generated by production must be realized--it must be converted into money--and for this to happen, the products leave the Circuit of Money Capital, where exchange-value is the dominant aspect of the commodity, and enter the Circuit of Commodity Capital, where use-value is the dominant aspect (axiom 7).[13]

Marx details three "barriers" which restrict the "*general tendency of capital*" (Marx 1857, p. 416) to expand incessantly, leading to crises and overproduction. At the level of the "entirely superficial" (Ibid., p. 404), the commodity must fulfill a need: "Its first barrier, then is *consumption itself--the need for it*..."[14] At the market level, exchange-value will be exactly realized only if the mass of any one commodity produced equals total demand for the product, hence "as *use-value*, the product contains a barrier ... which, however, is measured not by the need of the producers but by the total need of all those engaged in exchange" (Ibid., p. 405). At the level of the economy, and in a setting

[12]The driving force here has been the postulate of a tendency for the rate of profit to fall (TRPF), which itself is derived from the LTV. However, Khalil 1994 makes the point that, even assuming that the LTV is correct, there is nothing intrinsic to capitalism about the TRPF: if the tendency exists, then it should afflict socialism as much as capitalism.

[13]Marx's discussion of this issue is limited, being largely confined to the *Grundrisse*, Notebook IV pp. 404-24, Notebook VI pp. 678-80, "Capital as Fructiferous" in Notebook VII, pp. 745-60, and Ch. 15 of *Capital* Volume III. Groll (1980) gives an excellent survey of this material.

[14]The section omitted here is an interesting predecessor of the Clower-Leijonhufvud interpretation of Keynes: "(Given the present presuppositions, there is no basis whatever for speaking of ineffective, *non-paying needs*; i.e., a need which does not itself possess a commodity or money to give in exchange.)" (Marx 1857, p. 404)

of expanded reproduction, the new value created must be met by a matching expansion of aggregate demand, "since ... capital has created a new value in the production process, it seems indeed as if no equivalent were available for it... As *new value* and as *value* as such, however, it seems to encounter a barrier in the magnitude of *available equivalents*, primarily money... The surplus value now requires a surplus equivalent" (Ibid., p. 405).

This last insight is the foundation of Marx's critique of Say's Law. The argument that general overproduction is impossible is based upon the Circuit of Commodities, C--M--C, where money is only an intermediary, where no value is created, and where, since equivalents are exchanged, the sum of value supplied equals the sum of value demanded. However, crises of overproduction emanate from the Circuit of Capital, where the accumulation of money is the object, where new value is created, and where the sum of value supplied *exceeds* the sum of value demanded--though here demand, the purchase of labor and commodity inputs to production, occurs *before* supply:

> "The capitalist throws less value in the form of money into the circulation than he draws out of it... Since he functions ... as an industrial capitalist, his supply of commodity-value is always greater than his demand for it. If his supply and demand in this respect covered each other it would mean that his capital had not produced any surplus-value... His aim is not to equalize his supply and demand, but to make the inequality between them ... as great as possible." (Marx 1885, pp. 120-121)

Thus Say's Law is invalid in a dynamic economy with accumulation. Should the expansion in aggregate demand, or the availability of credit, be insufficient to realize the value contained in the commodities capitalists supply, overproduction will occur, capitalist expectations of profit will not be fulfilled, their purchases of labor-power and commodities will be curtailed, accumulation will falter, and a slump will eventuate from the insufficiency of aggregate demand.

8 Wages and Value

Post Keynesian analysis portrays the wage as primarily a monetary phenomenon, whose level is determined by struggles in the labor market. Marx's Labor Axioms portray the wage as being "on average equal to the 'value of labor-power'" (Green 1991, p. 199),[15] which is set by the subsistence requirements for reproduction of the labor force (augmented by social and historical norms relevant to each society; Marx 1867, pp. 167-168), and thus the wage is a real phenomenon, determined largely by forces outside the economic system.

Marx's Commodity Axioms, on the other hand, lead to a picture of the wage as monetary and determined in the labor market, as with Post Keynesian theory. This also leads to the first of several additional axioms; however, whereas axioms 6 and 7 of the Labor Axioms contradict preceding axioms, these additions augment the foundation Commodity set. In keeping with Whitehead's concept of internal relations, the wage relation (and, later, money and new products) are "narrower" contexts than the overall context of the commodity.

The key observation is that the ability to work cannot be properly characterized as a commodity. It is a commodity in the sense that labor-power is bought and sold; but it is also not a commodity in that it is neither produced in factories, nor produced with an eye to a profit. But were it possible to purchase labor-power at its value, then it would in fact be treated as a full commodity, in denial of

[15]However, Ronald Meek long ago pronounced himself "unconvinced by attempts of some modern Marxists to ... [define] ... `the value of labor-power' so that it becomes equivalent, in effect, to any wage which the workers happen to be getting" (Meek 1973, p. xvii.)

the aspects which make it more than a commodity. This gives us a reason to presume that, in general, it will take *more* than just the value of labor-power to hire a worker. There is thus a "dialectic of labor-power", in addition to the dialectic of commodities, which is embodied in the following axiom:

1) Labor-power is both a commodity and a non-commodity, giving rise to a dialectic of labor, which determines the wage.[16]

Marx's dialectics thus implies that as a rule labor would be expected to receive *more* than its value, and the dialectical interpretation of Marx therefore supports the Post Keynesian approach to wage formation over the conventional Labor Axioms approach. As evidence of this, on the one occasion where Marx considered the dynamics of wage formation, his analysis amounted to a verbal précis of Goodwin's predator-prey model of the trade cycle (Goodwin 1967): a period of rapid accumulation reaches the stage "at which requirements of accumulation begin to surpass the customary supply of labor, and, therefore, a rise of wages takes place" (Marx 1867, p. 575). However, this cannot continue forever, because

> "accumulation slackens in consequence of the rise in the price of labor, because the stimulus of gain is blunted. The rate of accumulation lessens; but with its lessening, the primary cause of that lessening vanishes, i.e. the disproportion between capital and exploitable labor power. The mechanism of the process of capitalist production removes the very obstacles that it temporarily creates. The price of labor falls again to a level corresponding with the needs of the self-expansion of capital, whether the level be below, the same as, or above the one which was normal before the rise in wages took place... To put it mathematically, the rate of accumulation is the independent, not the dependent variable; the rate of wages the dependent, not the independent variable." (Ibid., pp. 580-581.)

Thus the actual wage is monetary, while the real wage consists of two parts, a minimum payment which is an extra-economic given, and a share of the surplus which is a function of the rate of employment, of accumulation and of population growth.[17] This dynamic vision of wages formation ensures that the distribution of income will never quite be what capitalists expected it to be when

[16]While Marx never explicitly applied his Commodity Axioms to the question of labor-power, it is probable that he would have done so in the intended third book on wage-labor (Oakley 1983, pp. 115-116). However, whenever he did consider the relationship between the wage and the value of labor-power, the term he used was not "average", but "minimum" (Marx 1861, Part I, p. 46; 1846, p. 55; 1861, Part II, p. 223; Meek 1973, pp. ix-x, citing correspondence from Marx to Engels)--in contrast to the practice of his purported followers. In a section of the *Grundrisse* entitled "*The minimum of wages*", Marx made it clear that in his complete analysis, the wage would normally *exceed* the value of labor-power: "For the time being, necessary labor supposed as such; i.e. that the worker always obtains only the minimum of wages. This supposition is necessary, of course, so as to establish the laws of profit in so far as they are not determined by the rise and fall of wages or by the influence of landed property. All these fixed suppositions themselves become fluid in the further course of development." (Marx 1857, p. 817.)

[17]This two-part treatment of wages also accords with Sraffa's preferred approach: "In view of this double character of the wage it would be appropriate, when we come to consider the division of the surplus between capitalists and workers, to separate the two component parts of the wage and regard only the 'surplus' part as variable." (Sraffa 1960, p. 9)

their investment plans were made, adding further to the likelihood of alternating cycles of over and under-production.

9 Endogenous Money, Expectations, and Capitalism's Two Price Levels

The propositions that money is non-neutral in both the short and long term, and that the money supply is endogenous, distinguish Post Keynesian economics from all other schools of thought. American monetary Post Keynesians in particular focus upon the peculiar role of money, liquidity and financial assets as the explanation for capitalism's tendency to experience unemployment equilibrium, or cyclical crises brought on by financial fragility. Davidson emphasizes the peculiar elasticities of production and substitution of money (1981, p. 167; 1994, pp. 94-96) as the reason why an increase in demand for it (occasioned by a rise in uncertainty) will lead to an increase in unemployment, as demand shifts from producible commodities to non-producible money. Moore emphasizes the endogeneity of credit and the essential control that borrowers have over the money supply, while Minsky's "Financial Instability Hypothesis" focuses upon the interplay between endogenous money and assets prices. An essential part of Davidson's and Minsky's analyses is the proposition that there are two price levels in a capitalist economy: one for commodities, based largely on the cost of production, and one for financial assets, based on the cash flows the assets were expected to generate (Minsky 1982 pp. 3-12; Davidson 1994, pp. 56-62; Keen 1995, p. 610).

The analysis of money and credit has long been regarded as one of the weakest links in Marx's theoretical schema (De Brunhoff, 1973 p. xiii), and indeed there is little to differentiate Marx's discussion of money in *Capital* Volume I from the Quantity Theory of Money. In contrast, insights which are consistent with Post Keynesian analysis can be derived from Marx's Commodity Axioms, and in addition they introduce the concept of uncertainty. As with labor above, this results in an additional axiom, whose basis, likewise, is the observation that money is both a commodity and a non-commodity. It is a commodity because it is traded, but a non-commodity because it is not produced by means of other commodities, but by agreement between lender and borrower.

As has already been shown, the Commodity Axioms provide a rationale for basing the price of commodities on their cost of production. The same logic cannot be applied to money, however, since the "cost of production" of money is effectively zero. There thus arises the dialectic that, while credit money is essential to capitalism, it cannot be priced in the same fashion as all other commodities. Instead, credit money is the one commodity *whose exchange-value is set by its use-value*, which is expressed in the axiom:

1) Money is both a commodity and a non-commodity, giving rise to the dialectic of money, that its exchange-value is set by its use-value.

It is possible to find this proposition in Marx's writings. For example, when considering how the rate of interest is set, Marx says:

> "What, now, does the industrial capitalist pay, and what is, therefore, the price of the loaned capital?... What the buyer of an ordinary commodity, buys is its use-value; what he pays for is its value. What the borrower of money buys is likewise its use-value as capital; but what does he pay for? Surely not its price, or value, as in the case of ordinary commodities." (Marx 1894, p. 352.)

Thus, rather than the rate of interest being set by the cost involved in issuing a loan, it is set by the use-value of the loan itself, and "Its use-value, however, lies in producing profit" (Ibid., p. 355. See also Marx 1861, Part III., pp. 457-58).

Marx extended this result to assets--factories, mines, etc.--which are purchased or hired in order to generate a stream of income (Ibid., p. 458-459; 1861, Part II, p. 249; 1894, pp. 353-356). For example, Marx chastised Ricardo for explaining the price of minerals in situ on the basis of their "value", when no labor has gone into their production. Marx points out that they therefore contain no value--though they have obvious potential quantitative use-value, determined by the expected sale price of the estimated quantity of ore. Thus, if mining rights and the like could be purchased, like commodities, for their cost of production, they would be free. Hence as with loaned capital, the exchange-value of assets is determined not by their costs of production, but by their *perceived* use-value--that of being a potential source of exchange-value.[18]

Consequently, asset prices are determined by expectations of profit, while commodity prices are determined by the cost of production, so that there are two independent price levels in capitalism. The former will be far more volatile than the latter, and debt will be incurred to purchase them. The Post Keynesian emphasis upon expectations and uncertainty in general, and the fundamentals of Minsky's Financial Instability Hypothesis in particular, thus flow easily from Marx's Commodity Axioms.[19]

10 Commodities and Non-commodities

The Commodity Axioms need one further element to be complete. The observation that both labor and money are simultaneously commodities and non-commodities points out that, strictly speaking, the term "commodity" applies to products which are produced for sale, and which are themselves involved in the production of other commodities.

Ricardo was more precise on this point than Marx. Very early on in the *Principles*, he states that "There are some commodities, the value of which is determined by their scarcity alone... rare statues ... wines of a peculiar quality ... are all of this description. Their value is wholly independent of the quantity of labor originally necessary to produce them, and varies with the varying wealth and inclinations of those who are desirous to possess them." (Ricardo 1821, p. 12)

While Ricardo's examples are of little practical moment, this argument has much wider import. In particular, newly developed products fall between the type of commodities to which Marx's analysis applies, and those in the category excepted by Ricardo. This suggests that the products of technological development--which will in time become commodities as they are integrated into the system of reproduction--are liable to have their initial prices set by forces in addition to their costs of production. Perceived utility is one such additional force, though the evolutionary nature of

[18]"Ricardo never uses the word *value* for utility or usefulness or "value in use". Does he therefore mean to say that the "compensation" is paid to the owner of the quarries and coalmines for the "*value*" the coal and stone have before they are removed from the quarry and the mine--in their original state? Then he invalidates his entire doctrine of value. Or does *value* mean here, as it must do, the *possible* use-value and hence the *prospective exchange*-value of coal or stone?" (Marx 1861 Part II, p. 249)

[19] Marx's discussion of the trade cycle, while largely historical in character, is also consistent both with an endogenous theory of credit and with Minsky's hypothesis (Marx 1894, pp. 479-545). In particular, Marx acknowledges that credit can expand at a much different rate than the money supply (Ibid., p. 499)

technological progress suggests that the prices of established commodities with which the new product competes, and the threat of competitive products from rival companies, are likely to put bounds on this. Thus the price of a newly developed product is likely to be above its exchange-value, but to be driven towards this over time by the forces of competition and commodification. This suggests a final axiom:

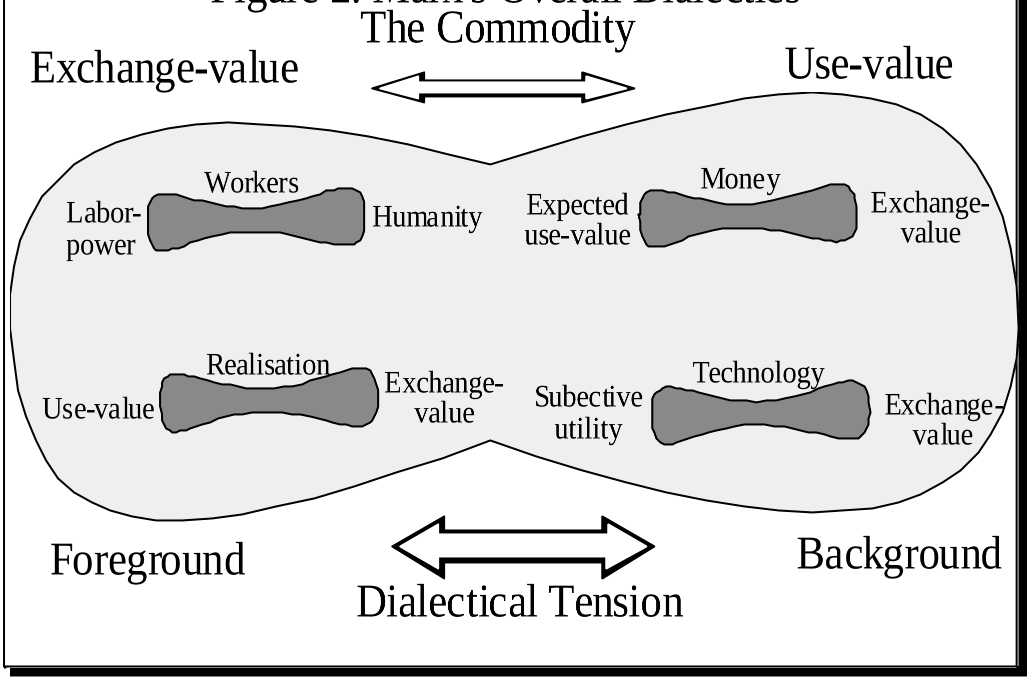
1) Products which are not part of the system of reproduction of products are not truly commodities, and hence not fully bound by the dialectic of commodities.

This also suggests an axis along which the most extreme versions of non-neoclassical economic thought can be related. At one end, Neo-Ricardian economics presumes that all products are commodities, and bases the exchange-values of all products solely on the technical conditions of production, and the distribution of income between wages and profits. Austrian economics occupies the other pole: while it shares with Marx a dialectical vision of capitalism (Sciabarra, 1995, pp. 11-29), it makes the innovative aspects of capitalism the center of its dialectic, and proposes an entirely subjective theory of value--which from the perspective of Marx's dialectic of the commodity, involves treating all products as non-commodities.

11 Conclusion

Post Keynesian economics is thus not as eclectic as both its major proponents and opponents believe; it has merely lacked a clearly articulated theory of value, and an axiomatic basis derived from that theory of value. Both of these exist in Marx, and can be adopted by Post Keynesians without fear of contamination by the labor theory of value, and without abandoning any of the valued aspects of Keynes's philosophical approach to economics.

Figure 2: Marx's Overall Dialectics



The benefits to Post Keynesianism from adopting Marx's neglected foundations are many. A sense of methodological consistency can be gained; disparate insights concerning the role of uncertainty, expectations, money, and the labor market, can be collated into a consistent perspective on capitalism; and most importantly, as Caldwell (1989, pp. 56-57), Pasinetti (1986, p. 427) and Backhouse (1988, pp. 39-40) emphasize, a consistent alternative paradigm is needed if Post Keynesianism is ever to develop into a full rival to neoclassical economics.

An additional major benefit that Post Keynesian economics would gain from taking up this abandoned cudgel is pedagogic. With Post Keynesian economics defined predominantly by its opposition to neoclassical analysis, students are unable to comprehend heterodox economics until they learn what it is not. Even then, realizing why an alternative exists, let alone is desirable, requires understanding the shortcomings of neoclassical analysis to a significant degree of complexity. However, using Marx's Commodity Axioms, Post Keynesian economics can be favorably distinguished from its neoclassical rival at the very beginning of a student's exposure to economics.

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