MONEY IN A COMMON RESEARCH PROGRAMME FOR
POST-KEYNESIANISM AND NEO-RICARDIANISM*

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INTRODUCTION

The theme of this paper arises from a set of two questions which are the following: Are post-Keynesian theory and neo-Ricardian theory distinct from neoclassical theory? And if they can tentatively be considered distinct from neoclassical theories, can post-Keynesian theory and neo-Ricardian theory be made compatible with each other? Of course, the two question are somehow intertwined. If post-Keynesian theory or neo-Ricardian theory, or both, cannot be truly distinguished from neoclassical economics, then there is not much point in asking about their dissemblance or compatibility. In the case of traditional marxist economics such doubts are illegitimate since the problems to be solved, the solutions being put forth, the method, the concepts, the measures appear to be so foreign from standard economics. However, in the present case, several would agree that there is an overlap with neoclassical economics, just as there probably is in the case of institutional or radical economics. Notwithstanding the so-called progressivity of the post-Keynesian or neo-Ricardian programmes, are these schools of thought truly different from mainstream economics, or are post-Keynesians and neo-Ricardians just a group of economists quoting each other in a sort of underground academic society?

In the following pages I intend to show that it is legitimate to pretend that a coherent alternative to neoclassical economics can be built on post-Keynesian and neo-Ricardian traditions. I believe that it is our task to 'reconcile' Keynes and Ricardo, or, as Robinson (1978, 15) put it, that "post-Keynesians must make use of Sraffa to build a type of long-period analysis which will prevent neoclassical equilibrium from oozing back in the General Theory". I shall call this alternative the post-classical research programme, a term first coined by Henry (1982,20) and adopted by Eichner (1986,3) to characterize this synthesis. The post-classical economists are in the tradition of the classical economists, as emphasized by the neo-Ricardians, but they also incorporate the major views of Keynes, who rejected those of the classical (neoclassical) school, as he called it. Others, in fact those who have insisted upon the necessity of a synthesis (Nell 1972, Kregel 1973), have spoken of a revival of political economy. The term 'post-classical' thus seems appropriate to describe the post-Keynesian and neo-Ricardian synthesis. Indeed, in view of the fact that both Joan Robinson and Nicholas Kaldor seem to have paid much respect in the end to Michal Kalecki, who himself was so much influenced by Marx, the term post-classical seems even more appropriate.

In the first part of the paper, I shall present how the neoclassical and the post-classical programmes can be distinguished in the most general terms. Some attention will also be devoted to the compatibilities between the post-Keynesian and the neo-Ricardian schools. In the second part of the paper, I shall treat the question of money as an instance of the distinctions made earlier, and I shall show that, in contradiction to some beliefs, there is substantial common ground around that topic between post-Keynesians and neo-Ricardians².
1. Neoclassical Versus Post-classical Economics

1.1 Cores and presuppositions

It has been argued by some methodologists that the Lakatosian concepts of hard core and protective belts cannot be applied directly to the field of economics, in particular the neoclassical research programme. The reason it that a school of thought may be tackling too diversified a set of topics, methods, and fields. The notion of a hard core, since it should be concerned with formal models only, cannot be general enough. Three ways out have been suggested. The first two proposals, by Remenyi (1979) and Fulton (1984), either restrict the application of hard cores to particular fields or theories of a programme, or create demi-cores that only apply to these subsets. A third position has been argued by Leijonhufvud (1976), who proposes the addition of presuppositions, i.e., a set of commonly-held beliefs, which cannot be put in a formal form, and which are anterior to the hard cores. Fulton (1984, 195) also occasionally argues along these lines. This is the position adopted here, since previous work has led the author to conclude that the crucially distinctive elements between neoclassical and post-classical economics could more easily be identified in general statements rather than in formal hard cores. If neoclassical economics to some extent can be rigidified, to search for cores, belts, heuristics and the like in the case of post-classical economics, or its two major components, appears to be a near-impossible task.

What seems to be striking to outsiders of post-Keynesianism and neo-Ricardianism is that these two schools of thought and their major proponents only seem to have one cimenting theme, their rejection of the dominant neoclassical paradigm (Klamer, 1984, 6; Caldwell 1989, 56). There are certainly good reasons for this perception. One is that some post-Keynesians still define their program in a negative sense, in reaction to neoclassical economics (Jarsulic 1988, 24). Another reason is that some surveys of post-classical economists have not really attempted to pull together the common elements of thought of various strands and authors. For instance Hamouda and Harcourt (1988) present an exhaustive survey, but they are more descriptive than analytical. They unexpectedly end up concluding that to search for a coherent vision is a futile endeavour. Coherence within each strand of post-classical economics is sufficient in their view. Their conception of post-classical economics is thus similar to that of Dow (1985, 73), who claimed that post-Keynesians had a Babylonian methodological approach. But this only leads critics of post-classical theory to conclude that post-Keynesians and their allies have not yet provided a suitable alternative to neoclassical theory (Backhouse 1988).

What is discouraging in all these surveys is that the works of those who have precisely attempted some synthesis of the neo-Ricardian and the post-Keynesian theories are being somewhat put aside. For instance, not much attention is devoted to Eichner (1987), who aimed at reconciling neo-Ricardian prices of production with the administered prices of firms, nor to Schefold (1984, 1985) who had similar objectives. I have also always been struck by the fact that some post-classical authors known for their work on the real economy and the long run, for instance Petri, Hagemann and Arena, have shown great interest in the purely monetary matters. Hence I do believe a synthesis is possible. The trouble is to identify the presuppositions that would constitute this synthesis. After some attempt at defining its hard core, I have come to associate four presuppositions with neoclassical economics. Two of them are at a methodological level; the other two are more of a technical matter. These presuppositions are instrumentalism and individualism on the one hand, exchange and substantive rationality on the other. Of course, anyone else may be quite unsatisfied with my choice and propose some other presupposition essentials. Note however that some recent descriptions of the essentials of the neoclassical programme come close to those presented here. For instance Heijdra and Lowenberg (1988, 275), in their plea for a unified definition of the neoclassical programme, also underline methodological individualism and individual rationality. In addition, one can consider that neoclassical economics evolves within an environment of risk situations, substitution possibilities and scarcity, which as we shall see are linked to its type of rationality and its focus on exchange.
On the other hand, post-classical economics, as shown by Table 1, is set within an environment of uncertainty, complementarity and abundance. Realism, organismism, bounded rationality and production are the corresponding four presuppositions of post-classical analysis. There is much coherence between those divisions and those suggested by Baranzini and Scazzieri (1985, 30-47). They suggest two long-lasting lines of research, the exchange and the production programmes. Their frameworks are

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<td>Epistemology</td>
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<td>Ontology</td>
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<td>Environment 3</td>
<td>Scarcity</td>
<td>Abundance</td>
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respectively scarcity, linear production, an individualistic vision, feasibility and simultaneity on the one hand; and producibility, circular production, a social-class vision, viability and causality on the other hand. Since simultaneity and causality can be associated with instrumentalism and realism respectively, Baranzini and Scazzieri's essentials are identical to those to be defined here. The proposed essentials thus have some foundations: they are not arbitrary; they have a significance of their own.

1.2 Instrumentalism versus realism

Instrumentalism is the dominant epistemology in neoclassical economics. Although there have been endless debates around Milton Friedman's essay in methodology, I take it that there are now two consensus around it. First, Friedman was basically taking an instrumentalist stance; second, Friedman's position has now been widely endorsed by his fellow neoclassical economists. The second point, if the first is correct, is not difficult to understand. In neoclassical economics, the empirical work done in the more 'vulgar' parts of the theory are the predictions of the more abstract neo-Walrasian programme. But we know, because its proponents have not attempted to deny it, that neo-Walrasian theory is not descriptive. There is no effort in putting forth hypotheses that are realist. Axioms are chosen, not for their likelihood, but for their ability to allow the existence of an equilibrium or its uniqueness. Neo-Walrasians describe the world as it should be rather than as it is. Since the more 'vulgar' neoclassical economists rely on general equilibrium theory for their scientific security, they are forced to start from unrealist and non-descriptive hypotheses.

In his recent contribution on post-Keynesian methodology, Caldwell (1989, 55)
seems to have been struck by the fact that the major critique of post-Keynesians against neoclassical theory is that it is unrealistic, while more realism is called for. He then recommends the development of this epistemological position. This is in my view a correct descriptive and prescriptive assessment. For post-classicals, a theory cannot be correct unless it incorporates realist hypotheses. The necessity of abstraction for any successful theorizing does not relieve of the need to be somewhat descriptive. Whereas neoclassical analysis can be realistic only in its auxiliary hypotheses, post-classicals require realism at the level of their initial and essential hypotheses. This would explain the fond interest of post-classicals for fixed coefficients of production, cost-plus or mark-up theories, constant marginal costs, endogenous money, unemployment, and so on.

The adoption of realism as an explicit or implicit methodology has several important consequences. Obviously, standard assumptions become subject to much more empirical scrutiny than the evaluation of predictions. Furthermore, a story has to be told. This, I suspect, is what Joan Robinson meant with historical time. It has also been pinpointed by Caldwell (1989,58): "Post-Keynesians value explanation in economics more than they do predictions". It is precisely the approach underlined by philosophers of science who support realism as a serious and legitimate methodology (Sayer 1984, ch. 3). What is emphasized is the capacity of a theory to explain the generation of events or structures and to understand the mechanisms at work (Lawson 1989, 63). In a somewhat discursive manner, Blaug (1980, 16) has attributed this 'storytelling' method to the Institutionalists, which he has linked to their call for more realism. Certainly the same could be said of post-Keynesians. Now, for a proper story to be told, some causal mechanism must be presented, some causal process must be reconstructed. A natural consequence of this realist approach is that causality becomes a major concern. Several neoclassical economists avoid the concept altogether or associate causality with temporal ordering, as in some modern assessments of it. On the other hand, post-Keynesians have been particularly careful to safeguard causal and asymmetric relationships. While it may seem obvious that post-classicals of the post-Keynesian strand have repeatedly called for more realism in economics, some may doubt that there is any link between realism and neo-Ricardians. This is not so. For instance, Milgate (1982,11) defines the neo-Ricardian method as the "abstract characterization of the actual economy... to capture the systematic, regular and persistent forces at work in the system". Furthermore, some neo-Ricardians describe the pure Sraffian model as a snapshot, a photography, of the existing economic system. As such, few hypotheses are superimposed upon the observed technological facts. Indeed, the standard hypothetical neoclassical demand and supply curves are criticized by neo-Ricardians in part because they cannot be observed (Roncaglia 1978,104). There is a strong belief among neo-Ricardians in requiring theoretical elements to be observable and objective, rather than metaphysical and subjective. This we can interpret as a desire for realism.

1.3 Individualism versus Organicism
The second object of opposition is the distinction between the individualistic and the holistic approaches. In neoclassical economics, the analysis starts with the behaviour of individual agents (Boland 1982, ch. 12). The individual is at the heart of neoclassical economics. This is where ideology might set in. The wants and the preferences of individuals are sacred. They must therefore be in the forefront of the theory, as they are in neo-Walrasian economics. Institutions, firms, banks, are a front for the preferences of individuals. Individuals, although they are different because of their distinctive preferences, are all equal as to their impact on the economy. There are no classes of individuals. This philosophical view has an impact on the neoclassical theory of value. Since the preferences of individuals are sacred, they should have an effect on prices, as we know they do in neoclassical theory. This fascination for the rights of individuals can be found in its extreme form
among the neo-Austrians. It is no surprise that subjectivism appears so strongly there.

In post-classical economics, although individual choices are not necessarily denied, they are severely constrained by the existing institutions, social classes, social pressures or even macroeconomic events. Individual behavior is interdependent. The social context plays an important role in the manner beliefs are formed. Individuals can influence and are influenced by their social environment. Every entity is "the outcome of its relation with other entities" (Winslow 1989, 1173). Some may speak of a form of holistic approach or of organicism.

In all post-classical models, there are social classes, workers, capitalists, entrepreneurs, rentiers. The consideration of these classes, for income distribution purposes or for the theory of effective demand for instance, arises from the presupposition that the definition of individual preferences are not sufficient to understand society. The consideration of individuals as social beings rather than atomistic ones allows not only for the explicit introduction of dominant institutions and imperfect markets, but also for the appearance of macroeconomic paradoxes (Dow 1988, 9). All sorts of paradoxes, conflicting micro and macroeconomic logics, arise in the post-classical framework, among which the famous effective demand principle. The relaxation of individualism allows to further abandon individual optimizing procedures since there are superior macroeconomic constraints.

To abandon the individualistic approach allows post-classicals to focus upon the institutional forms of competition rather than the atomistic neoclassical one. Even thus there is no infinite multitude of agents or producers, competition exists in post-classical analysis. Whereas the mainstream views institutions as imperfections preventing perfect competition, post-classical see them as providing some stability (Hodgson 1989, 116). This is particularly important in a world of uncertainty, where rational responses will develop along the lines of organic interdependence, and where stability will generally be provided by social conventions, until these break, as we shall see in the coming section.

1.4 Substantive versus procedural rationality
Caldwell (1989, 59) has recently pointed out that the principle of rationality is a very powerful device if not an absolute requirement for any theory in the social sciences. What should be made clear, however, is that the neoclassical programme is not founded on just any sort of rationality principle. Neoclassical economics is based upon substantive rationality, a very peculiar type of rationality. The main characteristic of substantive rationality is that it is loaded with computational facilities and information. The rational economic man of neoclassical economics might be able to predict all future events, or make use of a probability distribution tracing all possible alternatives, or form expectations integrating all available knowledge. The environment assumed to be surrounding the economic agent will be such that this substantive rationality can always be put to use.

Some limits may be imposed upon the available information when some realism or some economic policy results warrant such tampering. But the basic principle of substantive rationality remains preserved. It can be argued that when neoclassical authors model more realistic decision problems, they do so by upgrading the computational and knowledge requirements of economic agents, thus moving away from observed behaviour. Substantive rationality is quite compatible with instrumentalism, for it appears legitimate to assume that all possible events are known and that their consequences can be assessed, even thus this sounds perfectly unrealistic, provided some predictions can be made.

On the other hand, post-classical authors entertain a form of cognitive realism, that of procedural rationality, as defined by Simon (1976). Procedural rationality is bounded rationality, with limited capacities to acquire information, to treat information, to compute outcomes. Individuals are not omniscient; they must rely on group behaviour, numbers bringing confidence.
Bounded rationality is compatible with organicism because, as a consequence of these real-life deficiencies in the logistics of choice-making, procedures and rules of thumb have to be followed (Winslow 1989, 1180). These rules are common to a whole range of individuals, firms or banks. They set norms and conventions which have to be followed and which have effects upon the real economy. Blaug (1980b, 15) has conjectured that Institutionalists could be viewed as favouring the idea of "group behaviour under the influence of custom and habit". This certainly applies to post-classicals as well.

The environment in which bounded rationality can be put to use is quite different from the one warranted by substantive rationality. There is no need to know the probability distribution of all possible future events. True uncertainty, of the Knight/Keynes/Shackle variety, can be entertained. Neither individuals nor firms are assumed to optimize. It is enough to know that they follow the rules established by the various subgroups of society as best as they can. Expectations need not be of the neoclassical rational type. Conventions dominate.

Some might argue that neo-Ricardians have often expressed aversion for the concept of uncertainty. Taking up the principle of bounded rationality first, one should note that it is implicit in the snapshot idea of Sraffian models: there is no presumption that the optimal technique has indeed been chosen; the technical coefficients are what they are: they are not necessarily the optimal ones (Nell 1967, 22). As to uncertainty, Eatwell (1983, 127) points out that it is "an element, together with 'convention', of the general environment in which the systematic processes of production and accumulation must operate". Indeed, one could argue that the regularities and permanent features of the economy that the neo-Ricardians are so keen of, are provided precisely by the existence of fundamental uncertainty and the consequent rule-governed behaviour (Heiner 1983). Neo-Ricardians play down the role of expectations and uncertainty because they are afraid that these could be considered as imperfections in their critique of neoclassical economics. However, once the negative part of the job is done, neo-Ricardians and post-Keynesians alike recognize that theories must be built within an uncertain world, with procedural rationality.

1.5 Exchange and production
We now come to the last distinctive essentials, that of exchange versus production, as authors of various horizons have put it (Hicks 1976, 213; Henry and Seccareccia 1982, 6; Baranzini and Scanzieri 1986), and which we could call the scarcity versus production presupposition.

As early as the first class of principles, the student of economics is confronted with the basic definition of the neoclassical research programme, which is wrongly attributed to economics as a whole (i.e., to all schools of thought in economics). Textbooks use Lionel Robbins' definition of economics, calling it the science of the (optimal) allocation of scarce means (1932, 16). The concept of scarcity is in my view the fourth essential of the neoclassical programme. Scarcity is the fulcrum of neoclassical economics. Various conditions will be set to preserve it: full-employment, a fixed and given stock of money, etc. Scarcity justifies the supply and demand analysis. It gives prices their crucial role. It governs the behaviour of the economy. It explains why neoclassical economists attach such importance to the allocation of resources or why so many of them define the techniques of constrained optimization as the epitomy of neoclassical economics. When all resources are scarce, they are fully employed, and therefore all questions revolve around the proper use of existing resources, rather than about the creation of new resources. Scarcity is particularly obvious in pure exchange models. The supplementary hypotheses that can be found in the various sophisticated neoclassical production models are however precisely being introduced to safeguard all the main conditions and results of the pure exchange model (Rogers 1983). Production in neoclassical economics is a form of indirect exchange, between individual consumer agents who own resources which transit through the
same individual agents, then christened producers. These producers are nothing else than arbitragistes who are attempting to benefit from existing scarcities. In the post-classical research programme, the notion of scarcity is put aside, while that of reproducibility is put to the forefront (Roncaglia 1978, 5). With their emphasis on production, post-classical economists embark on the tradition of the classical economists, with their concern with the causes of progress and accumulation. In his review of the Cambridgian critique, Rymes (1971, 2) makes clear that the neo-Ricardian concern for reproducibility is in the lineage of the economic thought of Robinson, Kaldor and even Harrod. It is no surprise that Pasinetti (1981, 24) and Rymes, who have carefully studied economics with growing output per head as a result of technical progress, have put so much emphasis on the notion of reproducibility.

In post-Keynesian models, where output is not disaggregated, the emphasis on production appears through the assumption that in general neither capital goods nor labour are fully employed. In this sense, resources are not scarce. The major problem is not how to allocate them but how to increase production or the rate of growth. The principle of scarcity is put aside, as it is generally possible to increase the rate of utilization of capacity and as there are reserves of labour. The principle of scarcity is replaced by the principle of effective demand. The true constraint is not supply but effective demand. In more recent models, it becomes possible to simultaneously increase consumption per head and the rate of growth (Rowthorn 1981, Amadeo 1986, Dutt 1987). In these models, the short-run saving paradoxes of Keynes are truly extended to the long-period and to an analysis of accumulation.

Therefore, although neo-Ricardians have put much emphasis on the wage/profit frontier, I would be prepared to argue that if neoclassical economics is the research programme of a world of scarcity, post-classical economics is the research programme of a world of abundance. Of course, some goods, even produced goods, may become scarce. But as pointed out by Pasinetti (1981, 7), classical authors, in particular Ricardo, considered that produced goods could be multiplied without limits, and thus considered that scarcity conditions could only be of a temporary nature, focusing on the permanent feature of reproducibility. This is where the neo-Ricardians and the post-Keynesians join forces, since Hayek, when rejecting Keynes' economics in 1940, is precisely invoking the basic importance of scarcity (Parguez 1988, 144). Scarcity is the essence of neoclassical economics. To proclaim the existence of an economy of plenty is to negate the foundations of orthodoxy.

2. Money in the post-classical research programme
2.1 Post-Keynesian versus neo-Ricardian subprogrammes

Some readers may be surprised or even annoyed by the fact that a monetary economy has not been included as one of the essentials of the post-classical programme. Wulwick (1987, 851) for instance, includes the statement "decisions are monetary in nature" among her eight elements of the hard core of the post-Keynesian research programme. Eichner and Kregel (1975, 1300), although they do not include it in their main table, make the statement that post-Keynesian theory is "a theory of a monetized production economy," and that this should set it apart from the neo-Walrasian variant of the neoclassical model. My opinion is that by focusing upon production and realism, an analysis of a monetized production economy naturally comes to the forefront. Realism and production are thus essentials which are prior, in my view, to the concept of money, since the vision of money will be influenced, in particular, by the importance of producing activity in a world of plenty rather than by exchange in a world of scarcity.

Other distinctive features of post-classical economics versus neoclassical analysis, which are not present here, have been underlined in the past. Several authors from the post-Keynesian tradition would certainly support the statement that historical time is a fundamental characteristic of a post-classical approach (Henry 1982, 44); Davidson and Weintraub 1978, 6). This clearly shows
that there are tensions within the post-classical synthesis since, as it has
been demonstrated before (Carvalho 1984-85), there are strands within the
post-classical approach that would not seem to fit within such a requirement of
historical time. Another tension between post-Keynesianism and neo-Ricardianism
is the somewhat related opposition between short-period analysis and long-period
analysis. But in my opinion, as I have tried to show elsewhere (Lavoie 1989),
these oppositions are to a large degree artificial. As we all know, Joan
Robinson herself did indulge in logical time analysis, while on the other hand
those who have been proponents of the long period approach support analyses in
historical time. According to the problem at hand, the focus and the method of
analysis should change. This, in my view, is how a 'Babylonian' methodological
approach should have a role. A technique should not be exclusively associated
with a school of thought, as Kregel (1980) has pointed out.
Although the tensions between post-Keynesianism and neo-Ricardianism should not
be underestimated, there are large segments of theoretical agreement between
these two branches of post-classical economics, besides the four presuppositions
described above. One obvious example is the theory of prices, where prices of
production and mark-up prices are supply-side prices, depending on costs rather
than scarcity indices influenced by demand. A less obvious example is the theory
of money.
In the rest of this section, I intend to show the post-classical monetary theory
has a common core, distinct from that of neoclassical theory, along the lines
indicated in table 2. One of the major fear of post-Keynesians is that a return
to the so-called classical approach would lead to the reintroduction of Say's
Law or the Quantity theory of money. The names of Thomas Tooke and John Stuart
Mill are a reminder of the fact that classical authors did not necessarily
endorse Ricardo's views on money. Post-classical monetary theory can be
considered to be the continuation of a research tradition started by the Banking
School.

TABLE 2
In the following, I shall focus on three propositions that stand out from the
post-classical view of money: (i) money is endogenous; (ii) the rate of interest
is conventional; (iii) there are no natural financial constraints on expansion.
As we proceed along, the problem of reconciling liquidity preference theory with
its apparent denial by some neo-Ricardians shall be dealt with.

2.2 Endogenous money
Lawson (1989) has argued that realism characterized Kaldor's approach to
economic theorizing and that realism should characterize an alternative approach
to neoclassical theory. The three propositions underlined above are precisely an
attempt to put forth an alternative theoretical framework of monetary economics
which is based on realist hypotheses. When an endogenous theory of money was
originally proposed (Le Bourva 1962), it was partly as a reaction against models
which assumed the existence of reserves in countries where such reserves did not
exist. It turns out that very few countries function or have functionned
according to the high powered money fantasy. Indeed, when economists have
attempted to precisely describe how central banks act, or could act, they
invariably abandoned the excess reserves fable and told an endogenous money
story. Post-classical monetary theory is an essay in realist economics.
It is well-known that Kaldor (1970, 1982) and Moore (1988) have been
long-standing advocates of an endogenous theory of money. They have argued in
favour of reversed causation, where

TABLE 2
Characteristics of money in the neoclassical and post-classical research programmes

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<tr>
<th>Characteristics</th>
<th>Neoclassical</th>
<th>Post-classical</th>
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<tbody>
<tr>
<td>Money enters in exchange in production</td>
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<tr>
<td>Money is an individual a social convention requirement</td>
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<tr>
<td>Money is a given as flux/reflux endowment</td>
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<tr>
<td>Money is exogenous endogenous</td>
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<tr>
<td>Interest rates are endogenous exogenous</td>
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<tr>
<td>Interest rates are the market price of conventional money</td>
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<tr>
<td>Focus of analysis is substitution and on income effects portfolio effects</td>
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demand for credit arises out of expected increases in the demand for goods, with this inducing a demand for credit-money and ultimately a demand for high powered money. In that sense, money is demand determined, it is credit driven. This is a typical post-Keynesian theory (Lavoie 1985; Arestis and Eichner 1988), although some post-Keynesians add some degree of ecclecticism to this endogenous view of money (Rousseas 1986; Davidson 1988).

However, it is striking to note that the different strands of non-neoclassical theories all borrow from this endogenous post-Keynesian view of money. Whether they are European radicals (Lipietz 1982) or American ones (Devine 1987, 26), Marxist-trained economists now have left out the commodity-money fallacy and have embarked along the credit-led view of money. On the other hand, Institutionalists have for a long time described a monetary production economy, and for that reason, have had no difficulty in integrating the endogenous money theory (Parker Foster 1987).

Neo-Ricardians also have adopted an endogenous money approach. Whereas before one had to rely on Sraffa's critique of Hayek to entertain the idea that money contracts or monetary values were of some significance to the neo-Ricardians, now one can rely on more direct evidence to present such a claim. Not surprisingly, French neo-Ricardians, probably influenced by the strong currents of anti-Quantity theory that were always present within their country, led the attempt to integrate a classical theory of production with the Banking School view of money. In fact, as can be seen from Arena and Graziani (1985), the search for non-orthodox foundations of a monetary theory has paralleled that of the Naples group in Italy, the latter being also closely associated with the French circuit approach. There is thus some irony in noting that most of the French neo-Ricardians, at least those interested in dealing with money, have ended up resurrecting the same classical authors and the same analyses as those researchers working within the circuit approach, a school which, along with American post-Keynesianism, constituted a reaction against what was felt to be an exclusively real analysis.

On the transalpine front, neo-Ricardians, have also attempted to integrate a monetary analysis within their Sraffian models. This can be seen through models of prices of production incorporating debt interest costs and asset interest revenues (Panico 1985). The main neo-Ricardian monetary tract however is that of Pivetti (1985). He explicitly refers to an endogenous view of money (1985, 96), quoting Kaldor (1970) to that effect. Pivetti relies on Tooke's contention "that
the prices of the commodity do not depend upon the quantity of money... but that on the contrary the amount of circulating medium is the consequence of prices". For Pivetti then, "the money supply accommodates to the needs of trade", so that the quantity of money is an effect, rather than a cause, of the level of monetary expenditures. One must thus conclude that there is a large consensus among post-classicals around the notion of endogenous credit-money.

2.3 Conventional interest rates
This consensus is most evident in the work of Rogers (1989) whose main objective is to demonstrate that the Cambridge controversies have undermined any legitimacy to all real theories of the rate of interest. In an heroic attempt, Rogers tries to integrate Davidson's (1972) Marshallian monetary analysis with a reinterpretation à la Kregel of chapter 17 of the General Theory, and Kaldor's and Moore's views of endogenous money. Rogers (1989, 253) claims that "the interest rate reflects psychological, institutional, and other historical factors which cannot be specified a priori". In his small indicative model, the rate of interest is treated as an exogenous variable (p. 247). This is precisely what Kaldor (1982, 24) does, and it also represents the way Pasinetti (1974, 44) recommended to interpret Keynes' liquidity preference theory. The economic model becomes recursive with the rate of interest being exogenous, i.e., simply influenced by the decisions of the monetary authorities and the sentiments of the public about liquidity. The most vigorous exponent of such an exogenous theory of the rate of interest is of course Moore (1988), who has described how the central bank could fix the short-term rate within a narrow range and how commercial banks would follow suit. It has been argued against Moore and his theory of endogenous money that Keynes' liquidity preference has been evacuated and that this represents a setback for a proper monetary theory incorporating expectations and uncertainty (Dow and Dow 1989). Rogers' analysis is quite illuminating in that respect. He distinguishes, in the usual sense, between short-term and long-term interest rates, but also between transitory and permanent interest rate changes (1989, 252). Now, if we add to this a generalization of the liquidity preference for money, we are in a position to keep the exogeneity of interest rates, the endogeneity of credit-money and a form of Keynes' liquidity preference. Le Héron (1986) has provided such a generalization. He argues that in the General Theory Keynes has erroneously restricted the concept of liquidity preference to the households. Le Héron believes that all agents in the economy show some form of liquidity preference. Firms express their liquidity preference by refusing to invest or to borrow. Banks express their liquidity preference by setting short-term interest rates (the money rates) that are somewhat different from those offered by the central bank and by resisting changes of interest rates initiated by the central bank (Kregel 1984-85). The liquidity preference of households and non-banking financial institutions, those that we shall call the rentiers, i.e., those that own financial capital, is mainly reflected in the long-term rates of interest (the financial interest rates), or more precisely the spread between the long-term and the short-term rates of interest (Wells 1983, 533). Liquidity preference sets the conventional rate of interest around that determined by the central bank. This means that liquidity preference, as usually understood, sets the term structure of interest rates (Mott 1985-86, 224). The discount rate, which all the other rates of interest depend, is set by the central bank, according to its view of the monetary and economic situation, which some might wish to call 'liquidity preference' of the central bank the expectations of the latter. What the generalized liquidity preference theory tells us is that any change in interest rates orchestrated by the monetary authorities will be considered transitory as long as banks and rentiers have not adjusted to it. The rate of interest set by the monetary authorities becomes permanent when the liquidity preference of the public stops playing a role. Then, imperfections excluded, the central bank discount rate, the money market rate and the long term rate of
This, in my view, is how the unimportance attached to the liquidity preference theory of money by the neo-Ricardians (Eatwell and Milgate 1983, 7) can be reconciled with the post-Keynesian emphasis on such a theory. Since neo-Ricardians are generally concerned with the so-called permanent effects, rather than the transitory ones, the above analysis shows that in the so-called long period analysis, liquidity preference indeed has no particular role. What is of importance is the exogenous rate of interest, i.e., the permanent rate, which acts through the channels that shall be discussed later. In the short-period, one might wish to attribute a causal influence to liquidity preference. As a matter of fact, this is precisely how Kregel (1976, 219) recommends to 'tame' the real world when dealing with models of growth and capital accumulation. While some variables become endogenous, such as capacity, others have to become given. Kregel gives liquidity preference and propensities to save as examples of the latter.

This view of liquidity preference corresponds broadly to that of Panico (1988), who laid great emphasis on the exogenous and conventional nature of the interest rate. Following Keynes, Panico argues that the main role of liquidity preference is to force market interest rates to converge towards the normal rate of interest. The latter is mainly determined by monetary authorities, provided they are sufficiently persistent and consistent. As Robinson said: "If they [the authorities] persist resolutely, a moment will come when the bears are convinced that the new low rate has come to stay" (1952, 30). Of course, at any moment of time, the behaviour of the monetary authorities may be influenced by what the most powerful groups in society, presumably the rentiers, think the normal rate of interest should be. But ultimately, the decision to determine the normal rate of interest rests on the shoulders of the monetary authorities. The central point of Panico's analysis is thus that the rate of interest is of a conventional character. Any level of interest rate within a fairly wide band can be the durable level.

When presenting his neo-Ricardian theory of money, Pivetti also emphasizes this distinction between transitory and permanent changes in interest rates. Pivetti, like Panico, relies on Keynes' highly conventional interest rate. He recognizes that transitory downward variations in interest rates could increase inflationary pressures, as they do in mainstream economics (1988, 278). But his main argument is that in long-period analysis, one should deal with lasting changes in interest rates. With permanently lower interest rates, Pivetti (1985, 83) claims that prices will be lower. The money rate of interest must be considered as a causal element of a theory of distribution and growth because it is an exogenous variable. The explanation proposed by Pivetti, and largely endorsed by Roncaglia (1988), explicitly relies on a form of full-cost theory of prices, where the determinant of profit margins are the overhead costs due to interest payments on borrowed capital and the opportunity costs on the firm's own capital.

Notwithstanding the time frame utilized, the above shows that the concerns of post-Keynesians for a more monetary analysis are now being answered by some neo-Ricardians. Pivetti's analysis, as he did himself recognize (Pivetti 1985, 91), can be linked to the exogenous margin of profit assumed by the Kaleckians. The margins here would be explained by the level of the conventional rate of interest. Kaldor himself granted that "interest costs are passed on in higher prices in much the same way as wage costs" (1982, 63). In a world where governments have large debts and run deficits, rising interest payments could easily sustain rising profit margins through their effect on aggregate demand. Furthermore, changes in monetary interest rates will have an impact on income distribution and therefore on effective demand (Pivetti 1985, 99; Robinson 1956, 253).

2.4 The causal role of investment

There are many consequences arising out of a theory of endogenous money with...
conventional money rates of interest. As noted above, the standard theories of inflation, based upon an excess supply of money or excessive growth rates of the money supply, lose their validity in such a setting. The same could be said of Pigou or other Patinkin related effects. In this section, however, I would like to focus upon the consequences of a theory of endogenous money for the causal role of investment in contrast to savings, in particular because we have seen the importance of causal schemes in a realist approach. As we all know, various post-Keynesians have asserted that the causal link from investment to saving is a crucial distinct feature of post-classical economics.

"The fundamental difference between neoclassical economics and Keynesian economics thus remains the same, whatever the context of analysis - a short period model of fluctuations, or a long period growth model, an under-employment or a full employment model. In each case are implied suppositions concerning the chain of causation which are 'behind the equations' so to speak - in the neoclassical where the rate of interest is the main regulator, and where savings govern investment, and the Keynesian where investment governs savings, and where the share of profits in output is the main regulator" (Kaldor 1962, 249). Thus the chain of causation 'behind the equations', in the long period as well as in the short period, relies upon the ability of the economic system "to create monetary claims in advance of actual output" (Kregel 1973, 159). This is the important role played by credit-money. As a consequence, the neo-Ricardians also perceive this crucial link between money and Keynesian causality. "Money does play an essential role for effective demand in that ... it allows the circle production-income-demand-production to break in the savings-investment link" (Garegnani 1983, 78). In neoclassical economics, money, like all other commodities, must be scarce to be of some value and hence its supply is usually considered to be a stock, i.e., a given endowment. In post-classical economics, money is not scarce as such; the rate of interest is not so much its price as an income distribution variable; credit-money does not depend on a pre-existing stock of gold or high-powered money. "Credit-money does not exist as some fixed stock 'out there' in the economy" (Moore 1988, 296). An analogy can be made between this non-scarcity view of money and the refusal to consider prices (of production) as scarcity indices.

Partisans of the circuit approach have been quite keen to describe how credit-money and production are related (Graziani 1989). The circuit school, which is a particularly acute attempt at representing monetary production economies with a realist approach, denies that production could be conceived without credit-money. As Gerrard (1989, 43) says, "the whole of a monetary production economy is a monetary sector". The circuitistes consider that any production must start by getting access to credit. Either firms borrow or they must make use of their circulating capital, Keynes' 1937 revolving fund, which in any case comes from not yet repaid loans. This is Graziani's initial financement (1984), Davidson's short-term construction fund finance (1986). At the final financement stage, the circuitistes argue in cash-flow terms that the necessary finance cannot but be identical to the amount required. This is Keynes' much discussed identity (rather than equilibrium condition) between savings and investment. Circuitistes thus argue that, whether the economy is in equilibrium or disequilibrium, long term fund finance will always be forthcoming. Variations in interest rates are not needed to equalize savings to investment. This type of analysis thus contradicts Asimakopulos' attempt (1983) to resurrect the need for household saving in accumulation. Rather, the circuitistes' beliefs, i.e., any type of production requires credit-money and a lack of savings cannot financially restrain investment, now prevails among post-Keynesians (Moore 1988, ch.12; Eichner 1987, sec. 12.1.5; Nell 1986, 30). The standard orthodox response to those claims is to underline portfolio effects arising out of accumulated stocks. It is assumed that there are given amounts of money, bonds or equities, which the public can be convinced of holding at the
appropriate price (and hence interest rate). The response to this standard stock/flow objection, is that stocks are not given. One of the most fundamental contribution of the circuitists is to put to the forefront the flux/reflux theory of the Banking School. Money stocks are created and can be destroyed. They are destroyed all the time at the end of each circuit when firms, having got hold of their proceeds from sales, are in a position to reimburse the initial loans obtained from banks. The fact that, if any excess supplies of money ever arose, this excess would be used to pay back banks towards which firms are always indebted, has been also pointed out by Kaldor (1982, 70). The consequences of this flux/reflux analysis, notwithstanding those on inflation theory, are indeed that the interest rate may be considered an exogenous variable, determined by the monetary authorities (although liquidity preference may play some limited role), and not as an endogenous market determined variable, resulting from anonymous supply and demand forces arising out of portfolio effects. These effects explains the structure of interest rates. They cannot explain the base rate.

This helps to explain why scarcity analysis, so dear to neoclassical economists, cannot even enter financial markets. To claim that a growing economy will eventually trigger rising (real) interest rates, presumably as a consequence of excess credit demand or lack of savings is to reintroduce scarcity analysis through the back door. Of course, no one will deny that in output accelerating situations central banks are tempted to raise nominal interest rates, because of balance of payments constraints for instance. The truth of the matter is that, disregarding inflationary forces which may encourage the central bank to respond to the lobbying of those rentiers without indexation clauses, there are no natural forces which inescapably force up interest rates (nominal or real). As Robinson (1952, 128) points out, "when the boom is spread evenly over the world... it is hard to see why finance should check the upswing". If interest rates do rise, it is because central banks have consciously taken the political decision to do so. When liquidity preference forces are brought into the picture, one could argue that interest rate increases brought about by a fall in confidence could only be of a temporary nature. Monetary authorities have the power to enforce a permanent rate of interest, provided they show some consistency of purpose. Some post-keynesians, in the Minsky (1975) or Rousseas (1986) tradition, still believe that rising activity necessarily leads to increased (real) rates of interest. Their arguments usually rely on some form of generalized theory of liquidity preference, whereby rising activity should induce less liquid balance sheets for both firms and banks. The principle of increasing risk of Kalecki is then usually invoked. However, the macroeconomics of this principle are such that they may lead to lower interest rates and easier borrowing, a fact underlined by Robinson (1952, 23; 1956, 51). Recessions induced by financial or monetary causes are not a necessary and unassailable evil. They are orchestrated by the monetary authorities. Those who keep arguing that investment is the causal factor must recognize that money is endogenous and that interest rates are conventional. Otherwise the proposed causality cannot hold.

Conclusion
The aim of this paper was twofold: to propose a general reading grid of two opposite research traditions, that of neoclassical and post-classical economics, by providing a set of four binary presuppositions; and to apply this grid to the field of monetary economics, showing that despite endorsing widely different approaches, post-classical authors have a common vision of the role of money. In the first part, the neoclassical presuppositions were defined to be an instrumentalist epistemology, an individualistic philosophy, and a view of economics which is based on the notions of exchange and unbounded rationality. On the other hand, the post-classical research programme, defined as the synthesis of post-Keynesianism and neo-Ricardianism, is based on four opposite essentials: a realist epistemology, an organicist or holistic ontology, and a
vision of economics which relies on production and procedural rationality. These four sets of presuppositions represent the general thrust of each research tradition. They represent the metaphysical beliefs of the vast majority of participants in each line of research. They are the trends encouraged by the invisible college of each research programme.

With respect to the field of money, it was shown in the second part of the paper how post-Keynesians and neo-Ricardians viewed money as an endogenous variable, while the interest rate resulted from a conventional phenomenon rather than from supply and demand analysis. It was furthermore shown that the causal predominance of investment over savings, a crucial issue for post-classicals, rested on this vision of money. It was also emphasized that the post-classical view of money was based upon realist foundations, centered on the task of production rather than that of exchange.

Although neo-Ricardian and post-Keynesian authors seem to endorse widely differing tools, it turns out that their views on the nature of money are quite homogeneous. Furthermore, although their views on the importance of liquidity preference seem to be opposed, they can be made consistent once transitory and permanent changes in interest rates are set apart. I would thus be prepared to argue that although there are various post-classical monetary theories, just as there are various neoclassical monetary theories, there is a common vision of money among the two major strands of post-classical economics.

Lastly, I believe that interaction between post-Keynesians and neo-Ricardians is rewarding, as the latter have brought to our attention the impact of changes in monetary interest rates on income distribution and effective demand, an effect that had generally been omitted by those concerned with monetary factors.11

Footnotes

1. Gerrard (1989) also speaks of a post-classical synthesis. His work intends to link together neoclassical and post-Keynesian economics, but it excludes neo-Ricardians: "The neo-Ricardian influence on the present analysis has been an entirely negative one... The neo-Ricardians have gone off on the completely wrong track..." (Gerrard 1989, 181).

2. Perhaps I should add that, grosso modo, I feel that Radicals and Institutionalists are part of the post-classical research programme, as their writings are clearly interconnected with those of the post-classicals (URPE, 1987; Hodgson 1989). The same could be said of the evolutionary school (Schumpeterians à la Dosi) and the French regulation schools.

3. These essentials are studied in more detail in another paper (Lavoie 1989).


5. Wulwick includes Davidson, Kaldor and Garegnani in her definition of post-Keynesianism.
6. Consider the following quote: "I might incidentally make clear here that I do not in the least believe that 'the only objects of economic analysis are the long-run positions of the system and that short-run behaviour is irrelevant'... As I have often argued, the short-period outputs and employment are not only amenable to analysis, but Keynes's analysis of the degree of utilization of capacity is obviously of the greatest importance. The question is whether we need nothing else" (Garegnani 1988, 252-3).

7. Incidentally, the views of Arena (1987) on a possible post-classical synthesis (which he calls 'classico-keynesian') are fairly close to those of the author. The same could be said of Amadeo and Dutt (1987).

8. In actual time, these imperfections will always exist, and hence, unless by luck, these rates will never be equal.

9. While in the short run there may be no downward or upward rate of interest set, this is not true in the long run. For instance, we all know now that past accumulated debts may become unsustainable if interest rates are too high.

10. See also Lavoie (1986).

11. The impact of interest rates is explicit neither in markups nor in savings function of most post-Keynesian work.

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