Piero Sraffa and the Revival of Classical Political Economy

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Abstract: The first part of this essay is on Roncaglia's presentation of Piero Sraffa's work and its significance for economic theory. The second part takes up some issues of content, method and interpretation of this work. It is argued that Sraffa must be put into a wider context to link him with Keynes. Sraffa and Keynes constitute the basis for elaborating a classical-Keynesian system of political economy on a platform provided by Pasinetti's vertically integrated labour model.


Introduction

Piero Sraffa was one of the very great political economists of the past century, perhaps the greatest together with Maynard Keynes (and Michal Kalecki). Indeed, in the course of Shackle's Years of High Theory in the 1930s a twin Sraffian and Keynesian revolution is argued to have taken place. Sraffa took up the classical approach in economic theory to revolutionise thinking on production, value and distribution; Keynes elaborated a monetary theory of production in contrast to a real exchange economy to deal in an entirely new way with the problems of employment, interest and money. Of course, the Kiel School and Leontief also contributed to reviving the classical approach, and the Swedish School and many other monetary economists attempted to come to grips with monetary production economies. However, it was Sraffa who formulated the basic classical model of production, value and distribution, and it was Keynes who set up the first coherent and convincing model of employment, interest and money. (Again, Kalecki's particular position must be mentioned: he, in fact, belonged to both strands.)

Alessandro Roncaglia provides, in a restricted space, a brilliant and complete survey of Piero Sraffa's life, his work, of some crucial issues associated with his main achievement, Production of Commodities by Means of Commodities, and
some theoretical developments he initiated. At every stage of the argument Roncaglia's profound familiarity with his subject and his deep personal involvement in the debate about Sraffa's work shines through. His book is divided into three chapters. The first considers Piero Sraffa's life and work. Some aspects of his main work - *Production of Commodities by Means of Commodities* - are dealt with in chapter two. The third sets forth the tenets of the Sraffian schools. In the subsequent pages a few features of Sraffa's work are sketched in the first place, and some crucial issues are taken up in the second.

*Some Features of Sraffa's Work*

1. Piero Sraffa had an almost incredible capacity to pierce through complex appearances to distil the important and the essential. He combines intuition and analytical ability to the highest degree. This already shows up in the doctoral thesis *Monetary Inflation in Italy during and after the War* which was supervised by Luigi Einaudi. "The most significant original contribution offered by Sraffa's thesis lies in the distinction between stabilisation of the internal and of the external value of money, or in other words between stabilisation of the average level of domestic prices and stabilisation of the exchange rate" (p.6), a distinction taken up by Keynes in his *Tract on Monetary Reform* (1923). Perhaps it could have been mentioned here that Sraffa saw the main source of inflation in a massive government deficit and that he did not advocate deflation to restore pre-War parity with other currencies because of the too heavy social costs involved, mainly in terms of unemployment. Two articles on the bank crisis in Italy in the early twenties and the moving friendship with Antonio Gramsci are indications of Sraffa's 'intense passion for politics which must be borne in mind to understand the ideological roots of the research project that he was to pursue in the field of economic science'(11). Significantly, there is a 'gradual switch in Sraffa's interests from problems of applied economics to theoretical ones in the first half of the 1920s'(11).

2. The first outstanding theoretical contribution of Sraffa's - at 27(!) - was 'a radical critique of the Marshallian theory of the equilibrium of the firm and the industry ... set out in a long article published in 1925 in Italian... "On the relations between cost and quantity produced" '(12) which led to a vast debate on fundamentals in which 'the Marshallian theory of the equilibrium of the firm and the industry [was questioned]'(12). Roncaglia rightly speaks of a 'battle of giants'(14) with Clapham, Allyn Young, Pigou, Lionel Robbins, Schumpeter, Harrod, Robertson and Shove participating besides Sraffa. 'Underlying all this,
Sraffa pointed out, was a conceptual confusion: in classical political economy the "law" of decreasing returns was associated with [the conditions of production in agriculture] and with the problem of rent (theory of distribution), while the "law" of increasing returns was associated with the division of labour [and] general economic progress (theory of [industrial] production)'(14/15). 'Sraffa's 1925 paper attracted the interest of ... Edgeworth [who prompted Keynes to] ask Sraffa for an article to be published in the [Economic Journal]'(16). The English paper (Sraffa, 1926) summarises the Italian article and, subsequently, 'elaborates an original line of research based on negatively sloped demand curves hypothesised also in the case of individual firms and thus compatible with constant or moderately increasing returns' (16), thus giving rise to 'a theory of imperfect competition which ... takes up certain cues for "realism" scattered through Marshall's work. However, Sraffa is quick to point out the limits to this line of research, remarking [that] "the disturbing influence exercised by the competition of new firms attracted to an industry the conditions of which permit of high monopolist profits has been neglected". Basically, this means neglecting competition in the classical sense of the term, consisting in the shifting of capital from one sector to another in pursuit of maximum returns'(16/17).

3. Roncaglia mentions that Sraffa always criticised the leading figure of a school. Significantly, he did not attack Walras's General Equilibrium System which he considered as utterly sterile since events could always be justified ex post by parameter changes. Consequently, Sraffa criticised Marshall because of his apparent realism. Sraffa's almost unbelievable feel for the crucial point enabled him to achieve what Roncaglia rightly termes the Sraffian Revolution: 'the reconstruction of the real nature of the classical approach with his edition of Ricardo's Works and Correspondence; the critique of marginalist theory, whether in the Marshallian version ... or in Hayek's macroeconomic version ..., or as proposing a theory of capital as a factor of production ...; finally, an analysis of value and distribution that is both analytically consistent and rooted in the classical conception of the functioning of the economic system'(39).

4. 'Sraffa's critical edition of Ricardo's Works and Correspondence is unanimously recognised as a model of philological rigour, and it was above all for this that in 1961 Sraffa was awarded the gold medal of the Swedish Academy of Science. Keynes and Myrdal also figured among the economists honoured with the medal, which anticipated the Nobel Prize for economics, awarded only as from 1969. The works published in this edition, together with the apparatus of notes and, above all, Sraffa's introduction to the first volume, restore Ricardo - and through him the whole school of classical political economy - to a central
position in economic theory, freeing interpretation from the accretions of misleading marginalist readings' (31). In doing so Sraffa brought to the fore 'the notion of the surplus and of the economic system as a circular flow of production and consumption, which Ricardo inherited from an already robust school of thought: [for instance, William Petty for the concept of surplus and François Quesnay for the idea of the circular flow]' (31).

5. The view of the process of production as a circular process in classical political economy implies that this process is of an essentially social nature: 'The economic system is organised on the basis of the division of labour, which does not derive from differences in the original endowment of resources but rather from the intrinsically social nature of men and women' (52). Social activities are, in turn, rendered possible because of the different abilities of individuals, which Plato and Aristotle consider as the most important precondition for the coming into being of the State (on this Roncaglia seems to disagree - see p. 67, n4).

In the social process of production producers exercise different functions - based upon division of labour - to reach a common (implicit) aim, i.e. the production of the social product. This process is based on the principle of complementarity, rather than competition as is the case with individualist marginalist exchange theory, implying that cooperation dominates over substitution. In such a system the product of each firm does not correspond to its requirements in terms of means of production (including means of subsistence for the workers employed); thus, in isolation, no producer is able to continue, but must enter into relations with other sectors of the economy to obtain the necessary means of production in exchange for at least a part of his own product. Thus we have a logical circuit of production and exchange stages, the network that links up the various firms and the various sectors of the economy operating in such a way that the economic system continues to function. This is done by guaranteeing each sector the necessary reconstitution of means of production and subsistence, as well as a profit sufficient to induce firms to go ahead with their activities' (33). Here one should, perhaps, mention that exchanges are not balanced in terms of goods as is the case in neoclassical economics where goods of equal value are exchanged. In the process of production goods are always exchanged against money which merely represents value and, as such, constitutes a kind of voucher that can be used to buy any of the products resulting from the common effort undertaken in production. In fact, the process of production could not go on without money. As Marx suggested at the outset of Volume Two of Das Kapital producers use money to buy means of production which, in the process of production, are transformed into
final goods and exchanged against money. Hence we are in a monetary production economy. To come to grips with such an economy Keynes started to work out a monetary theory of production as early as in 1933 (Keynes 1933).

6. "The analytical representation Ricardo offered of the classical conception of the economy had one particularly important weak point, namely the hypothesis of relative prices proportional to the quantity of labour required for the production of the various commodities, which is inconsistent with the assumption of a uniform rate of profits in the various industries. In *Production of Commodities by Means of Commodities* Sraffa comes up with a solution to the problem framed in terms of the classical conception'(34). Ricardo - and Marx - would agree but would maintain that value is uniquely created by productive labour. These diverging views are, in fact, due to differences of vision and the associated way of abstraction. This point will be taken up in the next section. To determine income distribution - the real wage rate or the rate of profits - one 'must consider the system as a whole, with all the interrelations running between the various productive sectors, tackling simultaneously income distribution and the determination of relative prices'(35). Two interrelated reasons account for this: 'commodities are at the one and the same time products and means of production'(35) and, since the process of production is a social process with complementary relations between sectors prevailing, distribution must, in the classical view, also be a social process. In fact, distribution is about proportions in the sense of *part-whole-relationships* - shares of wages and profits in a *given product* and the associated structure of wages -; this contrasts with the marginalist view which sees distribution as the result of the balancing forces of supply and demand, i.e. a relationships between groups of individuals. In 'his analysis Sraffa takes the quantities produced in the various industries as given [in order to isolate a specific] problem - the one concerning the relationship between relative prices and income distribution - and in dealing with it assumes technology a [fundamental] datum ... . In the absence of assumptions on returns to scale - more specifically, if constant returns to scale are not to be assumed - this implies assuming the quantities produced in the different sectors of the economy as data of the analysis' (48). This, of course, immediately raises the question how output is determined. Since a monetary production economy is considered, Keynes's employment theory immediately comes to mind here. Here, however, problems of conceptual consistency arise, as will be suggested in the next section.

7. Finally, Sraffa's *Production of Commodities by Means of Commodities* also implies a fundamental critique of marginalist (neoclassical) theory (37-39). First,
there is no necessary association between higher (lower) factor prices and lower (higher) quantities of factors of production. Second, the same technique of production may be the most profitable at different profit rates. Third, 'Sraffa's critique undermines the very foundations of the idea ... that a competitive labour market in a closed economy would automatically tend towards full employment equilibrium since the decline in real wages which should attend unemployment [could prompt a decrease] in the quantity of labour employed per unit of capital'(39).

Sraffa's fundamental critique of neoclassical economists raises the question of setting up an alternative system of political economy. This would imply bringing together Sraffa and Keynes. The way in which Roncaglia tackles the relationship between these two political economists is, perhaps, the only disappointing aspect of his book. Roncaglia begins by stating that 'there are clearly no grounds to argue that Sraffa adheres to Says Law'(61). He, in fact, cuts out 'the problem of determination of technology or quantities produced, which lie 'upstream' from his analysis, but at the same time isolating his problem from what lies 'downstream' like the question of realisation, or the relationship between prices of production and market prices'(61). However, since it is 'impossible to take changes in technology [and hence of relative prices of production] as known ex ante because of uncertainty [Sraffa's and Keynes's problems] must be kept apart'(65). In fact, issues 'like the role of uncertainty and expectations in the economy, the influence of the monetary and financial on real phenomena and the possibility for unemployment to persist alongside unused productive capacity appear ... to have nothing to do with the conceptual world of Production of Commodities by Means of Commodities. However, contrasting Sraffian "long period" analysis with Keynesian "short period" analysis means contradicting both the conceptual foundations of the classical approach as proposed anew by Sraffa, and those of the Keynesian approach. A solution may be sought ... in the recognition that we are faced with a diversity of problems and that there are diverse areas of analysis related together not by the - chimerical - requisite of a general model embracing them all, but by the requisite of "conceptual consistency" '(41-42). 'In particular, both analyses reject the prices-quantities equilibrium associated with the full employment of resources: Sraffa with his criticism of the marginalist theory of capital and distribution, Keynes with his opposition to the orthodox theory of interest'(63). Moreover, Sraffa 'appears to consider his analysis open to integration with central aspects of the Keynesian framework ... : "The rate of profits ... is susceptible of being determined from outside the system of production, in particular by the level of the money rates of
interest" (Sraffa 1960: 33) (63/64). Finally, we may consider his analysis of the prices-distribution link conceptually compatible with Keynes' analysis of employment, once the latter has been cleared of marginalist encrustations (65). However, it is doubtful whether neoclassical economists who possess a comprehensive system grounded on a social philosophy - liberalism - would be content with pieces of theory connected through broad 'conceptual consistency'. In any case, the relationship between Sraffa and Keynes is one of the crucial issues to which we now turn.

Some Crucial Issues

1. Perhaps it is most appropriate to begin with a problem of method. In response to Sraffa's critique 'Wittgenstein abandoned the idea of language as the axiomatic representation of the world [made up of facts which are the atoms of the world] and the idea of the 'unspeakable'. Instead he developed the idea of 'language games', namely models that focus the attention on particular aspects of real language [fundamental sentences picturing aspects of the real world?] (58). [Although this is not to say that Sraffa went on to endorse these conclusions] we can see a distinct analogy with the method Sraffa follows in his book, focusing on a specific problem ... and on those variables directly relevant to the problem in question, but without denying the existence of other problems to be addressed with other 'language games' and ... without denying the indirect influence of other variables' (58). We are faced here with a very old and fundamental philosophical problem, i.e. the relationship between the thinking subject and objectively given reality, that is the problem of the nature of knowledge. Widely differing views on this relationship were set forth in the course of history (for a comprehensive recent exposition related to economics, see Lawson 1997).

2. To locate, tentatively at least, Wittgenstein's and Sraffa's conceptions of knowledge, it is useful to begin by distinguishing, very broadly speaking, between two great approaches to knowledge, Aristotelian realism and Kantian idealism (which, in practice, is not far away from entirely antimetaphysical Humean positivism and thus Wittgenstein's neo-positivism). In both the perception of real world phenomena - Wittgenstein's facts - through the senses initiates astonishment, gives rise to questions and problems and hence to the desire to know. In the Aristotelian approach, knowledge is about the constitution of the object considered, for example, in economics, the price, income distribution or the level of employment; in a way, the object determines (the thinking of) the subject: human reason attempts to get hold of the essence of
some phenomenon through abstracting from what is considered as not being essential. What is considered to be essential or accidental depends upon the vision of society of a theorist which may be analytically articulated through a social philosophy, e.g. liberalism or socialism (see Schumpeter 1954, p. 41). Moreover, knowledge is always tentative, i.e. probable in Keynes's (1971) sense. In the Kantian approach the (thinking of the) subject determines the object through models of thought based upon \textit{a priori} ideas and sense perceptions - this, in fact, Kant's Copernical revolution directed against Aristotle. As a consequence, Kant, and even more Hume, hold it impossible to know about the essences of things. The models of thought are a kind of nets to be used to catch pieces of reality through testable propositions. All established - not contradicted - propositions form the stock of knowledge. Hence the world is what the subjects, especially the scientists, think of it. What the world really is remains unknown. Kant's idealism is thus in sharp opposition to Aristotle's realism. Recently, the Kantian method of acquiring knowledge has been illustrated by a proposition of a French economist who, replying to criticism, argued that the world of Walras's \textit{General Equilibrium Model} was all he knew about the real world. Consequently, it is a hopeless task to criticise a convinced Kantian on the grounds that his model is not realistic! In this vein, neoclassical economists even argue that the temporary general equilibrium model is more plausible than Sraffa's with its uniform rate of profits and outputs being the same as inputs.

2. The early Wittgenstein, who held the idea of the 'unspeakable', appears to be a very restricted Kantian, anxious not to take any risk. With his language games the late Wittgenstein seems to be somewhat more adventurous. When Roncaglia speaks of Sraffa's 'philological rigour' and holds that Sraffa's \textit{Production of Commodities by Means of Commodities} only fixes the \textit{conditions} (64) of production and reproduction at a uniform rate of profits he also seems to put Sraffa and himself into the Kantian camp. This impression is reinforced by his defining 'different analytical areas' under the restriction of 'conceptual consistency'.

This is definitely not a satisfactory state of affairs. With the Kantian approach, where the subject determines the object, the question 'who tells you that the world you have created is more plausible than mine?' can always be asked. Scepticism and agnosticism regarding fundamentals are ever-present, and, sometimes, cynicism is not far away. And presently, the overwhelming majority of the economists - not only neoclassical - think that the Walrasian real exchange model is more plausible than the Sraffian model of monetary and social production, in spite of all the theoretical problems associated with the former.
3. The idealist Kantian approach implies dealing with appearances and, as such complements positivism, hence also Wittgenstein's neo-positivism. For the scientists this means looking at the objectively given and strictly measurable. This was also Sraffa's aim and explains why he disliked Keynes's psychological approach to explain investment volumes. Methodologically, the Kantian approach implies looking for clearly determined areas of investigation. The method is all important: 'philological rigour' (Roncaglia on Sraffa), hence rigorous definitions and a tidy, clear-cut model are hallmarks of the Kantian approach. However, appearances may be accidental and of secondary importance, as is the case, for example, of the market prices of the classical economists who focused their attention on the fundamental natural prices. Appearances may also be misleading because they may lead to wrong interpretation of the phenomena or facts considered. For example, Marx held that market prices and prices of production could only be understood on the basis of the concept of value, which, together with the notion of surplus value, is basic to understand wages, profits and rents. Marx even suggests that dealing with appearances was not scientific at all (Kapital III, p. 825).

Hence to look for essentials, in an Aristotelian vein, is crucial. In fact, all great political economists did so: Quesnay, Smith, Ricardo, Marx, Walras, Menger, Marshall, Keynes and, in my opinion, also Sraffa. Striving for essentials is simply the natural way of thinking when one is dealing with very complex problems. All the accidentals, not absolutely necessary to tackle the issue considered, are left aside and only fundamental are considered. This kind of thinking produces pure models, pure theory, telling us how the causal forces work in principle, i.e. in any concrete situation. In this sense, Ricardo wrote about the Principles of Political Economy and Taxation, arguing, rightly in my opinion, like Marx, that labour values constituted the essence of prices. Marshall wrote the Principles of Economics, Walras produced his Eléments d'Economie Politique Pure. And Sraffa's main work exhibits The Pure Theory of Value and Distribution in the Social and Circular Process of Production. Indeed this work exhibits the essential features of the determination of prices of production and of the regulation of distribution within the social and circular process of production, i.e. how these phenomena are governed or go on in principle, independently of any empirical or historical realisation. As such, Sraffa's theory of production, value and distribution is the counterpart of the corresponding exchange-based Walrasian theory. In this view, the capital theoretic discussion (Harcourt 1972) subsequent to Sraffa's Production of Commodities by Means of Commodities is
a discussion on principles showing that the classical production based approach is superior to the neoclassical exchange theory (Bortis 1997, ch. 5).

5. The distinction between pure and applied theory is of fundamental importance. In the field of political economy, Keynes, incidentally a self-taught philosopher, explicitly made use of this distinction in an easy and natural way. Volume I of his *Treatise on Money* is denoted *The Pure Theory of Money*, volume II *The Applied Theory of Money*. Pure theory deals with the causal forces *per se*, independently of their historical realisation; applied theory is, precisely, about the historical realisation of causal forces. Since each phenomenon is governed by a multitude of causal forces, different sets of principles may be required to explain some fact; for example, to fully explain a price the amount of labour directly and indirectly embodied in the commodity considered has to be taken into account, also the conditions of production, the distribution of income, and, finally, the forces of supply and demand. Divergences occur about which set of these causal forces is fundamental and which causal forces are of secondary importance. The classical political economist would put labour, the conditions of production and distribution to the fore, the neoclassical economist the iron law of supply and demand.

Moreover, in his *General Theory* Keynes mentions that a distinction ought to be made between 'the logical theory of the multiplier [the multiplier principle, the pure theory of the multiplier, what is essential about the multiplier] which holds good continuously, without time-lag, at all moments of time, and the consequences of an expansion in the capital-goods industries which take gradual effect, subject to time-lag and only after an interval [applications of the multiplier principle to some concrete situation]' (Keynes 1936, p. 122). Following up this statement, Keynes provides several instances to illustrate possible applications of the pure theory of the multiplier (123-25).

Finally, Marx's *Kapital* is structured by the distinction of pure and applied theory. Volume One - *Der Produktionsprozess des Kapitals* - and Volume Two - *Der Zirkulationsprozess des Kapitals* - are both pieces of pure theory, dealing with fundamentals, where the labour theory of value holds. The methodologically relevant point is that volume Three, *Der Gesamtprozess der kapitalistischen Produktion*, takes up the processes of production and circulation again. In this volume, however, socioeconomic phenomena pertaining to the upper layers of reality [appearances] are being considered: prices of production and market prices, rents, profits and wages [all of which] can only be understood properly if the fundamentals [i.e. value and surplus value] have been grasped [...]. Therefore, appearances must not be the primary
object of science; in fact, science would not be needed at all if the fundamental causal principles at work could be perceived immediately by looking at the appearances: "[alle] Wissenschaft wäre überflüssig, wenn die Erscheinungsform und das Wesen der Dinge unmittelbar zusammenfielen [Marx, Kapital, vol. III, p. 825]" (Bortis 1997, pp. 127-28). In accordance with what we have suggested before, Marx declares it dangerous to deal with appearances. True science is located in the realm of essences; appearances, as perceived by the senses, merely initiate thinking, giving thus rise to problems and questions, but it is reason which continues the march in the direction of probable essentials.

Taking account of the Aristotelian realism, in fact, essentialism, put to use by Marx and by Keynes - but also by Quesnay, Ricardo and Carl Menger, to name only a few - it may be suggested that Sraffa's *Production of Commodities by Means of Commodities* simply sets forth the pure theory of social and circular production and the pure theory of value and distribution associated with this view of production. Put in a wider context this is the evident interpretation of Sraffa's main work. Sraffa's analytical starting point is, in fact, Quesnay and Ricardo, both obvious essentialists (Pribram). It is unlikely that Sraffa bothered much about Kantian-Wittgensteinian language games. The whole of his work shows that he always went, in a straightforward way, down to essentials. Even if Sraffa had merely wished to establish the conditions of production and reproduction with prices embodying a uniform rate of profits, it is perfectly possible that, to paraphrase Molière, he spoke in prose - i.e. dealt with essentials - without being conscious of it.

6. Marx considered the social and circular process of production as interaction between man and society (labour) and nature (land). Consequently, two approaches can be taken to picture this process, a labour-based or a land-based approach. It seems evident that Quesnay, Leontief and Sraffa put land and the basics derived therefrom to the fore to leave labour in the background. On the other hand, Ricardo and Pasinetti (1981) work with a labour model in which land appears in the form of indirect labour embodied in primary products and, in part, of used up fixed capital. Pasinetti suggests that the Leontiev-Sraffa nature model is contained in the vertically integrated model which contains direct and indirect labour (Pasinetti 1981, pp. 109-12). Pasinetti's price and quantity relations thus imply the Sraffa model and may be used to link Sraffa, indirectly though, with Keynes. These price and quantity relations picture, in a way, the proportions aspect contained in classical political economy, i.e. relative prices and quantities as well as distributional shares which are, in a classical vein, all governed by persistent - constant or slowly evolving - forces, i.e. technology and institutions.
Now, if the concept of normal prices or prices of production is to make sense, capacity utilisation must also be normal which, in turn, requires a stable long-period employment level governed by persistent forces. In Bortis (1997, ch. 3 and 4) it has been suggested that one can conceive of an institutionally governed trend or long-period level of output and employment governing the scale of activity in a Pasinettian quantity system (Bortis 1997, pp. 146 and 150-51). Hence, considering essential features of the real world, Sraffa and Keynes can and, indeed, must be combined, though on a Pasinettian platform, implying vertical integration. As a consequence, we would not agree with Roncaglia that, in a Kantian sense, Sraffa and Keynes belong to different analytical areas, linked only by a broad conceptual consistency. This conclusion is valid on the level of, eventually, chaotic appearances - to be structured by conditions -, not if we go down to fundamentals or - probable - essences.

In the project of bringing together Sraffa and Keynes on a long-period basis Sraffa's uniform rate of profits plays the central and fundamental role. In the first place, the uniform profit rate - which in practice might be a hierarchy of profit rates - is, as Roncaglia rightly insists on, a powerful tool to organise competition in the classical sense: divergences between realised profit rates and the uniform profit rate set capital movements between industries and sectors into motion. These capital streams tend to bring about certain industrial structures and proportions between sectors. Second, and this provides the link with Keynes, the uniform profit rate is an ingenious device to deal with long-period uncertainty: If the realised profit rate exceeds the uniform normal rate, entrepreneurs invest more, and vice versa (Bortis 1997, pp. 207-14). This very simple device allows to dispose of the concept of the 'marginal efficiency of capital' which is associated with uncertainty and expectations. Hence, investment decisions based upon comparisons between the objectively given realised and normal profit rates enable us to evacuate the subjective and psychological elements of Keynes's analysis which Sraffa disliked so intensely, and provides a very strong link between Sraffa and Keynes. Incidentally, Keynes made an important step towards Sraffa's uniform rate of profit in chapter 17 of the General Theory where, in long-period equilibrium, all own rates of interest are equal with the own rate of money ruling the roost. Significantly, as Roncaglia emphasises, the notion of the own rate of interest is Sraffa's who developed it when critising Hayek's Prices and Production in 1932 (26-29). Hence, it is chapter 17 of the General Theory, based upon the concept of the own rate of interest, which has to be stripped of marginalist remnants and, subsequently, the uniform, long-period,
own rate of interest would have to be explained by institutional factors with the central bank playing a crucial role as Sraffa (1960, p. 33) has indeed suggested. Taking up the notions of realised and normal profits implies going back to Keynes's *Treatise on Money* (Keynes 1930). Here we also find the normal prices that are at the centre of Sraffa's work and which can be built into Pasinetti's natural system. The normal prices are, in principle, independent of output levels and are, as such, the natural complement to the Keynesian theory of output and employment where movements towards underemployment equilibria are based upon quantity adjustments. Hence attempting to combine Sraffa's and Keynes's work also implies bringing Keynes's *Treatise on Money* closer to his *General Theory*.

7. In the process of abstraction it is useful to think of the elements of the real world to be ordered in the form of layers according to their persistence in the course of time (Bortis 1997, pp. 103-17). In the socioeconomic sphere this leads to the distinction between the functioning of the institutional system, i.e. the material basis and the institutional superstructure, and the behaviour of individuals. Institutions are associated with persistence, behaviour with volatility, especially in the market place.

The social and circular process of production which is part of the material basis is the object of Sraffa's analysis. He shows how this process functions in principle, and works out the pure theory of value and distribution compatible with it. Hence Sraffa deals with the functioning of the socioeconomic system, not with the behaviour of individuals within this system. As a consequence, Sraffa's theoretical system, associated with Keynesian long-period theory through Pasinetti's vertically integrated model, lays the basis for arguing that the system has laws of its own which are independent of the behaviour of individuals (Bortis 1997, chs 3, 4 and 5). For example, there is Keynes's paradox of thrift. Most importantly, however, the crucial importance of income distribution appears in the Sraffa-Pasinetti-cum-Keynes system: According to the classical proportions aspect of the classical-Keynesian system, exhibited by relative price and quantities and income shares and structures, distribution is a crucial determinant of relative prices (Sraffa); within the Keynesian scale aspect, distribution emerges as the most important determinant of the level of output and employment (Bortis 1997, p. 146 and pp. 158-75). In fact, Ricardo's intuition was correct: 'To determine the laws which regulate ... distribution, is the principal problem of Political Economy' (Ricardo 1821, p. 5). Sraffa has, taking up the Ricardian surplus approach to distribution, shown how distribution is regulated.
in principle in a modern monetary production economy. This fact alone makes him, together with Keynes, the greatest political economist of the last century. 8. The last point to be made here is methodological again and concerns the importance of abstraction guided by a vision. Marx abstracted from the vagaries of exchange and from the conditions of production to study the production and the circulation of capital on the basis of the labour theory of value in Volumes One and Two of Das Kapital. (Incidentally, the labour theory only requires that the proportion between constant and variable capital be the same in the different branches of production, not the absolute values of these capitals. This enables the existence of heterogenous goods the exchange value of which is uniquely governed by labour-time.) Indeed, only labour force is capable of producing new value and surplus value in the social process of production - exchange may only bring about a redistribution of already existing values. 'Neoclassical economists might now accept the labour theory of value and argue that, in this case, all the crucial properties of the neoclassical production functions hold on the level of fundamental principles, as is indeed implied by Samuelson's surrogate production function (Samuelson 1962). The existence of the rate of interest could be easily justified by abstinence [...] and the marginal productivity theory would be valid generally on the fundamental level; specifically distribution would be determined on the factor markets and competitive conditions would produce a tendency towards full employment' (Bortis 1997, pp. 289-90).

Granted this, the problems for neoclassical economists would arise with the coming into existence of the various principles in the form of concrete phenomena, for example prices. Indeed, each price is governed by a multitude of causal factors, labour time and the conditions of production perhaps being most important - from considering a concretely existing price it is immediately evident that labour time must be the essence of the price since the conditions of production or the vagaries of the market do not create value. The latter are merely accidentals that modify labour values, thus leaving the labour theory of value untouched. This is the Aristotelian view of things implied in Ricardo's and in Marx's work and also in the classical-Keynesian system suggested in Bortis (1997). Hence in the classical-Keynesian system the essences or fundamental principles remain valid if real world situations are considered. This is indeed the hallmark of good theory representing, of course, merely probable truth (Keynes 1921).

However, all the neoclassical parables established on the basis of the surrogate production function are destroyed once real world situations, e.g. concrete prices
and quantities, are being considered. In particular, there are no necessary regular inverse associations between 'factor prices' and 'factor quantities', i.e. negatively sloped demand curves for 'factors of production' which rest on the concept of 'marginal productivity'. Moreover, if output levels are given, as is the case with Sraffa's main work, governed by long-period effective demand for example (Bortis 1997, pp. 142-204), 'the marginal product of a factor (or alternatively the marginal cost of a product) would not merely be hard to find - it just would not be there to be found' (Sraffa 1960, p. v).

This argument sheds additional light on Sraffa's immense theoretical performance. Indeed, his slim 1960 volume provides, first, a neat solution to the transformation problem - on which whole libraries were written -, showing thus the correct way on which the essences - labour values - are led into concrete existence, though in modified form. The uniform rate appears as an ingenious device to organise competition in a straightforward, very simple, robust and socially useful sense as was conceived by the great classical economists (see also Bortis 1997, pp. 158-75). Second, Sraffa's main work provides a 'prelude to a critique of [neoclassical] economic theory'. Indeed, *Production of Commodities by Means of Commodities* initiated the destruction of the neoclassical parables, achieved in the course of the subsequent capital theoretic debate set out in Harcourt (1972). Some wider implications of this process of destruction are set forth in Bortis (1997, ch. 5). Again, these parts of Sraffa's theoretical performance reinforce his position as the greatest political economist of the twentieth century in company with Maynard Keynes. While Keynes's theoretical activity is applied to the concretely existing real world of the monetary production economy with which he attempted to come to grips by the help of his - pure - theory of employment, interest and money, Sraffa's realm is the pure theory of social production and value formation, and of the corresponding regulation of distribution which he built on the work of François Quesnay and David Ricardo.

**Concluding Remarks**

Alessandro Roncaglia provides a fascinating account of the life, work and significance of Piero Sraffa. His presentation is immensely careful and painstaking. It is, in fact, a masterpiece of philological rigour, in line with the extraordinary precision of language of the master himself. Roncaglia's scientific biography is worthy of this true giant in political economy who brought about a
radical change in economic theorising, away from marginalist - neoclassical - theory in the direction of classical political economy, at the heart of which stands the social and circular process of production and the surplus principle of distribution.

Roncaglia mentions that 'the reconstruction of classical political economy [is now] well under way'(106). Indeed, in his final chapter he sets forth three important Sraffian schools that have emerged from Sraffa's work. All three are presented as reconstructions of great classical economists: Luigi Pasinetti's work is seen as a reconstruction of David Ricardo, Pierangelo Garegnani attempts to reconstruct Marx and Paolo Sylos Labini builds on Adam Smith. However, 'much difficult work remains to be done'(106). For example, Maurice Dobb (1973) opposes Adam Smith's individualistic and exchange-based approach to Ricardo's - and Marx's - approach which puts the social and circular process of production to the fore. Or, Joan Robinson mentions that 'Keynes evidently did not make much of [Sraffa's 1928 draft of *Production of Commodities by Means of Commodities*] and Sraffa, in turn, never made much of the *General Theory'* (Joan Robinson 1978, p. 14). Problems like these can only be tackled if a wider view of things are taken as has been undertaken in a tentative and preparatory way in Bortis (1997). For example, to substantiate Roncaglia's proposition of a 'broad conceptual consistency between Sraffa and Keynes' requires complementing Sraffa's theory of normal prices of production with a theory of normal output levels (Bortis 1997, pp. 142-204) since prices and quantities imply each other. Moreover, marginalist or neoclassical theory does not gain its strength form a particularly strong correspondance between theory and socioeconomic reality, but from the fact that this theory is part of a *Weltanschauung*, a vision of man and of society which is *liberalism*. It seems essential, therefore, that Sraffa's and Keynes's systems be brought together within a larger framework of economic theory which one could call classical-Keynesian political economy; this theoretical system must be grounded, in turn, a vision of man and of society that differs from liberalism (Bortis 1997). Hence one must go beyond the carefully restricted domain of analysis to which Roncaglia confines Sraffa. And more, formal logic and philological rigour is a duty, not a virtue (E.H. Carr). Indeed, Sraffa gains very much in importance if we approach him, not in the careful Kantian way, but in the risky Aristotelian-Keynesian way. The latter requires phenomena to see in their context which is due to society being a complex structured unity, having a rational purpose. Indeed, in 1900, after decades of 'history without theory' a member of the historical school uttered in dispair: 'We are tired of collecting materials, want to
come to grips with the available stuff; we want to penetrate the details conceptually in order to approach the great aim of social science: a great and comprehensive Weltanschauung' (H. Diels, quoted in Bortis 1997, p. 129).

Since Carl Menger's beautiful reply to Gustav Schmoller on the occasion of the Methodenstreit we know that pure theory, indeed a coherent system of pure theory, is required to come to grips with historical phenomena (Menger 1883). Given the highly unsatisfactory state of neoclassical theory and the grave socioeconomic and ecological situation worldwide, the classical-Keynesian system that may be elaborated on the basis of the work of the twin protagonists of Shackle's Years of High Theory represents a message of hope.

References


