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Sraffa's System in Relation to Some Main Currents in Unorthodox Economics

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Abstract. *This paper considers the relation between the approach to certain elements of economic theory entailed or implied by Sraffa's Production of Commodities by Means of Commodities and some other streams of unorthodox economics. As to elements of theory, the focus is upon theories of commodity prices, income distribution and activity levels (including growth). As to schools of thought, the contrast is primarily between Sraffa and Post-Keynesian economics, but also in at least one fundamental respect, with Marxist economics.*

1. INTRODUCTION

If one asks the question – how is Sraffa's book, and the system of theory contained within it, related to the scope and content of economics as a whole? – the answer, on one level, seems clear and obvious half a century forward. On the one hand, it reconstructs with a new coherence at least a foundational element of classical economics, a tradition running from William Petty and Richard Cantillon to David Ricardo and Karl Marx, and beyond. On the other, that same system of theory entails a critique of the marginalist approach to the theory of functional income distribution, insofar as the latter relies upon well-behaved substitutability between 'factors of production' for generating demand functions for factors. Absent that supply-and-demand approach to factor pricing, the supply-and-demand approach to commodity prices and quantities also collapses (Garegnani 1983).

As to *scope*, the primary purpose of the marginalist theory, as an 'economic' theory, has been to explain and determine prices and quantities of commodities and factors of production supplied and demanded (including growth dynamics), by recourse to individual preferences and 'endowments', together with technology. But from Philip Wicksteed (e.g., 1914: 1–9) forward there arose a further ambition, to make marginalism a generic theory of human choice as such, insofar as those choices could be reduced to constrained individual optimization, a project much advanced by Lionel Robbins's (1935: 15–16, 22–23) famous constitutive definition of economics. On the other hand, the scope of classical economics has a rather different character and quality. One reason for this is that for most of its history up to Ricardo it was not an organized academic discipline, produced and reproduced via systems of university education, as the marginalist theory has been for most of its history. Another is that for most of its history up to Marx economic science was not sharply demarcated from other elements of social science. Indeed in its Enlightenment foundations, political economy as framed by Adam Smith was part of an intellectual project of constructing a comprehensive 'science of man' (Aspromourgos 2009b: 53–59), a fact captured in the title of Andrew Skinner's (1996) collected essays on Smith. It almost goes without saying that that projected comprehensive social science was very different in character from any supposed marginalist general theory of human choice. In any case, one may say that economic growth, the distribution by functional category of the resulting aggregate

output, and its allocation between accumulation and surplus consumption, were the central themes of the classical economics project – all this being conceived of within a broader framework of economic *development*, involving qualitative change.

In the face of all this one could say that, in one sense, Sraffa's system is a 'modest' construction, with the very form, character and size of the book giving concrete, physical expression to the limited, and very precisely limited, domain of the intellectual project. Notwithstanding attempts to assimilate Sraffa's system to the general equilibrium form of marginalism, as a limiting case (Hahn 1982; Garegnani 1990, esp. 112–18), the book's economy of purpose and of execution cause no intractable problems for grasping its relationship to orthodoxy.¹ But what of its relationship with other streams of unorthodox economics? The two most salient such streams of thought are Marxist economics and Post-Keynesian economics. The significance of Sraffa's book for the former was very considerably debated in the decades immediately following its publication, with Steedman (1977) in particular, the catalyst for much controversy (see also Garegnani 1984). The focus here is therefore upon Post-Keynesian economics; but also, in one fundamental respect pertaining to the theory of functional income distribution, the relation between Sraffa's system and Marxism will also be considered. The three sections which follow successively consider price theory, income distribution, and activity levels and growth, in the process drawing on Aspromourgos (2004), which considers more deeply a number of these issues, as well as some pertinent other matters not touched upon here (and includes a substantial survey of Sraffa-inspired economic literature to 2001).

2. THE THEORY OF COMMODITY PRICES

With regard to the theory of prices, Sraffa's system represents the outcome for relative commodity prices that would result if 'free competition' (freedom of entry and exit of capital) fully works itself out, so that it is equally attractive to invest a dollar of capital in any and all industries or activities (hereafter, just 'industries' for short). The parameters for this determination are: 1) the quantities of gross outputs of the system; 2) the available production methods for each industry, as expressed in input-output ratios associated with production of the given gross outputs; and 3) a distributive variable – either the wage share, real wage rate, or general rate of profit. The first of these parameters is the one most perplexing to those accustomed to more conventional modes of economic analysis. Much could be said about this issue (see Garegnani 1984: 292–99, or 1987: 560–66; Kurz and Salvadori 2003: 13–24, abbreviated in Kurz and Salvadori 2002: 226–32). Suffice it to make here the following observations. If input-output ratios are variable with respect to scale of production, then the second parameter cannot be known without the first. The use of scarce natural resources as production inputs is the most obvious factor pertinent here, as well as scale economies. It might be tempting to seek some kind of supply-function-like constructions in response to these possible relations between scale and input-output ratios. But since these possible relations have no general character which could be posited a priori, for all commodities in general, this is not a plausible route to take.² If input-output ratios are invariant with respect to scale, for all commodities and over all economically relevant levels of gross outputs – whether as a matter of plausible realism, or merely assumed for simplicity or analytical convenience – then the data reduce to just the available, constant-returns production methods and a distributive variable. But this is a special assumption, justifiable only on the basis of analytical convenience for particular, limited theoretical purposes.

The fundamental Post-Keynesian reaction to this approach to price theory has been, on the one hand, at the substantive level, to prefer a mark-up-on-cost approach to commodity prices, posited on an appeal to market structures that are noncompetitive in some sense or other. And on the other hand, at a methodological level, at least many Post-Keynesians reject what they perceive as an ahistorical, timeless 'long-period' method of analysis entailed in Sraffa's system.

This kind of methodological critique was championed by Joan Robinson (1979; compare Garegnani 1979; Harcourt *et al.* 1995 deals extensively with the issue). The methodological issue, the substantive question of noncompetitive market structures, and additionally, the status of the mark-up as an explanatory variable in price theory, may be dealt with distinctly and successively.

The first requires little comment: if we make the analytically convenient or simplifying assumption of constant returns, an assumption generally employed also in the mark-up approach, we can write equations for Sraffa prices and equations for mark-up prices, side by side. Both are equilibrium constructions, in some sense, even if in perhaps somewhat different senses. Even if there is no uniform net rate of profit embedded within the mark-up prices, there are uniform commodity prices and uniform wage rates – and these uniform variables too are equilibrium concepts, the outcomes of *a form of competitive process* which equalizes returns (or costs) from sale (or purchase) of homogeneous commodities and labour. The one set of ‘equilibrium’ prices, Sraffa or mark-up, is no more or less ahistorical or timeless than the other; the issue of which is to be preferred as an approach to price theory cannot be decided on such purely methodological grounds.

As to the question of noncompetitive market structures, even allowing for the existence of restrictions to free competition in the classical sense – less than unrestricted entry to (and exit from) industries, and positive costs of entry and exit (so less than ‘free’ competition in two senses) – this by no means necessarily renders the notion of a general rate of profit on capital redundant for the theory of prices. If that *were* so, then mark-ups (supposing them otherwise theoretically coherent: see further, below this section), could be conceived of as determined independently of any such magnitude. The most direct and observable empirical analogue of the general rate of return on capital in the contemporary world is the riskless rate of return on government securities held to maturity, to which there attaches zero default risk. This may be interpreted as the minimum rate of return under competitive conditions, to which are added premia for differential risk and illiquidity, in order to arrive at required rates of return across the variety of available possible investments.

Under noncompetitive conditions in which there are barriers to entry and exit, the competitive minimum rate and wider required rates of return would only be irrelevant to price theory if the noncompetitive mark-ups or noncompetitive rates of return were determined completely independently of the competitive rates. This is highly implausible for most industrial and financial circumstances. In an industry subject to restrictions on competition, the margin or ‘spread’ between the competitive required rate of return and the actual rates of return on capital pursued by existing firms in the industry is incentive for potential new entrants to contest the market (so long as there is no legal prohibition against entry). For example, suppose an industry with a monopoly supplier who earns above-competitive profits on capital in production, and is owned via traded equities which (let us say for simplicity) are a claim to the total net profits from production. In order to equalize the net yield from equity ownership in this monopoly, with yields on other equities, or returns on other forms of income-yielding wealth, the total money value of the equities which constitute ownership of the monopoly firm will tend to exceed the replacement cost of the real capital employed in production. The greater this divergence between the financial value of the firm and its replacement cost the greater must be the threat of new entrants, a fact which could hardly escape the monopoly firm.

In any case, putting aside this particular example, these kinds of circumstances seem more generally applicable than the alternative possibility, that noncompetitive mark-ups or target rates of return are determinable completely independent of competitive rates (see also Clifton 1977; 1983). Under those generally applicable circumstances, the returns on capital in noncompetitive industries are best conceived of as the sum of a competitive required rate of return plus margins, the latter determined by a complex of economically relevant factors, pertaining to particular industries or commodities, which determine the ‘contestability’ of particular markets. The competitive returns remain an ‘anchor’ for noncompetitive target rates

of return, in some degree or other; the noncompetitive mark-ups are partly determined by the competitive required rates of return (*cf.* Mainwaring 1992). The resulting system of commodity price determination will not be different in its formal structure from a price system with differential profit rates due to differences in risk and illiquidity. It is well known that, subject to technological and sociological constraints (with regard to the latter, minimum real wages rates in particular), such differential profit rates can easily be incorporated into Sraffa price systems (e.g., Semmler 1984; Steedman 1984; Kurz 1985).

There is finally the question of whether mark-ups have integrity as independent explanatory variables in price theory. The argument immediately above, concerning rates of return under noncompetitive conditions as a function of competitive rates of return, does not necessarily render mark-ups completely void of causal significance for price theory: one might still be able to conceive of mark-ups as independent variables with respect to production costs and prices, even if mark-ups are in turn partly (or fully) reducible to competitive profit rates. From the standpoint of Sraffa's system – in which the 'circular' character of the production system makes transparent the mutual dependence, or simultaneous determination, of prices and costs – there naturally arises a suspicion about this also. If costs are not independent of prices then, in a mark-up pricing framework, one would expect costs not to be independent of mark-ups either. The Sraffa system, of course, demonstrates that the notion of *profit rates* as independent variables in price theory *is* consistent with the mutual dependence of prices and costs in circular production systems. Can the notion of mark-ups as independent variables in price theory also survive this mutual dependence?

This suspicion concerning mark-ups has been tested by Steedman (1992). The partial-equilibrium form of mark-up pricing cannot be sustained; in general, each industry or commodity price depends upon mark-ups in all industries producing 'basic' commodities in the sense of Sraffa (1960: 8); when subject to a constraint of minimum levels of real wages or intersectoral technological constraints, there is interdependence between the spectrum of values different mark-ups can take; for vertically integrated industries, mark-ups are not meaningful independent causative variables; and allowing for joint production, further difficulties arise (e.g., prices can become a negative function – and hence real wages, a positive function – of mark-ups). Nevertheless, in principle mark-ups can be preserved as independent variables with respect to commodity prices and costs; but this still leaves open the question of their dependence upon competitive rates of return. Even in the absence of any such dependence, noncompetitive pricing is better conceived of in terms of above-competitive target rates of return on capital, rather than mark-ups on cost of production (*cf.* Mainwaring 1992). The notion of noncompetitive pricing conceptualizes a *departure* from competitive pricing and therefore can only be clearly understood from the perspective of a robust theory of the latter.

3. INCOME DISTRIBUTION AND 'SURPLUS'

The mark-up approach to price theory is at the same time also offered as a theory of income distribution. To the extent that mark-ups could serve to determine wage-price ratios, the theory of mark-ups is also a theory of real wages, and possibly of wage and profit shares as well. Steedman's (1992) analysis at least partly compromises this element of the Post-Keynesian project as well. Furthermore, to the extent that mark-ups are reducible to target rates of return – in turn determined by competitive rates of profit plus spreads reflecting limits to free competition – the resulting theory of distribution is rendered effectively equivalent to Sraffa's system with differential profit rates. Two other unorthodox approaches to distribution worth noting are the 'Cambridge Growth Equation' causation, from the rate of accumulation to the general rate of profit, and the possibility of directly determining real wages by reference to the balance of bargaining power around the labour contract.

The former has been subjected to substantial, and I think convincing, conceptual and theoretical criticism. Outside the theoretical confines of steady-state growth, the rate of accumulation is not a variable independent of prices and hence, is not capable of being an explanatory variable with respect to the rate of profit. More substantively, the saving/investment equality which is the point of departure for all formulations of the Cambridge Growth equation allows a causation from actual accumulation to only the *realized or ex post* rate of profit, not to the *normal* profit rate. The latter profit concept is the one that would be necessary in order to enable accumulation to be a determining variable for the kind of long-period theory of distribution and normal prices envisioned in Sraffa's system (Garegnani 1992; Vianello 1985; Ciccone 1986). Direct determination of the real wage by bargaining is now endorsed by virtually nobody, since whatever its relevance in 1776, 1821 or 1867, it is accepted that the labour contract now determines only money wages, with real wages determined by commodity pricing in relation money wages. This does not necessarily mean that the labour contract is irrelevant to real wage determination, since money wage behaviour could influence the course of wage-price ratios, temporarily or even permanently (Stirati 2001).

All three of these possibilities may be read as proposals for 'closing' Sraffa's system: as ways of eliminating the degree of freedom in that system, by adding a further equation so to speak. None of them is satisfactory. It seems to me that the most plausible proposed approach to closure, for the situation of developed economies, in recent decades is the notion of profit rates in production being regulated by interest rates independently determined in the money markets, with monetary policy playing a decisive role (Sraffa 1960: 33; Pivetti 1985, 1991; Panico 1988). This is an idea which also brings Sraffa's system into a degree of consistency with Keynes's monetary thought and Post-Keynesian monetary economics (Ranchetti 2001; Pivetti 2001). But at a more fundamental level, it may be questioned whether economic theory should seek a general, a priori, and at the same time determinate, theory of functional distribution in 'the' capitalist economy. One makes this suggestion advisedly because, of course, at any point in time there *are* definite, particular outcomes for wages, profit rates and so on. Something is determining them to be what they just happen to be, at that time.

What I have in mind here is that the deepest significance of the degree of freedom is as an expression of the truth that a decentralized competitive economic system, in and of itself, does not foreclose the functional distribution of income. Rates of return to labour, capital and so on are not uniquely and fully determined by the operation of the system; they are open to determination by wider social forces, though subject to technological constraints. This analytical implication is just an expression of the fact that Sraffa's approach *is*, indeed, a 'surplus' approach: above some minimum levels (determined by customary notions of subsistence and premia for differential skills, required to enable or induce various kinds of labour provision), real wages are not necessary payments or costs for ensuring the viability and reproduction of the economic system;³ and likewise, above some minima (determined by risk and relative illiquidity, and required to induce capital provision), neither are rates of return on capital necessary remunerations or costs of production and reproduction. The distribution of the social surplus remains open and contestable, even under conditions of thoroughgoing competition. (This contestability provides also a theoretical basis for distributional conflict or incompatible claims to be a source of inflation.) In marginalist theory this kind of surplus, conceptually, is not to be found. All remunerations are conceived of as functionally necessary, at least at the margin, to induce the equilibrium quantities of factors of production to be supplied – though the sought after uniqueness of competitive general equilibrium in the marginalist framework proved not so easy to rationalize (further to the concept of surplus, see Aspromourgos 2009a).

In a sense of course, in any theoretical system incorporating circular production, a vector of gross outputs net of inputs used up, a net product, will be present. But for a *surplus* to be present this net product, or some part of it, must be available for free disposal. In relation to economic and social policy, it is the existence of such a freely disposable, and hence contestable, social surplus which provides 'space' for the possibility of egalitarian progress within the framework of

mixed capitalist economies, via taxation and government activity as well as redistribution between private incomes. (At the level of descriptive theory, it provides space also for a role for history and institutional specifics.) In the mixed capitalist economy, governments have functions too, and are also engaged in conflicts over the distribution of income, on their own behalf.⁴ Post-Keynesian economics does not address the issue of distribution at all at this deepest level. But if pressed, most Post-Keynesian economists surely would have to agree that this concept of the social surplus is the necessary intellectual foundation for enabling the idea of further human progress in the framework of a decentralized economy in which the bulk of income-earning material wealth is privately owned.

The concept of a freely disposable social surplus that is embedded in Sraffa's system has kinship of course not only with classical economics but also with Marx's economics. Indeed, Sraffa's system can be read as a satisfying resolution, at least at a certain formal level, of Marx's project of showing how the appropriation of surplus by some parties who do not contribute to its production is consistent with the conditions of competitive equilibrium. For that reason it should be fully embraced by those who perceive themselves as in the intellectual tradition of Marx, both economists and other social scientists and social theorists. But while Sraffa's surplus approach to distribution opens up space for progressive policy and politics of various possible kinds, it doesn't *entail* such politics. No purely descriptive theory could; there can be nothing necessarily 'politically partisan' entailed by a theoretical treatment of distribution at a merely descriptive level. One could still find social, cultural or political reasons for justifying positive remunerations to ownership of material wealth as such. A politically conservative 'Sraffian' is by no means a logical impossibility. What one could not believe is that there is an *economic* justification for such remunerations – a justification in terms of requirements for the reproduction and dynamics of the economic system.⁵

4. ACTIVITY LEVELS AND ECONOMIC GROWTH

With regard to the theory of activity levels, and by extension, the theory of economic growth, it might be tempting to simply conclude that since quantities of gross outputs are exogenous in Sraffa's system, there are no implications for the theory of activity levels to be found there. On the other hand, the very fact that Sraffa deemed it legitimate to inquire into the theory of distribution and prices in a framework of given outputs can be taken to imply that he conceived of a certain 'separability' between the theory of distribution and the theory of activity levels. (Garegnani in particular – notably, 1984: 295–99, or 1987: 561–63 – has developed this separability implication.) In any case, it is very widely accepted among economists working in the framework of Sraffa's system that for a theory of activity levels and growth complementary to his approach to distribution and prices one should look to the 'effective demand' approach of Keynes and Michal Kalecki.⁶ I merely note here what appear to be the key issues involved in this synthesis and their relation to Post-Keynesian growth theory.

The core structure of the Principle of Effective Demand, in contradistinction to the supply-side approach of marginalist theory, is determination of activity levels by reference to elements of aggregate demand which can be conceived of as autonomous with respect to current actual incomes, combined with multipliers reflecting induced demands, with those multipliers linking the levels and composition of autonomous demands to the total aggregate commodity demands – so that commodity supplies adjust to those total demands. Somewhat loosely speaking, and concisely expressed, investment demands determine saving via the multipliers and through determination of activity levels, whereas in marginalist theory saving determines investment, with activity levels determined so as to ensure the full employment of the supplies of factors of production. About this much, there is no disagreement between the Sraffa-Keynes synthesis and Post-Keynesianism.

But at a methodological level, many Post-Keynesians have objected to the long-period approach entailed by placing the Principle of Effective Demand in the framework of Sraffa's approach to distribution and prices (for a formal illustration, see Kurz 1985). This methodological issue has already been addressed in section 2 above. It only need be added here, with respect to the theory of activity levels in particular, that synthesizing Sraffa and Keynes amounts to nothing more (or less) than demonstrating that the Principle of Effective Demand can be given coherent expression for a world in which free competition is operative and fully works itself out – but in the framework of a surplus approach to distribution. What is so objectionable about that? (And Keynes proposed something closely akin to this himself, though absent the surplus approach to distribution.) Since such a world can be thought without contradiction, it is important in principle to know whether this is so. Furthermore, as argued in section 2, even if the economic world which we wish to theorize is not a world of free competition, in both a world of limited but still operative competition, or even of no competition whatsoever, one should still wish to theorize profits in terms of rates of return on capital. This being so, one is obliged to have recourse to a price theory essentially along the lines of Sraffa's system, even if with differential normal or equilibrium profit rates.

At the substantive level two key issues may be noted. 1) Is 'autonomous demand' a concept applicable in the framework of long-period equilibria? 2) Normal or long-period prices and income distribution are conceptualized by reference to production conditions associated with normal or desired rates of capital utilization. It might therefore appear that a complementary long-period treatment of activity levels and growth along effective demand lines should proceed also in terms of normal utilization rates. But is this necessary, or desirable, or even logically possible?

Between the Sraffa-Keynes synthesis and Post-Keynesian economics, the multiplier-mechanism element of Keynes's Principle is essentially uncontroversial I think. It is the treatment of autonomous demands which remains something of an open question. The available candidates for this role are some elements or other of private and public consumption, and private and public investment.⁷ In the framework of long-period equilibria (competitive or otherwise), if rates of utilization of capital are conceived of as being fully adjusted to equality with desired levels (given by expected demand and desired excess capacities), then any element of autonomy for private investment might evaporate. This might be so if all investment is then capacity-creating, and hence induced by actual or expected demand for output. But there *are* evidently some elements of investment demand which are essentially independent of desired scale of capacity output; e.g., research and development expenditures (Serrano 1995: 71, n. 1). In any case, whether or not it is true that in fully adjusted positions all investment is induced, in *some* sense, normal or long-period-competitive-equilibrium prices can continue to fulfill their functions with respect to production (including technical choice) and distribution, without requiring that *all* production in all industries is being undertaken in fully adjusted positions. Normal prices may be determined by reference to such conditions, even while the theory of activity levels refers to situations in which many, most, or even *all* firms are operating away from such fully adjusted positions – though the production methods with respect to which normal prices are defined must be the 'dominant' ones (see Garegnani 1992: 69–70, n. 28 for a definition).

With regard to private consumption, the greatly increased scope (let us say, since 1936) for households to engage in external financing has similarly increased the scope for private consumption to vary independently of current income, even if such debt-financed consumption remains a function of income over the feasible time-horizon of such debt contracts. In fact, even in the absence of household external financing, to the extent that (let us say, since 1821) many more households have real incomes in excess of customary subsistence, and hence, there is increased scope for positive saving rates, the scope for consumption to vary independently of current income has increased for this reason in itself (that is to say, even in the absence of recourse to debt financing). This points to a possible route to sustaining Keynes's Principle,

without recourse to autonomous demands, at least in the usual sense: cyclical fluctuations of investment around a constant average value, combined with asymmetric behaviour of the marginal propensity to consume in downturns versus upturns, can suffice to generate sustained growth (Garegnani and Trezzini 2010). But to the extent that these dynamics depend upon the capacity of average propensities to save to vary independently of income, they can be said to still involve a form of autonomy for consumption expenditures.

There is one further important question here, concerning the meaning of ‘autonomy’ in relation to demand and activity levels. In financially sophisticated modern economies, external finance (notably debt, but also equity) unleashes many components of aggregate demand from the constraint of *current* actual incomes. But all elements of aggregate demand are surely bound by intertemporal budget constraints, and hence by future incomes, in the medium to long run (though recall the peculiar financial autonomy of governments, mentioned in note 7). But even if *all* demands are constrained over some sequence of time periods by current together with future actual incomes – and more particularly in the case of investment, by future expected capacity requirements or sales – this does not seem to compromise the autonomy of demand with respect to activity levels required for Keynes’s Principle, so long as activity levels, outputs and the resulting incomes adjust to current demand. The capacity for current planned expenditures to vary independently of current actual incomes and activity levels would seem to be a sufficient condition. That current expenditures are ‘induced’ by expected or future scale (forecast sales or incomes) does not seem to undermine the notion of their ‘autonomy’ required for the Principle of Effective Demand.

It was pointed out earlier (three paragraphs above) that Sraffa’s normal commodity prices and associated income distribution do not cease to be relevant to economic decisions and outcomes when activity levels do not involve situations of universal, fully adjusted positions. Normal prices still can be determined by reference to normal costs associated with the dominant technique and normal utilization rates of capital; and these normal prices can regulate production choices and income distribution, even if many, most or even all firms are operating under other conditions.⁸ But if, on the one hand, a system in which all production occurs in fully adjusted positions is unnecessary to the application of normal prices and associated phenomena, then on the other, theorizing activity levels and growth as occurring under conditions of such universal fully adjusted positions (continuously or on average) may be also undesirably restrictive. It may even be impossible. This is the conclusion embraced by Palumbo and Trezzini (2003): steady-state growth theory with continuous normal rates of capital utilization, Post-Keynesian or otherwise, is not merely unduly restrictive; it is an impossible framework for enabling growth to be theorized as demand led. Essentially the same criticism is directed at ‘supermultiplier’ approaches to demand-led growth (notably, Serrano 1995). Central to the inadequacy of assuming normal utilization in some form or other is that investment decisions aimed at adjusting actual capacity towards desired capacity (the latter in turn governed by expected demand) of course will themselves feed back on demand, and the problem of the persistence or otherwise of the contending forces governing capacity and demand adjustments relative to the adjustment speeds of these processes (Palumbo and Trezzini 2003: 117–23).⁹

I may conclude with one final thought in relation to autonomous demand and demand-led growth. It is clearly possible for particular sectors of the economy, for a time, to play the role of generating the autonomous demand growth (by recourse to external finance or variations in current saving behaviour) which in turn drives actual output growth, consistent with respecting intertemporal budget constraints facing those sectors. Those intertemporal budget constraints might mean only that no single sector could play that role indefinitely. Continuous, uninterrupted growth would then depend upon particular sectors’ role as the growth driver being replaced by some other sectors, as the former reduce their autonomous demand growth, say, in order to repair balance sheets. After all, in a real sense what has happened in the run-up to the Great Financial Crisis and subsequently is that the household sector (particularly the US household sector) has withdrawn as a driver of growth, to be replaced, at least partly and for a

time, by the public sectors of some economies (see Barba and Pivetti 2009). One could respond that this conception would make continuous growth a mere fluke. But is not discontinuous growth exactly our experience of actual growth with cyclical characteristics? In any case, these kinds of dynamics – with particular sectors' autonomous demand growth only temporarily driving growth, but all the sectors together perhaps enabling something like continuous growth – amount to a 'messy' sort of growth theory. But if sustained growth of effective demand is a messy and contingent business in reality, then it is not necessarily to be regretted that the *theory* of the process is messy as well.

5. CONCLUSION

Our purpose here has been to contrast the approach to some fundamental elements of economic theory entailed by or associated with Sraffa's system, with Post-Keynesian economics in particular. Apart from contrasts also with Marxism (briefly touched upon, in one respect, in sec. 3) and Institutionalism (both addressed in Aspromourgos 2004), there are a variety of other 'non'-orthodox developments in economics in recent decades which possibly could usefully be subject to appraisal also; for example, behavioural economics and evolutionary economics. Suffice it to note here that it is possible to be non-orthodox without being heterodox. That is to say, a particular intellectual novelty may differ from orthodox analysis, without necessarily contradicting it, or even while remaining wedded to some or other fundamental orthodox postulates.

The two, closely related, fundamental orthodox elements against which Sraffa's economics is posited are the marginal productivity theory of functional income distribution and, closely related, the tendency to full employment of resources under competitive conditions. If these are not in question, orthodoxy is not really in question. On the other hand, there *are* developments in contemporary economics, beyond the traditional unorthodox currents associated with Marx, Keynes, Sraffa and Institutionalism, which are not particularly connected with objectionable orthodox marginalist foundations. Whether or not these developments are interesting or useful, they probably do not warrant criticism in the same degree as orthodoxy. Indeed, along with Sraffa's fundamental contributions, they might provide some constructive elements toward a better kind of economic theory. One of the themes of Aspromourgos (2004: 181–84) was that the Sraffian project, rather than being a comprehensive alternative to orthodoxy, offers solutions to a narrower set of fundamental problems in the history of economic theory. To that extent it is only a foundation from which a variety of research programmes can proceed; it is 'so to speak, a configuration of intellectual machinery available to inform wider and applied economic analyses'. Furthermore, the limited theoretical domain of Sraffa's system 'does not only leave it open to a range of alternative possibilities for specifying theory for determining other, to an extent separable, economic phenomena; it also makes the Sraffian project open to "history" in a substantial sense'. To that extent, its limited domain is 'a virtue not a defect – a welcome modesty of claims to definite and determinate general theoretical knowledge of the economically relevant world'.¹⁰

NOTES

* School of Economics, University of Sydney, Sydney NSW 2006, Australia. Email: tony.aspromourgos@sydney.edu.au. I am indebted for comment to M. Lavoie, [...](#) and participants in the conference, *Sraffa's Production of Commodities by Means of Commodities, 1960–2010* (Università di Roma Tre, December 2010), without thereby implicating any of them in the final product.

1. By orthodox economics I mean just the marginalist theory: the approach to understanding economic society in which constrained optimization by individual agents (who have autonomous preferences and can exploit substitution possibilities) generates simultaneous demand and supply functions (or correspondences) for commodities and factors of production, such that market clearing under competitive conditions determines equilibrium quantities and relative prices, including prices of the factors of production. By corollary, unorthodoxy entails a rejection of at least some fundamental elements of this orthodox vision, remembering that marginalism strongly implies an automatic tendency towards zero involuntary unemployment under competitive conditions.
2. The orthodox commodity supply function, or 'rising supply price', on the other hand, *is* posited on an a priori general principle, albeit a spurious one: the marginal productivity or supply-and-demand approach to factor pricing.
3. The notion of surplus wages gains extra significance in a world in which most of the remuneration of, for example, operatives in financial intermediation, and participants in business management generally, appears under 'wages and salaries'.
4. For example, the size of the tax share of GDP and of government has been much questioned by the neo-liberal resurgence since 1979, even if to limited practical effect.
5. In considering what are the necessary inputs required for the production of a set of gross outputs, to be netted out in order to arrive at the social surplus, one may differentiate between remunerations which 'enable' production and remunerations which 'induce' production – a distinction made in Sraffa's private papers (Kurz and Salvadori 2005: 429–33). For example, there are activities which may be necessary to the reproduction of a particular kind of economic society, without being strictly necessary to the production of the consumption of the great bulk of the members of that society. The significance and implications of this distinction cannot be pursued here.
6. Garegnani (1978–79) is the seminal reference, but written much earlier, with a version available in Italian in the 1960s (Garegnani 1964–65), in turn derivative from the theoretical part of Garegnani (1962). See his note at Eatwell and Milgate (1983: 21n). See also Eatwell and Milgate (1983) more generally.
7. Export demands may play a role in open economies. In a closed global system these disappear; but the mechanism of international adjustment of external imbalances can still nevertheless have implications for global effective demand. As to public (consumption or investment) expenditures, we make only this observation: in a world in which governments are able to issue liabilities promising future payment in an asset (fiat currency) which they can freely create *ex nihilo*, those governments evidently have very considerable autonomy in generating demand, particularly when that financial autonomy is buttressed with the power to compulsorily acquire revenues via taxation, even if they are not thereby *completely* unconstrained (Aspromourgos *et al.* 2010: 440–46). But many will balk at making the theory of activity levels and growth in a capitalist economy depend upon autonomous public sector demands *alone*.
8. Except, of course, the dominant production methods cannot be conceived of as being employed by *no* firms. But they need not necessarily be supposed as employed by even a *majority* of firms, if firms are of uneven size. For example a small number of firms that are large relative to the market as a whole can, in the relevant sense (with respect to production method), 'dominate' a larger number of small firms, though this might involve for the large firms a rate of return on capital above the competitive rate.
9. See also White (2006) for further discussion of these issues. Lavoie (2009) is a good recent example of a characteristic Post-Keynesian or Kaleckian growth model, with the rate of accumulation partly exogenous and partly a function of normal profit rates. This particular model is augmented to incorporate a managerial class and target-return pricing. The latter

aspect makes mark-ups derivative from normal or required rates of return on capital, an approach in accord with the conclusions of section 2 above.

10. In all the above, no reference has been made to uncertainty as a motif of Post-Keynesian economics, because this is not about any definite theoretical propositions. If pursued, the question would be the pertinent, *limited domain* of such uncertainty, since it cannot be so pervasive as to deprive the economy of any systematic structure (in which case, the realm of determinate theory or modelling would entirely evaporate). But the notion of a limit to theory has some kinship with the Post-Keynesian uncertainty theme.

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