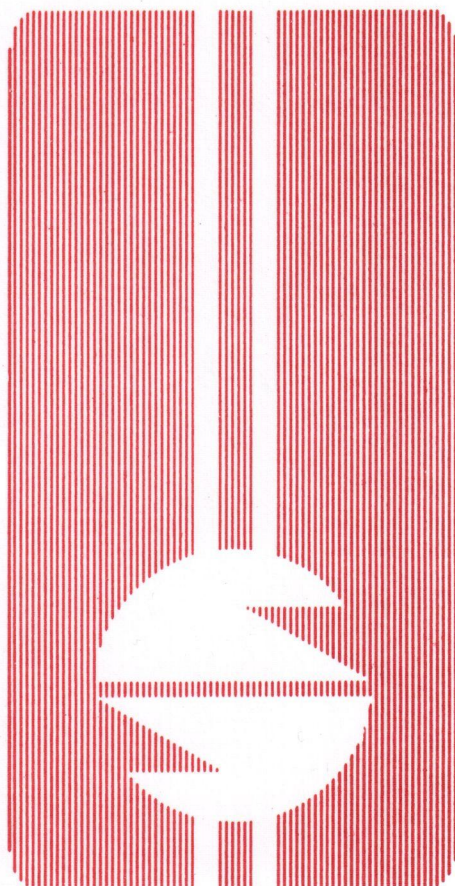


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THE SRAFFIAN INTERPRETATION OF RICARDO: A CRITIQUE

José Ricardo Bezerra Nogueira*

ABSTRACT

This paper attempts a critical assessment of the standard Sraffian interpretation of Ricardo. Particularly, we take issue with the idea that Sraffa's is the canonical Ricardian model. We argue that it is not a return to Ricardo's standpoint. The following assessment is based on the discussion of the role of tastes and demand in the explanation of the economic process.

1. INTRODUCTION

One of the most entrenched conceptions in the study of the history of economic thought is the close association of Ricardo's analysis with Sraffa's. Indeed, the tendency to associate both authors closely has been so strong that there is a near identification. For a long time we have been told by neo-Ricardians, Sraffa's heirs, that the history of economic doctrines can be divided into two main lines: one starting with Adam Smith (and the physiocrats) and developing through the works of Ricardo, Marx and Sraffa, and the other having its roots in the so-called "marginalist revolution" of Menger, Walras and Jevons, and going down through Marshall to modern general equilibrium analysis. The former is termed the "surplus" approach, the latter the "neo-classical" one.

Neo-Ricardians based their contention on Sraffa's interpretation of Ricardo contained in his celebrated introduction to Ricardo's *Principles* (Sraffa, 1951) and in his own *Production of Commodities by Means of Commodities* (Sraffa, 1960).

The fact that we have a Sraffian version of the history of economics is not, in itself, a bad thing. It is healthy to have alternative views of the subject. What is worrying about it is its reductionist character and the associated danger of misrepresenting past theories while sorting out qualitatively different analyses to fit in above-mentioned Great Divide.

In this paper we attempt a critical assessment of the standard Sraffian interpretation of Ricardo bearing in mind the findings of the previous chapters. It should be noted that we are not criticizing Sraffa's work in itself, but rather the view that it represents a "magnificent rehabilitation" of classical economics. We thus strongly disagree with Meek's assertion that both "Sraffa's model and Classical models are concerned with the investigation of one and the same set of properties of an economic system" (Meek, 1967, p.161). We think they are not. Sraffa's is not the canonical Ricardian model; it is not a revival of the classical standpoint; in particular, it is not a return to Ricardo's standpoint.

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¹ Eatwell and Panico (1987, p.451), as one example, have remarked that "Sraffa's analysis is a triumphant restatement of the classical analysis of value and distribution"

AEA Code 020	Key words: Sraffian interpretation of Ricardo, canonical Ricardian model, tastes and demand in the explanation of the economic process
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The following assessment is based on the discussion in the preceding chapters of the role of tastes and demand in the explanation of the economic process. We begin by outlining the basic hypotheses and arguments underlying the Sraffian (or neo-Ricardian) interpretation of Ricardo.

2. RICARDO FROM THE SRAFFIAN STANDPOINT: AN OVERVIEW

In his highly influential book of 1960, Sraffa - who in his 1951 introduction to his edition of Ricardo's *Principles* had laid down the foundation of the neo-Ricardian view of Ricardo - set forth an alternative analytical model of the economic system to the neo-classical one. There he affirmed that his was the method of analysis used by the old classical economists, in other words, that he was reviving the classical approach to economics.

In the preface, singling out a major feature of his book, he stated that: "The investigation is concerned exclusively with such properties of an economic system as do not depend on changes in the scale of production or in the proportion of 'factors' "(Sraffa, 1960, p.v). And he went on to assert that: "This standpoint, which is that of the old classical economists from Adam Smith to Ricardo, has been submerged and forgotten since the advent of the 'marginal' method" (ibid).

The economic system is analysed by selecting one point in time and proceeding to determine the relations among its variables at that particular moment. At the beginning of the analysis, then, we have a set of data describing the system. The vital data are (Eatwell, 1983, p.99): a) the size and composition of output; b) the method of production, c) the real wage

The above data, representing the physical state of production, are thought to be sufficient to determine the relevant characteristics of the system. From this representation of the economy, a straightforward deduction is made. With output taken as given, no relationship exists between quantities and prices, as for example in terms of variations in demand. Changes that might happen in quantities and prices would come about as a result of variations in the conditions of production, exclusively (ibid).

Moreover, this picture of the system is said to correspond to its long run, natural position. The linchpin of the neo-Ricardian argument is to attribute to Ricardo the sole concern with that long period position of the economic system. "Accidental and temporary deviations", mere short run phenomena, are left out of the analysis since, as Pasinetti (1981, p.8) has put it, "in the long run they become irrelevant". Those deviations only contribute to obscure the analysis, not influencing substantially the relevant relationships within the system nor the final, long run position of the economy, which is completely determined by the natural level of the variables, which in turn depends solely on the conditions of production.

What Pasinetti has called the "fundamental picture" of the system, the one depicting its natural state, may be symbolised as follows (Pasinetti, 1977, p.73):

$$pA = (1 + r)l + w = p$$

where: p = the row vector of prices; A = the matrix of technical coefficients; r = the uniform rate of profit, l = the row vector of inputs of labour; w = the wage rate.

Prices depend only on the material conditions of production, i.e., the technique $[A, l]$ of the system. One of the distributive variables, r and w , is determined outside

the model and thus taken as a given. As a consequence, neo-Ricardians assume value and distribution as two separate spheres for the purpose of economic analysis.²

From the given wage rate one determines the rate of profits through the device of the wage-profit frontier. Then, together with the technological information provided by the given data, one determines the prices of commodities. These are said to be "prices of production", that is, prices which do not depend on market conditions but on production conditions only. They are the ruling long run prices which guarantee the reproduction of the system.

We can thus see why the Sraffian model is a "production-oriented" one. The system is a system of production, the task of the model being to understand the "socio-economic relations between men in the sphere of production" (Meek, 1967, p.208), that is to say, the analysis should be "anchored to man's activities and relationships as a producer" (Meek, 1974, p.250).

In this system of production, the concept of surplus is the centre piece on which the working of the economy hinges (Garegnani, 1987, p.560). The idea is that the output obtained from the application of labour and capital to production in a specified way (method of production) not only replaces these inputs but yields a surplus besides, which is used to gear up production, so that it is the production of goods which "increasingly characterize and condition the emerging industrial societies" (Pasinetti, 1977, p.3). Accordingly, we have the following principle: "In the relationship between men and things it is the objective process by which men produce goods which is crucial and not the subjective and individual valuation of these goods" (Levine, 1974, p.311-12, n.4).

From the stipulation of the technique in use, $[A, l]$, and the corresponding output, Y , we arrive at the surplus product $S = Y - B$,³ with its distribution being determined through some exogenous mechanism. The next step is to find out what vector of prices assures the existence of the equilibrium position of the system - i.e., a situation where uniform prices of commodities and an equalized rate of profit prevail throughout the economy, and in which the composition and level of output are directly linked to the requisite reproduction of the system. What then is the neo-Ricardian verdict on the role of demand in the economic process? This is the point we address in what ensues.

3. DEMAND IN THE SRAFFIAN FRAMEWORK

One of the outstanding traits of the Sraffian model is the complete absence of demand considerations in the analysis. Prices, as we saw above, are a pure production phenomenon. Demand and market prices (which depend on the state of demand) as well as viewed as an epiphenomenon susceptible to be cast aside. Let us take a closer look at this argument.

Garegnani (1983, 1987) has put forward the most detailed account of the question of demand in classical economics, particularly in Ricardo, from a Sraffian point of view. His chief contention is the following: "The price system and the rate of

² Garegnani (1987, p.561) thus has affirmed that what the classical authors "had in common" was the general idea "of a real wage governed by conditions (often of a conventional or institutional kind) that are *distinct* from those affecting the social product and the other shares in it, and are therefore best studied *separately* from them".

³ B is the augmented input matrix.

profit ... are determined independently of any demand functions for the products" (Garegnani, 1983, p.311). This non-substitution-theorem-like principle is better understood if we disaggregate it thus (Garegnani, 1987, p.563-64): i) demand and preferences are immaterial for price formation given the fact that the wage rate is treated as a datum; and ii) this is so due to the separation between distribution and value theories.

Unlike the traditional non-substitution theorem which requires the assumption of constant returns to scale, Garegnani claims that in classical economics the determination of prices with no reference whatsoever to demand is possible even in the case of variable returns. He, however, does not elaborate upon this observation and gets round the problem by resorting to the usual Sraffian procedure of assuming that the level and composition of output is given from the outset. Actually, these depend on the income level, the technical conditions of production, and the distribution of income, but as they are taken as given, it follows that the level and composition of output are given as well.

One might still argue that both the level and composition of output are contingent upon the choices made by individuals manifesting their preferences, and consequently upon demand. But Garegnani appeals to the world outside his model and presupposes that the "content of consumer tastes" is also a datum, its study being the concern of psychologists or sociologists. Demand consideration is thus chopped off the model entirely. Garegnani however does concede that some kind of relationship between output and prices may be put forth when "relevant". But even so he remarked that such correlation can be accommodated without any need to resort to demand. He instead advances a recursive mechanism which operates via a step-by-step process from changes in prices to output and vice-versa (p 564-65).

Furthermore, he considers demand in classical economics as a "single definite point" in the price-quantity space corresponding to Adam Smith's concept of "effectual demand", that is, the quantity demanded at the natural price. With the level of effectual demand taken as given, any shortage or excess of supply results in the deviation of market price from the natural one, but the last (and thus effectual demand) is itself independent of market conditions.⁴ From this statement of the neo-Ricardian position on the question of demand in classical economics, and that of in Ricardo in particular, we shall proceed to an assessment.

4. DEMAND IN RICARDO: A CRITIQUE OF THE SRAFFIAN VIEW

Neo-Ricardians single out price determination as the main object of economic analysis. The theory of value is what Sraffian economics is about, and the price which really matters to them is the natural price or the price of production. By definition, this price is completely independent of demand, as Ricardo himself acknowledged.⁵ For him the natural price was nothing but the cost price, and thus dependent exclusively on the conditions of production. The economic phenomenon that neo-Ricardians profess to have an interest in is hence the reproduction of the

⁴ As Garegnani(1987, p.565) has put it, "in the classical economists the interplay of 'demand and supply' only explains the oscillation of actual prices and the normal outputs, equal to the 'effectual demands', where these normal levels are known independently of any such interplay"

⁵ "By the very definition of natural price, it is wholly dependent on cost of production, and has nothing to do with demand and supply" (vol 8, p 207)

economic system, to which we turn now

4.1 Reproduction in the Sraffian model: the lack of market considerations

The phenomenon of reproduction may be analysed by studying the conditions under which real-world economy would behave like the given economic model assumes it would. In the Sraffian model, as we saw before, the basic task is to calculate, from the input-output data of the system, the set of prices that would guarantee equilibrium, the natural state of the system.⁶

However, although production is what matters in the Sraffian model, it contains no mechanism by which production decisions are taken. The quantities produced and their distribution among the several sectors are just fixed from the beginning without any explanation as to why that particular set of quantities has been produced; prices are but technical coefficients required to give a solution, in terms of general equilibrium, to the system

The prices arrived at through the solution of the Sraffian equations are adequate to replicate the system identically as displayed at the beginning of the investigation.⁷ Sraffa (1960, p 9) likens these prices to the classical "prices of production", and if so they should reflect the outcome of decisions taken by producers in the past with respect to issues such as the quantity of labour to be employed, the commodity to be produced, the method of production to be chosen, the investment to be made etc. Yet the fundamental question of how producers decide what to produce and invest is not tackled in the Sraffian approach. All that we have is the profit rate equalization rule, that is to say, the assertion that the production process is carried out in such a way as to bring about the equalization of the sectoral rates of profit throughout the economy.

This is in marked contrast to Ricardo, who distinctly established a link between that process and the state of markets (and consequently of demand).⁸

The equalization of the rates of profit is the outcome of the competitive process that rules economic affairs and which has as its main instrument the mechanism of resource allocation. However, the latter is lacking in the Sraffian model. The uniformity of the rates of profit is assumed from the very outset but the process of competition among producers that brings it about is not mentioned.

In Ricardo, the uniformity result is achieved by means of the movement of capital and labour among the sectors of production in response to price changes. In Sraffa, on the other hand, it seems that profit rate equalization is the result of the fact that: a) the capital advanced by each sector or industry must be replaced, and b) the mass of profits must be distributed accordingly to the capital advanced in each sector or industry.

This also applies to Ricardo's analysis, but the difference is that, as Sraffa takes the structure of production (and thus the "proportion of the factors of production" in each industry) unchanged period after period, the mechanism of resource allocation

⁶ It is also called the long run position, but this seems to be an odd thing since there actually is no process by which to say that the system reached that point in time. The answer neo-Ricardians commonly give is that that position represents a "centre of gravity" to which the system tends

⁷ There is then "a unique set of exchange-values which if adopted by the market restores the original distribution of the products and makes it possible for the process to be repeated..." (Sraffa, 1960, p 3)

⁸ "... a commodity is not supplied merely because it can be produced, but because there is a demand for it" (vol 1, p 385)

has no role in his model. In Ricardo's system, however, it is of fundamental importance.⁹

Lacking the apparatus of resource allocation and the framework of individual decisions of production, the Sraffian model leaves aside one basic characteristic of Ricardo's analysis, namely, the competition among capitalists as a prime force moving the economic system. What is more important, in the Sraffian scheme of things, as Pivetti (1987, p 873) has rightly pointed out, competition is not related to the problem of distribution. The distribution of profits is, so to speak, predetermined by the fixed original arrangement of production, that is, by the "proportions of the factors of production" correspondent to the initial set-up of the economy, and not by the working of the (competitive) economic apparatus, which, in Ricardo, determines the division of the mass of profits among the sectors and the proportionalization of the rates of profits.

In Ricardo it is the perpetual competition among producers that ensures balanced growth. Furthermore, in the course of the process of economic growth the relative power of the different branches of capital changes position. Money and industrial capital plus commercial capital (linked to foreign trade) rise to prominence, while the more traditional forms of capital, like agricultural capital, lose ground and become (relatively) less important to the economy.

All this is missing in the Sraffian approach which portrays a system which undergoes no transformation at all. But the frozen conditions of production and of the level and composition of output (and thus demand) is an external imposition on Ricardian analysis, which frames the economic system in a constant state of change and transformation. The notion of the "centre of gravity" as the long run standing of the economy, we contend, is not part of the Ricardian framework.

In it, the concept of gravitation around the natural position is merely as a reference for producers while allocating their capital to the most profitable of the many alternative possibilities of investment. Such an allocation necessarily involves contrasting that referential price (the Ricardian remunerative price) with the market price in force. All these problems with the Sraffian model are compounded by its sheer inability to deal with the case of an "improving society", which is, after all, the cornerstone of Ricardo's system.

The Ricardian setting is that of a society experiencing a process of continuous accumulation and growth marked by changing conditions of production and modifications in its "habits and customs". Rather than taking these as given and proceeding to determine prices, the Ricardian approach aims to understand the sequence of events and feed-back effects that occur in the course of growth. The focus of the Ricardian approach is thus strikingly dissimilar to the Sraffian one.

Take the basic Ricardian problem as an illustration. Accumulation of capital, the growth of population, increases in demand and in the cost of production and changes in distribution, all are outstanding elements of the analysis from which Ricardo departed and developed his investigation of the operation of the economic system within the context of growth. The stationary state is the full description of the Sraffian model. Indeed, the stationarity of the conditions of production and of all the

⁹ Neo-Ricardians would not deny that capital mobility plays an important role in Ricardo, but the fact that they take the level and composition of output and the proportions of factors as constant renders it unimportant in their model.

other elements is its distinctive mark, and is so from the very outset of the analysis, whereas in Ricardo this situation is only reached, if reached, upon very restrictive conditions and only after a long process has taken place in time (contrast this with the historical, static nature of Sraffa's system).

What is highlighted here is the fact that the Sraffian approach is short of any relation of cause and effect among the elements and spheres constituting the economic system.¹⁰ In Ricardo we see how accumulation leads to population growth and rising demand for food, and how these in turn force the system to operate under diminishing returns in the agricultural sector. There is a chain of events, of causes and effects, of processes, in contrast to the Sraffian method of regarding everything as immutable.

4.2 The unchanging nature of consumption in Sraffa

There is hardly any reference to consumption in Sraffa's model. What may be inferred from its assumptions is that a certain pattern of demand exists remains frozen throughout the analysis. What is produced is consumed, in what seems to be a strict application of Say's Law, but there is nothing that explains why such-and-such commodities are produced. Instead of the view held by Ricardo and the classicals that production is a means of satisfying the desires of consumption of society, in Sraffa we have the reductionist view that production is by, and for the sake of, production. What is produced merely serves to reproduce the physical characteristics of the economic system. Consumption considerations, if any, are thus only incidental to the analysis.

The Sraffian economic system is thus built as though the consumption needs are already and always perfectly matched by production. But while this *ex ante* balance between demand and supply is what one may deduce from the Sraffian data set, and the Sraffian system of equations stipulates the requirements for the physical reproduction of the system, nothing is said about the satisfaction of individual preferences for consumption.¹¹ Are the individuals satisfied with the current level and composition of their consumption? What are their aspirations in terms of consumption? It really appears that there are no consumption goods in the Sraffian world, only inputs of production and final goods which are but produced means of production. Even the subsistence goods which enter the wage basket are reduced to the role of inputs of production, that is, the (re)production of labour.

Thus, something that is fundamental to the dynamics of Ricardo's system, and for that matter to all the classical literature, is completely missing in the Sraffian model, namely, the individual motivation of people to exert themselves in the activities of production. Undoubtedly, one might say that the plain fact that the categories of wages and profits are present in Sraffa's model is sufficient to demonstrate the existence of motivations for people to engage in productive activities. However, we think that the way in which Sraffa frames his system leads to the impression that the only motivation one can find behind the concepts of wages and profits is the

¹⁰ This is a criticism that Joan Robinson levelled against Sraffa. She, for example, remarked that "[t]here is no causation [in Sraffa's] model. The prices corresponding to a given share of wages in net output yield a uniform rate of profit on capital only because Sraffa says that they shall. There is no mechanism in the system to make them so" (Robinson, 1980, p. xi).

¹¹ As Garegnani (1987, p. 561) has remarked, "[t]he commodity composition of the social product... was studied mainly from the angle of the needs of reproduction".

necessity to secure the physical reproduction of the production system. Wages paid to workers thus serve the purpose of reproducing the labour input in the same way as profits accrued to capitalists serve the purpose of replacing capital advanced. While this image may be broadly consistent with Ricardo's analysis, the latter, however, has another crucial dimension, one that is completely missing in Sraffa.

In Ricardo such motivation is influenced to a great extent by the desire to consume from the fruits of their effort, viz., the aspiration individuals have of possessing those things which can fulfil their "wants and wishes". This desire affects, and is affected by, the functioning and growth of the economic system. It is, in short, a powerful force moving the economy. And yet it is entirely submerged under the givens of the Sraffian model. In other words, an element of prime importance in the Ricardian analytical construction is conspicuous by its absence in the Sraffian framework.

The reproduction of the material basis of the production structure of the system certainly is the bedrock of the process of accumulation and growth which Ricardo was primarily interested in, and he manifestly based his examination of economic events on a system where reproducibility of both the physical structure of production and the commodities (means of production and final goods).

The reproduction of the system, though, Ricardo took for granted. Even in the case of the stationary state, the system would continue to be reproduced, but not expanded.¹² His concern was with the conditions bringing about the expansion of the economy, i.e., with the prerequisites for securing accumulation and economic growth. The level of profits major among those requirements, but these also included the spreading of the division of labour, the increase in productivity, the amplification of the market, etc., all factors which, as we saw earlier, are tightly connected with the diversification of tastes and consumption and the consequent rise in demand.

It may be said that Sraffa and the neo-Ricardians would not deny this connection, but argue that it was not the main point. The problem is that Sraffians always tend to convey the message that demand considerations are unimportant in Ricardo. The contention is made notably with respect to (natural) price determination, but as they see Sraffa's procedure as the basis of the study of the reproduction and accumulation of the (capitalist) economic system (Dobb, 1967, p. 163), that argument is, implicitly at any rate, extended to the analysis of growth.

Demand might conceivably be introduced into the Sraffian system. When the composition of output is allowed to vary due, say, to changes in distribution, an additional set of equations could be added to the model (see Robinson, 1980, p. 148; Kregel, 1971, p. 39).¹³ But again that is not the crucial point. Neo-Ricardians would still maintain that demand factors play only a minor, secondary role in economic analysis. They would appear as dependent elements, subordinated to what happened to the physical conditions of production, and not as factors capable of influencing either those conditions or the process of accumulation and growth.

¹² This is indeed the state depicted by Sraffa's model

¹³ What precisely would be the mathematical problems attendant on this procedure are not quite clear, but as Kregel (1971, p. 38) has pointed out, it would greatly increase the complexity of Sraffa's system.

The Sraffian or surplus approach in the words of a sympathetic commentator, characteristically "seeks to comprehend systemic property directly, without the intervention of human subjectivities" (Howard, 1983, p.143). This is seen as a sign of the strength of Sraffian theory and taken to represent the basic feature of the classical economists. To be sure, appeals to "human subjectivities" seem to be anathema to neo-Ricardians and may in part be explained by their ideological and theoretical battle against the neo-classical school, which strongly relies on individual subjective preferences in approaching economic phenomena.

Yet "human subjectivities", or what David Hume called "human passions" constitute a significant part of the interpretative corpus of the classical school of political economy. Desires, aspirations, "wants and wishes", ambitions, interests, emulations, were all recognized by the classical writers as integral components of the cultural, psychological, and institutional fabric of human society and thus having a bearing on the dynamics of the economic system.¹⁴ In fact, as the discussion in the previous chapters has shown, they served to set in motion growth-inducing effects in the economy.

It is curious that neo-Ricardians prefer to ignore this underlying feature of the classical school, when the writings in this persuasion are abundant with explicit details of it. One has only to bear in mind the importance of Adam Smith's *The Theory of Moral Sentiments* to the understanding of political economy to perceive a glaring example of what the Sraffian restatement of the classical analysis lacks in comparison to the original construction. There seems to be no human motivation behind the economic phenomena that Sraffa's model attempt to depict; there are classes of income but not really classes of individuals. In Ricardo it is perfectly clear what kind of motivation drives the action and interests of landowners, workers, and capitalists (and, to some extent, of the different types of capitalists): Landowners resist threats to modify the *status quo* of society (which in Ricardo's scheme would be tantamount to putting the agricultural interest behind that of the emergent industrial sector and to cutting back the political power and influence of the landed aristocracy); workers yearn for an improved standard of life and are likely to increase their exertions in order to fulfil that desire, and capitalists, in turn, stimulated by the prospect of realizing profits, carry on the accumulation of capital.

Another contrasting point between the two approaches concerns the destination of the surplus. In Ricardo it may be directed either to consumption or investment purposes, depending on which class takes hold of it. Or, more precisely, the proportion of the surplus directed to either of those options depends on the share of each class in it. If landowners seize most of the surplus, according to Ricardo's class-behaviour assumptions, it is principally employed in unproductive consumption; If capitalists manage to secure the greater part of the surplus, then savings and investment and accumulation and growth are boosted, and if it is workers, their aim is to improve their condition through a combination of both savings and higher and more diversified consumption.¹⁵

¹⁴ In this respect, it seems that classical economics is not that much different from neoclassical economics, despite the latter's more abstract conceptions of "economic man" and of "consumer sovereignty".

¹⁵ That Ricardo expected workers to be able to save part of their wages during economic growth is evident in his support, as we have seen in chapter 3 above, for the establishment of "savings banks", seeking to encourage more prudent financial behaviour on the part of workers (see Ricardo, vol 7, p 26, 134-35, 248). See also his remark in the *Principles* (Ricardo, v 1, p 348) that, in

In Sraffa, on the other hand, the logical result of his assumption of an unchanged scale of production is that the surplus is not used to expand production but must necessarily be employed in consumption. Indeed, Sraffa asserted that with "the emergence of a surplus ... there is room for a new class of 'luxury' products" (Sraffa, 1960, p 7). This corresponds to the picture drawn by Ricardo as far as the class of landowners is concerned, but what about the other two classes? The share of the surplus which falls in the hands of the capitalists is also assumed to be wholly allocated to the consumption of "luxuries", in stark contrast with Ricardo's behavioural assumptions, which say that capitalists have a high propensity to save and invest. Positive profits are the mainspring of accumulation and growth in Ricardo, while in Sraffa, who framed his system in a growth-less setting, they only serve to increase the consumption of luxury goods by capitalists.¹⁶

In the case of the working class, Sraffa allows for wages to be variable (ibid, p 9), in which case wages may incorporate a part of the surplus or net product. As the latter is related to luxury products, the wage basket is likely, if distribution favours labour, to include them. At first sight this result appears to conform with Ricardo's analysis. However, Sraffa's result is derived from a pure abstraction, markedly different from Ricardo's frame of reference wherein workers are able to increase and improve their consumption, and it arises from his device of the wage-profit frontier, represented by the following expression (ibid, p 22-23)

$$r = R(1 - w)$$

where: r = rate of profit; R = "standard ratio" or the maximum rate of profit; w = proportion of the surplus that goes to wages.

Theoretically, w may assume any value between 0 and 1. Why any particular level of w is taken is, however, not explained by the model, it is an exogenous variable. The upshot is that the different values w may take along the w - r curve cannot in any meaningful way be related to one another as in a process occurring in time. The points along that curve thus refer merely to different alternative cases, and not to a sequence of events.¹⁷

By what means can wages rise? Sraffa's approach is silent on this point except in so far as it refers to the world outside its model, viz., "historical conditions" to explain how the initial level of wages is set (Garegnani, 1987, p 561).

Undoubtedly, historic-sociological conditions are important aspects of the study of wage determination. They are so in Ricardo and in the classical school in general. But to suppose wages to be determined wholly exogenously, valid as this method may be to the examination of some particular problem, is not consonant with Ricardo's procedure, wherein wage determination depends on three main factors, namely: a) the "habits and customs" of the people, which shape the contents of the

general, workers had access to a part of the surplus product which could be directed either to extra consumption or to savings or to the defence of the country

¹⁶ Again, neo-Ricardians would not deny that in classical economics reinvestment of the surplus is the basis of accumulation and growth. The fact remains, nonetheless, that the Sraffian school has been unable so far to extend Sraffa's model to the growth context, apart from the development of the value theory and of the critique of neoclassical economics, areas in which it has proved quite fertile

¹⁷ This is by now a very common criticism of Sraffa's model. Joan Robinson (1980, p 146), for instance, pointed out that "[w]e are only to compare the effects of having differing rates of profit, with the same technical conditions and the same composition of output"

wage basket; b) the cost of producing that wage basket; and c) the interplay between the demand and the supply of labour, that is to say, between the mechanism of population growth and that of the accumulation of capital.

Wages are determined not exogenously but from within the main body of the Ricardian model. Furthermore, the elements which their determination hinges on are interrelated. Not only are changes in the composition of the wage basket allowed for, but are explicitly linked to the process of accumulation and growth through rises in the real wage and taste differentiation which develop among workers as a consequence of improved conditions and habits. This brings us to the question of the relation between alterations in the pattern of demand and economic advancement.

In Sraffa the only kind of goods which have an impact on the level of profitability of the system are the so-called "basics", viz., commodities that enter in the production of each and every commodity. One could say that "basics" constitute the means of production (the inputs) of the production system. Luxury goods are excluded from this category, because they are pure consumption goods. In fact, they are called "non-basics", and they do not affect profits. Subsistence goods entering the wage basket are, however, included among the "basics" of the system since they are indispensable for the reproduction of labour.

In this sense "luxuries" may be severed from the core of the analysis in that they are irrelevant for the purpose in view, that is, to determine the Sraffian prices of production of commodities produced by means of commodities (means of production). This practice has its logic within the Sraffian model. But in the market-ruled, competitive system of Ricardo that rationale does not quite apply.

It is true that Ricardo wrote that in so far as the case is that workers do not consume "luxuries", these latter do not affect the rate of profit. But this in fact may not be so much a general rule as much as a particular case. In general, reflecting the fact that wages increase along the system's growth trajectory, workers are able to diversify their consumption. But Sraffa also allowed for wages to include a part of the surplus, which in his case means access to luxury goods.¹⁸

The vital difference between Ricardo and Sraffa, however, is that the former understood this to be a major step towards significantly extending the market for the goods of the industrial sectors and thus making them more attractive for capitalists to invest in. Ricardo gave great weight to market relations (unlike Sraffa, for whom there is no discernible market at all). He then made it clear that the extension of the market (taste differentiation and increases in demand) was of crucial importance for securing adequate conditions for the accumulation of capital and the realization of growth. In Sraffa, on the other hand, consumption changes towards "luxuries" seem

¹⁸ He however continued to maintain that such goods would not affect the core of the system. Wages, then, would be separated into two parts, as we saw already: one comprising the "necessaries" of workers and included among the inputs of production (that is to say, they are considered basic goods and thus influence prices and the rate of profit); the other comprising the "surplus part" corresponding to the consumption of luxury goods and which does not influence prices and the rate of profit. As Sraffa (1960, p. 9-10) put it, "We have up to this point regarded wages as consisting of the necessary subsistence of workers ... We must now take into account the other part of wages since, besides the ever-present element of subsistence, they may include a share of the surplus product. In view of this double character of the wage it would be appropriate ... to separate the two component parts of the wage and regard only the "surplus" part as variable; whereas the goods necessary for the subsistence of the workers would continue to appear, with fuel, etc., among the means of production".

not to affect the system, that is to say, there is no link between alterations in the pattern of demand and the transformation of the structure of production; no feedback effect of the kind present in Ricardo and the classical authors. A further problem with the Sraffian model is that the scale of production is assumed not to change throughout the analysis. While it is claimed that the generation of a reinvestable surplus is a basic feature of the classical approach rescued by the Sraffian one, "surplus" in Sraffa appears to refer only to an increased supply of luxury goods which do not affect the proceedings at the core of the economy, i.e., the reproduction of the means of production necessary to allow the system to keep going on the same basis as before.

But from the Ricardian perspective some means of production will certainly be subject to diminishing returns, land and the production of agricultural raw produce for example, so that even if we allow that the surplus is allocated with the purpose to increase production, problems of scale crop up inevitably. Such issues were central in Ricardo's analysis. He contrasted the diminished returns characteristic of (domestic) agricultural production with the non-diminishing returns feature of the non-agricultural sectors of production in order to highlight the necessity of expansion in the latter sectors. Since the role of the pattern of demand in bringing that about, as seen in the precedent chapters, is central, assumptions about the scale of production and demand consideration may be after all unavoidable in any attempt at extending Sraffa's model to the standard case of Ricardian analysis, viz., of an improving society undergoing structural changes along its growth path.

It seems that the task would require profound changes in the underlying Sraffian edifice so as to accommodate the alterations necessary to deal with the question of accumulation and growth.¹⁹

The great problem with Sraffa's model is the freezing of the system from the very outset. This procedure renders it unfit for the analysis of the process of accumulation and growth and of the structural transformation it engenders. It is true that in so far as Sraffa's model treats production as a circular process, it bears some similarity to the classical approach. However, one of its main characteristics - the examination of the economic system in a frozen situation - is not, in general, reminiscent of the point of view of the classical political economists whose dynamic analysis is set aside in favour of the static analysis of value and distribution.²⁰

¹⁹ Considering the possibility of such an extension of Sraffa's model to the broader context of growth, and commenting on the issue of choice of techniques, Vicarelli (1990, p30) rightly asserted that "one definite consequence of the interdependency between technical coefficients and distribution is that dynamic extensions of Sraffa's original model can no longer be seen in terms of a 'natural economy'". Vicarelli also rightly emphasized that in such a case demand matters, since the "importance of the composition of demand is not ... that it invalidates the 'non-substitution theorem' ... but rather that it determines the *availability* of techniques among which to choose"(ibid). See also Vicarelli, 1989, on this question.

²⁰ As Burmeister (1977, p69) has pointed out, in a critique of the Sraffian approach, by taking "the size and composition of output as given data in every situation, most of the interesting economic questions concerning the equilibrium relationship between [the rate of profit and the wage rate] are assumed away at the very outset. One is left with mere description of given data with no theory about the effects of changes in that data". Eatwell, a neo-Ricardian, has rightly observed that the "classical theory of accumulation is founded on a conception of the economic roles of social classes ... hence the distribution of the product between the classes of the society is the causal antecedent to the dynamic behaviour of the economy"(Eatwell, 1977, p 62), but the freezing of the structure of the system in the Sraffian approach leads exactly to the neglect of that "dynamic behaviour of the economy".

The unfreezing of some of the model's data is necessary if the reformulation of the starting point of Sraffa's model is to be carried out and the course of economic growth investigated. In particular, its shunning of subjective factors, like those linked to taste formation and differentiation we have been dealt with in the present work, may have to be reconsidered radically so as to bring it in line with the classical approach.²¹ Indeed, this step will be of profound consequence for the neo-Ricardian view of economic phenomena.

5. CONCLUDING REMARKS

From this outline of a critique of the Sraffian interpretation of Ricardo, we conclude that it does not correspond to the overall, and we think most significant, characteristic of Ricardo's analysis, namely, the examination of the causes and consequences of the process of accumulation within the context of growth and structural transformations, an exercise which involves demand considerations in a critical way.

Moreover, any attempt to extend the basic Sraffian model along the lines of the classical analysis of accumulation, distribution, and growth seems bound to involve important reconsiderations of some central assumptions and views underlying it, not the least the limitation of its analysis to the case of a "natural economy"²², the outcome of which is not completely discernible as yet

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²¹ Even the physiocrats, often taken by neo-Ricardians as champions of the objective approach, had a role for subjective factors in their analyses. As Ingrao and Israel (1990, p 43) have stated, the "right of man to enjoy objects that can provide *jouissance* underlies the concept of natural law as understood by Physiocrats. The continuous reproduction and distribution of the goods required by man's needs are the prime object of the order established through natural law by the creator of nature". They quote Quesnay, for example, as saying that the "natural laws of the order of society are precisely the physical laws of the perpetual reproduction of the goods necessary for man's subsistence, conservation, and well-being"(ibid). Production, reproduction, and distribution, thus, are not only connected to the replication of the physical conditions of the system of production through the production of commodities like in Sraffa, but importantly, also to the satisfaction of man's needs as individuals seeking to better themselves. As Turgot (again quoted by Ingrao and Israel) wrote:

Experience shows us one cause truly productive of movement, and only one: namely the arbitrary will of sensitive and interesting beings which is not primitively determined but which determines itself, not by motions but by motives, not by mechanical causes but according to final causes. I maintain that these feeling, thinking, and willing beings, proposing their own ends and choosing their own means, constitute an order as real and as certain as that of entities considered purely material and agitated by purely mechanical means

²² See footnote 17 above

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SINOPSE

UMA CRÍTICA DA INTERPRETAÇÃO SRAFFIANA DE RICARDO

Este trabalho procura analisar criticamente a tradicional interpretação sraffiana de Ricardo. Particularmente, discorda-se da idéia de que o modelo de Sraffa é o modelo canônico ricardiano. Argumenta-se que ele não é um retorno à perspectiva tomada por Ricardo. A análise toma como base a discussão do papel dos gostos e da demanda na explicação do processo econômico.