A Comment on Sraffa's 'Classical Economics'

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Statement of the Thesis

In this paper I intend to critically comment on Sraffa's interpretation of Ricardo's theory of value, which has been largely responsible for the 'Sraffian' interpretation of classical economics. I would argue that Sraffa's more popularly known interpretation of Ricardo found in his 'Introduction' to Ricardo's *Principles* is dramatically different from his earlier understanding of Ricardo's theory of value. The old interpretation, however, subsists in the 'Introduction' but is submerged under the new interpretation. The paper makes two points. First, Sraffa's new interpretation of Ricardo's problem of the 'invariable measure of value' is disputable. And second, it appears to be an afterthought designed to fit Ricardo into a frame of generic 'classical economics' that he was constructing.

State of the Archive

The scholars who are familiar with Sraffa's archive at the Wren library know it well that there is very little intellectual material available on Ricardo. Most interestingly, we do not find even a draft of his famous 'Introduction' to Ricardo's *Principles* in his files—all we have is the final galley-proof of the 'Introduction', though we have an earlier proof of the 'Acknowledgement', where one can see a couple of names deleted. Thus there is no doubt that important papers are missing from the Sraffa-files at the Wren Library. Could it be possible that Sraffa put most of his intellectual notes of the two decades of work mainly on Ricardo in separate files, which somehow got lost or purposely destroyed by Sraffa? The suspicion of an intentional destruction becomes stronger when we find that many files relating to Ricardo-project that contain mostly non-intellectual materials such as Sraffa's correspondence with others regarding Ricardo's papers or his life etc. are preserved.

Given that 'by the summer 1940, six volumes of the present edition had been set up in page-proof, while the volume of Speeches and Evidence had reached the stage of galley-proofs' (Sraffa 1951, p. ix), one would expect that Sraffa must have at least a rough draft of the 'Introduction' ready by then. Moreover, given that Sraffa had a habit of writing several drafts

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[1] This paper is strictly for discussion at the conference on 'what we have learnt on classical economics since Sraffa' at University of Paris X, Nanterre, October 16-17, 2014. Please do not quote without permission. I thank the Institute of New Economic Thinking (INET) and the Centre for International Governance Innovation (CIGI) for a research grant to support my research on Sraffa. My Thanks are also due to the very friendly and helpful staff of the Wren library at Trinity College, University of Cambridge. Address for communication: Sinha_a99@yahoo.com

of any piece he readied for publication, there is no doubt in my mind that there must have been several drafts of the 'Introduction' written over a number of years. As a matter of fact, in a response to Keynes's letter of March 26th, 1943, where Keynes showed his extreme frustration with the whole project dragging on for so long, Sraffa reported that 'of the Introductions, all those which must go in the middle of a volume are ready: the others (three of them) go at the beginning of volumes and can be printed later, on pages with roman numerals. On these I have done much work, and drafted parts over and over again: all the materials is collected, but it is the drafting of the Introductions that has been holding up the whole thing.' (D3/11/65: 26, dated 31st March, 1943).[2] No sign of these 'drafts' are available in Sraffa's files. Had it been available to us it could have given us a direct glimpse of how Sraffa's interpretation of Ricardo evolved or changed over the two decades of the '30s and the '40s. In any case, below I try to develop a sketch of the evolution of Sraffa's interpretation of Ricardo over time that suggests that there has been a dramatic shift in Sraffa's interpretation of Ricardo's theory of value.

Sraffa's Early Position on Ricardo's Theory of Value

In (Sraffa 1925) Sraffa's understanding of Ricardo ('classical economics') was very much in line with Marshall's interpretation that Ricardo took supply functions as horizontal straight lines on price quantity plane and therefore prices were independent of demand considerations. This implied that Ricardo was assuming constant returns to scale in a partial equilibrium framework or also no substitution possibilities in technique in a general equilibrium framework. In an eight-page long note on Marx's and Ricardo's theory of value written prior to 1928, Sraffa attributes to Ricardo the proposition that distribution between profits and wages does not affect value. Then he notes that the importance of Ricardo's theory for Marx is that a rise in wages leads to a fall in profits and it does not affect value. Then the importance of Ricardo's distinction between labour and wages is noted and it is claimed that all the wrong interpretations of Marx confuse labour with wages. Further on, Sraffa notes that what Ricardo calls profit Marx calls surplus value. (D1/21: 1-8). Clearly, at this stage a pure labour theory of value is attributed to Ricardo, at least in the sense that labour is the *sole cause* of *changes* in value and that changes in distribution does not affect it. In 1928 the position remains the same, e.g., in a note titled 'The wages of Shepherds are capital' a footnote appears stating: 'note however that on Ricardo's theory this would not be true—values are independent of wages' (D3/12/7: 40) and again, '… If not Ricardo's proposition is true. Variations in wages do not affect values… (D3/12/7: 94).

[2] D3/12/… etc. are the file numbers of Sraffa's archive at the Wren library.

In his Lecture notes of 1928-31, Sraffa tells the story that Ricardo was a practical man and his interest in economic theory was purely driven by practical matters such as the 'corn law' controversies. He notes that in the 'Preface' to the *Principles*, Ricardo announces that:

> the principal problem in Political Economy is to determine the laws which regulate distribution', that is the distribution of 'the produce of the earth, all that is derived from its surface by the united application of labour, machinery and capital…among the three classes of the community, namely the proprietor of the land, the owner of the stock of capital necessary for its cultivation, and the labourers by whose industry it is cultivated.

And then Sraffa goes on to add:

> The wording of this definition is remarkable; it is intended {or} meant to apply to the distribution of the whole of the national income, but it only mentions the produce of the surface of the earth, and regards all capital and all the labourers as only engaged in its cultivation. Ricardo was a city man, in fact he was in his outlook a typical representative of the commercial and manufacturing classes and was not likely to over-estimate the importance of agriculture, as the French physiocrats did, so as to make it include all productive industry. This definition is in fact characteristic of Ricardo's main interest which was not so much distribution in general between all those who take part in it as distribution between land-lord on the one side and all the others on the other. As Professor Cannan has shown, the origin of the Ricardian theory of distribution is entirely found in the Corn Law controversy of 1813-15. Ricardo's scientific interest in economics developed when his main theory had already been established in his pamphlets. This theory of distribution was an extremely effective argument against the Corn Laws. 'The divergence of interests with regard to the Corn Laws was a typical divergence of the interests of classes, and not of individuals. It was not a question of the rich against the poor, but of the land-owning class against the commercial and manufacturing class.' Ricardo's theory regarded as the fundamental problem, connected with the cost or production and value, the distribution between the landlord and the other classes; *when this was done the division of their share between capital and labour would take place on entirely different principles, but changes in the proportions of this distribution would not materially affect value of the product.* (D2/4/6: 6-8, emphasis added).

On the presupposition that Ricardo's theory was mainly designed to be used as a stick to beat the landlords, Sraffa at this stage believed that Ricardo remained ambivalent about whether cost of production included only labour or also use of capital and went on to more or less agree with Jacob Hollander's thesis of successive weakening (or at least ambivalence) of Ricardo's 'labour theory of value':

> Therefore Ricardo's theory lays great emphasis on the distinction between rent on the one side and all other shares on the other; but he left in the background the question as to how the distribution of the other shares, that is, wages and interest, takes place, and the effects of the changes in the proportions of this division on the value of the product. What Ricardo's views were on this point is rather obscure, and it would be hard to say whether his theory of value based on the quantity of labour must be taken literally or interpreted as including the use {of} capital amongst costs. Probably, as Professor Hollander has shown in his book on Ricardo, he held different views at different times,

> and his changing views having been embodied in successive editions of the principles, the result is that opposite passages from them can be quoted in support of both views.
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> But however the historical point as to the interpretation of Ricardo is settled, it is, I think, true to say that Ricardo's views on this point are not very important; they play a secondary part in his theory, and as the question had no practical importance in his time he certainly gave little thought to it. (D2/4: 9-10).

The New Interpretation

All this apparently changed dramatically in the 1951 'Introduction'. Now Sraffa claims that the theory of rent was designed to 'get rid of rent' 'in order to simplify the problem of the distribution between capitalist and labourer' (p. xxiii). The dominant story that is told in the 'Introduction' runs on two parallel tracks. On the one track runs the concern for a theory of profits that is independent of prices and on the other track runs the concern for determining the effect on the rate of profits of a change in the rate of wages.

On the first track the story runs as follows: In *circa 1914* and in the *Essay on Profits*, published in February 1915, Ricardo held the opinion that 'it is the profits of the farmer that regulate the profits of all other trades'. Malthus had opposed this view by asserting that 'the profits of the farmer no more regulate the profits of other trades, than the profits of other trades regulate the profits of the farmer' (Sraffa 1951, p. xxxi). The 'rational foundation' of Ricardo's thesis, according to Sraffa, must have been the idea that only in agriculture it can be conceived that all the inputs, including real wages, and outputs are made of a single commodity, 'corn'. In such a case the rate of profits would be determined in physical terms in the 'corn industry' and if competition must equalize the rate of profits across industries then all other commodities' prices must adjust such that they all receive the rate of profits determined in the 'corn industry' independently of prices. Malthus apparently had opposed this idea on the ground that '[i]n no case of production, is the produce exactly of the same nature as the capital advanced. Consequently we can never properly refer to a material rate of produce…' (*ibid,* p. xxxi).

It is Sraffa's contention that due to Malthus's criticism of the 'rational foundation' of Ricardo's theory of profit, which, 'at the cost of considerable simplification', is able to determine the rate of profits of the system by completely by-passing the problem of measurement of heterogeneous capital and therefore the problem of a theory of value, Ricardo had to abandon this thesis and search for a general solution of the problem of determining the rate of profits in the system; as Ricardo wrote to James Mill on 30 December 1815, 'I know I shall be soon stopped by the word price' during the initial stages of the writing of the *Principles*. The 'labour theory of value' as the general theory of prices proposed in the *Principles* was, according to Sraffa, designed to solve this problem:

> It was now labour, instead of corn, that appeared on both sides of the account—in modern terms, both as input and output: as a result, the rate of profits was no longer determined by the ratio of the corn produced to the corn used up in production, but, instead, by the ratio of the total labour of the country to the labour required to produce the necessaries for that labour. (But while the theory that the profits of the farmer determine all other profits disappears in the *Principles*, the more general proposition that the productivity of labour on land which pays no rent is fundamental in determining general profits continues to occupy a central position). (*ibid*, pp. xxxii-iii).

Sraffa reinforces the thesis of the corn-ratio theory of profits by citing Ricardo's letter of 13 June 1820 to McCulloch where Ricardo writes: 'After all, the great questions of Rent, Wages, and Profits must be explained by the proportions in which the whole produce is divided between landlords, capitalists, and labourers, and which are not essentially connected with the doctrine of value' (*ibid*, p. xxxiii).

On the second track, Sraffa argues that as early as his *Essays on Profits* Ricardo had repudiated, although still in its agricultural form, Adam Smith's dictum that a rise in the price of corn, through its effect on wages, would raise all other prices. He had also pointed out that the exchangeable prices of all commodities rise or fall as difficulties of their production rise or fall. Thus improvements in agriculture or importation of cheap corn must lead to a fall in the price of corn vis-à-vis other commodities and therefore a fall in wages and consequently a rise in real profits. In his letter of the 30 December 1815 to James Mill, Ricardo went on to elaborate three points that must be clarified in order to understand the problem of value: '(a) the distinction between causes which affect the value of money and causes which affect the value of commodities; (b) the supposition of the invariability of the precious metals as a standard of value; (c) the opposition to the view that the price of corn regulates the price of all other commodities'. Sraffa goes on to state that 'these three things, which are so closely connected in his {Ricardo's} mind as to be almost identified, are what he calls "the sheet anchor on which all my proposition are built" (*ibid*, p. xxxiv).'

The crucial point in this context is that a rise or fall in wages would have no effect on exchange ratios of commodities if the ratios of direct to indirect labour-time are uniform across industries. Hence if the money-commodity happens to be one of the commodities produced within the system then a rise or fall in wages would have no impact on the prices. Thus it clearly refutes Adam Smith's dictum that a rise in wages would lead to a rise in the prices of all commodities. However, if the direct to indirect labour-time are not uniform across industries then a rise or fall in wages would affect all the prices to ensure equal rate of profits across industries. Now, if these changes in prices are measured against a particular money-commodity then the question arises as to how to understand and ascertain the change in price of a commodity due to changes in wages when the standard against which it is measured is itself affected by the same cause? But why this is a problem?

Sraffa's answer to this question is that:

> This preoccupation with the effect of a change in wages arose from his approach to the problem of value which, as we have seen, was dominated by his theory of profits. The 'principal problem of Political Economy' was in his view the division of the national product between classes and in the course of that investigation he was troubled by the fact that the size of this product appears to change when the division changes. Even though nothing has occurred to change the magnitude of the aggregate, there may be *apparent* changes due solely to change in measurement, owing to the fact that measurement is in terms of value and relative values have been altered as a result of a change in the division between wages and profits. This is particularly evident in the extreme case where the aggregate is composed of the same commodities in the same quantities, and yet its magnitude will appear to have changed as measured in value.
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> The problem of value which interested Ricardo was how to find a measure of value which would be invariant to changes in the division of the product; for, if a rise or fall of wages by itself brought about a change in the magnitude of the social product, it would be hard to determine accurately the effect on profits (this was, of course, the same problem as has been mentioned earlier in connection with Ricardo's corn-ratio theory of profits.) On the other hand, Ricardo was not interested for its own sake in the problem of why two commodities produced by the same quantities of labour are not of the same exchangeable value. He was concerned with it only in so far as thereby relative values are affected by changes in wages. The two points of view of difference and of change are closely linked together; yet the search for an invariable measure of value, which is so much at the centre of Ricardo's system, arises exclusively from the second and would have no counterpart in an investigation of the first (*ibid*, pp. xlviii-xlix).

My Criticism

By now Sraffa's interpretation of Ricardo has become highly controversial. This is not a place to review this literature, however. Elsewhere (Sinha 2010a,b), which also contains review of some of the literature on this controversy, I have made the case in detail that Ricardo's concern for the 'invariable measure of value' was not related to the problem of changes in the size of the pie when it is cut in different proportions but rather it was related to establishing the hypothesis that labour is the sole cause of *changes* in relative values or 'variations in wages do not affect value', which, as we have seen, was Sraffa's own position as well in 1927-31. Here I will briefly point out that this position still subsists in Sraffa's 'Introduction' though it is submerged under the new interpretation. Our object here is only to draw an arrow from Sraffa's notes to his new interpretation of Ricardo's *Principles*.

Let us begin with Sraffa's story on track one, that '[i]t was now labour, instead of corn, that appeared on both sides of the account—in modern terms, both as input and output: as a result, the rate of profits was no longer determined by the ratio of the corn produced to the corn used up in production, but, instead, by the ratio of the total labour of the country to the labour required to produce the necessaries for that labour'. Leaving aside the controversial issue of the 'corn-ratio' theory as Ricardo's pre-*Principles* theory of profits, the question is: is the 'labour-ratio' theory of profits present in the *Principles*?

On my reading of Ricardo, it is not. In Section IV of his chapter on 'Value', Ricardo establishes that '[o]n account then of the different degrees of durability of their capitals, or, which is the same thing, on account of the time which must elapse before one set of commodities can be brought to market, they will be valuable, not exactly in proportion to the quantity of labour bestowed on them,-- they will not be as two to one, but something more, to compensate for the greater length of time which must elapse before the most valuable can be brought to market' (Ricardo 1951, *Works I*, p. 34). But then what must be the ratio of exchange between the two commodities if not two to one? Ricardo has no answer to offer. After establishing that there is reason why the labour-ratio theory of exchangeable value must be 'considerably modified', he no longer concerns himself with establishing what must be the 'modified' exchange-ratios, which would have required him to establish the rate of profits in the system. Ricardo leaves the problem of, what Sraffa calls, the 'difference' between the labour-ratios and the 'modified' exchange-ratios unresolved and moves directly to the problem of 'change' by raising the question that given the 'modified' exchange-ratios, 'how will their relative value be affected by the rise in the value of labour?' (*ibid*, p. 34).

Sraffa's proposed 'labour-ratio' theory of profits is based on Marx's notion of *absolute* labour-values of commodities—a notion that is absent in Ricardo's theory. As Ricardo clearly states:

> It is necessary for me also to remark, that I have not said, because one commodity has so much labour bestowed upon it as it will cost 1000*l*. and another so much as will cost 2000*l*. that therefore one would be of the value of 1000*l*. and the other of the value of 2000*l*. but I have said that their value will be to each other as two to one, and that in those proportions they will be exchanged. It is of no importance to the truth of this doctrine, whether one of these commodities sell for 1100*l*. and the other for 2200*l*., or one for 1500*l*. and the other for 3000*l*.; into that question I do not at present enquire; I affirm only, that their relative values will be governed by the relative quantities of labour bestowed on their production. (*Ibid*, p. 47).

To leave no doubt that his theory does not deal with the notion of value in absolute-labour terms, Ricardo adds a footnote to this statement in the 3rd edition of the *principles*:

> Mr. Malthus remarks on this doctrine, "We have the power indeed, arbitrarily, to call the labour which has been employed upon a commodity its real value, but in so doing, we use words in a different sense from that in which they are customarily used; we confound at once the very important distinction between *cost* and *value*; and render it almost impossible to explain with clearness, the main stimulus to the production of wealth, which in fact depends upon this distinction."

> Mr. Malthus appears to think that it is a part of my doctrine, that the cost and value of a thing should be the same;-- it is, if he means by cost, "cost of production" including profits. In the above passage, this is what he does not mean, and therefore he has not clearly understood me. (*ibid*. p. 47).

Now, the major evidence that Sraffa provides in support of his 'labour-ratio' theory of profits in Ricardo is as follows (Sraffa 1951, *Works I,* p. xxxii):

> A rise in wages, from an alteration in the value of money, produces a general effect on price, and for that reason it produces no real effect whatever on profits. On the contrary, a rise in wages, from the circumstance of the labourer being more liberally rewarded, or from a difficulty of producing the necessaries on which wages are expended, does not, except in some instances, produce the effect of raising price, but has a great effect in lowering profits. *In the one case, no greater proportion of the annual labour of the country is devoted to the support of the labourers; in the other case, a large portion is so devoted* (Ricardo 1951, pp. 48-49, emphasis added).

I have emphasized the last sentence because this is what Sraffa cites as evidence in support of the above thesis. But the context makes it clear that what Ricardo meant here was that a nominal rise of wages will have no impact on the rate of profits; but a real rise of wages (or the value of wages), which amounts to a greater proportion of the annual labour of the country being devoted to the support of the labourers, will lower the rate of profits. There is no theory of the determination of the *rate* of profits by taking the ratio of the total labour of a country to the labour necessary to produce total wages is presented here—all we get is a statement that a rise in wages would *cause* the rate of profits to fall.

In addition, in a footnote to the above cited quotation, Sraffa writes: "See the statement that profits depend upon the 'proportion of the annual labour of the country [which] is devoted to the support of the labourers', below, p. 48-49, and 'the same conclusion' on p. 126 below" (*ibid,* f.n. 5, p. xxxii). Here Sraffa's use of the word 'depend' could either mean its level or the movement of its level. As far as Ricardo is concerned, he does not use the word 'depend' in either of the quotations cited and usually his preferred word for describing the relations between variables is 'regulate' rather than 'depend'. Again, the reference to page 126 reads:

> Each man may, and probably will, have a less absolute quantity; but as more labourers are employed in proportion to the whole produce retained by the farmer, the value of a greater proportion of the whole produce will be absorbed by wages, and consequently the value of a smaller proportion will be devoted to profits. This will necessarily be rendered permanent by the laws of nature, which have limited the productive powers of land (Ricardo 1951, *Works I,* p. 126).

Here again, the statement simply refers to a fall in profits due to an increase in the difficulty of producing the given wage basket and not the determination of its rate.

Furthermore, the chapter 'On Profits' in the *Principles* presents its *problematique* as: 'The profits of stock, in different employments, having been shewn to bear a proportion to each other, and to have a tendency to vary all in the same degree and in the same direction, *it remains for us to consider what is the cause of the permanent variations in the rate of profit, and the consequent permanent alterations in the rate of interest*' (*ibid*, p. 111, emphasis added). And so it is not surprising that we, yet again, do not find any theory of the *determination* of the rate of profits in this chapter except for an examination of the *cause* that bring about permanent *variations* or *changes* in the rate of profits. In other words, Ricardo's concern with the rate of profits is entirely about '*change*' and not about '*difference*'.

Now let us move to track two of Sraffa's story. This track relies heavily on Ricardo's unpublished draft on 'Absolute value and Exchangeable value', written only a few weeks before Ricardo's untimely death on September 11, 1823. Sraffa does not provide any direct evidence for his claim that 'in the course of that {division of national product between classes} investigation he {Ricardo} was troubled by the fact that the size of this product appears to change when the division changes'. In this context, Sraffa emphasizes that by *absolute* or *real* value Ricardo means the value of a commodity measured against the 'invariable measure of value':

> The idea of an 'invariable measure' has for Ricardo its necessary complement in that of 'absolute value'. This concept appears in the *Principles* at first (in ed. I) as 'absolute value' and later (in ed. 3) as 'real value', it comes out from time to time in his letters, and takes more definite shape in his last paper on 'Absolute Value and Exchangeable value'. In one of the drafts for that paper he writes: 'No one can doubt that it would be a great desideratum in political Economy to have such a measure of absolute value in order to enable us to know[,] when commodities altered in exchangeable value[,] in which the alteration in value had taken place'. (Sraffa 1951, p. xlvi).

And then Sraffa immediately goes on to add:

> In another draft he {Ricardo} explains what he means by a test of whether a commodity has altered in value: 'I may be asked what I mean by the word value, and by what criterion I would judge whether a commodity had or had not changed its value. I answer, I know no other criterion of a thing being dear or cheap but by the sacrifices of labour made to obtain it. (*ibid*, p. xlvi).

Thus the second (actually the earlier) draft makes it clear that the *real change* in value for Ricardo always means *change* in its labour content *only*. Now, when we put the two positions together, that is: (i) a change in 'absolute value' or 'real value' is the change measured against the 'invariable standard' and (ii) a change in 'absolute value' is a change in its labour content, then we come up with the inescapable conclusion that the changes in value of any commodity measured against the 'invariable standard' measures *only* the changes that are caused by changes in its labour content; and therefore, all the *apparent* changes in its exchangeable value caused by changes in wages or profits must *ipso facto* disappear (i.e., become zero) when measured against the 'invariable standard'. This is the property of the 'invariable measure' that Ricardo was looking for. But this is not concerned with keeping the size of the net output constant with respect to changes in wages but rather showing that changes in wages have no impact on exchangeable value or price of a commodity—precisely the position Sraffa held during 1927-31.

And this is also consistent with Ricardo's position in the 3rd edition of the *Principles*. In Section VI on 'an invariable measure of value', Ricardo after arguing that the differences in the direct and indirect composition of capitals across industries render it impossible for any one commodity to be an 'invariable measure of value' for all the commodities with respect to changes in wages, he goes on to argue that if gold is *assumed* to be a commodity that is always produced by the same amount of labour and that its direct and indirect capital composition is somewhere in the middle of *most* of the other commodities then it can be argued that the changes in the prices of all other commodities due to changes in wages would be minimized and therefore legitimately ignored (i.e., assumed to not exist):

> Neither gold then, nor any other commodity, can ever be a perfect measure of value for all things; but I have already remarked, that the effect on the relative prices of things, from a variation in profits, is comparatively slight; that by far the most important effects are produced by the varying quantities of labour required for production; and therefore, if we suppose this important cause of variation removed from the production of gold, we shall probably possess as near an approximation to a standard measure of value as can be theoretically conceived. May not gold be considered as a commodity produced with such proportions of the two kinds of capital as approach nearest to the average quantity employed in the production of *most commodities*? (Ricardo 1951, *Works I*, p. 45, emphasis added).

The point to be noted here is that Ricardo does not allude to the proposition that the 'average commodity' as the standard of measure would render deviations of prices due to changes in profits in such a manner that both positive and negative movements of prices would cancel each other out and leave the value of the net output constant. His concern is solely with *minimizing* the price movements due to changes in wages or profits so that they could be rendered small enough to be *ignored*; and that could be achieved by minimizing the difference in the composition of the two kinds of capital of most of the commodities from the composition of capital of the standard of measure. It is important to note in this context that Ricardo refers to the 'average' of '*most* commodities' and not *all* commodities. This is because Ricardo leaves out 'extreme' commodities from his consideration since the deviations in prices of those commodities cannot be assumed to be small enough from the 'average commodity' to be ignored; however, this would not create a problem if his concern was only to ensure that total deviation was zero.

But, of course, Ricardo was wrong in assuming that changes in the distribution will have no effect on relative values if they were measured against an 'invariable measure of value' for the simple reason that changes in the distribution affect relative values of commodities and thus logically there cannot be any commodity against which the relative values of commodities could remain constant in the face of changes in distribution. Now we find that Sraffa, in his 'Introduction' endorses this conclusion in a paragraph which appears quite anomalous with respect to his 'new interpretation': 'In this attempt to extend the application of absolute value to the second problem (that of distinguishing the two sorts of changes in exchangeable value) Ricardo was confronted with this dilemma: whereas the former application presupposes an exact proportionality between relative and absolute value, the latter implies a variable deviation of exchangeable from absolute value for each individual commodity. This contradiction Ricardo never completely succeeded in resolving, as is apparent from his last paper.' (Sraffa 1951, p. xlvii).

Happenings behind the Scene

So the question is: how and why a new interpretation was superimposed on an old one? Now we know that his new interpretation of Ricardo 'suggested itself as a natural consequence' only after 'the Standard system and the distinction between basics and non-basics had emerged in the course of the present {i.e., Sraffa 1960} investigation', as acknowledged by Sraffa in the 'references to literature' in his book. A perusal of his notes of the period 1942-44 gives us the clue to what Sraffa could mean by 'a natural consequence'. As a matter of fact, in summer 1927 Sraffa had identified the classical theory with an *essentialist* theory that reduced the 'ultimate cause' of cost of production to *labour*. Since the 'Winter 1927-28' Sraffa embarked on his new and revolutionary project of removing the *essentialism* of the classical theory by building a non-causal 'cost of production' theory of value on purely objective physical data. By 1944 Sraffa had concluded that for any given system of inputs and outputs, its rate of profits can be found out via the formula $r = R(1 - w)$, without the knowledge of prices if the wage rate in terms of the Standard commodity is given from outside. Now a direct link can be drawn between these developments and Sraffa's hypothesis of a 'corn-ratio' theory as the 'rational foundation' of Ricardo's theory of profits. But not only that. The idea that Ricardo's concern for the 'invariable measure of value' relates to the problem of keeping the size of the pie constant when it is cut in various proportions relates to his problem of keeping the maximum rate of profits, '*R*', constant when wages and consequently prices change throughout the range of wages from 1 to 0.

During the period, 1942-44, Sraffa's main concern was to prove his 'Hypothesis' that '*R*' remains constant with respect to changes in wages and the rate of profits. This hypothesis had nothing to do with the idea of keeping the size of the pie constant when it is cut in various proportions. Instead, the 'hypothesis' was designed to prove that the foundation of the theory of the determination of the rate of profits based on marginal productivity of capital is weak, as it proves that the rate of profits is independent of the productivity of social capital. It was in this context that Sraffa in 1942 had enlisted Marx's transformation of values to prices of production as a helpful aid for a proof of his 'hypothesis' rather than Ricardo's concern with his 'invariable measure of value'.

The idea of a proportional distribution of the net output between the capitalists and the workers takes the centre stage in Marx's theory of exploitation. In this case, (V + S) can be separated out, even though V is treated as part of total capital investment, as the value of total net output and S/V can be shown to represent the relative share of the two classes in the total value of the net output. This Marx is able to do on the basis of his definition of value as 'embodied labour' in commodities independently of its expression or 'appearance' as prices in relative terms, unlike Ricardo who recognized value only in relative terms. It is, however, important to note that Marx had presented the transformation of values to prices of production in, what Sraffa describes as, the context of 'difference' rather than the context of 'change'. In other words, Marx's transformation is an answer to precisely the question: 'why two commodities produced by the same quantities of labour are not of the same exchangeable value'? Unlike Sraffa's notes of 1942-43, Marx does not begin (in *Capital vol. III,* chs. 8 & 9) with the case when rate of profits is zero and therefore labour-value ratios are identical to price ratios. Instead, he begins with positive surplus value and unequal organic composition of capital and argues that the proposition that 'two commodities produced by same quantities of labour must be of same exchangeable value' stands in contradiction to the requirement of a competitive capitalist system that the returns to capital must be uniform. Marx's transformation of values to prices of production (*op. cit., ch. 9*) was designed to resolve this contradiction by showing that what price mechanism does behind the scene is to *pool* the total surplus value (or total profits) produced in the system and redistribute it to all the individual capitals uniformly by systematically deviating price ratios (or exchangeable values) from their labour-value ratios. This is the answer to the question: 'why two commodities produced by the same quantities of labour are not of the same exchangeable value'?

As a matter of fact, in Marx's judgment Ricardo's preoccupation with variations in prices due to changes in real wages laid unnecessary emphasis on a secondary problem. Commenting on Ricardo's discussion on an 'invariable measure of value', Marx wrote: 'This section VI On an Invariable Measure of Value deals with the "measure of value" but contains nothing important. The connection between value, its immanent measure—i.e., labour time—and the necessity for an external measure of the values of commodities is not understood or even raised as a problem' (*TSV II*: 202). So for Marx, it was Ricardo's weakness that he had failed to distinguish between the notion of 'absolute value' and its 'form of appearance' in relative or price form. In *Capital III,* Marx devotes a short chapter (chapter XI) exclusively to Ricardo's problem of changes in wages and its effect on relative prices and concludes by saying: 'This is a very secondary question compared with the other important points which have been dealt with in this part' (p. 306).

Yet, Sraffa in his notes of 1942-43 period interprets Marx's transformation of value to prices of production in the context of 'change' and not 'difference'. The crucial point in all this for Sraffa is not the problem of keeping (v + s) constant in price regime with respect to changes in wages because it was clear to Sraffa that once the price equations are written in physical input and output form it is evident that there is enough room in the system of equations to put the constancy of the net output as a *condition* (i.e., as the *numéraire*) that must be met by the solution sets for various values of wages. But this condition was not enough to prove the constancy of '*R*' with respect to changes in wages from 1 to 0 and the corresponding changes in prices. To prove this Sraffa had to measure prices and wages against the Standard commodity.

There are two aspects of Marx's transformation of values to prices that were crucial to Sraffa: (1) the average rate of profits of the system can be determined independently of prices, i.e., 'profit is a non-price phenomenon'; and (2) a commodity produced by the 'average organic composition of capital' will show no deviation from value. Now, if these two points could be proved to be correct then Sraffa's hypothesis regarding '*R*' being constant with respect to changes in wages and the rate of profits would *ipso facto* be proven. Now we can see that all these aspects of Marx's economics are brought to bear upon Ricardo's theory of profits and the problem of the 'invariable measure of value'. It is not for nothing that Sraffa acknowledges his debt to Marx for the idea of the 'maximum rate of profits', which is the value of '*R*', in his book (Appendix D). It should, however, be noted that Sraffa had to abandon Marx's formulations on his way to his final position on the proof of the constancy of '*R*' with respect to changes in the rate of profits. In the course of the search for the proof of the constancy of

‘*R*’, Sraffa realised that the ‘average industry’ is not given by Marx’s ‘average organic composition of capital industry’. It had to be a weighted average, which the Standard system and the Standard commodity represents.

But why Sraffa had to relate Ricardo’s problem of the ‘invariable measure of value’ with the problem of keeping the size of the pie constant? Now, from the point of view of his problem of the constancy of *R*, it connects Ricardo’s problem with Marx’s idea of the ‘pool’ of profits, which helps translate Ricardo’s hypothesis built on *causation* to a purely mathematical problem that is *non-causal* in nature; as Sraffa’s emphasis on *no-change in output* suggests: ‘This is particularly evident in the extreme case where the aggregate is composed of the same commodities in the same quantities, and yet its magnitude will appear to have changed as measured in value.’ (*op.cit.*).

In the ‘Introduction’ when Sraffa writes:

> The problem of value which interested Ricardo was how to find a measure of value which would be invariant to changes in the division of the product; for, if a rise or fall of wages by itself brought about a change in the magnitude of the social product, it would be hard to determine accurately the effect on profits (this was, of course, the same problem as has been mentioned earlier in connection with Ricardo’s corn-ratio theory of profits.),

he conflates two issues: (i) a scientific requirement of having an ‘invariable scale’ with respect to changes in wages to measure the changes in the prices of other commodities due to changes in wages; and (ii) a supposed consequence of such a measuring scale, which may or may not be true, that such an ‘invariable scale’ must ensure that the size of the total net output remains constant before and after the changes in wages. It appears that when Sraffa wrote the ‘Introduction’ he was not aware that point (ii) cannot be sustained. Once the Standard net product is taken as the *numéraire* it can no longer be claimed that the size of the actual net output would remain constant when wages move from 1 to 0. This realisation is clearly put forth in the book:

> Reverting to our example, if in the actual system (as outlined in §25 ff., with $R = 20\%$) the wage is fixed in terms of the Standard net product, to $w = ¾$ there will correspond $r = 5\%$. But while the share of wages will be equal in value to ¾ of the Standard national income, it does not follow that the share of profits will be equivalent to the remaining ¼ of the Standard income. The share of profits will consist of whatever is left of the *actual* national income after deducting from it the equivalent of ¾ of the *Standard* national income for wages: and prices must be such as to make the value of what goes to profits equal to 5% of the value of the actual means of production. (Sraffa 1960, p. 23).

In other words, the Standard commodity does not solve Ricardo’s problem of keeping the net output of the actual system constant, if, indeed, that was Ricardo’s problem.

As a matter of fact, in the drafts of *PCMC* written in 1955, we find that Sraffa begins to interpret Ricardo's problem of the 'invariable measure of value' in terms of the first point *only*. For example, in his earlier draft, we find a reference to Ricardo's problem of 'invariable measure of value' in the following terms:

> In such a world, where everything moves in every direction; where wages can increase more than profits fall; where the value & indeed the composition of the nat{ional} rev{enue} can change merely because it is divided in different ways; where prices of commodities rise or fall; where … one sympathises with Ricardo in his search for an "invariable measure of value". In a universe where everything moves we need a rock to which to cling to, a horizon to reassure us when we see a brick falling that it is not we who are going up—nor that we are falling when we see a balloon rising. (D3/12/52: 15, dated 18.3.55).

And again in the later draft, Sraffa writes:

> If we observe the movements of the price of commodity a in terms of commodity b we shall never know how much of any fluctuation originates in the circumstances of a & how much of those of b. The attempt to eliminate this type of disturbance lies at the basis of R's suggestion that we take as standard a comm. that is equally distant from the two extremes, 'those much capital … & those much labour [quote R. This criterion, we shall soon find, is inadequate and assumes a measurability of capital (or of 'time') which R himself elsewhere denies (let. To M^c^C). (D3/12/53: 4, dated 6.9.55).

It should be noted that in the later draft even a passing reference to 'the composition of the nat{ional} rev{enue} can change merely because it is divided in different ways' is removed and Ricardo's problem is attributed only to the changes in the relative prices of the two commodities. These remarks were written in the context of *PCMC* and the construction of the Standard commodity. Here we can see that Sraffa begins to distance Ricardo's problem with the requirement of the constancy of the size of the net output and relate it directly to the property of the Standard commodity, which ensures that the price movements measured against this standard would always measure the changes that has come about in the price of the commodity measured, and not in the standard, due to changes in wages. And finally in the book (see Sraffa 1960, §23, p. 18), even the reference to Ricardo is removed.

Conclusion

In 1927-28 Sraffa had set himself a task in the following manner:

> 'Principio':
>
> I shall begin by giving a short "estratto" of what I believe is the essence of the classical theories of value, i.e. of those which include W. Petty, Cantillon, Physiocrats, A. Smith, Ricardo & Marx. This is not the theory of any one of them, but an extract of what I think is common to them. I state it of course, not in their own words, but in modern terminology, and it would be useful when we proceed to examine their theories to understand their portata *from the point of view of our present inquiry. It will be a sort*

> *of "frame", a machine, into which to fit their own statements in a homogeneous pattern*, so as to be able to find what is common in them and what is the difference with the later theories. … (D3/12/4: 12, emphasis added).

Our analysis of Sraffa's interpretation of Ricardo suggests that it was indeed an active constructive process of fitting Ricardo in the 'frame' or processing him through the 'machine' that he was constructing, which, at least partially, took shape in his book. This leaves us at the threshold of understanding Sraffa's statement in the 'Preface' to his book that 'this standpoint, which is that of the old classical economists from Adam Smith to Ricardo, …'.

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