

# Classical Economics after Sraffa

Heinz D. Kurz and Neri Salvadori

## 1. Introduction

There can hardly be disputed that the edition of *The Works and Correspondence of David Ricardo* and especially Piero Sraffa's Introduction in Volume I, containing Ricardo's *Principles* (Sraffa 1951), and Sraffa's *Production of Commodities by Means of Commodities* (Sraffa 1960) had a major impact on the way in which the Classical economists and especially Ricardo are seen nowadays. Sraffa's contributions provided a new and original view on the centrepiece of Classical economics – the theory of value and distribution. The latter forms the foundation of all other economic analysis of the Classical authors, such as, for example, the problems of capital accumulation and economic development, of foreign trade and of taxation.

While Sraffa's new interpretation was at first received with great enthusiasm and was approved of by scholars coming from different intellectual camps, things changed soon, when it was gradually understood that it undermined not only the received view of the Classical authors, but also, and more importantly, the view that modern marginalist or neoclassical economics, in whatever form, was the legitimate heir of the Classical authors. The use of terms such as "neo"-classical, "new" classical etc. bear witness of the apparent desire to present one's own contribution as continuing the tradition the Classical economists had established.<sup>1</sup> By providing a new and sharp definition of the essence of the Classical approach to the theory of value and distribution Sraffa provided a criterion that allowed one to discriminate between legitimate and spurious uses of the term "classical". Still more importantly, it allowed one to embark on the challenging task of excavating and then developing what had been "submerged and forgotten since the advent of the marginal method" (Sraffa 1960: v?).

---

<sup>1</sup> Just a decade ago Robert Lucas (2004) had expressed this view in the following way: "I think of all progress in economic thinking, in the kind of basic core of economic theory, as developing entirely as learning how to do what Hume and Smith and Ricardo wanted to do, only better." There is no evidence that Lucas studied Hume, Smith and Ricardo carefully

This was indeed badly needed since thick layers of interpretation conceiving of the Classical authors as marginalist economists “waiting to be born” (Samuelson) stood in the way of a thorough reception of Sraffa’s new view. Attempts to ward off his re-interpretation abounded, involving major economic theorists and historians of economic thought such as John Hicks, Paul Samuelson, Kenneth Arrow and Samuel Hollander. The picture got blurred again and split the profession into three groups: those who accepted and elaborated on Sraffa’s interpretation, those who were keen to defend the received marginalist interpretation of Ricardo, as it was forcefully advocated by Alfred Marshall, and those who criticised Sraffa without necessarily embracing the marginalist view of the world and its Classical analysts.

Sraffa in his hitherto unpublished papers maintained that the study of the varied history of the theory of value and distribution was the truly important thing, not least because that history ran in parallel with major economic and socio-political developments. He intended to write the history of the subject, but then was prevented from doing it because of the difficulties he encountered with regard to the Ricardo edition (see Gehrke and Kurz 200?) and the analytical obstacles he had to overcome, frequently with the help of his “mathematical friends”, in elaborating on the reformulation and rectification of the Classical theory of value and distribution. His unpublished papers contain a huge amount of material, and critical comments on it, designed to be used in such a history. They also contain the elements on the basis of which we can reconstruct, how Sraffa arrived at his “equations of production” and the inspirations he received from the writings of the Classical authors. As such, they can be expected to lead to a renewed interest in the characteristic features of the Classical theory of value and distribution and a re-assessment of the difference between it and marginalist theory. This paper will focus attention on the material under consideration as it is available in Sraffa’s papers, which can deepen our understanding of Sraffa’s published work and his view of the genuine significance of Classical theory and its fundamental difference with marginalism

The composition of the paper is the following. Section 2 summarises the situation as regards the interpretation of the Classical economists at the beginning of the 20<sup>th</sup> century. Section 3 summarizes the essence of Sraffa’s understanding of the Classical “standpoint” as it comes to the fore in his unpublished writings. Section 4 deals with the labour theory of value, which according to many interpreters is an indispensable part of the Classical theory of value and distribution, whereas Sraffa was of the opinion that it involved a “corruption” of it. Section 5 provides a short summary account of contributions to various fields in economics rooted in a reformulated and rectified Classical theory after Sraffa; the fields mentioned include the treatment of fixed capital, capital utilization, renewable and exhaustible natural resources,

foreign trade, economic growth and taxation. Section 6 summarizes the criticism of marginalist theory. Section 7 concludes.

We have individually, together or jointly with some other authors variously written on the different aspects of the issues under consideration. In the present paper we will draw on our earlier work, large parts of which are conveniently available in Kurz and Salvadori (1998, 2003, 2007, 2014); see also Kurz (2012) and ...

## **2. The conventional view**

In the first half of the twentieth century there existed a fairly wide consensus as to the nature of the Classical economists' contribution to political economy, especially to the theory of value and distribution, and its relation to marginal economics, which had or was about to become the mainstream in large parts of the profession at around the turn of the century. This position was well expressed by Alfred Marshall in his *Principles of Economics* (1890). He portrayed Adam Smith, David Ricardo and other authors he dubbed "classical" as precursors of his own theory of demand and supply. The classicals, he argued, were possessed of a fairly well developed theory of production and thus supply, but lacked an equally developed theory of demand. Classical theory, which had provided us with the concept of marginal productivity in the theory of intensive diminishing returns, could easily be reconciled with modern theory, based on the concept of marginal utility. A judicious combination and amalgamation of the two, as he, Marshall, had elaborated, was considered to accomplish the task and bring to full fruition the seed the Classical economists had sown. Marshall thus disagreed strongly with William Stanley Jevons, who in his *Theory of Political Economy* (1871) had contended that the classical analysis was entirely useless. Jevons deplored what he called "the mazy and preposterous" assumptions underlying the doctrine of the "Ricardian school" and advocated its abandonment rather than its extension and completion.

There were, of course, still scholars who neither thought that the legacy of the Classical was worthless nor that it could easily be absorbed into marginalist theory. They felt that the Classical had developed a theory of value and distribution that was fundamentally different from marginalist theory and that the former's shortcomings did not reflect deficiencies beyond remedy, as Jevons and his followers had contended. Interestingly, amongst those keeping the classical flag flying in various countries there was almost unanimous agreement that a defining characteristic of the classical approach to the theory of value and distribution

was the labour theory of value.<sup>2</sup> Classical and especially Ricardo's economics came close to being identified with the labour theory of value. It was then only natural to consider Marx's labour value-based reasoning as firmly belonging to the classical tradition, although Marx ([1867] 1954) himself had given *Capital* the subtitle *A Critique of Political Economy*, meaning, of course, first and foremost the political economy of Smith, Ricardo, James Mill, Torrens etc.

This elicits two remarks. First, with the benefit of hindsight one might say that both supporters and critics of classical theory as well as those, who saw a continuity between the 'innovators', that is the marginalists, and the Classics got it more or less wrong. In particular the idea that the classical theory stood or fell with the labour theory of value interpreted as a theory of relative prices, on the one hand, and the idea that in the marginalist theory there was no room for it whatsoever, on the other, cannot be sustained. Scrutiny shows that despite their insistence on the original novelty of their approaches, authors such as Jevons, Eugen von Böhm-Bawerk and John Bates Clark were all convinced that in conditions of free competition relative prices in long-run equilibrium equal relative labour values. What they essentially disputed was the causality invoked by the classical authors, which leads from cost of production in terms of amounts of labour to normal prices. Instead they argued that the natural starting point is the needy individual and its estimation of goods. The choices of individuals are then said to bring about a situation in which relative marginal utilities with respect to the various goods are equal to relative prices, which in turn are equal to the relative quantities of labour needed directly and indirectly in their production.

Secondly, Marx, as is well known, distinguished between what he called 'classical political economy' and 'vulgar economics'. By the latter he meant an economic analysis that did not analyse the inner relations and contradictions of bourgeois society, but dealt with its surface only and was essentially apologetic. Yet his main criticism concerned propositions of the classical economists, and especially of Smith and Ricardo, whom he took seriously and from whom he learned a great deal. This appears to have (mis)led many commentators to thinking that Marx's analysis did not constitute an attempt at developing classical political economy by shedding its weaknesses and elaborating on its strengths (as Marx saw them), but a fundamental break away from it. In short, Ricardo was seen to be the main enemy. This view is based on a fundamental misunderstanding, which, alas, still shapes the perception of many Marxists of the relationship between Marx and his precursors.

---

<sup>2</sup> For evidence with respect to the German speaking world, see Kurz (1995).

When in the above we referred to the benefit of hindsight, we had of course in mind the situation subsequent to the publication of Volume I of *The Works and Correspondence of David Ricardo* (1951) and Piero Sraffa's 'Introduction' therein and even more so to his *Production of Commodities by Means of Commodities* (1960). Sraffa's interpretation of the classical economists as advocates of a 'surplus' approach to the theory of value and distribution changed not only totally our perspective on authors such as Smith and Ricardo, it also attributed to this approach a genuine significance that is fundamentally different from the marginalist one. After Sraffa the situation was completely different from what it was before. This does not mean that there were no other authors who had anticipated elements of Sraffa's interpretation of the classicals (see, for example, Ladislaus von Bortkiewicz) or who had insisted on striking differences between the marginalist and the classical approaches (see, for example, the young Schumpeter). It means that only Sraffa managed to revolutionise our perception of the genuine significance of the classical approach, of how it compares to the marginalist one, and of how insights derived from the former imply a criticism of the latter.

### **3. Sraffa: Classical economics – a 'science of things'**

We now turn to Sraffa's reconstruction of the Classical approach to the theory of value and distribution, followed by a rectification of this approach in terms of its coherent development, which overcomes the deficiencies of the version that was handed down from Smith via Ricardo to Marx and later authors. Put briefly, the Classical authors and Marx were unable to develop a coherent, logically unassailable theory of value and distribution, because the analytical tools at their disposal were not up to the complexity of their highly sophisticated and empirically rich concepts (production as a circular flow with a surplus product and inputs advanced at the beginning of the production period consisting of heterogeneous commodities). The mismatch between tools and concepts landed them in an impasse, with which they tried to cope as best as they could. The result was the labour theory of value. Whereas Smith and Ricardo insisted that it held exactly true in exceptional circumstances only and Ricardo opined that it could be seen as an approximation to a correct theory of value and distribution, of which he was not possessed, Marx contended that the 'law of value' was true with regard to the aggregate of all commodities: in terms of a labour-value based reasoning both the general rate of profits of the system as a whole and 'prices of production' of commodities corresponding to this rate could be ascertained. This was the origin of the (infamous) problem of the 'transformation' of values in prices.

According to Sraffa, the labour theory of value involved a ‘corruption’ of the Classical approach to the theory of value and distribution. It reflected the wrong path the Classical authors had taken vis-à-vis analytical difficulties they could not master and was in great measure responsible for the premature abandonment of Classical analysis and its replacement by marginalism. In what sense did the labour theory of value involve a ‘corruption’ of Classical theory. In the following we summarize in desperate brevity (to use one of Schumpeter’s favourite phrases) how Sraffa arrived at this characterisation in the period extending from the second half of 1927 to 1931 and what it meant. The reader interested in a more thorough account of the chronology of Sraffa’s early re-constructive and critical work is asked to consult some of our earlier works on the matter; see, in particular, Kurz and Salvadori (2005, 2014), Gehrke and Kurz (2006) and Kurz (2012).

Sraffa was extremely well read in Alfred Marshall’s analysis (1890) and for some time thought that *this* was economics.<sup>3</sup> He was critical of Marshall’s analysis (see Sraffa 1925, 1926), but felt that any attempt at improving upon the state of the art in economics had to start from Marshall. He rejected Marshall’s concept of ‘real costs’, which involved subjectivist elements such as disutility, abstinence, waiting and the like. For a short while Sraffa even contemplated the possibility of purging Marshall’s analysis from its subjectivist elements and tried to conceive of demand and supply schedules in purely objectivist terms. However, he soon realised that this did not lead him anywhere. At around the same time he delved deeper and deeper into the analyses of the classical economists. He had been clear at an early time that their analyses differed in important respects from those of the later marginalist authors, but it was far from clear to him wherein precisely the difference consisted. He now grasped that a characteristic feature of their theory of value was that they based it on what he called ‘physical real cost’: the value of a commodity reflected the amounts of commodities – raw materials, means of production and means of subsistence in support of workers – that had of necessity to be ‘destroyed’ in the production of the commodity under consideration. Production involved destruction, and value had to do with the amounts of commodities so destroyed.

Sraffa encountered numerous expressions in the Classical authors of the physical real cost approach and noted them in his papers. The most remarkable ones are perhaps the following two – one by William Petty, the other by Ricardo’s friend James Mill. Petty advocated a

---

<sup>3</sup> Sraffa’s working copy of Marshall (1920 [1890]) is studded with annotations, criticisms and remarks.

‘physician’s outlook’ on economic matters; Sraffa cited approvingly the Petty’s 1676 choice ‘to express my self in terms of *Number, Weight, or Measure* ... and to consider only such Cases, as have visible Foundations in Nature, leaving those that depend upon the mutable Minds, Opinions, Appetites, and Passions of particular Men, to the Consideration of others’ (Sraffa’s Papers, D3/12/4: 3). Petty’s statement is particularly interesting, because it confronts the physical real cost point of view with an early expression of the subjectivist point of view. James Mill (1826: 165) had put forward the remarkable proposition: ‘The agents of production are the commodities themselves ... They are the food of the labourer, the tools and the machines with which he works, and the raw materials which he works upon.’ In a document composed in December 1927, Sraffa called classical economics explicitly a ‘science of things’ (D3/12/61: 2) as opposed to Marshall’s economics, which was a science of motives.<sup>4</sup>

But how could one ascertain the values of commodities in terms of physical real costs? In order to determine the value of commodity U one had to know the values of commodities X, Y, Z ... used up in its production. In short, it appeared as if one was trapped in circular reasoning, explaining (and determining) the values of commodities in terms of the values of commodities. So how did the Classical economists (and Marx) try to get out of the trap? They sought to reduce all commodities to an ‘ultimate measure of value’ and render them commensurable in terms of this measure. Thus William Petty suggested to use a ‘loaf of bread’ (or also ‘corn’) – representing workers’ means of subsistence bundle – as an ultimate measure of value: bread was needed directly and indirectly in the production of all commodities, because in all productions workers had to be employed and fed. Similarly, Smith used ‘corn’ as a generic term including all means of subsistence of workers (see WN I.xi.e.29); Ricardo followed him in this regard.

---

<sup>4</sup> William Cunningham (1892) in a paper titled ‘A Plea for Pure Theory’ had confronted the different views of Petty and Marshall. Sraffa probably sometime in the period from May to July 1928 excerpted and commented on the following lines from it: “Prof. Marshall describes economics as the science of *measurable motives* (Present Position, p. 31). This ... seems to me to be the very gist of the difference in treatment” C. is opposed to this and agrees with W. Petty. He wants to deal with “external phenomena” “laying a solid foundation of fact.” “But when we start from motives, we loose all this advantage. What actually weighs with a man and determines him in any course of conduct, is not a thing we can observe ... Motives are not obvious and we are likely to be mistaken about them” (Sraffa’s Papers D3/12/9: 18).

In Sraffa's early manuscripts we also encounter attempts to reduce commodities to some ultimate measure of value. However, Sraffa did so by starting from systems of simultaneous equations. He quickly discovered that several commodities could serve as an ultimate measure of value: in the case of a system without a surplus product, all commodities produced are 'necessaries', that is, they are indispensable in production. Hence each and every commodity enters into the production of each and every commodity. Here things are relatively simple and each type of reduction must result in the same exchange ratios among commodities. In systems with a surplus, distributed in the form of wages or profits, things are not so. While the reduction of wages appears to cause no problem, to which ultimate measure of value ought profits to be reduced? And would all reduction series give rise to the same exchange ratios among commodities?

As is well known, the Classical authors eventually decided to take labour as the common measure of value, since labour was considered an indispensable input in the production of all commodities. Marx went a step further and identified labour as the only source and 'substance' of value. According to Sraffa this involved the said 'corruption'. Relative prices, Sraffa had convinced himself in late 1927, could be ascertained without falling into circular reasoning by formulating and then solving a system of simultaneous production equations. This was the tool the Classical economists would have badly needed in order to bring their surplus approach to the theory of value and distribution to full fruition and avoid the pitfalls into which they stumbled.

Beginning in November 1927, Sraffa developed first square systems of equations (dealing with single production) in which no more is produced of the different commodities than is consumed productively, that is systems *without a surplus product*. This is what he called his 'first equations'. He swiftly moved on, in the late 1920s, to investigate *systems with a surplus product*, without and with durable instruments of production (fixed capital) and given and constant real wages in his 'second equations', followed by an investigation of the impact of a variation in real wages on the 'rate of interest', the notion he used at the time, and relative prices in his 'third equations'. This led him to analysing the mathematical properties of the following systems of equations (taking gross output quantities of the various quantities as defining unit output):

Without a surplus product: 
$$\mathbf{p} = \mathbf{A}^+ \mathbf{p}, \quad (1)$$

where  $\mathbf{p}$  is the prices vector and  $\mathbf{A}^+$  is the input matrix (per unit of output) of the means of

production-cum-means of subsistence in the support of workers productively consumed during the annual cycle of production (known also as the “augmented” matrix, which takes account of the fact that in a Classical perspective wages belong to the capital advanced at the beginning of the production period).

With a surplus product: 
$$\mathbf{p} = (1 + R) \mathbf{A}^{++} \mathbf{p}, \quad (2)$$

with  $R$  as the general rate of profits and  $\mathbf{A}^{++}$  as the production matrix in the new situation. (With wages at some socio-historical subsistence level,  $R$  gives the maximum rate of return in the prevailing socio-technical conditions).

When Sraffa discusses the impact of a change (rise) in real wages on the rate of profits and relative prices, he at first follows Ricardo’s example, who contemplated an hypothetical redistribution that is proportional to the surplus product in the initial situation. If the entire surplus product goes hypothetically to workers, we are back to a system like (1) with  $\mathbf{A}^{++}$  in the place of  $\mathbf{A}^+$ .

We need not dwell here on the long journey Sraffa undertook before arriving at his 1960 book, a journey that was twice interrupted for several years (basically between 1931-1942 and 1946-1956) because the Ricardo edition required all his attention and energy. Here it suffices to draw the attention to a passage in Whitehead (1926), which Sraffa annotated and which paraphrases the essence of what he was doing in the late 1920s. Whitehead had remarked on the success of science since the seventeenth century:

*Science was becoming, and has remained, primarily quantitative. Search for measurable elements among your phenomena, and then search for relations between these measures of physical quantities.* (Whitehead 1926: 63–4, emphasis added)

We now discuss briefly, why according to Sraffa the labour theory of value was not an indispensable part of the Classical approach to the theory of value and distribution, but reflected rather a weakness of their analyses. Had they been possessed of a coherent theory of value and distribution with regard to a system in which heterogeneous commodities were produced by the self-same commodities, they would not have had to have recourse to an assumption that was admittedly not fully true (Ricardo), but served as a device not to be stopped by the word value.

#### 4. The Labour Theory of Value vs. the Value Theory of Labour

When Paul Samuelson once asked Sraffa whether Ricardo held a labour theory of value, Sraffa is reported to have answered: “He did and he didn’t.” What might at first sight be considered a sibylline response turns out to reflect properly Ricardo’s point of view, which, for example, in the third edition of the *Principles* comes to the fore when Ricardo speaks “of labour as being *the foundation of all value*, and the relative quantity of labour as *almost exclusively* determining the relative value of commodities” (Ricardo *Works* I: 20; emphasis added). The following note Sraffa wrote in November 1927 may be read as a comment on Ricardo’s statement:

It is the *whole* process of production that must be called “human labour”, and thus causes all product and all values. Marx and Ricardo used “labour” in two different senses: the above, and that of *one* of the factors of production (“hours of labour” or “quantity of labour” has a meaning only in the latter sense). It is by confusing the two senses that they got mixed up and said that value is proportional to quantity of labour (in second sense) whereas they ought to have said that it is due to human labour (in first sense: a non measurable quantity, or rather not a quantity at all).’ (Sraffa Papers D3/12/11: 64; emphasis in the original)

Ricardo considered labour as the “foundation” of all value, “a non measurable quantity, or rather not a quantity at all” in the words of Sraffa, and he also felt entitled to approximate value in terms of labour values.<sup>5</sup> The confusing of the two senses Sraffa illustrated with respect to Robert Torrens’ approach to the problem:

Torrens knew that the (absolute) value of the product is determined by (in fact, is) the amount of things that have been destroyed for its production. But he did not see his way through without finding a “common measure” of them: he probably felt a repulsion to, or thought that it could not be done, *to sum together quantities of heterogeneous things measured in different units. This was of course fatal: he started to find something common in them, upon which to base his measurement: the labour theory was ready at hand ... The result was of course absurd.* (Sraffa’s Papers D3/12/5: 26)

---

<sup>5</sup> A confusion of the two senses is widespread in the literature on Ricardo. For example, Mary Morgan recently wrote: “it is *labour alone that creates value*, and ... there is a direct relationship between labour input and value” (Morgan 2012: 60; emphasis added). As we have just seen, Ricardo was not of this opinion.

The statement that the result was “absurd” applies to a system with a surplus, whereas with regard to systems without a surplus it can be shown that the price vector in equation (1) is proportional to the vector of labour values appropriately constructed (see Kurz and Salvadori 2009). Sraffa apparently was not aware of this when he developed and discussed his “first equations”. The reason is obvious: there is no need to talk about labour, all that matters are physical real costs of production. Labour values therefore are of no importance to the analysis, they are at best secondary magnitudes (we return to this question below). The labour theory of value, Sraffa concluded at the time, involved a “corruption” of the tradition established by Petty and the physiocrats, who are said to have had the right concept of “cost”. In this context it is worth mentioning that in a document of some fifty pages composed in the summer of 1929, Sraffa explained in detail why he then thought that labour was *not* a “quantity” that could be taken as a datum in value theory (see also the reflection of his argument in D3/12/13: 2 and Kurz and Salvadori (2009)). He expounded that his objection to the approach in terms of labour quantities “è basata sulla veduta essenzialmente fisiocratica, che il *valore* sia una quantità intrinseca degli oggetti, quasi una *qualità fisica o chimica*. (D3/12/12: 7, emphases added).<sup>6</sup> The physical interpretation is neatly corroborated by a document entitled ‘Physical Costs & Value’, contained in a folder ‘Nov. [1927]’, which reads:

When I say that the value of a product is “determined” by the physical volume of commodities used up in its production, it should *not* be understood that it is determined by the value of those commodities. This would be a vicious circle, because the value of the product is equal to the value of the factors *plus* the surplus produced.

What I say is simply that the numerical proportions between amount of factors and amount of product *is*, by definition, the absolute value of the product.

(Sraffa’s Papers D3/12/11: 101; emphasis in the original, “not” is underlined twice in the original)

And in a document contained in the same folder, he also talked of “physical value” (Sraffa’s Papers D3/12/11: 75).

Some people seem to think that labour values are something natural and simple. However, they are typically not (see Kurz and Salvadori 2009). Here there is no need to enter into a

---

<sup>6</sup> English translation: “is based on the essentially physiocratic point of view that value is a quantity that is intrinsic to the objects, almost a physical or chemical quality.”

discussion of the difficulties involved. We rather ask ourselves where labour values are supposed to come from. If in the production of one unit of commodity U certain amounts of commodities X, Y, Z, ... are consumed productively, then in order to be able to ascertain the labour value of U one would have to know already the labour values of X, Y, Z, ... As Sraffa stressed, this involves “a vicious circle”. In a system with a circular flow of commodities and a surplus product labour values can be ascertained by solving a special system of simultaneous equations, namely the one in which the rate of profits is equal to zero. Hence labour values reflect but a very special constellation of the sharing out of the product among workers and capitalists. To emphasize this fact Sraffa coined the term *Value Theory of Labour*: values are proportional to labour quantities if and only if there are no profits (setting aside the special case of uniform input proportions across all industries of the economy).

Only in the case Ricardo contemplated, in which production processes start with “unassisted labour” can labour values be ascertained in an easy and straightforward manner by adding up labour quantities from the beginning of the time-staggered labour process until its end. Marx objected to this conceptualization of production as a unidirectional or linear process of finite duration that there is no stage in this process that does not involve some “constant capital”, that is, produced means of production. The implication of this is, of course, that labour values can only be ascertained by solving a system of simultaneous equations.

Finally we remark briefly on the “transformation problem”. As Sraffa’s interpretation of the Classical authors shows, if the Classical physical real cost approach in the theory of value and distribution is developed coherently, it does not face a “transformation problem” as a *necessary* step in the analysis. This does not mean that one cannot get in certain cases in a logically consistent way from labour values to prices of production. But the latter can be determined totally independently of the former and are therefore redundant in the analysis (Steedman 1977) and the way from labour values to prices of production requires the use of Sraffa’s Standard commodity (see Kurz and Salvadori 2009).

## **5. Applying the Classical approach**

## **6. Criticizing marginalist theory**

Reference to Opocher and Steedman’s full industry equilibrium

## **7. Concluding remarks**

## References

- Kurz, H. D. 2003. The surplus interpretation of the classical economists, pp. 167–83 in Samuels, W., Biddle, J. and Davis, J. (eds), *The Blackwell Companion to the History of Economic Thought*, Oxford, Blackwell
- Kurz, H. D. 2006. The agents of production are the commodities themselves: on the classical theory of production, distribution and value, *Structural Change and Economic Dynamics*, vol. 17, 1–26; reprinted pp. 131–58 in Kurz, H. D. and Salvadori, N. 2007. *Interpreting Classical Economics: Studies in Long-period Analysis*, London, Routledge
- Kurz, H. D. 2011. On David Ricardo’s theory of profits: the laws of distribution are ‘not essentially connected with the doctrine of value’, *History of Economic Thought*, vol. 53, no. 1, 1–20
- Kurz, H. D. and Salvadori, N. 1993. The ‘standard commodity’ and Ricardo’s search for an ‘invariable measure of value’, pp. 95–123 in Baranzini, M. and Harcourt, G. C. (eds), *The Dynamics of the Wealth of Nations: Growth, Distribution and Structural Change—Essays in Honour of Luigi Pasinetti*, London, Macmillan; reprinted pp. 123–47 in Kurz, H. D. and Salvadori, N. 1998. *Understanding ‘Classical’ Economics: Studies in Long-period Theory*, London, Routledge
- Kurz, H. D. and Salvadori, N. 1995. *Theory of Production: A Long-period Analysis*, Cambridge, UK, Cambridge University Press
- Kurz, H. D. and Salvadori, N. 2001. Sraffa and the mathematicians: Frank Ramsey and Alister Watson, pp. 187–216 in Cozzi, T. and Marchionatti, R. (eds), *Piero Sraffa’s Political Economy: A Centenary Estimate*, London, Routledge; reprinted pp. 187–216 in Kurz, H. and Salvadori, N. 2003. *Classical Economics and Modern Theory: Studies in Long-period Analysis*, London, Routledge
- Kurz, H. D. and Salvadori, N. 2004. Man from the moon: on Sraffa’s objectivism, *Économies et Sociétés*, vol. 35, 1545–57; reprinted pp. 120–30 in Kurz, H. D. and Salvadori, N. 2007. *Interpreting Classical Economics: Studies in Long-period Analysis*, London, Routledge
- Kurz, H. D. and Salvadori, N. 2005A. Removing an ‘insuperable obstacle’ in the way of an objectivist analysis: Sraffa’s attempts at fixed capital, *European Journal of the History of Economic Thought*, vol. 12, no. 3, 493–523; reprinted pp. 119–49 in Kurz, H. D., Pasinetti, L. L. and Salvadori, N. (eds) 2008. *Piero Sraffa: The Man and the Scholar—Exploring his Unpublished Papers*, London, Routledge
- Kurz, H. D. and Salvadori, N. 2005B. Representing the production and circulation of commodities in material terms: on Sraffa’s objectivism, *Review of Political Economy*, vol. 17, no. 3, 69–97; reprinted pp. 249–77 in Kurz, H. D., Pasinetti, L. L. and Salvadori, N. (eds) 2008. *Piero Sraffa: The Man and the Scholar—Exploring his Unpublished Papers*, London, Routledge
- Kurz, H. D. and Salvadori, N. 2009. Sraffa and the labour theory of value: a few observations, pp. 187–213 in Vint, J., Metcalfe, J. S., Kurz, H. D., Salvadori, N. and Samuelson, P. A. (eds), *Economic Theory and Economic Thought: Festschrift in Honour of Ian Steedman*, London, Routledge
- Kurz, H. D. and Salvadori, N. 2012. On the ‘vexata questio of value’: Ricardo, Marx and

Sraffa, Chapter 12 in Taylor, L., Rezai, A. and Michl, T. (eds), *Analytical Insights and Social Fairness: Economic Essays in the Spirit of Duncan K. Foley*, London, Routledge

Kurz, H. D. and Salvadori, N. 2014. *Revisiting Classical Economics. Studies in Long-Period Analysis*, London, Routledge

Steedman I. 1977.

Opocher, A. and Steedman, I. 2014