

On David Ricardo's Theory of Profits: The Laws of Distribution Are 'Not Essentially Connected with the Doctrine of Value'*

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In economics the route by means of which
an author arrives at a theory is
occasionally as interesting as the theory
itself.

Anonymous

Abstract:

The paper grew out of discussions with Japanese colleagues about Ricardo's theory of profits on the occasion of a meeting at Meiji University in September 2009. It is argued that from an early time onwards Ricardo was convinced that the rate of profits could be ascertained in purely physical terms, without any question of valuation. Unfortunately, he was not given the time to translate this vision into a coherent and general theory. However, the vision permeates all his consecutive attempts at formulating such a theory—from the early 'corn-ratio theory' via the *Essay on Profits* to the *Principles*. The theory was meant to be general, taking into account all industries of the economy and paying due attention to their relationships. Ricardo understood that when it comes to the determination of the rate of profits, only those industries matter, which directly or indirectly contribute to the production of 'necessaries,' or wage goods, whereas industries that produce 'luxuries' do not. The concept of 'corn,' a composite commodity, was designed to reflect the set of industries producing necessities. The surplus of necessities over the amounts of them employed in production as capital gives the rate of profits as a physical ratio. Ricardo's 'fundamental law of distribution' expresses the inverse relationship between the general rate of profits, conceived in this way, and real wages. It was Piero Sraffa who finally managed to elaborate a coherent and comprehensive theory of profits that confirmed Ricardo's vision that the laws of distribution are 'not essentially connected with the doctrine of value' and overcame the shortcomings of Ricardo's analysis.

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I Introduction

The idea of the meeting at which I gave an earlier version of this paper emerged on the occasion of the joint conference of the *Japanese Society for the History of Economic Thought* (JSJET) and the *European Society for the History of Economic Thought* (ESHET) in Tokyo and then in Kyoto in March 2009. In the Kyoto part of the conference, Professor Shinji Fukuda on 24 March 2009 gave a paper on 'Early Ricardo Studies in Japan' in which he provided a valuable summary account of the works of Japanese scholars on Ricardo published in Japanese and therefore not (easily) accessible to those who, alas!, don't read and speak Japanese. I have to confess that I belong to them. *Mea culpa!* In my intervention during the discussion that followed Professor Fukuda's presentation I suggested that it would be a great service to the international community of Ricardo scholars, if the main ideas of our Japanese colleagues were made available in what nowadays is the *lingua franca* in the sciences in general and in economics in particular, that is, English. This was no attempt to support language imperialism, but simply an expression of curiosity on my part, interested in learning what there is in Japanese works on the issue at hand.

Therefore I was delighted when Professor Watarai organised a seminar on the occasion of the 2009 meeting of the *Ricardo Society of Japan*, in which different views on Ricardo's theory of profits could be discussed. He kindly invited major representatives of Japanese Ricardo scholarship to put down their ideas in English, so that these could also be assessed and discussed by peo-

ple with no command of the Japanese language. He asked me whether I would be willing to participate in such a discussion. My answer was of course in the positive and I told Professor Watarai that it just so happened that I would be in Japan later in September 2009 as a visiting professor at the Institute of Social and Economic Research (ISER) of Osaka University.¹⁾ Papers in English language by Professors Nakamura, Senga and Mizuta were circulated before the meeting; a revised version of Professor Senga's paper has in the meantime been published in this journal (Senga 2011).

In this contribution I respond to my Japanese colleagues, focussing attention on Professor Senga's paper. However, I shall do so within the context of a discussion of the development of Ricardo's entire intellectual work on the problem under consideration, as I see it. My concern will be with those elements in Ricardo's thinking that became stable and permanent as opposed to those that played only a temporary role and which he abandoned. It will be argued that Ricardo's thinking was characterised by a remarkable continuity as regards his overall outlook on the problem, on the one hand, and a hardly surprising variety of forms in which he expressed it, on the other, as his understanding gradually developed. In other words, I see no fundamental ruptures in Ricardo's thought, no revision of his basic 'vision' (Schumpeter). Ricardo explained profits in terms of the *surplus product* that remained after all necessary physical real costs of production (including the means of subsistence of workers, or real wages) have been subtracted from gross output levels.

The composition of the paper is the fol-

lowing. Section II draws the attention to a point that might strike the reader as obvious, but that ought to be kept in mind when dealing with Ricardo's various attempts to come to grips with the problem at hand: Ricardo was keen to elaborate a coherent theory of value and profits based on the concept of physical surplus just mentioned, but he did not manage to fully accomplish the task. Section III deals briefly with what has just been called Ricardo's vision concerning the laws of distribution and value. This vision defines the confines within which Ricardo sought to solve the problem at hand, and it is against this background that we may put his various attempts in context. Without an idea of what guided them, the intuition he had, the 'shining star' he followed, one can easily get lost in the material at our disposal. Section IV contains a remark on the style of discussion entertained by Ricardo and his contemporaries and especially on the role of numerical examples in it. This style is rather different from today's style, a fact that must not be forgotten. Section V specifies what I consider to be the task of the historian of economic thought. This provides me with a criterion or metric to assess the contributions of my fellow historians of economic analysis. Since nowadays the debate about Ricardo is at the same time a debate about Sraffa's edition of Ricardo's works and correspondence, Section VI contains a few words about how Sraffa defined the task of an editor. These remarks will hopefully clear up frequent misunderstandings of Sraffa's editorial work. Section VII turns to the (in)famous 'corn model,' or what Sraffa called Ricardo's 'corn-ratio theory of profits.' I claim that this theory is just the simplest conceptualization of Ricardo's

basic vision of the factors affecting the rate of profits. In the course of time he came up with more sophisticated versions of it. The remarkable continuity of his argument, however, appears to have escaped many commentators' attention, and it is therefore perhaps worth recalling the various forms in which it is garbed. However, before doing so, Section VIII refers to reflections of Ricardo's thoughts in the writings of some of his contemporaries. It is a well-known phenomenon that contemporaries often understand an author better than later interpreters, whose minds have been trained and shaped rather differently.²⁾ Section IX turns to the *Essay on Profits* of 1815 and argues that it contains another strong expression of Ricardo's basic vision. The latter is also present in the *Principles*, first published in 1817, the object of Section X. We discuss briefly a numerical example, which Ricardo designed to show that the rate of profits may be conceived of in purely physical terms, without any need to bring in values. Section XI then indicates how Sraffa finally managed to corroborate Ricardo's vision in terms of the concept of the 'Standard system.' Section XII concludes.

It will not come as a surprise when I say that I am not aware of *any* argument that effectively undermines Sraffa's interpretation of Ricardo's theory of value and distribution. This is, of course, a view I cannot fully establish in as short a paper as the present one. It would require a discussion of many different authors and contributions that have been put forward in the years since the publication of the Ricardo edition and Sraffa's 1960 book. It would also require taking into account Sraffa's hitherto unpublished papers that are accessible to scholars at Trinity Col-

lege Library in Cambridge, U.K. This cannot be done here and actually has already been done elsewhere (see, in particular, Kurz 2006 and Gehrke and Kurz 2006).

Before I begin with my main argument, let me stress that I perfectly subscribe to Professor Senga's dictum that 'we should reconstruct [Ricardo's] thought using textual evidence as much as possible' (Senga 2011, 44). Our reconstructions ought indeed to be historically faithful to the author under consideration.

II Groping towards a Coherent Theory of Value and Distribution

Despite some remarkable progress Ricardo made in the course of his studies of value and distribution, he did not succeed in elaborating a fully coherent theory.³⁾ His analysis remained *in statu nascendi*. We know the various steps he took as time went by, and why, but we do not have his last and definitive word on the matter. When Ricardo died in 1823, his work was still under way. Many others continued along his line of thought, including Karl Marx, Vladimir Dmitriev, Ladislaus von Bortkiewicz, to name but the most important ones. But it was only Piero Sraffa (1960) who finally provided a coherent solution to the problems we are concerned with here with which Ricardo had struggled.

Ricardo started from Adam Smith's theory of value and distribution, which he came across during his and his wife's stay in Bath in 1799. He was deeply impressed by *The Wealth of Nations*, so much so that he wanted to study the subject of political economy and contribute to its development rather than continue to make money as a stock jobber.

Making money was easy to him, and boring, whereas thinking about his 'most favourite subject' (*Works* VI, 263), political economy, was challenging and exiting.

Given his extraordinary intellectual powers and his taste for abstract reasoning, it could not take Ricardo a long time to find out that Smith's analysis of value and distribution was seriously flawed.⁴⁾ To correct the flaws committed by a celebrated authority such as Smith in an important subject such as political economy and to elaborate a coherent formulation of the theory must have been a strong incentive to Ricardo to take up the subject. However, without James Mill, who pushed him to write and publish, he might never have accomplished what he actually did.

The theory Ricardo sought to elaborate shared with Smith's analysis at least three important features. First, the theory had to be *general*: it had to deal with the economic system as a whole and the interdependence between its different parts.⁵⁾ Second, it had to come to grips with the modern economy's *inherent dynamism*, a system, in which capital accumulates, the population grows, there is ongoing technical change, output expands and the heterogeneity and diversity of commodities increases. What are the laws governing this system and, especially, what are the laws governing the *distribution* of a growing product amongst the different classes of society, workers, capitalist and landlords?⁶⁾ Third, the method Smith and Ricardo employed in order to investigate the system is now known as the *long-period method*. It focuses attention on situations in which, due to *free competition*, a uniform rate of profits and uniform rates of wages and of rents for

each particular quality of labour or of land obtain. Competitive forces are taken to make 'market prices' and the distributive variables gravitate towards (or oscillate around) their 'natural' levels.

As regards profits, Ricardo was very clear: 'Profits come out of the surplus produce' (*Works* II, 128). This he stressed time and again. The *surplus product* consists of the quantities of commodities that are left over after all the necessary means of production and means of subsistence in the support of (productive) workers have been deducted from the quantities actually produced of the various commodities during a year. In modern terminology, the surplus product is a vector of commodities. If we can set aside the rents of land, then the surplus product constitutes the commodity content of profits. The *capital advanced* on the other hand consists of the means of production and the means of subsistence employed and (partly) used up; it constitutes another vector. The *general rate of profits* relates these two vectors or bundles of commodities: the surplus product alias profits in the numerator, capital in the denominator.

It seems obvious that the two can only be compared with one another, if the various quantities of commodities in the numerator and those in the denominator are rendered commensurable with one another. It is here that the theory of value comes into the picture of the classical surplus-based approach to income distribution; see Garegnani (1984) for a succinct account. The rate of profits, it seems to be as clear as daylight, can *only* be ascertained in terms of, or simultaneously with, values (or prices).

Strangely enough, Ricardo was *not* of

this opinion. He was rather convinced that the problem of distribution could be dealt with independently of the problem of value. This brings me to the *leitmotif*, or main idea, that guided Ricardo's reasoning. Without understanding it, I am convinced, it is difficult to understand what he was doing, and why.

III The Laws of Distribution— 'Not Essentially Connected with the Doctrine of Value'!

I fully agree with Professor Senga (2011) and his colleagues that the inverse relationship between the rate of profits and wages—Ricardo's so-called '*fundamental law of distribution*'—was one of his most important findings, if not *the* most important one. If such a relationship could be established, it would allow one for any given magnitude of (real or proportional) wages to assess the corresponding level of the general rate of profits, given the system of production in use. This would be possible *without* any reference to values or prices (two terms Ricardo used synonymously). *This* is what Ricardo attempted to establish. In fact, he was quite explicit about it. In a well-known letter to McCulloch of 13 June 1820, looking back at his work on value and distribution and the criticisms it had received, he insisted:

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. (Ricardo, *Works* VIII, 194)

Ricardo went on to summarize his theory

and concluded: ‘The truth of this doctrine I deem to be absolutely demonstrable’ (ibid., 195). *It is demonstrable, but has not yet been demonstrated (by Ricardo)!*

These are remarkable statements, whose boldness is stunning. After what we have heard in the previous section: How could the laws of distribution *not* be essentially connected with the doctrine of value? How could Ricardo entertain such a peculiar, if not strange or even outright ridiculous view? And how could he ever hope to be able to make himself understood by his contemporaries, Malthus, James Mill, McCulloch etc.?

If the above hypothesis that the laws of distribution are not intimately tied up with the problem of value was indeed Ricardo’s leitmotif in his struggle of escape from Smith’s doctrine, then it must be possible to identify traces of this idea in his writings on profits. However, before I turn to this problem three remarks are apposite in order to prepare the ground for the following. The first remark concerns Ricardo’s style of discussion and the role of numerical examples in it. The second refers to the task of the historian of economic thought. The third concerns Sraffa’s understanding of the task of an editor. The three remarks are intimately intertwined, as the following discussion will show.

IV On Ricardo’s Style of Reasoning and the Role of Numerical Examples in it

Several commentators (including myself) have noted that some of Ricardo’s numerical examples and calculations seem to be beset with difficulties. How can this be explained in view of Ricardo’s untiring effort to get his

argument right? We need not speculate in this regard, because Ricardo told his readers how he proceeded. Apparently, his main concern was the general thrust of the argument, whereas he did not care too much about the nitty-gritty details. A reference to Michelangelo is perhaps allowed, who every so often focused only on the grand composition of his paintings and left it to students to fill in the details. Ricardo may perhaps be said to have left the details to his intelligent readers. As he pointed out with reference to some numerical examples:

In all these calculations I have been desirous only to elucidate the principle, and it is scarcely necessary to observe, that my whole basis is assumed at random, and merely for the purpose of exemplification. The results though different in degree, would have been the same in principle, however accurately I might have stated the [details]. My object has been to simplify the subject . . . (*Works* I, 121–22)

Hence what mattered to him were the economic principles he wished to establish; the numerical examples to illustrate them were chosen *ad hoc*. To show that some such examples have not been designed with sufficient accuracy does not *ipso facto* imply that the underlying argument is dubious or even mistaken. Yet this is what some critics of Ricardo have argued. While there is nothing wrong with pointing out shortcomings in some of Ricardo’s numerical examples, some commentators have gone too far and have thrown out the baby with the bathwater. While some of Ricardo’s illustrations are problematic, the underlying theory may still

be fundamentally correct. What is more, some of his examples can easily be rectified and brought into harmony with the economic principles Ricardo was desirous to elucidate; see, for example, Gehrke, Kurz and Salvadori (2006) with respect to his discussion of different forms of agricultural improvements. One therefore ought to be cautious and refrain from deriving sweeping judgements about the substance of Ricardo's theory from somewhat mistaken illustrations used by him. Moreover, as we shall see below, some numerical examples are only 'wrong' on the surface, but convey a message whose essence is sound.

Whilst I agree with Professor Senga (2011, 28) that Japanese Ricardo scholars are very meticulous (whether they are 'much too meticulous,' as he writes, I cannot judge), I have a different view of the main problem all Ricardo scholars face. He identifies it as consisting in the 'philosophical' underpinning of the labour theory of value, whereas I see it in not losing sight of the basic physicalist vision underlying Ricardo's thoughts, namely that the laws of distribution, which interested him most, are *not essentially connected with the doctrine of value*. While nobody can dispute that the labour theory of value assumed a prominent place in Ricardo's *Principles* and after, in my view its importance has been vastly exaggerated in the literature. Ricardo knew that the labour theory of value was at best approximately true in explaining the exchange values of commodities, and he adopted it only because he had no better theory at his disposition. Most important, he was convinced that the labour theory of value was *not* needed in order to determine the general rate of profits. This will become clear in the

following, I hope.

These observations lead me to some remarks about the task of the historian of economic thought, as I see it.

V On the Task of Historians of Economic Thought

What is valuable research in the history of economic thought? This is a difficult question and may be answered differently by different people. Let me give you my answer, which, I believe, is probably not very different from the one Sraffa would have given.

I am interested in economic analysis and in the contributions of major authors because they improve our understanding of the working of the economic system. Hence in my view, economic theory and the history of economic thought are inseparable. Ideas are produced by means of ideas across time and space. Given the tremendous complexity of the economists' subject matter—societies characterized by a continuously deepening division of labour, the coordination of economic activities via a network of interdependent markets, exchange mediated by money, etc.—there is no reason to presume that we will ever understand the working of such systems in all their fascinating and often bewildering details. However, some authors have considerably enriched our understanding, typically taking off from a particular 'vision' of the working of the system. Having a clear view of the vision guiding an author and whether he abandoned it for some other vision at some point, is of the utmost importance for understanding what he is doing.

It is Piero Sraffa's great merit to have unravelled the fundamental vision that guided

Ricardo's thinking and to have traced the various steps through which he attempted to forge his vision into a theory. Unfortunately, in Ricardo the underlying basic idea did not get to full maturity, despite the progress Ricardo made over time. But he spelled out *verbatim* with sufficient clarity the basic idea that drove his investigation.

Let me describe the historian's task, as I see it, with the help of a passage taken from Antonio Gramsci, Sraffa's friend, with whom Sraffa had discussed the problem of editing and introducing Ricardo's works. Gramsci wrote (the translation from Italian is mine):

Question of method. If one wants to study the birth of a view of the world which its constructor never put forward in a systematic way (and whose essential coherence is not to be found in single writings or series of writings, but in *the whole development of the entire intellectual work*, which implies the elements of the view, it is first necessary to make a philologically meticulous work and carry it out with a maximum attention as to exactness, scientific honesty, intellectual loyalty and absence of any preconception and a priori position or party taken. *Above all, it is necessary to reconstruct the process of intellectual development of the thinker under consideration in order to identify the elements that became stable and "permanent," i.e. those which are taken to reflect the proper thoughts, and which differ from, and are superior to, the previously studied "material" which served as a stimulus; only those elements are essential to the moments of the process of development . . .*" (Gramsci 1948, 76; the first emphasis is Gramsci's)

According to Gramsci, when reconstructing the process of the intellectual development of a thinker, the all important task consists in identifying the elements that became 'stable and "permanent"' and that are taken 'to reflect the proper thoughts' of the author. I fully subscribe to this view.

These elements have to be separated from the author's other thoughts, i.e. ideas he once entertained, but then abandoned.⁷⁾ The latter are not without any interest for the development of the author's view, because we learn by making errors and correcting them. They may contain 'material' that served as a 'stimulus' for further thoughts, and if they do, they ought to play some role in the reconstruction of the author's intellectual path. However, what matters in the end, and what matters exclusively, are the elements that became stable and permanent.

A good historian of economic thought for sure needs to be meticulous. However, more than this is required. If the ideas and concepts of a major author, such as Ricardo, transcend the form in which he can express them at a given moment of time, constrained by the limited possibilities of language and of the analytical tools at his disposition; in other words, if there is more to what he is able to put in black and white, then what is required in addition is to grasp the *momentum* of an argument, its *potentiality*, to grasp what is there without being clearly spelled out.

Using Gramsci's reflection cited above, what I am occasionally missing in the literature is a concern with the thrust of Ricardo's argument, its momentum, and its materialization in ever more elaborate forms (without, however, ever reaching a definitive stage).⁸⁾

What is occasionally lacking in my view is a concern with the progressive element in Ricardo's thinking, its time derivative, so to speak, with the thread that connects his successive attempts at translating his vision into a theory. To care for the details is one thing, to care for the overall picture another one.

Sraffa cared for both. I am not aware of any statement by Sraffa in his Ricardo edition that has been proved wrong. Nor do I know any reconstruction of the route Ricardo took in his theory of value and distribution that compares with Sraffa's in terms of historical faithfulness and ingenuity.

I also see no big differences between the interpretations put forward by my Japanese colleagues and that of Sraffa. There are some minor quibbles, which, I believe, can be sorted out without much ado. They look huge only, if seen through a magnifying glass. These differences do not concern, as far as I can see, the essence of Sraffa's reconstruction. According to it, Ricardo advocated a surplus approach to the explanation of profits and the rate of profits, which is fundamentally different from an explanation in terms of 'demand and supply' or the 'scarcity' of capital. Ricardo was *not* an early marginalist economist, as some interpreters contend.

Before I turn to these issues I must briefly comment on the role of an editor, as Sraffa saw it. Several misunderstandings seem to be rooted in a misapprehension of Sraffa's stance in this regard.

VI On the Task of an Editor— Sraffa and the Ricardo Edition

When Professor Paul A. Samuelson learned that I had been entrusted by Sraffa's literary executor, Professor Pierangelo Garegnani,

with the task of general editor of Sraffa's unpublished papers and correspondence, he sent me a letter. He praised Sraffa for his magisterial Ricardo edition, but he advised me not to follow Sraffa's example in one respect. As Ricardo scholars will have noticed, in his general introduction to the Ricardo edition in volume I of the *Works* as well as in his various introductions elsewhere in the edition, Sraffa insisted to *state only facts* that can easily be checked by everyone. There is only a single exception to this: it concerns the corn-ratio interpretation of Ricardo's early theory of profits. Sraffa makes it abundantly clear that this is his interpretation, but that he feels entitled to put it forward because of the overwhelming circumstantial evidence available in its support. In other words, Sraffa as editor was keen to stay as much in the background as possible, to be neutral and impartial and focus attention only on what was *factual*, to abstain from interpreting, intervening, criticizing, speculating. Ricardo should be given an opportunity to speak for himself, and it was the editor's task to provide the appropriate platform for this.

In his hitherto unpublished papers Sraffa discusses in some detail Ricardo's views, points out errors in the argument and spots blunders in numerical examples etc. But now it is Sraffa the commentator, not Sraffa the editor. He was convinced that the two roles ought to be strictly kept apart.

Samuelson was critical of this separation. He wished Sraffa, the editor, also to act as a commentator and critic. I was not convinced by this and informed him accordingly. If facts are mixed with interpretations, criticisms etc., the picture gets blurred and one

runs the risk of failing to see what is what.⁹⁾ Sraffa's procedure, I am convinced, is the only one that is acceptable, because it allows one to encounter an author's ideas and views without any contamination caused by later observers, including possibly the editor. What matters, and what matters exclusively, are Ricardo's thoughts and the debates in which he participated during his lifetime. They stimulated and channelled his thinking, prompted him to correct his previous views and led him to develop new ones. Burdening this with later interpretations and criticisms would distract attention from what is at issue: the development of Ricardo's point of view.

The fact that in the Ricardo edition Sraffa did not point out blunders in Ricardo's writings does not mean that he was not aware of them. He simply did not consider it as his task as editor to do so. When later readers spot such errors or problems, this is fair enough. Thus, Professor Hatori's critical observations on a numerical example in the *Essay*, reported by Professors Nakamura and Mizuta at the Meiji University seminar, are welcome, because they open up a discussion about the message Ricardo attempted to convey with the example. But for the reasons given, they tell us nothing about Sraffa's scholarship and his understanding of Ricardo. Actually, we may ask ourselves why Ricardo 'slipped,' and whether the 'slip' is just this—a slip. It will be argued in the following that the 'slip' is telling, because it expresses a deep conviction of Ricardo's, which, alas, he was unable to formulate properly. Without too great a stretch of the imagination we might say that Ricardo 'slipped' on purpose.

VII A Physical Ratio Theory of Profits: the 'Corn Model'

It was stated in the above that Ricardo's theory of profits remained *in statu nascendi*. Just before he died he was still trying to mend some of the difficulties he had encountered. He was perfectly aware that he was not possessed of a fully worked out and consistent theory. Interpreting his efforts and achievements is difficult, not least because we do not know precisely where his efforts would have led him, had he been given enough time and energy and mental power to accomplish the task. However, we can build a clear idea of where he intended to go, the direction of his intellectual enterprise.

Since Ricardo was convinced that the laws of distribution are 'not essentially connected with the doctrine of value,' he can be expected to have been concerned with establishing the correctness of his intuition from an early time onwards. This brings us to Ricardo's famous statement in his correspondence of 1814 that 'it is the profits of the farmer that regulate the profits of all other trades' and Sraffa's 'corn-ratio' interpretation of it. The latter deserves to be quoted in full:

The rational foundation of the principle of the determining role of the profits of agriculture, *which is never explicitly stated by Ricardo*, is that in agriculture the same commodity, namely corn, forms both the capital (conceived as composed of the subsistence necessary for workers) and the product; so that the determination of profit by the difference between total product and capital advanced, and also the determination of the ratio of this profit to the capi-

tal, is done directly between quantities of corn without any question of valuation. It is obvious that only one trade can be in the special position of not employing the products of other trades while all the others must employ its product as capital. It follows that if there is to be a uniform rate of profit in all trades it is the exchangeable values of the products of *other* trades relatively to their own capitals (i.e. relatively to corn) that must be adjusted so as to yield the same rate of profit as has been established in the growing of corn; since in the latter no value changes can alter the ratio of product to capital, both consisting of the same commodity. (Sraffa 1951, in *Works I*, xxxi; first two emphases added)

To this Sraffa added:

Although this argument is never stated by Ricardo in any of his extant letters and papers, he must have formulated it either in his lost 'papers on profits of Capital' of March 1814 or in conversation, since Malthus opposes him in . . . terms which are no doubt an echo of Ricardo's own formulation. (Ibid.)

And a little later:

The advantage of Ricardo's method of approach is that, at the cost of considerable simplification, it makes possible an understanding of how the rate of profit is determined without the need of a method for reducing to a common standard a heterogeneous collection of commodities. (Sraffa 1951, in *Works I*, xxxii)¹⁰

Three observations are apposite. First, from an early time onwards Ricardo understood that the different industries of an economy are not of the same importance when it comes to the determination of the rate of profits: only those industries are important that contribute directly or indirectly to the production of 'necessaries' or wage goods (see, for example, *Works I*, 132), whereas industries producing 'luxuries' are not. Second, in much of Ricardo's discussion of the problems of wages and profits, capital is for simplicity completely reduced to or identified with wages, and (vertically integrated) wages are taken to be given in units of the 'good of goods': corn.¹¹ In accordance with much of Ricardo's argument, Sraffa identifies capital with wages. Third, the subject Ricardo was concerned with is so complex that it must have appeared to him as almost impenetrable. One could approach it only in terms of some bold abstractions in the hope and expectation that these would allow one to throw some light on the problem at hand. Such abstractions were desperately needed. The question then is precisely which abstractions Ricardo entertained and whether these tell us something about what he felt was the salient point in the theory of profits.

Ricardo was convinced that the general rate of profits was closely related to an economic system's capacity to generate a surplus over and above the wages paid to workers. The profit rate was taken to represent a genuinely physical relationship, a 'proportion,' as Ricardo stressed time and again. It ought to be possible to express this relationship without any reference to values. Obviously, it did not need a Malthus to tell Ricardo in a letter of 5 August 1814: 'In no case of

production, is the produce exactly of the same nature as the capital advanced' (*Works* VI, 117). Ricardo can safely be assumed to have seen a few farms earlier in his life. It will then not have escaped his attention that both inputs and outputs typically consist of quantities of heterogeneous things.¹²⁾ Ricardo's reasoning in terms of a corn model is therefore not indicative of a complete lack of knowledge of the real world on his part. It rather shows that he wished to cut through the complexities and intricacies of the real world in terms of some crude simplification, as Sraffa rightly emphasized. Ricardo was, of course, aware of the fact that this simplification could not be sustained and that in order for his theory of profits to be acceptable as a *general theory*, he would have to extend the argument. He actually did so, also in response to Malthus's objection. Yet the important point to be stressed here is that the corn model confirmed the idea that a conceptualization of the rate of profits in strictly physical terms as a ratio of quantities of products and thus independent of values was possible, at least in certain conditions. The question was close at hand: does the idea carry over to more general cases?

Before we turn to this question, the following remark is appropriate. Ricardo, like Smith, was concerned with analysing the capitalist economic system as a whole. His focus on the corn producing industry when ascertaining the rate of profits was legitimate only to the extent to which this industry was indeed special in the sense Sraffa expounded. This industry or, in the more general case, a set or composite of industries, could be singled out, because the level of the rate of profits depended exclusively on the condi-

tions prevailing in it and not on those prevailing in the other industries. Ricardo identified the corn industry as the sought key sector, because what it produces is needed directly and/or indirectly (as means of subsistence and means of production) in each and every industry of the economy. It is a 'necessary' commodity. This does not mean that the other industries are unimportant. It only means that for certain questions, but not for others, they play no role.

In modern terminology, the system is *decomposable*.¹³⁾ In the next but one section we see, among other things, that decomposability is not limited to the case of the simple corn model. Yet before we come to this, let us have a quick look at corn model reasoning in the works of two authors writing at around the same time as Ricardo.

VIII Reflections of the 'Corn-Ratio' Theory of Profits in Other Authors

Ricardo's contemporaries appear to have had much less difficulties to discern in Ricardo's reasoning a corn-ratio approach to the theory of profits than some modern interpreters. We have already referred to Malthus's response to Ricardo, which reflects the corn model. Perhaps even more interesting is its reflection in the following statement by Robert Torrens, who insisted

that in whatever proportion the quantity of produce obtained from the soil exceeds the quantity employed in raising it, in that proportion the value of the manufactured goods will exceed the values of the food and material expended in preparing them. (Torrens 2000, Vol. II, 362)

Torrens says substantially the same thing as Sraffa, and this in 1820: the rate of profits in manufacturing is equal in *value* terms to the rate ascertained in purely *physical* terms in agriculture. Competition is taken to adjust relative prices in such a way that a uniform rate of profits, which is equal to the physical ratio in agriculture, obtains. And Torrens leaves no doubt that it is Ricardo, whom we owe this ingenious concept put forward in what Torrens calls an

original and profound inquiry into the laws by which the rate of profits is determined. (ibid., xix)

Interestingly, several authors took up Ricardo's concept or developed it independently from him. It can, for example, also be found in *Der isolierte Staat* of Johann Heinrich von Thünen, who had read some of Ricardo's published work (see Kurz 1999, 154–57).

We now turn to more general formulations of the physical-ratio theory of profits.

IX The *Essay on Profits: Staying Away from 'a Labyrinth of Difficulties'*

A central concern of the papers by Professors Nakamura, Senga and Mizuta is the analysis in the *Essay on Profits*. This appears to have been also very much a focus of interest in Professor Hatori's earlier work, to which my Japanese colleagues refer and with regard to which they express to deviate from Sraffa's interpretation. The main question is: did Ricardo in the *Essay* still advocate some corn model reasoning? The answer is: he did and he didn't. Since this sounds paradoxical, let me explain what I mean.

Let us first recapitulate what Sraffa wrote

about the *Essay* and Ricardo's theory of profits in it. First, Sraffa insisted that Ricardo's new theory was available only in 'fragmentary terms' in the *Essay*. He added:

At first, both in the *Essay* and in Ricardo's letters of 1814 and early 1815, a *basic principle* had been that 'it is the profits of the farmer that regulate the profits of all other trades.' Malthus opposed him in this view, 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.' After the *Essay* this principle disappears from view, and is not to be found in the *Principles*. (Sraffa 1951, *Works* I, xxxi; emphasis added)

Sraffa went on to explain:

The nearest that Ricardo comes to an explicit statement on these lines is in a striking passage in a letter of June 1814: 'The rate of profits and of interest must depend on the proportion of production to the consumption necessary to such production.' The numerical examples in the *Essay* reflect this approach; and particularly in the well-known Table which shows the effects of an increase of capital, both capital and the 'neat produce' *are expressed in corn, and thus the profit per cent is calculated without need to mention price*. (Sraffa 1951, *Works* I, xxxii; emphasis added)

In a footnote appended to the word 'Table' Sraffa drew the readers' attention to Malthus's criticism of the table:

The feature of calculating the advances of the farmer in corn is singled out by Malthus as ‘the fault of Mr. Ricardo’s table’; since circulating capital did not consist only of corn, but included ‘tea sugar cloaths &c for the labourers’; so that a rise in the relative price of corn would ‘afford a greater surplus from the land’ (letters of 12 and 14 March 1815 [see *Works* VI, 185–87]). (Sraffa 1951, *Works* I, xxxii, fn. 4)

Malthus’s criticism is adopted by my Japanese colleagues, who rightly stress, following Malthus, that Ricardo himself had explicitly stated that capital (and wages) in agriculture was made up of heterogeneous commodities, some of which were produced in the manufacturing industries. With the price of corn as the standard of value, the prices of manufactured products were bound to decrease, as less and less fertile lands were cultivated.

This is certainly correct. But what does it tell us? Ricardo had of course not to be convinced by Malthus that capital and wages in agriculture consist of several commodities and not only of corn (a composite commodity, by the way, as we have seen in the above). Only a fool would claim otherwise! But then, in the *Essay*, after having stated the obvious himself, Ricardo in the Table, as Malthus, Professor Hatori and several other commentators noticed, simply ignored it! How come?

There are (at least) three possible interpretations:

1. Ricardo was a fool, who did not really understand Malthus’s objection.
2. Ricardo was tremendously forgetful and did not remember what he had written on

an earlier page.

3. Ricardo was not a fool, but was unwaveringly sticking to his basic vision that the rate of profits could be conceived of in purely physical terms, and that a deeper analysis was both needed and indeed possible than Malthus’s shallow statement 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,’ which is of no use at all in understanding *how* that regulation is actually meant to work.

To me there is no doubt that answer 3 is the correct one. Ricardo was not impressed by Malthus’s criticism and consistently followed his own intuition.

Ricardo’s corn model reasoning and its resumption in the *Essay* were first probing steps into a deeper analysis of profits than the one available at the time. Assume that capital (or rather wages) in agriculture consist not only of corn (or rather the composite commodity, called ‘corn’), but also of some manufactured products (sugar, cloth, tea etc.), but assume for a moment that corn is by far the most important element in it. There are, for sure, also the other commodities, but for the sake of simplicity they may be put aside in a first approximation to the problem at hand. This I think is what Ricardo actually did. For perfectly good reasons, it seems, he tried to avoid getting entangled in a myriad of complex relationships, whose precise form neither he nor anyone else (including, of course, Malthus) knew at the time. In a letter to Malthus of 17 April 1815 Ricardo spoke of his ‘simple doctrine,’ designed to ‘account for all the phenomena in an easy, natural manner’ and thus staying away from ‘a laby-

rinth of difficulties' (*Works* VI, 214). *Simplicity may be a virtue instead of a vice, and in the case under consideration it surely was!*

Keeping this in mind, a proper understanding of Ricardo's Table is not difficult. The Table was meant to convey two closely related, in Ricardo's judgement all-important insights in terms that are as simple as possible. The two insights, or analytical elements, under discussion we know already: first, while some industries are important when it comes to the determination of the general rate of profits, others are not; secondly, focusing attention on the former, the rate of profits may be conceived of in purely material terms. In the interest of getting these messages across to the readers, Ricardo apparently considered it admissible to commit what some of his critics called a 'fault,' a 'slip' or an 'inconsistency.' Had he been possessed already of a fully worked out theory, he can be expected to have presented it. He was not. As Sraffa rightly stressed, Ricardo's new theory was available only in 'fragmentary terms' in the *Essay*. The two most important fragments were those just mentioned. Let us recall what Ricardo said about his numerical examples, tables etc.: 'In all these calculations I have been desirous only to elucidate the principle, and it is scarcely necessary to observe, that my whole basis is assumed at random, and merely for the purpose of exemplification.' This applies, I maintain, also and especially to the Table in the *Essay*. Ricardo upheld his basic intuition or vision as to how the rate of profits was determined. He was convinced of the explanatory power of his novel view, although he was not yet possessed of the tools to bring it to full frui-

tion. He was forced to compromise, and did so by paying lip service to Malthus's trite objection on one page, retaining the surplus principle he saw at work in the rest of the essay. Ricardo deserves to be praised for his courage and steadfast adherence to what he considered to be the right approach to the theory of profits!

X The *Principles*

When we now turn to the *Principles*, first published in 1817, do we encounter Ricardo's vision also there? Indeed we do, and we do so in a form in which the role of corn in the corn model is now simultaneously performed by several commodities, all of which are 'necessaries,' that is, wage goods that have to be advanced to workers as capital in each and every branch of production. However, before we provide evidence in support of this, let me first comment once again on the corn model and also on Torrens's reflection on it, which we discussed in Section VIII above.

Both Ricardo and Torrens were clear that taking the capital of a *single* industry to be homogeneous with the industry's product was not an empirical proposition, but a simplifying analytical device. Yet what could never ever be observed with respect to a single industry was, of course, possible with regard to *several* industries taken together: there may be homogeneity between product and capital in *aggregate* terms, that is, the commodity composition of the surplus product may be the same (or nearly the same) as the commodity composition of social capital. In this case, the general rate of profits may again be conceived of (at least in a first approximation) in purely physical terms, with-

out any question of valuation. It is surprising that this case has been given hardly any consideration in the debate about the corn model, although it mimics the latter's basic logic without having recourse to its bold premises.¹⁴⁾ In some of the comments on the development of Ricardo's theory there is a certain analytical narrowness, which, I believe, impedes a proper understanding of Ricardo's ingenuity.

Interestingly, in all three editions of the *Principles* we encounter a numerical example which satisfies the homogeneity condition between aggregate output and aggregate capital; see *Works* I, 50 and 64–66. In the example there are three commodities, all of which enter the real wage rate and thus count as 'necessaries' or capital goods needed in the production of the three commodities themselves (and also in that of other commodities, about which Ricardo does not speak in the context under consideration). The three commodities are hats, coats and corn. Ricardo assumes that of 100 units produced of each of them workers and landlords are paid 25 (or 22) units each. Profits consist accordingly of 50 (or 56) units of each commodity. If capital consists only of the real wages bill, an assumption Ricardo employs in much of his reasoning on profits, the rate of profits can be ascertained independently of values and amounts to $(50/25) = 2$ [or $(56/22) = (28/11)$]. Here we have a case in which the vector of the surplus product and the vector of the capital advanced are linearly dependent and in which, therefore, the rate of profits can be ascertained in purely material terms, confirming Ricardo's dictum that the questions of wages, profits and rent 'are not essentially connected with the

doctrine of value.' Here we also have a clear expression of what Ricardo meant by the 'proportions in which the whole produce is divided between landlords, capitalists, and labourers.' Ricardo actually introduced the above example in the following terms:

It is according to the division of the whole produce of the land and labour of the country, between the three classes of landlords, capitalists, and labourers, that we are to judge of rent, profit, and wages, and *not* according to the value at which that produce may be estimated in a medium which is confessedly variable. (*Works* I, 64; emphases added)

Last but not least, we also have the inverse relationship between the rate of profits and real wages (and rents), which reflects Ricardo's fundamental theorem of distribution.¹⁵⁾ For example, if wages fell from 25 to 22 units, profits would increase from 50 to 56 units, and the rate of profits would rise from 200% to approximately 254.55%.¹⁶⁾

Taking into account a multiplicity of wage (or capital) goods, as Malthus had requested, does not spell trouble for Ricardo's grand vision of the factors affecting the general rate of profits and the possibility of conceiving of it in physical terms. The rate depends on the conditions of production in all industries that directly or indirectly contribute to the production of wage goods, whilst it does not depend on the conditions of production of luxuries. Ricardo's above example thus could be said to elevate the corn-ratio theory from its previous single (and implicitly composite) commodity conceptualization to an explicitly multi-commodity one. It

preserves Ricardo's two fundamental insights, or analytical 'fragments,' mentioned in Section IX.

Ricardo's example is, of course, very special, not least because it identifies capital with wages and does not take account of produced means of production in a circular flow framework of the analysis, in which commodities are produced by means of commodities. Therefore (setting aside the problem of rent), with wages hypothetically tending to zero the rate of profits tends to infinity. This would not be so in the case in which each industry uses not only labour, but also raw materials, tools, machines etc. In this case the maximum rate of profits which obtains at hypothetically zero wages would be finite, not infinite.

Interestingly, echoing Ricardo's above argument and at the same time reformulating it in a circular flow framework, Torrens in his *Essay on the Production of Wealth*, published in 1821, put forward a numerical example in which two commodities, corn and cloth, are produced by means of corn and cloth. One part of each input quantity represents the use of the commodity as a means of subsistence, the remaining part as a means of production. Torrens assumes for simplicity that at the given real wage rate both industries employ the two commodities in the same proportion (and actually even in the same absolute amounts) as inputs (see Torrens 2000, vol. III, 372–73). The social surplus consists of the selfsame commodities in the same proportion as the social capital, so that the rate of profits can be determined without any recourse to prices. However, due to the very simple and special conditions postulated, both products exhibit the same

physical real costs per unit of output and therefore exchange for one another at the rate 1:1.

XI The Missing Step

Needless to say that Torrens's example is also very special. In fact, there is no reason to presume that any real economic system will ever exhibit a surplus product that is composed of the same commodities in the same proportions as the social capital employed to produce it. However, as Sraffa showed with his concept of the 'Standard system' (Sraffa 1960, 20), starting from an actual economic system a system may be constructed by hypothetically re-proportioning its industries until the above condition is met. As Sraffa (1960, 23) emphasized, the particular proportions of the Standard system 'give transparency to a system and render visible what was hidden, but they cannot alter its mathematical properties.'

Here is not the place to discuss in detail Sraffa's device and how he arrived at it, including his reasons for replacing wages paid *ante factum*, as in Ricardo, with wages paid *post factum*, and the related replacement of the distinction between 'necessaries' and 'luxuries' with that of 'basic' and 'non-basic' commodities; see therefore Kurz (2003, 2006) and Gehrke and Kurz (2006). It suffices to point out that Sraffa finally succeeded in corroborating Ricardo's intuition that 'the rate of profits [can be understood] as a ratio between quantities of commodities irrespective of their prices.' (Sraffa 1960, 22)

XII Concluding Remark

I am grateful to my Japanese colleagues for having involved me in a stimulating debate,

which gave me the opportunity to reconsider and sharpen my view of Ricardo's theory of profits. The remarkable continuity of thought both across Ricardo's various attempts to express his basic vision of the problem at hand and from Ricardo to Sraffa's resumption and elaboration of the classical approach to the theory of value and distribution are now a good deal clearer to me than they were before. If the interpretation given here, which is, of course, very much inspired by Sraffa (1951, 1960), should stand up to close scrutiny, then this is partly to the credit of my Japanese colleagues.

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Notes

- 1) My host at ISER, where I spent marvelous and productive weeks, was Professor Yoshiyasu Ono, whom I owe sincere thanks for his hospitality, good company and fruitful discussions.
- 2) A particularly striking example is close at hand. When classical authors talk about 'supply' (or 'offer') and 'demand,' many present-day readers, brought up with marginalist demand and supply analysis, are inclined to associate with such terms supply and demand functions or schedules. However, nothing could be more misleading. The idea of a quantitatively definite relationship between the price of a commodity and the quantity demanded or supplied was developed only much later. When Malthus talked about natural prices as being determined by demand and supply, Ricardo rightly objected: 'this, I think, is saying nothing.' (*Works* VIII, 279) Indeed, the terms 'supply' and 'demand' were just words that lacked almost any analytical content. Nothing could be explained in terms of them.
- 3) However, he was quite pleased with what he had achieved, and quite rightly so.
- 4) See the discussion in Watarai (2010).
- 5) Therefore I do not agree with Professor Senga (2011, 27 and *passim*) that Ricardo 'only gradually conceived the subject as the problem of a whole economy' and that it is only with the labour theory of value in the *Principles* that he recognised 'that an economy is organized as a society.' In accordance with Adam Smith he did so from the beginning.
- 6) As to how Smith, Ricardo and Marx saw technical change affect income distribution and the pace at which capital accumulates and the economy grows, see Kurz (2010).
- 7) One is reminded of Ludwig Wittgenstein's famous picture of a ladder, which allows one to reach a higher standpoint. Once one has reached the higher standpoint one can dispense with the ladder, because it has accomplished its task.
- 8) It hardly needs to be mentioned that there is also the opposite danger of being too much concerned with what Ricardo could have meant as opposed to what he actually wrote, which may lead to reading into Ricardo what actually is not there to be found. In my view Samuel Hollander is a case in point. His interpretation of Ricardo as an early demand and supply theorist or marginalist author involves a travesty of facts, as many critics of Hollander have convincingly argued.
- 9) Professor Senga (2011, 44 n. 3) maintains that 'the ideology of readers inevitably colours their interpretations.' This may well be true. Therefore the historian of economic thought who wishes to come up with an interpretation that is faithful to the author under consideration ought to take precautions not to allow ideology to overwhelm and spoil his task. This is what Sraffa did.
- 10) In this paper we do not enter into a discussion of Ricardo's search for an ultimate or invariable measure of value; see, therefore,

- Watarai (2010) and Kurz and Salvadori (1993).
- 11) Recall Sir William Petty's remark in his *Treatise*: 'Corn, . . . we will suppose to contain all necessaries for life, as in the Lords Prayer we suppose the word Bread doth' (Petty [1662] 1986, 89). Corn is accordingly conceived as a *composite* good, comprising all necessary means of subsistence. Scrutiny shows that Ricardo used the concept of corn in the same way as Petty.
 - 12) He will also have come across Adam Smith's discussion of *joint production* in agriculture: growing corn, for example, does not only yield corn, but also straw and other by-products. He also set aside this complication in his argument.
 - 13) On decomposable and indecomposable systems, see Kurz and Salvadori (1995).
 - 14) But recall that 'corn' in Ricardo's reasoning was a term designed to encompass all necessaries, i.e. it represented a composite commodity.
 - 15) The inclusion of rents in this example may irritate readers. Ricardo saw rents and profits essentially as inversely related to one another and this is expressed in the above, but a coherent analysis of the distributive relationship including the rents of different qualities of land would need a much more sophisticated analysis. See Kurz and Salvadori (1995, chapter 10).
 - 16) This is also why I think, contrary to Professor Senga (2011, 42), that the labour theory of value in the *Principles* cannot possibly constitute a different logic than the one reflected by the physical ratio theory of profits. The counterposition of an 'analysis of the agricultural sector' in Ricardo's early works and 'a theory of society as a whole' in the *Principles* (*ibid.*) appears to me to be a fiction. It was always an analysis of the economic system as a whole Ricardo was interested in. However, he discovered at an early

time that the system is *decomposable* into a department that produces necessaries and the means of production needed in their production, on the one hand, and non-necessaries (luxuries), on the other, and that only the former matter when it comes to the determination of the *general* rate of profits. This explains, why he focused attention on the conditions of production of the former. Ricardo's correct dictum that the system is decomposable must not be misinterpreted as implying a partial or sectoral as opposed to a general or total view.

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