Rent, as share of produce, not governed by proportions

Christian Gehrke[*]

1. Introduction

The “General Index” of the *Works and Correspondence of David Ricardo* contains a sub-entry on ‘Rent, as share of produce, not governed by proportions’,[1] with a page reference to a deleted passage in note 115 of Ricardo’s *Notes on Malthus*, which reads:

> Rent is not a proportion of the produce obtained – it is not governed like wages or profits by proportions – depending as it does on the difference between the quantity of produce obtained by two equal capitals. (*Works* II: 196-7, note 1)

As Sraffa pointed out in his “Introduction”,[2] a number of small textual alterations[3] that Ricardo introduced in the third edition of the *Principles* reflect this note.

The present paper will discuss the meaning and significance of the above note, and of the alterations prompted by it in ed. 3 of the *Principles*. The fact that Sraffa devoted almost a full page of his “Introduction” to the explanation of those textual changes, and did not refrain from quoting a *deleted* passage in one of Ricardo’s notes on Malthus’s *Principles* to support his interpretation, clearly suggests that he considered the issue important. In my reading, Sraffa’s reason for providing such a detailed explanation of those textual alterations lies in their great importance for a proper understanding of Ricardo’s conceptualization of the wage-

---

[*] I would like to thank John King, Heinz D. Kurz, Gary Mongiovi, Guido Montani, Fabio Petri and Neri Salvadori for comments on a previous draft. I also thank an anonymous referee for very helpful suggestions and for saving me from an error in my argument. The usual caveat applies.

[1] See Ricardo (*Works* XI: 78).

[2] See Sraffa (1951: lvi).

[3] See Ricardo (*Works* I: 49, 83, 402-3).

profit-rent relationship. In addition, they obtain a special relevance from the fact that Ricardo's earlier, unclear statements on this issue have misled several commentators, including Marx.

Marx, I will suggest, indeed misunderstood Ricardo's approach to the analysis of the proportional distribution of income, because he failed to perceive the analytical significance of Ricardo's attempt to clarify his meaning by introducing those small textual alterations in ed. 3 of the *Principles*. Consequently, Marx's critique and purported improvement of Ricardo's analysis of the wage-profit-rent relationship was partly misdirected, because the latter simply did not hold some of the views which Marx ascribed to him. However, to Marx's excuse it may be noted that he could neither benefit from Ricardo's *Notes on Malthus* nor from Sraffa's editorial remarks in his "Introduction". Such excuse is not open to more recent interpreters of Ricardo, by whom his *Notes* and Sraffa's editorial remarks have been ignored or misinterpreted. In fact, misunderstandings of Ricardo's conceptualization of the wage-profit-rent relationship pervade many interpretations, both past and present, of Ricardo's approach to the theory of distribution. Following Cannan ([1893] 1967: 278), Ricardo is still widely interpreted as having predicted a rising share of rent in the value of the social product in his 'natural course' scenario of economic development. Moreover, Sraffa's explanation of the small textual alterations in Section VII of Chapter 1 of the *Principles* as a reflection of Ricardo's note 115 in the *Notes on Malthus* has recently been contested, and it was suggested instead that the textual changes under consideration should rather be interpreted as 'the substitution of a "micro" method of treating distribution for the one previously framed at the level of social aggregates' (Peach 1993: 221). The plausibility of this alternative reading will be discussed below.

The paper is organized as follows. Section 2 briefly recalls Ricardo's analysis of the wage-profit-rent relationship, emphasizing in particular the differences that exist between the expositions in the *Essay on Profits* and in the first, second and third edition of the *Principles*. Section 3 turns to Marx's interpretation of Ricardo's analysis of this relationship and shows it to entail a misconception with regard to Ricardo's analytical treatment of the share of rent in the social product and its development over time. Section 4 offers some concluding remarks.[4]

---

[4] Sections 2 and 3 of this paper draw partly on material which has been previously published, as part of a much longer and differently focused paper on the re-assessment of Marx's critique of Ricardo's theory of rent; see Gehrke (2011b).

2. Ricardo's analysis of the wage-profit-rent relationship

In order to prepare the ground for a serious discussion of Marx's interpretation and critique of Ricardo's analysis of the wage-profit-rent relationship, the latter's main features must be briefly recalled. Since this is well-covered ground, the following exposition will concentrate on the major analytical aspects and particularly emphasize those issues which are important for a proper assessment of Marx's critique.

2.1 The corn ratio theory of profits and rents

As is well-known, Ricardo first adopted the theory of differential rent, in both the extensive and intensive form, in his *Essay on Profits* of March 1815, where he presented an analysis of the wage-profit-rent relationship which can be made most easily intelligible in terms of corn ratio theorizing. Suppose, then, an economic system in which corn is produced by means of heterogeneous land, homogeneous labour, and seed corn. If the wage per unit of labour (in corn), assumed to be advanced at the beginning of the production period, is designated by w_c, the amount of corn produced at the (extensive or intensive) margin by c, the corresponding amounts of labour and non-wage capital (seed-corn) by L_c and c_c, respectively, and the total advanced capital by a, the corresponding net product, y, is given by

$$y = c - (w_c L_c + c_c) = c - a\,.$$

It is immediately obvious that the rate of profits, $r = \dfrac{c - (w_c L_c + c_c)}{(w_c L_c + c_c)} = \dfrac{y}{a}$, is a material ratio between two different amounts of corn and that it is inversely related to the (corn) wage rate.[5] In competitive conditions the same rate of profits must also be earned by producers who cultivate more fertile or more favourably situated plots of land, because the owners of those plots are able to request a rent payment which corresponds exactly to the cost differential.

In addition to the inverse $r(w_c)$-relationship, which must hold in a given state of capital accumulation (that is, for a given level of (net) corn output), the two distributive variables are also unambiguously related to one another when the economy is supposed to expand in a given state of technical knowledge. In this hypothetical 'natural course' scenario of economic

---

[5] Of course, in this formulation the $r(w_c)$-relationship also exhibits an upper bound, which is given by the maximum rate of profits $R = y/c_c$. However, in his *Essay on Profits* Ricardo did not specifically emphasize this feature of the wage-profit relationship.

expansion, in which improvements in agriculture are for simplicity set aside, the rate of profit must fall with a constant corn wage per worker, because a more extensive (or intensive) cultivation is bound up with increased amounts of labour and/or seed corn per unit of output, and hence with a decreased net product at the extensive (or intensive) agricultural margin, moving the curve which depicts the $r(w_c)$-relationship closer and closer towards the origin.

In the present context, the reader's attention must be drawn to the fact that Ricardo's famous table in the *Essay on Profits* shows not only the rates of profit at different levels of output, but also the associated 'rates of rent', that is, the amounts of rent (in corn) *as a percentage of the total capital advanced* (in corn).[6] Moreover, Ricardo specifically emphasized that 'in a progressive country', in which capital accumulates and the population grows, and in which recourse must therefore be had to less and less productive soils or methods of land cultivation, the decline in the rate of profit is bound up with a rising rent rate: 'Rent is not only absolutely increasing, but (…) is also increasing in its ratio to the capital employed on the land' (*Works* IV: 16). The idea is close at hand, then, of reading him as envisaging an *inverse relationship* between the rate of profit and the rate of rent (so defined) for an expanding economic system in a 'natural course' scenario, in which agricultural improvements and corn importation are for simplicity set aside. As we shall see below, such a reading in fact appears to have informed Marx's critique of Ricardo's analysis of the wage-profit-rent relationship.

2.2 Labour-based reasoning

It is clear that the problem of the determination of the rates of profit and rent, and their development over time, is considerably simplified by the adoption of "corn ratio"-based reasoning. However, while this conception could give transparency to the existing relationships between the distributive variables without a need to consider value magnitudes, it was clearly not general enough. Soon after the publication of his *Essay on Profits* Ricardo in fact conceded, in response to objections raised by Malthus, that capital advances generally consist of a set of heterogeneous commodities, and that 'corn, though an important part, is only a part of the consumption of the labourer' (*Works* I: 306). With the adoption of the labour theory of value in his *Principles* Ricardo could demonstrate the existence of an inverse wage-profit relationship without the simplifying assumption of homogeneity between product and advanced capital.

---

[6] See Ricardo (*Works* IV: 17).

To illustrate this, suppose an economic system in which n commodities are produced, one of which (say, commodity c) is an agricultural product ('corn', for short) which can be produced on k different types of land. Furthermore, suppose the wage basket to be specified in terms of given quantities of corn and other necessaries, $\mathbf{d}$. On the simplifying assumption that the advanced capital consists only of wages, prices are then determined by $\mathbf{p} = w\mathbf{l}_{(h)}(1+r)$, where $w = \mathbf{p}^T\mathbf{d}$ is the wage rate and $\mathbf{l}_{(h)}$ is the labour input vector, with the element $l_{c(h)}$ (i.e., the labour coefficient of the corn sector) corresponding to the one associated with the marginal method h. Now, let the total amount of labour expended in the production of the annual social product be designated by L and the amount of labour that is necessary to produce the wage goods by L_w. Since the amount of labour that is necessary to produce the real wage per unit of labour is given by $\mathbf{l}^T_{(h)}\mathbf{d} = \dfrac{\mathbf{p}^T\mathbf{d}}{w(1+r)} = \dfrac{1}{(1+r)}$, it follows that $L_w = \dfrac{L}{(1+r)}$. Then the ratio, $\omega \equiv L_w/L$, gives the 'proportional wage',[7] and the rate of profits is seen to be determined by $r = \dfrac{L - L_w}{L_w} = \dfrac{1-\omega}{\omega}$. As Sraffa pointed out,

> it was now labour, instead of corn, that appeared on both sides of the account – in modern terms, both as input and output: as a result, the rate of profits was no longer determined by the ratio of the corn produced to the corn used up in production, but, instead, by the ratio of the total labour of the country to the labour required to produce the necessaries for that labour. (1951: xxxii)

It needs to be emphasized that Ricardo assumed that this inverse $r(\omega)$-relationship, which has also been called "Ricardo's fundamental proposition on distribution", applies not only to a given system of production in use but also to technologically changing systems. This is because he considered technological changes, and in particular deteriorating production conditions at the agricultural margin, to be adequately reflected in changes in the proportional wage: In an expanding economic system ω was bound to rise over time, Ricardo contended, because ever more labour per unit of 'corn' would be needed at the agricultural margin. And while he was clear about the fact that, in general, the production conditions of *all* wage goods are involved in the determination of r, he nevertheless tended to focus attention primarily on those of 'corn', as the workers' main means of subsistence. In his analysis of the wage-profit

---

7 On Ricardo's 'proportional wage' concept, and Sraffa's discreet hint on its significance in his "Introduction" to the *Principles*, see Gehrke (2011a).

relationship Ricardo thus argued as if ‘corn’, because of its role as the principal wage good, was the only basic commodity in the system:[8]

> Profits depend on high or low wages, wages on the price of necessaries, and the price of necessaries chiefly on the price of food, because all other requisites may be increased almost without limit. (*Works* I: 119)

Moreover, Ricardo suggested that ω (and thus also r) is determined exclusively by the production conditions of corn at the extensive (or intensive) margin of cultivation:

> In all countries, and all times, profits depend on the quantity of labour requisite to provide necessaries for the labourers, *on that land or with that capital which yields no rent*. (*Works* I: 126; emphasis added)

Note that in the formulation adopted above the value of corn, p_c, as well as the amount of labour that is required to produce the workers’ necessaries, L_w (and, consequently, also the proportional wage, ω, and the rate of profit, r), is determined exclusively by the production conditions at the agricultural margin: *Intra*-marginal production conditions are only involved in determining the amounts of extensive and intensive differential rent. Note, moreover, that whereas L is the total amount of labour which has been expended in the course of the year, L_w is *not* the amount of labour that has actually been expended in the course of the year in producing the wage goods, because part of the corn was produced with intra-marginal production methods.[9]

Some clarifying remarks are necessary to justify the simplifying assumption, adopted above, that the capital consists only of advanced wages. This reflects Marx’s correct observation (see below, Section 3) that Ricardo in his analysis of the wage-profit relationship had generally argued *as if* the entire capital consists only of wages. Since this claim has been emphatically

---

8 Sraffa has drawn attention to this feature of Ricardo’s reasoning in the following terms: ‘But while the theory that the profits of the farmer determine all other profits disappears in the *Principles*, the more general proposition that the productivity of labour on land which pays no rent is fundamental in determining general profits continues to occupy a central position.’ (1951: xxxii-xxxiii)

9 This distinction has not always been clearly seen. Tosato (1985: 195), for instance, wrongly identifies the amount of labour which has been annually expended, L, with ‘the value of total output’ – which, in Ricardo’s formulation, is rather given by the hypothetical amount of labour that would have been annually expended if *all* the corn had been produced with the marginal method, that is, by $L_{(h)} = \mathbf{l}_{(h)}^T\mathbf{x}$, with $\mathbf{x}$ as the activity vector.

rejected by some commentators,[10] its precise nature needs to be clarified. It would of course be quite wrong to accuse Ricardo of having simply ignored the existence of non-wage capital in his analyses at the aggregate level,[11] or of *always* having argued as if only labour and land were involved in the production of commodities.[12] The important point is, rather, that *in his analysis of the wage-profit relationship* Ricardo generally adopted the simplifying assumption that all non-wage capital can be reduced to direct and indirect wages in a finite number of steps without leaving a commodity residue. As Marx correctly pointed out (see Section 3 below), it was this simplifying assumption which had prevented Ricardo from recognizing that the rate of profit depends not only on ω, but also on the maximum rate of profits, R.

2.3 A clarification: Rent, as share of produce, not governed by proportions

Let us turn, then, to Ricardo's statements on the rent share in the *Essay on Profits* and in the first two editions of the *Principles*, and to the textual alterations which he then introduced in edition 3 in order clarify his conceptualization of the wage-profit-rent relationship.

In the *Essay on Profits*, as was already noted above, it was asserted that in a progressive country with a rising demand for food and raw produce, 'rent is (…) increasing in its ratio to the capital employed on the land'; it had also been suggested there, apparently with regard to the *net* social product (exclusive of wages), that 'the landlord not only obtains a greater produce, but a larger share' (*Works* IV: 16 and 18). It is difficult to see, then, how a reader of the *Essay* could not have formed the view that for Ricardo the natural course of economic development was bound up with a rising share (and rate) of rent, and a falling share (and rate) of profits (where the two shares together make up, of course, the entire net social product).

With the adoption of the labour theory of value in the first edition of his *Principles* Ricardo had then maintained, in Section VII of Chapter 1, that 'the division *of the whole produce of the land and labour of the country* between the three classes of landlords, capitalists, and

---

10 See, for instance, Steedman (1982) and Caravale (1991).

11 There can, of course, also be no question of charging Ricardo with having ignored non-wage capital at the level of *single commodities*, since the greater part of chapter 1 of the *Principles* is devoted precisely to showing the importance of differences in the wage/non-wage composition of the advanced capital for the prices of individual commodities.

12 However, in several of his numerical examples he *did* argue as if the only inputs needed were (direct) labour and land; see, e.g., the example at the end of the chapter "On Rent" (*Works* I: 83-4, note).

labourers' must be judged in terms of 'the proportion of the product of the annual labour of the country that is received by each class as rents, profits, and wages' (*Works* I: 49, note 1; emphasis added) – with the value of the product being measured, of course, by the amount of annual labour expended in its production. The division of the social product in terms of proportions was thus explicitly applied to wages, profits *and rents,* that is, to all three components of the functional distribution of income. Similarly, in the chapter "On Rent" in editions 1 and 2 of the *Principles*, rent was also explicitly conceptualized as 'the proportion *of the whole produce*' (*Works* I: 83, note 1; emphasis added).

As Sraffa pointed out,[13] the textual changes which Ricardo introduced in the italicized parts of the two passages cited above in ed. 3 of the *Principles*[14] can be explained by the fact that 'Malthus in his *Principles* had (…) criticised Ricardo for having applied to rent his measure by "*proportions* or cost in labour", and having suggested as a result that with the extension of cultivation the proportion of rent to the total produce of land would increase' (1951: lvi).[15] Malthus's criticism in fact prompted Ricardo to a restatement of his position in his *Notes on Malthus* and in his correspondence, and to explain 'in effect that rent would take up an increased proportion of the produce of the *old* lands, or, if additional capitals be employed on the same lands, an increased proportion "of each quantity before obtained"' (ibid.).

Let us take a closer look at Ricardo's reply to Malthus in note 115. In the opening paragraph Ricardo conceded that 'my language about proportions may not have been so clear as it ought

---

13 See Sraffa (1951: lvi).

14 In edition 3, Ricardo changed the first passage to read: 'the division *of the whole produce of the land of any particular farm*', while the second one was re-written as 'the proportion *of the produce, obtained with a given capital on any given farm*' (*Works* I: 49 and 83; emphases added). In addition, there are also a number of textual alterations in chap. 32, "Mr. Malthus's opinions on rent", which according Sraffa (*Works* I: lvi, n. 5) were also inserted in response to Malthus's criticism.

15 Sraffa's interpretation has been challenged by Peach, who suggested that the textual alterations under consideration should rather be interpreted as 'the substitution of a "micro" method of treating distribution for the one previously framed at the level of social aggregates'; accordingly, this author also contends that 'in his later writings he {Ricardo} made a point of explaining that his analysis of changes in the rate of profit was to be framed at the "micro" level of the individual farm (or firm), not at the "macro" level of national income shares' (Peach 1993: 221, 31; see also 290-1). This reading seems to overlook that in order to determine the functional distribution of income in the presence of land scarcity the demand for agricultural products in the economic system as a whole must be known: What possible analytical meaning can be given, then, to the phrase 'a "micro" method of treating distribution'?

to have been' (*Works* II: 196), and he therefore set out to re-explain his novel concept of "proportional wages" with a simple numerical example, in which he illustrates his new device for measuring the 'real value of wages' for the hypothetical case, in which only a single commodity is produced in the economic system:

> Suppose the last land now in cultivation yields 180 qrs. of corn with the employment of a given quantity of labour, and in consequence of the rise in the price of corn a still inferior quantity of land shall be cultivated next year which shall yield only 170 qrs. If this year the labourer shall have one third of the 180 quarters, and next year he shall have one third of the 170 quarters, I say his wages will be of the same value next year, as this, because the whole 170 quarters next year will be of the same value as the 180 quarters are this year, and consequently $\frac{1}{2}$, a fourth, or a third of either of these quantities will be also of the same value. (*Works* II: 196)

Ricardo's explanation of his novel conceptualization of wages in the context of a one-commodity model only served him to demonstrate in simpler terms what he had previously already presented in more general terms, in Section VII of Chapter 1 of the *Principles*, with reference to a three-commodity example: that his conceptualization of the proportional distribution of income refers, not to the proportion of the total *quantity* of produce received by each class, but to the proportion of the *value* of the total produce. In the next paragraph, however, he then stressed that 'this division by proportions' must only be applied, and *should only have been applied by him*, to wages and profits at the agricultural margin, but not to rents:

> When I speak of this division by proportions I always apply it, or ought to apply it, (and if I have done otherwise, it has been from inadvertence), to the produce obtained with the last capital employed on the land, and for which no rent is paid. (*Works* II: 196)

Next, Ricardo then demonstrated in terms of his one-commodity example what in Chapter 1 of the *Principles* he had previously shown with a three-commodity example, namely that 'this language about proportions' allowed him to speak of a rise in the 'real value of wages' with the expansion of the economic system, even if the 'commodity wages' remain constant:

> Now in fact the labourer will get a larger proportion of the 170 qrs., than he got of the 180 qrs., he will get a larger proportion of this equal value, and therefore it is that I say his wages have risen. Whatever may be the quantity of corn obtained by the last capital employed on the land, it will be of the same value, because it is the produce of the same quantity of labour. A larger proportion of this equal value must itself be a larger value. (*Works* II: 196)

The following paragraph in Ricardo's *Notes* manuscript, later deleted, then contains the passage quoted by Sraffa:

> Rent is not a proportion of the produce obtained – it is not governed like wages or profits by proportions – depending as it does on the difference between the quantity of produce obtained by two equal capitals. If therefore I have anywhere said that rent rises or falls in the proportion that the produce obtained is increased or diminished I have committed an error. I am not however conscious of having so done. (*Works* II: 196-7, note 1)

The analytical significance of Ricardo's clarifying remark consists not so much in the fact that it disposes of the common misunderstanding that he had predicted a continuously increasing rent share in his 'natural course' scenario,[16] but more importantly in the exclusion of intra-marginal production conditions from the determination of the size of the social product which can be shared out among workers, capitalists, and landlords.[17] It also disposes of the idea, which could easily (but wrongly) be inferred from the *Essay on Profits*, that Ricardo had envisaged an inverse relationship between the rates of profit and rent, each defined as a percentage of the advanced capital, in the natural course of economic development.

Marx, of course, did not have access to the Ricardo-Malthus correspondence and to the *Notes on Malthus,* and therefore was necessarily unaware of Ricardo's clarifying remarks. It is not surprising, therefore, that he failed to notice the significance of the small textual changes which Ricardo had introduced in edition 3 of the *Principles* to clarify his meaning.

---

[16] Cannan criticized Ricardo for his failure to notice that in his 'natural course' scenario the rent share in the social product (inclusive of wages) need not necessarily rise, and that it happens to do so 'only in special cases' ([1893] 1967: 278). Later, it was suggested that Ricardo had originally predicted a rising rent share in the social product, but that the writing of his *Notes on Malthus* had then convinced him that rent need not rise as a relative share, without himself noticing that his reasoning in the *Notes* was implicitly based on 'a renunciation of diminishing returns as a property of the aggregate production function' (Barkai 1966: 291). It is then suggested that Ricardo, being 'reluctant to make such a complete *volte face*', made 'attempts to bring into line some, though by no means all, of his original statements on rent as a relative share, by means of minor deletions and the insertion of qualifying phrases into the third edition of the *Principles*' (ibid.). For a discussion of Ricardo's alleged prediction of a rising rent share in the social product in his earlier writings, and his later 'recantation' of it, see also Davidson (1959).

[17] Ricardo's insistence that rent, unlike wages and profits, is 'not governed by proportions' is echoed in Sraffa's finding that land is equivalent to a non-basic commodity and that the processes corresponding to rent-bearing land cannot enter the Standard system in the case of extensive rent, while with intensive rent both processes enter into the construction of the Standard system in such a way that the land is eliminated from the means of production of that system (Sraffa 1960: 77-8).

3. Marx's critique of Ricardo's analysis of the wage-profit-rent relationship[18]

A recurrent theme in Marx's economic manuscripts of 1861-63, later published as *Theories of Surplus Value,* and in the manuscripts of 1864-67, which Engels later used for compiling volume III of *Capital*, is the criticism of Ricardo's "fundamental proposition on distribution". We have already noted Marx's claim that Ricardo, in his analysis of the wage-profit relationship, had disregarded circular production relations and had argued as if all capital consisted only of wages, or could be reduced to wages in a finite number of steps. As Marx put it:

> *In his observations on profit and wages*, Ricardo (…) abstracts from the constant part of capital, which is not laid out in wages. He treats the matter as though the entire capital were laid out directly in wages. ([1861-63] 1989b: 10; emphasis added)

Marx had approved of Ricardo's concept of 'proportional wages'[19] and had translated it into his own concept of 'rate of surplus value', *S/V*, with *S* as the labour value of the social surplus and *V* as that of the social variable capital. To Ricardo's "fundamental proposition" Marx objected that Ricardo had erroneously identified the rate of profit with the rate of surplus value and had thus overlooked a second determinant of the former: the technical conditions of production as they are reflected in the organic composition of capital of the system as a whole. To render this clear, let us turn to Marx's expression for the 'rate of profit',

$$r = \frac{S}{C+V} = \frac{S/L}{C/L + V/L} = \frac{1-\omega}{1/R+\omega} = \frac{R(1-\omega)}{1+R\omega},$$

with *C* as the labour value of constant capital, *L* as the amount of living labour expended during the year, ω as the wage share (*V/L*, or the rate of surplus value, $(1-\omega)\omega^{-1}$) and *R* as the inverse of the organic composition of capital (*C/L*). It is then obvious that the rate of profits depends on two magnitudes instead of only one: *R* and ω. In Marx's conceptualization, $L/C = R$ gives the maximum rate of profits that corresponds to zero wages. If the maximum rate of profits happens to fall (rise) in the course of economic development, and proportional wages remain constant, the actual rate of profits is bound to fall (rise).

---

[18] On the following, see also Gehrke and Kurz (2006), Kurz (2010), and Kurz and Salvadori (2010).

[19] See Marx ([1861-63] 1989b: 53-4).

3.1 The ‘rate of profit’ in Marx’s “law of the tendency of the rate of profit to fall”

It needs to be emphasized that in the above formula for *r*, with the *entire* surplus value *S* in the numerator, the ‘rate of profit’ is defined in such a way as to include (in the numerator) all of the three components into which, according to Marx, surplus value is being transformed: (industrial) profit, interest, and ground-rent. This peculiar definition of the ‘rate of profit’[20] was in fact the one Marx used in Part III of vol. III of *Capital* – and it was *this* definition to which his famous “law of the tendency of the rate of profits to fall” was meant to refer. Marx indeed specifically emphasized this point (which nevertheless seems to have been generally ignored in discussions of his infamous “law”) in his economic manuscript of 1861-63:

> Incidentally, when speaking of the law of the falling rate of profit in the course of the development of capitalist production, we mean by profit the total sum of surplus value which is seized in the first place by the industrial capitalist, [irrespective of] how he may have to share this later with the money-lending capitalist (in the form of interest) and the landlord (in the form of rent). Thus here the rate of profit = $\frac{\text{surplus value}}{\text{capital advanced}}$. ([1861-63] 1989b: 94)

Marx also made it perfectly clear that he was referring to the ‘rate of profit’ in *this* sense in his “law of the tendency of the rate of profit to fall” in the opening paragraphs of Chapter 13 (“The Law as such”) of vol. III of *Capital*:

> We intentionally present this law before going on to the division of profit into different independent categories. The fact that this analysis is made independently of the division of profit into different parts, which fall to the share of different categories of people, shows from the outset that this law is, in its entirety, independent of this division, and just as independent of the mutual relations of the resultant categories of profit. The profit to which we are here referring is but another name for surplus-value itself, which is presented only in its relation to total capital rather than variable capital, from which it arises. *The drop in the rate of profit, therefore, expresses the falling relation of surplus-value to advanced total capital, and is for this reason independent of any division whatsoever of this*

---

[20] In the section “Theories of Surplus Value. Adam Smith” in his economic manuscript of 1861-63 Marx explained his peculiar use of the term ‘profit on capital’ in the following terms: ‘When I speak of surplus value, in relation to the total sum of capital advanced, as *profit on capital*, this is because the capitalist directly engaged in production *directly* appropriates the surplus labour, no matter under what categories he has subsequently to share this surplus value with the landowner or the lender of capital’ ([1861-63] 1988: 392).

> *surplus-value among the various categories*. ([1894] 1959: 214; emphasis added)[21]

The above passage was clearly formulated against Ricardo, as an implicit criticism of his explanation of the falling rate of profit (of which Marx had provided a summary account in the paragraph immediately preceding it). And when Marx says that he 'intentionally' presents the law in this form he wants to impress the point on his readers' minds that the tendency of the rate of profit to fall is independent of any inverse movements of the shares (and rates) of profit and rent. Marx appears to have particularly stressed this point because he believed – erroneously – that Ricardo had envisaged the two distributive shares, and also the *rates* of profit and rent, as being inversely related to one another.[22] (At this point it probably does not need emphasizing that Marx always calculated the 'rate of ground-rent' in the present context (that is, when discussing income distribution at the aggregate level),[23] *not* per unit of land, but *as a percentage of the total social capital* – in the same way as Ricardo had done in the *Essay on Profits*.)[24]

However, apart from the 'didactical' reason which Marx put forward in the above passage as a justification for his peculiar definition of the 'rate of profit', there is also a more substantial, 'analytical' reason for it. In Marx's understanding, the proportional wage, or rate of surplus value, must be defined in relation to the total annual *net social product* (inclusive of wages). For Marx, the value of the annual *gross* product is given by $C+V+S$, that is, by the total amount of living labour, *L*, *plus* the value of the constant capital, C – and not by *L* alone, as Ricardo had erroneously maintained *with regard to manufacturing*.[25] But the total amount of

---

[21] Cp. also Marx's discussion of the various components, into which the 'profit on capital' can be split up, in section 1 of chapter 15 in vol. III of *Capital* ([1894] 1959: 241-6).

[22] Some textual evidence for this claim is provided in Subsection 3.1 below.

[23] There are also passages in Marx's writings on rent, particularly in the sections on differential rent I and II, in which Marx refers to, or makes numerical calculations of, the 'rent per acre'.

[24] In chap. 46 of vol. III of *Capital*, Marx criticised Rodbertus for having committed 'the mistake of dealing with the ratio of money-rent to a quantitatively definite piece of land, e.g., an acre, as though it had been the general premise of classical economics in its analysis of the rise or fall of rent. This is (…) erroneous. Classical economics always treats the rate of rent (…) with reference to the advanced capital' ([1894] 1959: 778).

[25] As Marx rightly pointed out, 'Ricardo's statement that "the labour of a million men in manufactures will always produce the *same value*" (…) is only right in the *one* case, where the total capital = the variable capital' ([1861-63] 1989a: 49). Note, however, that

living labour which has been annually expended, $L = V + S$, gives, for Marx, the value of the *net* social product which can be shared out among workers, capitalists, and landlords, and the two ratios *V/L* and *S/L* accordingly give, respectively, the 'proportional wages' (i.e., the wage share) and the 'proportional profits *plus* rents', *jointly* (i.e., the 'profit *and* rent share'). This means that in Marx's formulation of the $r(\omega)$-relationship the proportional wage, *V/L*, must be taken to be determined by the *average* amount of socially necessary labour for producing the wage goods, and the rent (or rather the part of surplus value that is transformed into rent) is confounded with the profit. On the contrary, in Ricardo's alternative formulation, where the proportional wage is taken to be determined by the amount of labour which is required at the agricultural margin, rent is instead confounded with, or 'hidden in', the proportional wage – which thus includes elements of (what in Marx's view properly belongs to) surplus value.[26] In Marx's formulation, unlike Ricardo's, *intra*-marginal production methods are thus involved in the determination of ω, and the rent share is conceptualized as a proportion of the total annual labour.

3.2 Marx's "law of the tendency of the rate of ground-rent to fall"

Let us turn, then, to Marx's criticism of Ricardo's analysis of the wage-profit-rent relationship (in the following, the terms 'profit' and 'rate of profit' refer to the common usage). In Marx's reading, Ricardo's propositions on income distribution entailed not only the statement 'that wages and profit are related *inversely*', but also 'that profit and rent have an inverse relation' ([1861-63] 1989a: 308). More specifically, Marx interpreted Ricardo as having asserted that the same cause, namely the deterioration of the productivity of labour in agriculture in the course of the accumulation process, was bound up with a *fall* in the rate of profit and a *rise* in the rate of rent. Now, from an analytical point of view, Marx made two main objections to Ricardo's "fundamental proposition": First, he sought to disprove it by showing that the 'rate

---

in the above passage, which Marx quotes and criticises, Ricardo refers explicitly to 'manufactures': For him, the labour of a million men in agriculture will *not* always produce the same value, because the value of 'corn' is determined by the amount of labour which is required at the agricultural margin. Thus if one worker produces one unit of corn on the marginal land and two units of corn on the intra-marginal land, then the labour of a million men in agriculture would produce a value of 1,5 million men-years if one-half of the men were employed on each type of land, but a value of 1,67 million men-years if one-third of them were employed on the marginal, and two-thirds on the intra-marginal land.

[26] Ricardo's and Marx's different approaches are illustrated with a simple numerical example in the Appendix.

of profit' (defined as the ratio of total surplus value to total advanced capital) depends not only on proportional wages, but also on the maximum rate of profits, *R*. An implication of this was that 'the *rate of profit* can fall without any rise in the *rate of interest* and *rate of rent*' ([1861-63] 1989b: 100). Secondly, Marx also sought to demonstrate that the rate of profit (where the term is now meant to refer to common usage, that is, to Marx's notion of 'industrial rate of profit') depends not only on the proportional wage, but may also be affected by variations in the rate of ground-rent (with the proportional wage remaining constant):

> The rate of profit can rise as a result of a fall *or rise* in rent, independently of any change in the value of labour. ([1861-63] 1989a: 60; emphasis added)

Note that Marx's statement above amounts in effect to the claim that the rates of profit and ground-rent need not necessarily be related inversely to one another – a proposition which he considered to be fundamental to Ricardo's explanation of the tendency of the rate of profits to fall. This becomes clear from his *Grundrisse* manuscript, where Marx provided a very concise statement of his understanding of Ricardo's (and A. Smith's) argument regarding the tendency of the rate of profit to fall:

> A. Smith explained the fall of the rate of profit, as capital grows, by the competition among capitals. To which Ricardo replied that competition can indeed reduce profits in the various branches to an average level, can equalize the rate, but cannot depress this average rate itself. (…) Ricardo, for his part, says: "No accumulation of capitals can permanently reduce profits unless an equally permanent cause raises wages." (…) He finds this cause in the growing, or rather in the *relatively* growing, unproductiveness of agriculture, that is, in "the growing difficulty of increasing the quantity of subsistence", i.e., in the growth of proportional wages, so that the labourer's real wage is no greater, but is the product of more labour; in a word, a greater portion of necessary labour is required for the production of agricultural products. The falling rate of profit hence corresponds, with him, to a nominal increase of the wage rate and a real increase of ground rent. ([1857-58] 1974: 637-8)

Essentially the same interpretation (but less concisely) Marx also put forward in his economic manuscript of 1861-63, where he also spelled out the relationship which – in his reading – Ricardo had assumed to exist between the rate of profit and the rate of ground-rent:

> Ricardo thinks that rent gradually swallows up the rate of profit. (…) The continuous fall in profits is thus bound up with the continuous rise in the rate of rent. ([1861-3] 1989a: 73 and 74)

Considerable portions of Marx's writings on rent are in fact devoted to showing, against Ricardo, that the tendency of the rate of profit to fall is first and foremost caused by a rising organic composition of capital (that is, by a fall in *R*), and that it is unrelated to any tendency of the rate of ground-rent to rise. And with his typical penchant for contrariness, Marx even went so far as to assert, in chapter 15 of vol. III of *Capital*, that the latter tends to *fall* – rather than rise – over time:

> But the rate of ground-rent likewise has a tendency to fall, although its absolute mass increases, and may also increase proportionately more than industrial profit. (Marx [1894] 1959: 242)

How did he justify this claim? According to Marx, the rate of ground-rent falls, because the organic composition of capital in the economic system as a whole tends to rise, so that the ratio of ground-rent to the total social capital will tend to fall, even if the amount of ground-rent increases in absolute terms. Marx conceded that the latter indeed exhibits a rising trend, but denied that this was caused by an absolute deterioration of agricultural productivity. He rather suggested that in agriculture the increase in the organic composition of capital is notoriously lagging behind the one in industry, so that the labour productivity in agriculture, although absolutely increasing, declines in relation to the productivity in industry: Agriculture becomes *relatively* more unproductive, so that the value of the agricultural product in relation to the industrial product, and thus also ground-rent, increases. The prices of agricultural products are therefore bound to rise relative to those of industrial commodities, just as Ricardo had maintained, but only because agriculture becomes *relatively* – not absolutely – less productive.[27] According to Marx, this implies that rents may rise at the expense of wages rather than profits, even if commodity wages are held constant, 'for the average wage is not determined by the relative but by the absolute value of the products which enter into it' ([1861-63] 1989a: 119). With a *relatively* declining productivity in agriculture, the commodity wage could remain constant, leaving profits the same or even greater, with increased rents in commodity or value terms.

It should be noted that Marx's reasoning constitutes no valid criticism of Ricardo's argument. First of all, Marx was tilting at windmills when he tried to show that the rates of profit and rent need not be related inversely to one another, because this was not a proposition to which Ricardo had meant to subscribe. More importantly, however, Marx's argument did not adhere to the set of assumptions underlying Ricardo's 'natural course' scenario, because it allowed for the introduction of agricultural improvements which raise the productivity of labour. But it is clear that in a regime of absolute increases in productivity constant commodity wages must correspond to falling proportional wages in Ricardo's sense.

---

[27] See Marx [1861-63] 1989a: 254).

4. Concluding remarks

In the preceding section it was shown that Marx's interpretation of Ricardo's analysis of the wage-profit-rent relationship suffered from a misunderstanding with regard to the latter's conceptualization of rent, which seems to have emanated from some misleading statements which Ricardo had made in the *Essay on Profits* and in the first two editions of the *Principles*. The textual alterations in ed. 3 of the *Principles*, by means of which Ricardo later sought to clarify his meaning with regard to his conceptualization of rent at the aggregate level, were unsuccessful – not only with Marx alone, but also with many other interpreters of Ricardo. Marx therefore believed – erroneously – that Ricardo had envisaged the rate of profit and the rate of rent, each defined as a percentage of the total social capital, as being inversely related to one another in a 'natural course' scenario of economic expansion.

It was also shown that Marx, like Ricardo, approached the analysis the wage-profit-rent relationship in two steps, and first focused attention on the wage-profit relationship alone. However, whereas in Ricardo's conceptualization of the $r(\omega)$-relationship the rent (or "excess profit"), which accrues on the intra-marginal lands, is confounded with ω, in Marx's alternative formulation the proportional wage (or rate of surplus value) is defined in such a way that the rent share is included in (the numerator of the formula for) the 'rate of profit', r.

References

Barkai, H. (1966), Ricardo's Second Thoughts on Rent as a Relative Share, *Southern Economic Journal*, **32**, 285-93.

Cannan, E. ([1893] 1967), *A History of the Theories of Production and Distribution in English Political Economy from 1776-1848*, London: P.S. King. Reprint 1967, New York: Augustus M. Kelley.

Caravale, G. A. (1991), Marx's Views on Ricardo: A Critical Evaluation, in G. A. Caravale (ed.), *Marx and Modern Economic Analysis*, Vol. II, Aldershot: Edward Elgar, pp. 168-205.

Davidson, P. (1959), A Clarification of the Ricardian Rent Share, *The Canadian Journal of Economics and Political Science/Revue canadienne d'Economique et de Science politique*, **25**, 190-195.

Gehrke, C. (2011a), "Prices of Wages": A Curious Phrase, in R. Ciccone, C. Gehrke, and G. Mongiovi (eds), *Sraffa and Modern Economics*, Vol. 1, London and New York: Routledge, pp. 405-422.

Gehrke, C. (2011b), Marx's Critique of Ricardo's Theory of Rent: A Re-assessment, in C. Gehrke, N. Salvadori, I. Steedman, and R. Sturn (eds), *Classical Political Economy and Modern Theory*, London and New York: Routledge, pp. 51-84.

Gehrke, C. and Kurz, H. D. (2006). Sraffa on von Bortkiewicz: Reconstructing the Classical Theory of Value and Distribution, *History of Political Economy*, **38**, 91-149.

Kurz, H. D. (2010), Technical Progress, Capital Accumulation and Income Distribution in Classical Economics: Adam Smith, David Ricardo and Karl Marx, *European Journal of the History of Economic Thought*, forthcoming.

Kurz, H. D. and Salvadori, N. (2010), Sraffa and the Labour Theory of Value, in J. Vint et al (eds), *Economic Theory and Economic Thought, Essays in Honour of Ian Steedman*, Oxford and New York: Routledge, pp. 189-215.

Marx, K. ([1894] 1959), *Capital*, vol. III, Moscow: Progress Publishers. English translation of *Das Kapital*, vol. III, Hamburg, 1894: Meissner.

Marx, K. ([1857-58] 1974), *Grundrisse der Kritik der Politischen Ökonomie (Rohentwurf),* 2nd ed. (1st ed. 1953), Berlin: Dietz Verlag.

Marx, K. ([1861-63] 1988), *Economic Manuscript of 1861-63. A Contribution to the Critique of Political Economy ["Theories of Surplus Value"]*, in *Karl Marx, Frederick Engels: Collected Works*, vol. 30, New York: International Publishers.

Marx, K. ([1861-63] 1989a), *Economic Manuscript of 1861-63. A Contribution to the Critique of Political Economy ["Theories of Surplus Value"]*, in *Karl Marx, Frederick Engels: Collected Works*, vol. 31, New York: International Publishers.

Marx, K. ([1861-63] 1989b), *Economic Manuscript of 1861-63. A Contribution to the Critique of Political Economy ["Theories of Surplus Value"]*, in *Karl Marx, Frederick Engels: Collected Works*, vol. 32, New York: International Publishers.

Peach, T. (1993), *Interpreting Ricardo*, Cambridge: Cambridge University Press.

Ricardo, D. (1951-73), *The Works and Correspondence of David Ricardo*. Edited by P. Sraffa in collaboration with M. H. Dobb, 11 vols, Cambridge: Cambridge University Press.

Sraffa, P. (1951), Introduction, in *The Works and Correspondence of David Ricardo*. Edited by P. Sraffa in collaboration with M. H. Dobb, Vol. I, Cambridge: Cambridge University Press.

Sraffa, P. (1960), *Production of Commodities by Means of Commodities*, Cambridge: Cambridge University Press.

Steedman, I. (1982), Marx on Ricardo, in I. Bradley and M. Howard (eds), *Classical and Marxian Political Economy*, London: Macmillan, pp. 115-156.

Tosato, D. (1985), Sraffa's Interpretation of Ricardo Reconsidered, in G.A. Caravale (ed.), *The Legacy of Ricardo*, Oxford and New York: Basil Blackwell, pp. 189-216.

Appendix

In order to illustrate Marx's and Ricardo's different approaches to the analysis of the wage-profit-rent relationship, consider the following simple example. Suppose 1 million men on the marginal land produce 1 million tons of corn, and 1 million men on the intra-marginal land produce 2 million tons of corn. Suppose the corn wage per worker amounts to 0.5 tons of corn.

Ricardo then reckons as follows: $L = 2$ million men-years, $L_w = 1$ million men-years, and $\omega = L_w / L = 1/2$, from which he then determines the rate of profit as r = 100%. However, ω does *not* give the proportion of the annual (net) social product[28] received by the workers as wages. For Ricardo, the value of the annual social product, which can be shared out among workers, capitalists and landlords, amounts to $L_{(h)} = 3$ million men-years, because the (labour) value of corn is determined on the marginal land. Accordingly, the proportion of the social product received by the workers as wages (that is, the wage share) is given by $L_w / L_{(h)} = 1/3$ and the profit share is given by $(L - L_w)/L_{(h)} = 1/3$; the rent share in the social product can then be determined residually as 1/3.

On the contrary, Marx starts out from a given amount of living labour that has been expended in the course of the year, $L = V + S = 2$ million men-years, and from a given rate of surplus value, $S/V = 2/1$. For him, the value of the annual net social product which can be shared out among workers, capitalists and landlords is given by $L = 2$ million men-years, and the value of V is determined by the *average* amount of labour embodied in the workers' wages, which is 666.667 men-years. Accordingly, he arrives at $V/L = 1/3$, from which he then determines the 'rate of profit' as $r = \frac{\text{surplus value}}{\text{capital advanced}} = \frac{1.333.333}{666.667} = 200\%$.

---

[28] In this example the annual *net* social product in Marx's sense (that is, inclusive of wages) corresponds, of course, to the annual *gross* social product, because it has been assumed for simplicity that there is no non-wage capital (no 'constant' capital).