The Non-Ricardian Stationary State in Chapter 17 of the Principles of Political Economy and Taxation

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ABSTRACT:

This paper explains the non-Ricardian stationary state (NRSS) and the tax incidence in such a state concretely. In the NRSS, the corn becomes monopoly price, and the rent upon scarcity is caused into the price. In this regard, Hollander (1979) considered that Ricardo emphasized the rent upon scarcity in addition to the differential rent. However, Hollander derived the interpretation based on Buchanan's words, rather than Ricardo's. On the contrary, we attempt to derive the interpretation from Ricardo's words in Chapter 17 of the *Principles*. We show that Hollander's interpretation is more inherent in Ricardo himself.

KEYWORDS: David Ricardo; stationary state; rent; monopoly price; tax

JEL CODES: B12, B31

1. Introduction

In the 18th century, in the background of the Industrial Revolution, England began experiencing rapid economic growth, continuing throughout the 19th century. At the time, the renowned classical economist David Ricardo (1772–1823) showed deep interest in economic growth in his book, *Principles of Political Economy and Taxation* (thereafter *Principles*).[1] In its introduction, Ricardo describes economic growth in relation to differential rent theory.

> In 1815, Mr. Malthus, in his "Inquiry into the Nature and Progress of Rent," and a Fellow of University College, Oxford, in his "Essay on the Application of Capital to Land," presented to the world, nearly at the same moment, the true doctrine of rent; without a knowledge of which, it is impossible to understand the effect of the progress of wealth on profits and wages, or to trace

[1] *On the Principles of Political Economy and Taxation* is included in vol. 1 of *The Works and Correspondence of David Ricardo* (Ricardo 1951-73). In this paper, *The Works and Correspondence of David Ricardo* is abbreviated as *RW*, and the number of volumes is expressed in Roman numerals.

satisfactorily the influence of taxation on different classes of the community; particularly when the commodities taxed are the productions immediately derived from the surface of the earth.

(*RW* I, 5–6)

Ricardo's theory of growth can be described as follows. First, accumulation of capital due to the investment of profits increases labour demand, which then raises wages above the subsistence level, which, in turn, is followed by an increase in population. Population growth then increases the demand for food (here corn), which leads to progress in the cultivation of inferior land and a corresponding increase in corn production costs. Owing to population growth, wages drop again to the subsistence level, and the rise in corn price increases wages and leads to population growth. Because of the reciprocal relationship between wages and profits, the profit ratio tends to decrease as the economy grows. Finally, the profit ratio decreases to its lowest level, resting at a stationary state. Here, we term this the Ricardian stationary state (RSS).[2]

In this regard, we believe that Ricardo has an additional stationary state, in Chapter 17 of *Principles* "Taxes on Other Commodities than Raw Produce." We call this the non-Ricardian stationary state (NRSS). We consider that it relates to the margin of intensive cultivation and the rent upon scarcity explained by Hollander (1979). However, Hollander derived his idea based on the words by David Buchanan (1779–1848), not on those of Ricardo, and he did not show how the rent upon scarcity is caused concretely. Then, this paper explains the NRSS and the tax incidence in such a state concretely, referring to Ricardo's words in Chapter 17 of *Principles* and *Notes on Malthus*.

In this paper, we also suggest the new relationship between Adam Smith (1723–1790) and Ricardo regarding agricultural taxes. Until now, the differences of opinion between Smith and Ricardo have generally been emphasized in the effect of agricultural taxes. For example, it is said Smith regarded that the taxes are paid from rent,[3] and Ricardo regarded that they are paid from profit.[4] However, this paper argues that Smith and Ricardo have a similar point of view of theoretical foundation in the effect of agricultural taxes.

The remainder of this paper is structured as follows. In Section 2, we discuss the effects of agricultural taxes on capital accumulation and the RSS. In Section 3, we examine the NRSS as laid

[2] About the Ricardian economic growth based on subsistence wage, see Pasinetti (1960). On the other hand, about the Ricardian growth based on variable wage, see Hicks and Hollander (1977).

[3] Smith's basic views on the agricultural taxes are found in Book 5, Chapter 5, Part 2 of *Wealth of Nations*. Smith, unlike Ricardo, does not adopt the theory of differential rent, instead argues that rents are always included in the price of corn and agricultural taxes are paid by landlords (Smith 1976 [1776], 836–37, 847).

[4] See, Seligman (1921) and Dome (1992; 2004). Furthermore, Eagly (1983) and Shoup (1960) discusses Ricardo's position in detail.

out in Chapter 17 of the *Principles* and the impact of agricultural taxes on such a state. Section 4 contains concluding remarks.

2. Ricardian Stationary State and Agricultural Taxes

A comparison of the effects of taxes between the RSS and the NRSS allows us to ascertain the existence of a stationary state differing to the Ricardian. The absence of the tax effect of the RSS in the NRSS indicates that the two steady states are different types. Thus, to begin with, it is necessary to understand the effect of agricultural taxes on the RSS before investigating the NRSS.

2.1. Effect of Agricultural Taxes on Capital Accumulation

Before we discuss the effect of agricultural taxes on the RSS, we characterize the effect of agricultural taxes on capital accumulation.

Ricardo argues that corn (or raw produce) is the first and most important consumption good in the wage-good bundle (*RW* I, 243), which means that considering a tax on corn can help in improving the understanding of a tax on workers' consumption goods.

"A tax on corn," according to Ricardo, "would fall on the consumers of corn, and would raise its value as compared with all other commodities, in a degree proportioned to the tax" (*RW* I, 159). The consumers of corn here are not only workers but also capitalists and landowners. Ricardo demonstrated that the price would increase according to the amount of the tax, as follows.

> If the price of raw produce [corn] did not rise so as to compensate the cultivator [agricultural capitalist] for the tax, he would naturally quit a trade where his profits were reduced below the general level of profits; this would occasion a diminution of supply, until the unabated demand should have produced such a rise in the price of raw produce, as to make the cultivation of it equally profitable with the investment of capital in any other trade.／A rise of price is the only means by which he could pay the tax, and continue to derive the usual and general profits from this employment of his capital. He could not deduct the tax from his rent, and oblige his landlord to pay it, for he pays no rent.
>
> (*RW* I, 156-57)

Ricardo also stated the following: "A tax, however, on raw produce [corn], and on the necessaries of the labourer, would have another effect": namely, the tax would raise the money wages per capita and lower the profit rate (*RW* I, 159). Adopting the Malthusian principle of population and the permanently fixed wage assumption, Ricardo demonstrated the second effect to be as follows: "From the effect of the principle of population on the increase of mankind, wages of the lowest kind," those of the labour class, "never continue much above that rate which nature and habit demand for the support of the labourers." As the workers are "never able to bear any considerable proportion of taxation," if they had to pay a sum equal to the tax in addition for corn or any other good consumed by them, "they would not be able to subsist on the same wages as before, and to keep up the race of labourers." Therefore, the money wage rate "would inevitably and necessarily rise." Following Ricardo's principle concerning the relationship between the rate of wages and profits, the rate of profits "would fall" in proportion to that of wages (*RW* I, 159).

This discussion covers the process of capital accumulation. In the RSS, the rates of profits reach the minimum level. When this is achieved, wages do not rise, the rate of profits does not fall, and the price of corn does not rise. Conversely, during capital accumulation, wages rise, the rate of profits falls, and corn prices rise. Thus, the discussion on the corn tax covers capital accumulation.

The tax on agricultural profits has the same effect as the tax on corn. According to Ricardo, "taxes on necessaries do not affect the consumers of necessaries, in proportion to the quantity that may be consumed by them, but often in a much higher proportion. A tax of corn, we have observed, not only affects a manufacture in the proportion that he and his family may consume corn, but in alters the rate of profit of stock, and therefore also affects his income. Whatever raises the wages of labour, lowers the profits of stock; therefore every tax on any commodity consumed by the labourer, has a tendency to lower the rate of profits" (*RW* I, 205). A "tax on the profits of the farmer would raise the price of corn" (*RW* I, 205). Then, higher corn prices raise the wages of labour and lower the profits of stock.

2.2. Effect of Agricultural Taxes on the Ricardian Stationary State

Next, we reflect on the effect of agricultural taxes in the RSS. However, as this effect is not explicitly discussed by Ricardo, we infer its characteristics.[5]

[5] Shoup (1960, 83) considers that Ricardo did not show the long run effect of tax explicitly, but he pays attention to a footnote that Ricardo added to Chapter 10 "Taxes on Rent" at the third edition of his *Principles*. At the third edition, the proviso "in a progressive country" (*RW* I, 175), was added to the explanation of the short run effect of tax that the taxes on raw produce raise the price of raw produce by the amount of the tax. Then, Shoup inferred: Ricardo thought that if the economy is not "progressive state", namely it is the stationary state, the tax on raw produce does not raise the price of raw produce but causes another effect. And he argued his view about the long run effect of tax inferred from Ricardo on taxation. If the taxes that are payed from profits are imposed, they decrease

As already noted in the RSS, the wages do not rise, and the rate of profits does not fall. Because wages do not rise, the price of corn also does not rise. If agricultural taxes were imposed, they would be paid out of agricultural capital. As a result, the country's population would decrease, and the cultivation of land would decline.

After taxation, the new price of corn would correspond to its price in the stationary state before taxation because the cultivation of land would decline from the stationary state, and corn production costs would decrease. Thus, the price of corn would rise by a sum equal to the tax, money wages would increase, and the rate of profit would fall. As a result, a new stationary state would appear. The price of corn before taxes in the new stationary state would correspond to the price based on the production costs in the old stationary state.

Therefore, the effects of agricultural taxes on the RSS would be the following: (i) it would cause a decline in the cultivation of land in comparison with the stationary state before taxation, and (ii) the price of corn after taxation would be the same as the price before taxation. This must be contrasted with the NRSS in the next section.

3. Effect of Agricultural Taxes on the Non-Ricardian Stationary State

3.1. Monopoly Price of Corn

The title of Chapter 17 of the *Principles* is "Taxes on Other Commodities than Raw Produce," but only a small part of the chapter covers such commodities. Instead, public debt and the monopoly price of corn are the main subjects of this chapter. To discuss the monopoly price of corn, Ricardo first explained the idea of a monopoly price.

> When a commodity is at a monopoly price, it is at the very highest price at which the consumers are willing to purchase it. Commodities are only at a monopoly price, when by no possible device their quantity can be augmented; and when therefore, the competition is wholly on one side—amongst the buyers.[6]
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> (*RW* I, 249)

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the capital in a country. Then, the next things occur: (i) the decrease in population in a country, (ii) the retrograding of marginal land in agriculture, (iii) the constituting the same price of raw produce between the new and old stationary state. We reconstruct the effect of agricultural taxes in the RSS based on Shoup (1960).

[6] It is interesting that Ricardo does not define about the monopoly price itself. We identify it through its effects.

According to Shoup (1960, 166), for Ricardo, "a monopoly price is that price that clears the market of commodities or objects, the quantity of which cannot be increased by human effort." We adopt this idea.

Thus, "raw produce is not at a monopoly price, because the market price of barley and wheat is as much regulated by their cost of production." In this case, "one portion of the capital employed in agriculture regulates the price of corn, namely, that portion which pays no rent… corn, and other raw produce, can be augmented, too, in quantity, by the employment of more capital on the land, and therefore they are not at a monopoly price" (*RW* I, 250).

3.2. Non-Ricardian Stationary State and Monopoly Price of Corn

Soon after Ricardo asserted that corn does not rest at a monopoly price, he gave the case of its being permanently at such a price.

> The corn and raw produce of a country may, indeed, for a time sell at a monopoly price; but they can do so *permanently only when no more capital can be profitably employed on the lands, and when, therefore, their produce cannot be increased*. As such time, every portion of land in cultivation, and every portion of capital employed on the land will yield a rent, differing, indeed, in proportion to the difference in the return. At such a time too, any tax which may be imposed on the farmer, will fall on rent, and not on the consumer. He cannot raise the price of his corn, because, by the supposition, it is already at the highest satisfied with a lower rate of profits, than that obtained by other capitalists, and, therefore, his only alternative will be to obtain a reduction of rent, or to quit his employment.
>
> (*RW* I, 250-51; italic is added)

If corn has a permanent monopoly price, agricultural taxes (a tax on corn, a tithe, or a tax on agricultural profits) would reduce the rent of land directly. If the price of corn becomes the monopoly price, it is at the highest price that the consumers can pay, and it cannot be raised more than that. Here, the basic effect of agricultural taxes according to Ricardo (the corn price raises by a sum equal to the tax) does not occur. Moreover, the effect of agricultural taxes in monopoly price is different from the effect in RSS.

From this passage, it is impossible to know exactly how Ricardo believed that corn could have monopoly pricing. However, in another following passage, Ricardo's characterization of the state of a permanent monopoly price of corn appears. In this, Ricardo elaborates on Buchanan's discussion of the monopoly price of corn and agricultural taxes. The context is Buchanan's comments on Smith's *Wealth of Nations*, in which he argues that the corn price always incorporates rent, and the landlords pay the tax (*RW* I, 251). Against this, Ricardo argues as follows.

> It is evident that if we yield to Mr. Buchanan the basis on which his argument is built, namely, that the price of corn always yields a rent, all the consequences which he contends for would follow of course. Taxes on farmer would then fall not on the consumer but on rent...but I hope I have made it sufficiently clear, that *until a country is cultivated in every part, and up to the highest degree,* there is always a portion of capital employed on the land which yields no rent, and that it is this portion of capital, the result of which...is divided between profits and wages that regulates the price of corn. The price of corn, then, which does not afford a rent, being influenced by the expenses of its production, those expenses cannot be paid out of rent. The consequence therefore of those expenses increasing, is a higher price, and not a lower rent.
>
> (*RW* I, 251-52; italic is added)

Indeed, Ricardo explicitly contradicts Buchanan's conception that the price of corn always involves rent and that agricultural taxes are paid by landlords. However, it is possible to see an illustration of Ricardo's special case where agricultural taxes are, in fact, paid by landlords, not by consumers, in this very critique. According to Ricardo, "until a country is cultivated in every part, and up to the highest degree, there is always a portion of capital employed on the land which yields no rent." Effectively, the last part of the capital employed on the land yields no rent. However, once a country is cultivated everywhere and to the highest degree, all capital employed on the land yields rent. This means that the last part of the capital employed on the land also yields rent. We believe that this interpretation suggests an example of the case of the permanent monopoly price of corn according to Ricardo. In this case, the production of land is physically constrained, and population and wealth cannot increase. Furthermore, the price of corn includes the rent of the land.

This example indicates that a NRSS is present in Ricardo's economic growth theory. The RSS is reached when the rate of profits is the minimum. The NRSS is attained when all the country's land has reached its limit in quantity and quality. The former finds a stationary state at the limit of wealth and population due to economic factors. The latter reaches a stationary state at the limits of wealth and population attributed to physical factors.

How does the rent of land appear in the price of corn in the NRSS? In this regard, we refer to the margin of intensive cultivation and the rent upon scarcity by Hollander (1979, 665-666). According to Hollander, Ricardo emphasizes not only the differential rent, but also the rent upon scarcity. The following is a quotation from Ricardo's *Principles* by Hollander.

> Dr. Smith does not reflect that rent is the effect of high price … It is … from the price at which the produce is sold, that the rent is derived; and this price is got not because nature assists in the production, but because it is the price which suits the consumption to the supply.
>
> (*RW* I, 77)

Here, it should be noted that the latter part of Hollander's quotation is not in Ricardo's words, but in Buchanan's.[7] Using the above quotation, Hollander infers the following: Ricardo considers that when the demand of corn exceeds the supply permanently due to the constraint of corn supply resulting from the expansion of intensive cultivation, such a constraint increases the rent. Our idea of NRSS may be consistent with the margin of intensive cultivation by Hollander. However, he does not illustrate how such a situation is caused concretely. Hence, we should explore its mechanism.

We can raise the RSS as the case does not enable increasing corn, but as we have already seen, the effect of agricultural taxes in RSS does not occur when the corn becomes the monopoly price. Thus, it is thought that the monopoly price of corn (NRSS) is reached before the rate of profits is minimum (RSS).[8]

In the NRSS, we believe that the competition of capital would cause the rent of land into the price of corn. Suppose that labourers spend all their wages on corn consumption; agricultural and manufactural capitalists always invest all their profits to extend their business; and landowners spend all their rent on luxury goods (manufactured goods). Further, suppose that a country is cultivated everywhere and to the highest degree, though the rate of profits is above than minimum. In this case, corn cannot be artificially increased. There would occur the competition of capital, increasing wages and decreasing profits. Here, labourers would increase the demand of corn because of their increasing wages. The corn price would rise due to its excess demand. Subsequently, additional profits in the agricultural sector against the manufactural sector would occur. Those profits would be replaced by the rent of land because of the negotiation to the landowner among capitalists.

Our hypothesis may be supported by Ricardo's reaction to Thomas Robert Malthus (1766–1834)'s *Principles of Political Economy*. In Chapter 5, "Of the Profits of Capital", Malthus supposed that there is "a limited territory, with all the land of nearly equal quality, and of such great fertility as to admit of very little capital being laid out upon it" within a country. According to Malthus, the profits of this land are low, and the rents are high, as follows.

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[7] In Chapter 2 "On Rent" of his *Principles*, Ricardo cites Buchanan's argument from the *Wealth of Nations* edited by Buchanan.

[8] We consider that the NRSS exists before reaching the RSS.

> After all the land had been cultivated, and no more capital could be employed on it, there cannot be a doubt that rents would be extremely high and profits and wages very low. The competition of increasing capital in manufactures and commerce would reduce the rate of profits, while the principle of population would continue to augment the number of the labouring classes, till their corn wages were so low as to check their further increase…rents would rise to an extraordinary pitch without any assistance from poor lands, and the gradations of soil; and profits might fall to the point only just sufficient to keep up the actual capital without any additional labour being necessary to procure the food of the labourer.
>
> (*RW* II, 261)

In this quotation, the state is assumed that all the land in the given country has been cultivated and corn cannot be artificially increased. Here, Malthus assumes the competition of capital and explains that the overall profit rate of the economy declines, and the rent of land increases to a higher rate than that before the competition of capital. Then, Malthus was to argue that "the increasing quantity of labour required for the successive cultivation of poorer land is not theoretically necessary to a fall of profits from the highest rate to the lowest" (*RW* II, 261).

Interestingly, Ricardo did not refute Malthus' argument. In note 168 of *Notes on Malthus*, Ricardo argued that "[i]n this case the landlords would have a strict monopoly, and the price of corn would rise to the limit of the ability of the consumers to pay for it" (*RW* II, 261). Ricardo seems to recognize that profits fall and rents increase by means of another mechanism than the differential rent theory. Then, we believe that Ricardo's response in note 168 suggests his acceptance of Malthus's assertion of the competition of capital.[9]

If our interpretation is right, the corn becomes the monopoly price as a result of the competition of capital in the NRSS, and the rent of land appears in the price of corn. From Chapter 17, if agricultural taxes are imposed at the NRSS, the taxes are paid from the rents. This result is not consistent with our examination of the effects of agricultural taxes in the RSS. Therefore, we can assert that the NRSS, differing from the RSS, exists in Chapter 17.

4. Concluding Remarks

Our purpose was to explain the NRSS and the tax incidence in such a state concretely. In the

[9] Ricardo also comments in note 171 that "I have read the I and 2d sections of Chap. 5 of Mr. Malthus work with great pleasure they express with great clearness and ability the doctrines which appear to me to be true respecting profits" (*RW* II, 265). It may be that note 168 refers to the part that Ricardo read "with great pleasure."

NRSS, the corn becomes the monopoly price, and the rent upon scarcity is caused into the price. In this regard, Hollander (1979) considered that Ricardo emphasized the rent upon scarcity as well as the differential rent at Chapter 2 of his *Principles*. However, Hollander derived the interpretation based on Buchanan's words, not on Ricardo's. On the contrary, we attempt to derive the interpretation from Ricardo's words in Chapter 17. Our argument is that Hollander's interpretation is more inherent in Ricardo himself.[10]

Conversely, we explained the mechanism as to how the rent upon scarcity is caused at the NRSS. Hollander did not deal with this problem. The NRSS occurred before reaching the RSS, and the rent upon scarcity is caused based on the competition of capital. As a result, we established the existence of NRSS comparing the effect of agricultural taxes between the RSS and the NRSS.

We also may reconsider the relationship between Smith and Ricardo regarding agricultural taxes. Smith has been considered that the agricultural taxes are paid from rent, and Ricardo that they are paid from profit. However, this paper argues that Smith and Ricardo have a similar point of view of theoretical foundation in the effect of agricultural taxes; this is because we showed that the taxes are paid from landlords at the NRSS in Ricardo. In this case, the supply of raw produce is constrained due to the limit of cultivation. In this regard, Smith considers that the agricultural taxes are paid from rent when the supply of raw produce (for example, wine) is constrained due to the limit of cultivation (Smith 1976 [1776], 892–93). Smith and Ricardo may have a common theoretical foundation of taxation depending on the condition of land cultivation.

Our interpretation of the condition of land cultivation and the tax of Chapter 17 may give us the methodological suggestion in Ricardo on taxation. Ricardo essentially argued the effect of agricultural taxes on capital accumulation process from Chapter 9 of the *Principles*. In this regard, Chapter 17 is positioned to almost the end part in Ricardo on taxation of the *Principles*, and Ricardo argued the effect of agricultural taxes on NRSS. First, Ricardo referred to the effect of taxes on capital accumulation process, and second, he referred to the case considered the physical factors into the condition of land cultivation. This means that Ricardo's economic system is available to various discussion considering the new condition of the high abstractive discussion.

In the future, we may be able to reconsider Ricardo's economic policy of taxation. It is generally said that Ricardo emphasizes the tax minimum because most taxes are paid from profits and taxes disturb capital accumulation.[11] However, if taxes are paid from rent, another economic policy may be adopted, because the landowners do not use their rent as capital. Moreover, the title of Chapter 17 remains to be discussed, entitled "Taxes on other commodities than raw produce," but Ricardo

[10] It is interesting that Buchanan's argument is related with the problem of rent upon scarcity in both of Chapter 2 and Chapter 17.

[11] See, Dome (2004).

ultimately focuses on raw produce there. Why is this contradictory title given? Elucidation of these problems will remain a problem for the future.

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