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The residual determination of the rent of land in Adam Smith's theory of value and distribution

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Abstract

The objective of this paper is to present Adam Smith's theory of value and distribution as coherent with the idea that the wage, profit and rent of land rates distribute a given physical produce. Therefore, each social class cannot receive a greater quantity of commodities unless the other classes' losses are of the exact same amount. This affirmative directly contradicts Marx's "adding-up interpretation", whereby Smith would have independently determined the rates of wages, profits and rents of land before adding them up to determine the natural prices of the commodities. The adding-up interpretation fails to acknowledge the residual explanation of the rent of land rate, determined by technology and the rates of wages and profits. I will show that the residual determination of the rent of land rate set forth in the eleventh chapter of WN resulted also in a residual determination of the share of rent in total produce. In fact, Smith's theory of value is re-interpreted as the theoretical linkage among physical production and monetary revenues, allowing Smith to subordinate the later to the former. Therefore, the theory of value does not deny the binding constraint on distribution. The article is composed of six sections: 1) Introduction; 2) The "adding up theory of value" interpretation; 3) The residual determination of the rent of land rate; 4) Distributive changes and natural prices; 5) The interpretation of Smith's theory of value and distribution; 6) Conclusion.

Resumo

O objetivo deste texto é mostrar que a teoria do valor e distribuição de Adam Smith é coerente com a proposição de que salários, lucros e rendas da terra distribuem um dado produto físico. Consequentemente, para que uma classe social receba uma quantidade maior de mercadorias é necessário que outra perca exatamente a mesma quantidade. Esta afirmação contradiz diretamente a interpretação do “adding-up” de Marx que afirma que Smith determinava de maneira completamente independente as taxas de salários, lucros e renda da terra para então somá-los ao determinar os preços naturais das mercadorias. Tal interpretação deixa de considerar a explicação residual da renda da terra, determinada pela tecnologia e pelas taxas de salários e lucros. A partir de evidências textuais, mostrarei que a determinação residual da taxa de renda da terra defendida no décimo primeiro capítulo de “A Riqueza das Nações” tem como consequência a determinação residual da parcela do produto social apropriado na forma de renda da terra. A teoria do valor de Smith é então reinterpretada como responsável pela conexão teórica entre o produto físico e as rendas monetárias, permitindo Smith subordinar estas últimas à produção. Consequentemente, a teoria do valor de Smith não contradiz o fato das variáveis distributivas estarem limitadas pela tecnologia de produção. O artigo é formado por seis seções: 1) Introdução; 2) A interpretação do "adding up theory of value”; 3) A determinação residual da taxa de renda da terra; 4) mudanças distributivas e preços naturais; 5) a interpretação da teoria do valor e distribuição de Adam Smith; 6) Conclusão.

1 Introduction

The purpose of this paper is to present Adam Smith's theories of exchange value and distribution as coherent with the basic concept of a given social product to be distributed among social the classes. This entails that in order to any class receive a greater share of the social product some other class has to be deprived of the exact same amount.

The argument is structured upon the acknowledgment that the rent of land rate was residually determined in opposition to the wages and profits rates. I will show, by recollecting various passages in Smith's "Wealth of Nations" (henceforth WN), that it is possible to overcome his distractive narrative on rent to find an objective and logical theory that is systematically applied in other parts of his work. Once the residual determination of rent is accepted, Smith's theory of value based on the recurrent reduction of all inputs to wages, profits and rents is reinterpreted as the fundamental link among revenues and technology.

Section 2 will briefly discuss the "adding-up" interpretation of Smith's theory of value and distribution. Section 3 will concentrate in the reconstruction of the theory of rent of land rate and share. Section 4 will show that Smith applied the theory of rent in his other discussions concerning value and distribution. Section 5 will explore the consequences of the acknowledgement of the residual determination of rent of land to the signification of Smith's theory of value, followed by concluding remarks on Section 6.

2 The “adding-up theory of value” interpretation.

A defining proposition underlining Marx’s interpretation of Smith’s theory value and distribution is the determination of the distributive rates, and consequently the distributive shares, independently of each other. In Marx's “Theories of Surplus Value” (Marx 1862-1863, p. 264, 492, 549, 552, 559, 622) and in the second volume of “Capital” (Marx 1863-1878, II, p. 234-235) Smith goes from correctly *resolving* the natural price into wages, profits and rents to the direct opposite of *determining* the natural price by adding up wages, profits and rents.

> “Adam Smith, as we saw above, first correctly interprets value and the relation existing between profit, wages, etc. as component parts of this value, and then he proceeds the other way round, regards the prices of wages, profit and rent as antecedent factors and seeks to determine them independently, in order then to compose the price of the commodity out of them” (Marx 1862-1863, p. 492).

The same idea is found in Capital, Vol 2:

> In accordance with the *quid pro quo*, by which the revenue becomes the source of commodity-value instead of the commodity-value being the source of revenue, the value of commodities now has the appearance of being “composed” of the various kinds of revenue; these revenues are determined independently of one another, and the total value of commodities is determined by the addition of the values of these revenues. (Marx 1862-1863, p.234)

According to Marx, Smith allowed a “vulgar” conception to “creep” onto his writing: value would arise not only from labour, but also from capital and land (Marx 1862-1863). This would have led to the determination of the distributive rates independently of each other, losing awareness of the existence of a given product to be distributed through the rates of wages, profits and rents of land entails

Marx’s main concern was clear: the labour theory of value immediately identifies profits and rents as appropriations of the social surplus created by labour. He identifies various passages where Smith correctly *resolves* the value of the commodity created by labour in profits, rents and wages instead of simply adding them up. He envisages the possibility of finding the basic elements of a correct theory of value in Smith (Marx 1862-1863, p.234), but affirms that all these elements are abandoned when Smith is carried away by his "adding-up" determination of exchange value, which "remains the predominant conception with him" and by his other difficulties in integrating fixed capital to the analysis of the economy as a whole (Marx 1862-1863, p.227, 234-236). As a consequence, Marx thought that Smith was not able to coherently integrate the concept of a given social product to be distributed among the social classes in his theory of value.

Sraffa (1951)[1], in clear reference to Marx, affirms that Ricardo's view was that "the prices of commodities are arrived by a process of *adding up* the wages, profits and rents" (Sraffa 1951, p.xxxv)[italics in the original]. Dobb (1973) affirms that Smith held an "adding-up-cum-supply-and-demand" theory of value. According to O'Donnell, "the rejection of the labour theory was seen as a move towards a supply and demand approach to distribution" (O'Donnell 1990, p. 198) by authors like Dobb (1973 p. 112-115; 1975 p.329) and Meek (1977 p. 154) that "argued that Smith must be considered the source of both the classical and the neoclassical 'lines of tradition'" (O'Donnell, 1990, p. 199).

The key to the revision to Marx's interpretation is the long and distractive eleventh chapter of WN: "Of the rent of land". In its majority a descriptive and historical chapter that contains long digressions on relative prices of corn and silver, and of historical prices of many natural products. The residual explanation of rent lied silent in it and its implication were not realized until some recent contributions highlighted the residual determination of rent.

O'Donnell (1990) identified a residual determination of rent and drew the right conclusions concerning its impact on relative prices but underlined its negative consequences to the theory of value as an "important error" (O'Donnell, 1990, p.105). Dome (1998, 2004), when investigating the history of the theories of taxation, noticed

[1] Sraffa argues that Ricardo shared exactly the same view as Marx. It was "what Ricardo referred to in writing to Mill as Adam Smith's 'original error respecting value'" Sraffa (1951, p.xxxv). Ricardo's complete sentence is: "In reading Adam Smith, again, I find many opinions to question, all I believe founded on his original error respecting value. He is particularly faulty in the chapter on bounties, and is also I think wrong in some points respecting colonies, and the interest of the mother country" (RICARDO 1951 v.VII p.100). The textual evidence presented seems inconclusive, especially when compared to Marx's clear assertions. It is also worth noting the reference to the chapter on bounties, when Smith makes reference to the corn price regulating all prices in the economy.

that the rent of land was residually determined and then, based on his findings, defended the internal coherence of Smiths theory of value. Garegnani (2007) accepted the residual determination as a possibility that would make Smith's theory of value compatible with surplus theory. Aspromourgos (2009, p.262) identified "some notion of binding constraint on distribution" that was related to the "vexed Smithian treatment of rent", while underlining its negative consequence of distancing the author from an inverse profit-wage relationship (Aspromourgos 2009, p.149). Finally, Sinha (2010a, p. 33-48; 2010b) defended the internal coherence of Smith's theory of value and distribution based on the residual determination of rent.

This paper is a complementary contribution to this ongoing revision. It's main objective can be divided in two parts: i) to reconstruct Smith's argument on Chapter XI on the determination of the normal rate of land rate in a concise manner to show that he had a logically coherent theory of rent and applied it recurrently and correctly in his book; ii) to re-interpret the reduction of natural prices to wages, profits and rents as a theoretical advance allowing the linkage of distributive rates to the constraint given by technology in use.

3 The residual determination of the rent of land rate

In Chapter XI of WN, Adam Smith has two distinct explanations for the level of rent of land which are applied consistently in two different circumstances: i) the rent paid in mining (coarse metals, precious metals, coal, etc.), and; ii) the rent paid in the "estates above ground" (Smith 1981, I.xi.c.35). These last includes everything produced in the agricultural sector: food, agricultural inputs and raw materials that do not come from mining (lumber for example).

The explanation for the rents of land paid by mines was akin to Ricardo's differential theory of rent. Smith call's it proportional to the "relative fertility" and it was determined by the "superiority over other mines of the same kind" (Smith 1981, I.xi.c.33). According to Ricardo, Smith correctly identified the principle of differential rent when explaining the rent paid in mines: "The whole principle of rent is here admirably and perspicuously explained" (Ricardo 1951, p. 330). But when describing the historical period of the discovery of new and more productive mines that rendered the old ones unprofitable, Smith made affirmed the more productive mines as regulators of prices instead of the least productive:

> "As the price both of the precious metals and of the precious stones is regulated all over the world by their price at the most fertile mine in it, the rent which a mine of either can afford to its proprietor is in proportion, not to its absolute, but to what may be called its relative fertility, or to its superiority over other mines of the same kind" (Smith 1981, I.xi.c.33)

For the sake of simplicity I will consider the total amount of rent paid in mines as exogenously determined in relation to the other distributive shares. The purpose is to concentrate on the completely different explanation concerning the rent paid in agricultural production, on the "estates above ground".

> "[T]he rent of the cultivated land, of which the produce is human food, regulates the rent of the greater part of other cultivated land. No particular produce can long afford less; because the land would immediately be turned to another use: And if any particular produce commonly affords more, it is

> because the quantity of land which can be fitted for it is too small to supply the effectual demand" (Smith 1981, I.xi.b.34).

All products cultivated on the "estates above ground" have its rents determined by human food. Human food production has one distinctive characteristic from all other produce: it can *directly* maintain the labourer.

> "As men, like all other animals, naturally multiply in proportion to the means of their subsistence, food is always, more or less, in demand. It [food] can always purchase or command a greater or smaller quantity of labour and somebody can always be found who is willing to do something, in order to obtain it" (Smith 1981, I.xi.b.1) [brackets added].

Smith considers the labourer to be maintained by the agricultural produce. This allows the identification of a food supply to an equivalent labour supply, and consequently, the identification of a physical surplus in agriculture in terms of labour:

> "…[L]and, in almost any situation, produces a greater quantity of food than what is sufficient to maintain all the labour necessary for bringing it to the market, in the most liberal way in which that labour is ever maintained. The surplus too is always more than sufficient to replace the stock which employed that labour, together with its profits. Something, therefore, always remains for a rent to the landlord" (Smith 1981, I.xi.b.2).

Smith identified labour with the inputs and human food with the outputs alongside with the proposition that the produce maintained the labour. Here lies the *kernel* of Smith's explanation for rent of land rate and of the interpretation of his theories of value and distribution. In food production the author equates the inputs and outputs to the same substance. He can then conceive the agricultural surplus as a given physical magnitude in terms of labour to be distributed as wages, profits and rent (Smith 1981, I.xi.b.2).

Smith conceives that the natural powers of land allows for a production that requires almost no inputs other the labour of tending some cattle or extracting milk. Even with this low productivity there is a small surplus:

> "The most desart moors in Norway and Scotland produce some sort of pasture for cattle, of which the milk and the increase are always more than sufficient,

> not only to maintain all the labour necessary for tending them, and to pay the ordinary profit to the farmer or owner of the herd or flock; but to afford some small rent to the landlord" (Smith 1981, I.xi.b.3).

From food production in general, Smith specifies one product: "In Europe corn is the principal produce of land which serves immediately for human food" (Smith 1981, I.xi.b.35). And a corn field demands a much greater stock from which the producer "furnishes the seed, pays the labour, and purchases and maintains the cattle and other instruments of husbandry" (Smith 1981, I.xi.a.1). But it is supposed that this extra labour directs and guides the natural powers to an end that is most beneficial to men, therefore augmenting the surplus even further:

> "A corn field of moderate fertility produces a much greater quantity of food for man, than the best pasture of equal extent. Though its cultivation requires much more labour, yet the surplus which remains after replacing the seed and maintaining all that labour, is likewise much greater" (Smith 1981, I.xi.b.3).

In the passage above the author refers only to seeds and labour. It seems he reduced all inputs to labour and then calculated the surplus in physical terms. Smith will correctly (regarding to his own theory) differentiate the "estates above ground" in which "[t]he value both of their produce and of their rent is in proportion to their absolute, and not to their relative fertility" like that of mines (Smith 1981, I.xi.c.35).

The conception of a physical surplus in food production can be clearly identified when Smith considers the substitution of corn by other rice and potatoes. It is remarkable that in every example Smith makes explicit the condition that the wage be composed of the vegetable food being produced:

> "A rice field produces a much greater quantity of food than the most fertile corn field. … Though its cultivation, therefore, requires more labour, a much greater surplus remains after maintaining all the labour. In those rice countries, therefore, where rice is the common and favourite vegetable food of the people, *and where the cultivators are chiefly maintained with it,* a greater share of this greater surplus should belong to the landlord than in corn countries" (Smith 1981, 9 I.xi.b.37) [italics added]

> "Should this root [potatoes] ever become in any part of Europe, like rice in some rice countries, the common and favourite vegetable food of the people..., ...*and the labourers being generally fed with potatoes*, a greater surplus would remain after replacing all the stock and maintaining all the labour employed in cultivation" (Smith 1981, I.xi.b.39) [italics and brackets added].

As a consequence, *when* the labourers are fed with the produce of land, absolute and not relative fertility determines rent of land. It is the labour surplus that explains the rent of land in a way that does not depend directly on relative prices. Wages and profits are determined elsewhere and are taken as given in the examples above concerning changes in productivity in the agricultural sector. Part of the surplus will be absorbed by profits and even by wages (depending on how "liberally" it is maintained), the residue being accrued in the form of rent of land[2].

The passages above transcribed were mostly taken from the second part of Smith's chapter on rent (Smith 1981, I.xi.b). They all highlight the idea of a labour surplus that is independent of the relative prices, and therefore proportional to productivity.

It is clear that the rent of land is determined residually in relation to the other distributive shares and to the technology.

Since corn rent regulates all other rent paid by the common lands, the rent of land share is the residue of a given social product, once wages and profits have taken their respective shares. The rent of land share in total produce can be divided in two parts, a fixed one (for the sake of simplicity) corresponding to the rent of mines, and a residually determined one, corresponding to the rent paid by all products of the "estates above ground".

3.1 The corn-wage

The "corn wage" is the main hypothesis underlying Smith's theory of rent. From the above cited passages we conclude that the author presumes that the English labourers' wage basket was composed mostly by corn, or by the "common and favourite vegetable

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[2] Sinha (2010b, p.35) argues that Smith "did think in terms of one commodity corn model, as explained above, and thought that the argument will carry through for more than one good case".

food of the people" (Smith 1981, I.xi.b.35). But is this hypotheses coherent with the rest of Smith's theory (since it is my purpose to evaluate the internal consistency in his work, the question of this hypothesis' historical validity is of no concern).

By recollecting numerous passages throughout WN it is possible to build a much diversified English worker´s consumption basket: beer, tobacco, sugar, tea, coats and shirts of cotton and linen, leather shoes, coal, wooden furniture, plates, glass windows, soap, salt, candles and simple houses (Smith 1981, V.ii.k.3, I.i.11, I.viii.35, I.xi.c.6). It seems, at first, completely contradictory to the single product corn-wage identification.

Accordingly, in the passage bellow Smith points to a broader definition of wages, while following the same output-input homogeneity outlined above:

> The land which produces a certain quantity of food, cloaths, and lodging, can always feed, cloath, and lodge a certain number of people; and whatever may be the proportion of the landlord, it will always give him a proportionable command of the labour of those people, and of the commodities with which that labour can supply him (Smith 1981, I.xi.c.35).

The idea of homogeneity of outputs and inputs associated with the identification of a labour surplus is here again present. But in this passage the author also includes clothing and lodging to the subsistence wages and identifies it with agricultural production. But these other expenditures are considered just a small proportion

of the labouring class expenditure:

> "When food is provided, it is easy to find the necessary cloathing and lodging. But though these are at hand, it may often be difficult to find food. In some parts even of the British dominions what is called A House, may be built by one day's labour of one man. The simplest species of cloathing, the skins of animals, requires somewhat more labour to dress and prepare them for use. They do not, however, require a great deal". (Smith 1981, I.xi.c.6)

> "The necessaries of life occasion the great expense of the poor. They find it difficult to get food, and the greater part of their little revenue is spent in getting it". (Smith 1981, V.ii.e.6)

Smith refers to the working class as the "laboring poor" (Smith 1981, II.i.1) and therefore, in relation to the simple laborers, the higher share of expenditure in food is compatible with his corn-wage approximation. Even when doing this approximation, the author used words like "chiefly", "generally" denoting that was indeed an approximation.

It seems that Smith always use the same idea of identifying the wage basket mostly with a food basket and with agricultural products. He also divides the wage basket in two parts, one that he calls necessaries of life, in which corn makes up the greater part, and another that he calls luxuries, that includes, for example, tobacco and beer. He defended that only taxes on the necessaries would affect the real wages (Smith 1981, V.ii.k.5-6) augmenting even more the importance of corn. We conclude therefore that although a theoretical approximation, the corn-wage was not contradictory to Smith's treatment of wages in other parts of WN.

The author does apply this simplification quite directly when discussing the corn bounty:

> "It [corn] regulates the money price of labour, which must always be such as to enable the labourer to purchase a quantity of corn sufficient to maintain him and his family either in the liberal, moderate or scanty manner in which the advancing, stationary or declining circumstances of the society oblige his employers to maintain him" (Smith 1981, I.IV.a.12)[brackets added]

Vianello (2002) argues that it was on this simplification that Ricardo (1915) found the building blocks of his corn model and explains that Malthus criticized Ricardo for adopting the same corn-wage identification on his corn model.

3.2 Smith's theories on rent.

Smith affirms in the introduction of the chapter on rent that what determines rent is the "ordinary price", it is above the necessary payments of wages and profits or is just sufficient for the commodity to be produced:

Smith affirmed that there is "in every society or neighbourhood an *ordinary* or average rate" for each of the distributive shares that made up the component parts of the "natural price" (Smith 1981, I.vii.1-4). The rent of land is included in the natural price as a “component part” which defines the natural price. But in the passages below, it is the natural, average or ordinary price that determines the rent of land:

> “If the ordinary price is more than this, the surplus part of it will naturally go to the rent of the land. If it is not more, though the commodity may be brought to market, it can afford no rent to the landlord. Whether the price is, or is not more, depends upon the demand” (Smith 1981, I.xi.a.6).
>
> “Rent, it is to be observed, therefore, enters into the composition of the price of commodities in a different way from wages and profit. High or low wages and profit, are the causes of high or low price; high or low rent is the effect of it” (Smith 1981, I.xi.a.9).

The introduction of the Chapter XI points to an all encompassing explanation of the intensity of the rent of land based on demand and its effect in the “ordinary” price. I believe that this introduction strongly contributed in making Adam Smith’s theory of rent a vexed topic. This general description is misleading and only partially applicable to each of Smiths explanations of rent.

Considering the corn production (and food production in general) as always being demanded, Smith withdraws from demand any active role in determining rent (Smith 1981, I.xi.b.1). As discussed above, the intensity of rent is not determined by demand of corn but defined in the “supply side” by the technology in use and the other distributive shares.

Corn regulates, by competition, the rent paid in the agricultural production in the common lands. Therefore their rent of land is not determined independently of the other distributive shares and the technology in producing corn. Demand for any other product plays no role in the determination of the amount of rent paid. In fact, from the perspective of each agricultural good but corn, its natural price is arrived by adding up the profits, wages and rent of land paid in all production stages. The adjustment process among market and natural prices is exactly the one described in Book I (Smith 1981, I.vii.7-15). Competition and the desire to attain a above the normal remuneration acts as a centripetal force attracting market prices towards natural prices. Demand directly affects only the market prices but not the average or natural prices.

A considerable proportion of Smith's chapter on rent is devoted to the competition and equalization process that makes the rent of corn regulate all other rent. Associated with this discussion is the historical tendency of the agricultural produce to rise in relation to manufactures (see Smith 1981, I.xi.c). Smith compares distant periods in time, starting in a thinly inhabited country when the natural products of the "land in its original rude state" were more than enough to meet the demand (Smith 1981, I.xi.c.1-3). Then, as the richness and population grew, the demand for raw materials is greatly increased:

> "[Hence] arises a demand for every sort of material which human invention can employ, either usefully or ornamentally, in building, dress equipage, or household furniture; for the fossils and minerals contained in the bowels of the earth; the precious metals, and the precious stones" (Smith 1981, I.xi.c.7).

Natural supply becomes insufficient and demand has to be met by production in lands that could otherwise produce corn, and their proprietors will demand the payment of rent that at least equals the "corn-rent". As a consequence, all the natural products that in a poor country were cheap, since they were naturally supplied by nature, become expensive in a densely populated and rich country. The manufactures, at the same time, would be greatly benefited by the division of labour, and this effect would more than compensate the augmentation of the price of some of its agricultural inputs (Smith 1981, I.xi.o.1-3). Therefore, Smith uses the price of the natural products (but corn) relative to manufactures as an index of economic development:

> "But from the high or low money-price of some sorts of goods in proportion to that of others, we can infer with a degree of probability that approaches almost to certainty, that it was rich or poor, that the greater part of its lands were improved or unimproved, and that it was either in a more or less barbarous state, or in a more or less civilized one" (Smith 1981, I.xi.n.3).

This effect occurs only once, when the product begins to be produced. This historical process is related to the introduction as "PART II: Of the Produce of Land which sometimes does, and sometimes does not, afford Rent" (Smith 1981, I.xi.c,d). It is the augmented demand in the process of economic development which allows the payment of rent in these products and determines whether it will or will not pay rent. But, when it starts to be produced, the rent of land will be defined in the production of corn, making the introduction above only partially adequate.

This rationale applies to almost all agricultural products since its majority is produced in the prevalent and common type of land that determines a modal average around which others will vary in situation and fertility.

> "The usual and natural proportion, for example, between the rent and profit of wine and those of corn and pasture, must be understood to take place only with regard to those vineyards which produce nothing but good common wine, such as can be raised almost any where, upon any light, gravelly, or sandy soil, and which has nothing to recommend it but its strength and wholesomeness. It is with such vineyards only that the common land of the country can be brought into competition; for with those of a peculiar quality it is evident that it cannot" (Smith 1981, I.xi.b.30).

But there is a second group of lands composed of specific types needed for specific products, such as fine wines, in which the total demand at normal prices is always in excess of the quantity the land can supply. In this second type of land, the rent would be determined by "the fashionableness and scarcity" (Smith 1981, I.xi.b.29-33):

> "The whole quantity of such wines that is brought to market falls short of the effectual demand, or the demand of those who would be willing to pay the whole rent, profit and wages necessary for preparing and bringing them thither, according to the ordinary rate, or according to the rate at which they are paid in common vineyards. The whole quantity, therefore, can be disposed of to those who are willing to pay more, which necessarily raises the price above that of common wine" (Smith 1981, I.xi.b.30).

In this specific case, the rent of land would be determined by the demand of that specific product and the description in the introduction of Chapter XI would perfectly apply in the way modern readers tend to interpret it, as demand determining the intensity of rent per area of land.

Finally, in Smith's theory of mine the price is determined by the more productive mine, relating its rent to the differential productivity on the supply side .(Smith 1981, I.xi.c.13).

Smith has, in fact, three different explanations for rent, which are applied consistently to different situations. The first one was thoroughly explained, and concerns the common vegetable of the people. The second one concerns all agricultural produce that are produced in the most common land and pay the same rent as corn. Only some special and specific products for which there is not enough land to supply effectual demand will have its rent of land rate determined by demand. And lastly, the land containing the mines, will pay rent accordingly to differential productivity and situation of these mines.

In trying to include all these explanation in a general and imprecise definition in the introduction of Chapter XI, associating it with demand, Adam Smith has diverted the attention from his actual arguments on the determination of the rent of land. According to Smith's argument inside the chapter, the vast majority of the agricultural product will be human food and raw materials which are produced in the most common, and consequently ubiquitous, type of land. Here, the rent of land rate will be mostly determined residually, as will be its total share of the national product. Demand takes no active role in its determination.

4 Distributive changes and natural prices

Adam Smith's "natural prices" are determined by the social costs of producing any commodity. These social costs reflect the common technology of production and the distributive rates of wages, profits "at the time and place in which they commonly prevail" (Smith 1981, I.vii.1-4). Natural prices are arrived at by recurrently reducing all costs to wages, profits and rents the "component parts" of value (Smith 1981, I.vi.11-14).

Therefore, in the general case, the natural prices of produced commodities are the endogenous variables and technology and the distributive rates are the exogenous variables. But when dealing with corn, the rent of land is the endogenous variable and technology, wages, profits and the natural price are the exogenous variables.

According to Smith, the natural price of any commodity can be measured in the amount of labour units it can buy (or command) (Smith 1981, I.vii.9). Therefore, a decrease in the amount of labour demanded in the production of any commodity would entail a diminution of the natural price measured in real terms, or in the amount of labour it could command. This is true to all commodities but corn, in which the real wage is all that is needed to determine its real price. Since the wage can be equated to a quantity of corn, the real price is already determined with no regard to technology, which will determine the residual rent rate.

Therefore the nominal natural price of corn is determined by the corn-wage and by the natural price of silver. Corn's relative price to any commodity depends on the "corn-wage" and on the labour commanded by the other commodity, which in turn depends on the other commodities technology and distribution. Smith affirms that the price of corn relative to all other commodities cannot be changed artificially when dealing with bounties (Smith 1981, I.iv.a).

Supposing a given technology, an increase in the rate of wages and/or profits will diminish the rent rate in corn production and consequently the rent paid in the production of all "estates above ground". If taken individually, the agricultural natural prices are still given by the "adding up" of wages, profits and rents paid at their normal levels. But, since the rent of land is inversely linked to wages and profits, the effect on the prices of other agricultural prices will be cancelled or attenuated. In the manufacturing sector the increase in wages or profits will increase the natural prices by the same amount. If the increase is in wages, it will diminish the prices in real terms and if it is in profits it will increase (labour commanded measure). But even in the former case, the decrease in the real price will be more intense in the agricultural sector, where prices are stable in relation to changes in profits and wage rates due to the residual determination of rent.

Therefore, there is a positive relationship among real wages and the prices of manufactures relative to agricultural produce. Therefore, an augmentation of wages with constant profits entails a diminution of rent of land rate and an augmentation of manufactured prices relative to agricultural prices. Due to this idiosyncrasy Smith might have been wrongly accused of affirming that a real wage would augment the prices of all products without reducing the profits:

> "The increase in the wages of labour necessarily increases the price of many commodities, by increasing that part of it which resolves itself into wages, and so far tends to diminish their consumption both at home and abroad" [italics added] (Smith 1981, I.ix.57).

In the passage above Smith is discussing the exportation of commodities. He was most probably referring to manufactures since, "as in a small bulk they frequently contain a great value..., ...are, in almost all countries, the principal support of foreign trade" (Smith 1981, IV.ix.41). The increase of labour would then increase the prices of manufactures but not the price of agricultural production. That's why "many" commodities would have their prices necessarily increased but not all of them.

4.1 Profit and wage rates and their relationship

The corn-labour equivalence and the residually determined rent of land have the effect of disconnecting the profit and wage rates, giving then the possibility to move in the same direction, limited only by overall surplus.

In Smith's WN the wage rates are determined by institutional elements in the labor market, mainly the higher bargaining power of the masters in relation to the workers, that forces the wages to a minimum subsistence level (Smith 1981, I.viii.11-15). This minimum allows for the reproduction of the working class and includes not only physiological necessities (like food and shelter), but also some socially determined necessities (for example a linen shirt and leather shoes in the case of the English working class) (Smith 1981, V.ii.k.3) .

This subsistence wage rate will be different from actual market wage rate if the country experiences either a rapid capital accumulation or a declension of its capital. If the rate of accumulation is high, a temporary shortage of workers would follow which in turn would trigger a dispute among masters to hire the available workers, breaking their tacit arrangement to never raise wages. If, otherwise, the country was consuming more than the net produce, encroaching upon its capital stock, there would be ever fewer jobs than workers, and the workers would not be able to receive even the minimum subsistence wage, being therefore left to a miserable condition (Smith 1981, I.viii).

The labour market adjustment mechanism is based on population growth, the quantity supplied of workers adapting to the quantity demanded. The transmission channel is the infant mortality rate, and the argument, straightforward: the better the workers are fed and lodged, the higher the proportion of the surviving offspring, and being the birth rates somewhat constant, the faster the population growth. This slowly adjusting mechanism entails that the real wage depends on the pace of accumulation and can be kept high for long periods. In the commercial society (i.e. capitalism) the demand for labor is supposed to be always advancing (as a result of continuous accumulation of capital) before the supply, maintaining a real wage permanently above subsistence level (Smith 1981, I.viii).

Smith's explanation on profits relates a fall in the rate of profits to increased competition in all branches of trade as the accumulation of capital advances.

As the capital of a private man, though acquired by a particular trade, may increase beyond what he can employ in it, and yet that trade continue to increase too; so may likewise the capital of a great nation. (Smith 1981, I.ix.10)

The main idea is that capital increases in a greater speed than the capacity to employ it (a proposition criticized by Ricardo utilizing Smith's own proposition that all income is readily spent). While wages depends on the pace of accumulation, profits are associated with the whole stock that was accumulated in a country. In a country where there was continuous accumulation for many years it is expected that the rate of profits be low (Smith 1981, I.ix.14).

Continuous accumulation of capital increases the competition in all branches of trade and at the same time demands the employment of increasingly more workers. As a consequence, a historical inverse profit/wage relationship would emerge, and Smith refers to the examples of in England, Scotland, France and Holland (Smith 1981, I.ix.6,8,9,10 respectively). Yet, this observed inverse relationship is not the result of a direct connection that would be entailed by the workers and capitalist classes sharing a given product (like in Ricardo). But the fact that they are linked to the same process (capital accumulation) that affects them inversely: "[t]he increase of stock, which raises wages, tends to lower profit" (Smith 1981, I.ix.2).

But the since the profit rate is affected by the stock of capital and the real wage is affected by the augmentation of capital that increases demand of labour before supply, there are two instances when these rates can move in the same direction. A new capitalist colony, for example, where capital accumulation is supposed to be rapidly expanding, but the stock of capital accumulated be still small:

> "In our North American and West Indian colonies, not only the wages of labour, but the interest of money, and consequently the profits of stock, are higher than in England…., …They have more land than they have stock to cultivate. What they have, therefore, is applied to the cultivation only of what is most fertile and most favourably situated, the lands near the sea shore, and along the banks of navigable rivers. *Such land too is frequently purchased at a price below the value even of its natural produce*" (Smith 1981, I.ix.11).

Or a mature and stagnated economy, with a high amount of accumulated capital:

> "In a country which had acquired that full complement of riches which the nature of its soil and climate, and its situation with respect to other countries allowed it to acquire; which could, therefore, advance no further, and which was not going backwards, both the wages of labour and the profits of stock would probably be very low…, …But perhaps no country has ever yet arrived at this degree of opulence." (Smith 1981, I.ix.14-15).

There is no logical contradiction in profits and wages moving in the same direction once the residual determination of rent is acknowledged. Since the rent of land is inversely connected to the rates of profit and wages, the price of corn was not affected by an augmentation or reduction in the real wage or the profit rate: both would be absorbed by an opposite movement of the rent of land. This means that profits could increase without the real wage falling (since it was determined in terms of corn): the manufactured products prices would be augmented but corn (and other agricultural products) would not.

The increased share of the social product appropriated by the capitalists would be subtracted from the landlords that would receive a smaller share of the agricultural produce with a diminished relative price. The same would happen if wages were increased: the greater purchasing power of the labouring class would be compensated by the loss of the landlord through a reduced share of the agricultural produce and falling agricultural prices relative to manufactures. As a consequence, profits and wages could move independently, as only the prices of manufactures would be (mostly) affected.

The relations entailed among the distributive rates and technology are, everything else constant: i) the rise in wages will diminish rent because more corn will be given to the labourers and the prices of manufactures will rise relative to corn; ii) the rise of profits will diminish rent because more corn will be given to the producer and the prices of manufactures will rise relative to corn; iii) an augmentation of technology will augment rent since it will augment the food residue. But since Smith analyses these changes through time, these relations can be better perceived when dealing with bounties and taxation.

5 The interpretation of Smith's theory of value and distribution.

Adam Smith marks a clear departure from the idea that market forces determine the normal exchange value of commodities, focusing otherwise in its difficulty of production. The term scarcity is signified as difficulty of production and not the short term lack or abundance of a determinate commodity in the market (Smith 1981, I.xi.c.31). This is an advance towards a systemic view of social material production as recurrently conditioning the exchange relations.

Smith refers natural prices to wages, profits and rents by reducing all costs to revenue payments through time in the production of each commodity (Smith 1981, I.vi.11-14). This step is crucial in avoiding the price-cost-price circularity and relocates the determination of normal prices in the technology of production and determination of the distributive variables: wages, profits and rent of land at their average levels.

As I have shown, Smith has a coherent residual approach to rent of land and applies it correctly when discussing profits. Dome (1998, 2004), when investigating taxation, noticed that Smith treated rent of land as a distributive share determined residually. This means that the residual definition of rent theorized in book one, chapter eleven was coherently applied in the discussion of bounties and taxation, to the point that it could be inferred from them.

The most important implication of the correctly interpreted theory of rent is that Smith did in fact acknowledge the binding constraint on distribution. Therefore, Smiths "additive" theory of value was not an addition of independently determined parts, but more correctly, a reduction of price into its parts, at least in the agricultural sector.

His theory of value allows the identification of the value of the whole produce with the aggregated value of the wage, profit and rent of land shares (Smith 1981, I.vi.17). Smith was able to identify the value of the total produce with the amounts of income received, connecting the apparent monetary flows to the production process and allowing to integrate technology and distribution within the same theoretical apparatus. Revenue could only rise as long as production would rise, as "original revenue" was defined as having being created by the production of a set of commodities of equal value. With the reduction process he could root revenues in production processes.

Therefore, Smiths reduction of prices to incomes, by dissolving the physical inputs of production into wages, profits and rents, can be interpreted as an analytical tool that allowed him to link aggregate production to total income, and subordinate the last to the former. There could be income without production, but it would be derivative revenue and not augment total wealth.

Smith's main charge against mercantilism was its identification of money and wealth. In his effort to subordinate revenues to the production of new commodities, Smith went as far as considering wealth only physical commodities. Production always creates corresponding revenue of equal value but revenues do not always correspond to an original production, they might be just the redistribution of commodities already produced, not "original" but "derivative revenues". This might explain why Smith substituted the expression that profits were "a source of value" with the expression that they were "component parts of price" after the first edition. The only *source* of value was production and its main and ultimate moving power: human labour (Smith 1981, I.vi.6).

6. Conclusion

In this paper I have reconstructed Smith's theory of the residual determination of the rent of land rate and share. Although the author has various explanations to the determination of rent, they are applied to consistently to different situations: mines, all agricultural products but corn and corn. These explanations are not contradictory and are applied consistently throughout the chapter on rent. They can be summed up in a residual determination of the rent of land rate and share. By acknowledging the residual determination of rent, the adding up interpretation loses its main assertion: that Smith determined the distributive shares independently of each other.

Smith's theory of value, on the other hand, related the normal prices of the commodities to the social conditions of production: the common technology and the distributive rates. It was his reduction of all inputs to wages, profits and rents that allowed him to differentiate market prices and normal prices. The former was a result of quantities supplied and demanded. The latter was related to the production conditions. Since none of the three variables were defined based on other prices, Smith's explanation of the natural prices can be considered non tautological. It's the reduction process which allows him to latter identify the three components of price and relate them to the three shares of the social product.

Smith included in the annual production only commodities that had a physical substrate. Although this concept should be criticized and reformulated to include productions that are instantly consumed, like various services that are sold in capitalist economies, it reinforces the main affirmative of the paper: the identification of a given amount of physical products entails that the real amount of commodities appropriated by each social class cannot augment unless some other class diminishes it's share. Smith never attributed an increase in wealth to greater nominal wages, rents or increased profit rate. The key to greater wealth for all can only be an increase in the productivity of labour: "[I]t is the great multiplication of the productions of all the different arts" which occasions "that universal opulence which extends itself to the lowest ranks of the people" (Smith 1981, IPW.3). This limit to produced commodities was the reason of the insistence on the "frugality" of the capitalist class as an important element of capital accumulation and wealth.

Bibliografia

ASPROMOURGOS, T. (2009) **The science of wealth: Adam smith and the framing of political economy.** Routledge, New York, 2009.

DOBB, M. (1973) **Theories of value and distribution since Adam Smith: Ideology and economic theory.** Cambridge University Press, Cambridge, 1973.

________. (1975) **Ricardo and Adam Smith, in** Skinner and Wilson (1975), pp.324-325.

DOME, T (2004) **The political economy of public finance in Britain, 1767-1873.** Volume 66. Psychology Press, 2004.

________. (1998) Adam Smith's theory of tax incidence: an interpretation of his natural-price system. Cambridge Journal of Economics, (22):79-89, 1998

GAREGNANI P. (1983) The classical theory of wages and the role of demand schedules in the determination of relative prices. In **AEA Papers and Proceedings**, volume 73, pages 309–313, May 1983.

________. (2007) Professor Samuelson on Sraffa and the classical Economists. **The European Journal of the History of Economic Thought**, (14:2):181-242, June 2007

RICARDO, D. (1951) **On the principles of Political Economy and Taxation** in The Works and correspondence of David Ricardo, Volume I. Edited by Piero Sraffa in collaboration with M. Dobb, Cambridge University Press, Cambridge, 1951 [1821]

SMITH, A. (1821) [1776] An Inquiry into the Nature and Causes of the Wealth of Nations, Volume I. Liberty Press, Indianapolis, 1821.

SINHA, A. (2010a) **Theories of value from Adam Smith to Piero Sraffa.** Routledge, London and New York, 2010.

_______. (2010b) In defense of Adam Smith's theory of value. **European Journal of the History of Economic Thought.** 17(1):29-48, 2010a.

SRAFFA, P. (1951) **Introduction** in The Works and correspondence of David Ricardo, Volume I. Edited by Piero Sraffa in collaboration with M. Dobb, Cambridge University Press, Cambridge, 1951.

MARX, K. (1862-63) **Theories of Surplus Value** – Capital: A critique of Political Economy vol. IV (Draft) [1862-1863] Moscow, USSR: Progress Publishers. Downloaded from www.marxists.org.

_____. (1863-1878) **Capital: A critique of Political Economy, Vol. 2,** Progress Publishers, Moscow, 1956, USSR. Downloaded from https://www.marxists.org/archive/marx/works/download/pdf/Capital-Volume-II.pdf

MEEK, R. (1977) **Smith, Marx and after: ten essays in the development of Economic Thought.** London: Chapman and Hall.

O'DONNELL, R. (1990) **Adam Smith's theory of value and distribution: A Reappraisal.** St. Martin Press, New York, 1990.

VIANELLO, F. (2002) **The Smithian origin of Ricardo's corn-ratio theory of profits: a suggested interpretation.** Quaderno di Ricerca n. 1, Roma, 2002