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Original Exposure and Contemporary
Reformulations

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Calle 19A No. 1 – 37 Este, Bloque W.
Bogotá, D. C., Colombia
Teléfonos: 3394949- 3394999, extensiones 2400, 2049, 3233
infocede@uniandes.edu.co
http://economia.uniandes.edu.co

Ediciones Uniandes
Carrera 1ª Este No. 19 – 27, edificio Aulas 6, A. A. 4976
Bogotá, D. C., Colombia
Teléfonos: 3394949- 3394999, extensión 2133, Fax: extensión 2158
infeduni@uniandes.edu.co

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Samuel Jaramillo González (*)

Abstract

Here is presented an English version of the first two chapters of the book of Samuel Jaramillo *Hacia una teoría de la renta del suelo urbano* (2009) (*Towards a theory of Urban Land Rent)* that is only published in Spanish. This is justified because the theme developed in these two chapters have greater thematic scope than the book, since it refers to the general category of rent, which has a crucial role in the Marxist interpretation of value and price formation in capitalism, and these days it is the subject of several debates. Therefore, it may be interesting not only to those involved in real estate and urban phenomena. The two chapters have autonomy and great consistency as text. Its approach is original and challenging, as shown by the discussions awakened by the Spanish version. With this publication we want to broaden the spectrum of these theses and introduce them to those who do not speak Spanish and are interested in the topic of land property.

The text has three core themes. In the first chapter a scheme of the original exposure of Marx, which is relatively sparse in his work, is presented. Initially we outline his general notions, and then, the different forms of manifestation of this category: Differential Rent Type I and Type II, Absolute Rent and Monopoly Rent. In the second chapter the main notes and objections that have been made to the original presentation, mainly in Latin American and French literature, are discussed. These objections are examined, their scope is evaluated, and is analyzed what could be the origin of the mismatches identified, when judged that they are justified. A reformulation of the original approach to absorb or overcome these difficulties is proposed. Three cores of discussion are analyzed:

the Marx notion of Absolute Rent and its connection to an organic composition of capital in agriculture abnormally low; the presentation of Differential Rent Type II and the relationship with an unequal distribution of agricultural capital; the difference in nature that Marx proposes between Differential and Absolute Rent and the relationships established between the latter category with the private ownership of land. The chapter concludes with an outline of a general reformulation of the Marxist category of Rent, in order to overcome these criticisms and enhance its potential to interpret the dynamics of price formation and the distribution of value in capitalism. The latter is developed in the light of contemporary discussion of the Marxist theory of value, roughly following the perspective known as "New Approach"

Key words: Theory of Land Rent; Theory of Value; Marxist Theory of Prices; New Approach

JEL Classification: b51

Teoría Marxista de la renta de la tierra. Presentación original y reformulaciones contemporáneas

Samuel Jaramillo González (*)

Resumen

Se presenta aquí una versión en inglés de los dos primeros capítulos del libro de Samuel Jaramillo *Hacia una teoría de la renta del suelo Urbano* (2009) que solo está publicado en español. Esto se justifica porque el tema desarrollado en estos dos capítulos tienen un alcance temático mayor que el del libro, pues se refiere a la categoría general de la renta que tiene un papel crucial en la interpretación marxista sobre el valor y la formación de precios en el capitalismo y en estos días es objeto de diversos debates. Por lo tanto interesa no solamente a quienes se ocupan de los fenómenos urbanos e inmobiliarios. Los dos capítulos tienen autonomía y una gran coherencia como texto. Sus planteamientos son originales y retadores, como lo muestran las discusiones que ha despertado en su versión en español. Con esta publicación queremos ampliar el espectro de estas tesis e involucrar en ellas a los interesados en el tema que no hablan español.

El texto tiene tres núcleos temáticos. En el primer capítulo se presenta un esquema de la presentación original de Marx, que está relativamente dispersa en su obra. Inicialmente se plantean sus nociones generales y luego las distintas modalidades de manifestación de esta categoría: Renta Diferencial Tipo I y Tipo II, Renta Absoluta y Renta de Monopolio. En el segundo capítulo se abordan las principales anotaciones y objeciones que se han hecho a esta presentación original, principalmente en la literatura marxista latinoamericana y francesa. Se examinan estas objeciones, sus alcances, se analiza cuál puede ser el origen de los desajustes señalados cuando se juzgan que son justificados, y se propone una reformulación del planteamiento original para absorber o superar estas dificultades. Se analizan tres núcleos de debate: la noción de Marx de Renta Absoluta y su conexión con una Composición Orgánica de Capital en la agricultura anormalmente baja; la presentación de la Renta Diferencial Tipo II y la relación con una distribución desigual del capital agrícola; la diferencia de naturaleza que propone Marx entre Renta Diferencial y Renta Absoluta y las relaciones que establece entre esta última categoría con la propiedad privada de la tierra. El capítulo concluye con un esbozo de reformulación general de la categoría de la renta de Marx, que

permita superar estas críticas y potencie su capacidad interpretativa de la dinámica de la formación de precios y distribución del valor en el capitalismo. Esto último se desarrolla a la luz de la discusión contemporánea de la teoría marxista del valor, siguiendo a grandes rasgos el enfoque conocido como "Nueva Aproximación".

Palabras clave: Renta de la tierra; Teoría del valor; Teoría marxista de los precios; Nueva Aproximación.

Código JEL: b51

* Profesor Titular de la Facultad de Economía de la Universidad de los Andes, Bogotá e investigador del Centro de Estudios sobre Desarrollo Económico CEDE.

Marxist Theory of Land Rent
Original Exposure and Contemporary Reformulations

Chapter 1

The General Theory of Land Rent

1.1 Basic notions and reformulations

In the Marxist tradition there is a crucial theoretical background to address the topic of ownership of urban land: this is what we can call the General Theory of Land Rent. This analytical body is part of the overall examination that Marx develops on capitalist society, which is reflected in his seminal work, *Capital*. There Marx develops the central thesis for understanding the social existence of landed property in capitalism, overcoming simultaneously the spontaneous representation this phenomenon engenders among the agents involved, and theoretical elaborations that are apologetic of this type of social organization.

The GTLR is thus the obliged starting point of any effort to understand ownership of urban land, since the latter would be but a specific case of the more general issue studied by Marx. This consideration, which we fully share, explains why virtually any text that intend to develop a Marxist Theory of Urban Land Rent begins with an overview of the concepts developed by Marx, as a convenient shorthand to remind the reader briefly these notions. In this study, however, the inclusion of an explicit reference to the work of Marx has an additional motivation: in addition to refresh the reader's memory on this reflection, we also invite to make a critical review of these concepts. This for the following reason: although we are convinced that the GTLR, such as Marx poses, provides the core of interpretive tools on this topic, some historical determinants surrounding its development marked the shape of the exposure in such a way that is necessary to reformulate some aspects of the concepts included in Marx's theory in order to make them really useful for the purposes we pursue nowadays.

A first aspect that merits a rethinking of Marx's thesis about land rent has to do with certain ambiguity in its degree of generality. In fact we speak of a General Theory of Land Rent because,

we reiterate, it implicitly contains the fundamental theoretical tools to understand the overall social existence of land in capitalism. However, this theory was developed with the main purpose to specifically understand one of its manifestations, the rent received by the owners of agricultural land. This is not surprising. At the time, the really relevant fact about land was precisely the consolidation an agrarian landowning class. Other forms of land ownership, including the ownership of land in cities, had a very minor weight. However, the result is that in the construction of the categories of analysis there is a mixture: some of these notions are rigorously general, while others correspond to the particular case of agricultural production. It is clear the inconvenience of automatically use these analytical tools to examine a different case of land ownership, the property of urban land. Precisely, some evoked failures in attempts of this type, make evident the need of the task that we propose here: to separate in the formulation of Marx its general components, and those that are specifically related to the agricultural case, in order to build, from these global notions, categories corresponding to the object of our analysis: the ownership of the land in cities.

The other circumstance that makes advisable to reconsider the exposition of the theory of Marx is linked with the historical development of his thought. The proposed interpretations advanced by Marx did not stay frozen at the time of their initial elaboration but have continued to develop through the contributions of generations of Marxist researchers. In this development have been raised multiple theoretical reconsiderations, some of them explicitly referring to the Theory of Rent, and others with a more global reach about the overall examination that Marx makes on capitalist society, but that affect his thesis on the property of land. It is natural that, facing a contemporary development of this theory to a new field of manifestation, the urban land, the starting point must be a formulation of the mother theory including all enrichments and enhancements available at the time. Unfortunately this is not always the case among those who venture into new realm of the Theory of Urban Land Rent. Many, perhaps in order to not accumulate risks, prefer to use the categories relating to land ownership in its original state, which surely attracts less opponents. But if it makes explicable this attitude, the fact is that it does not validate it, and we are sure that more than a difficulty in the development of the Theory of Urban Land Rent comes from an overly conservative position in relation with the traditional formulation of the general categories. We will try to rectify this oversight, to the extent of our abilities, and of course from our own perspective, introducing what we believe are the most notable and valid innovations within the formulation of the General Theory of Land Rent.

These two initial chapters are devoted to this purpose. In the first we will present, in a synthetic way, the original exposure on Marx's Theory of Land Rent, which can be regarded as its canonical version. In the second chapter we discuss a number of issues that have been object of debate during the long time between the initial presentation of this theory and present; we propose some adjustments which we believe are necessary and appropriate, and we propose a general reformulation of this general theoretical framework.

1.2 The exposure of Marx

We will examine the thesis of Marx in the following sequence. Initially we will present the core concepts of the Theory of Land Rent in its most general formulation, which in a way are the conclusions of the analysis. To make this more understandable, we present, in detail, the development of his thought. Initially, the relationship he establishes between Land Rent and Land Price, which is key to understand his reasoning. Then, and paraphrasing of what makes Marx himself in *Capita*l, we will use a hypothetical example (the famous land endowed with waterfalls) to introduce his intuitions about the operation and implications of the mechanism of rent in a capitalist structure of production. Finally, we will show how Marx specifies these notions in the context of agricultural production and the different types of rent that appear in this context.

1.2.1 The nature of land rent

The General Theory of Land Rent has like overall purpose the interpretation of the social existence of landed property in capitalism. More specifically, it tries to explain the survival and consolidation of an agrarian landowning class in a developed capitalist society, and essays to establish its ties of interdependence with this society as a whole. It focuses, therefore, on defining in conceptual terms the category that distinguishes the landlords as a class, the land rent, in other words, the perception of an income, a portion of social labor, just because of the legal domain on land.

These fundamental interrogations imply a series of operational questions, and Marx undertakes the solution of a set of paradoxes, apparent inconsistencies between his overall analysis

of capitalist society, and the real processes connected with land. Why land, which in itself is not a product of social labor, and therefore is not able to condense value has, however, a price and is exchanged with other commodities? Why a social class like the landowners, who is not directly involved in production, nor does seem to participate of the capitalist relations of exploitation, does not disappear, but strengthens while proliferates the capitalist regime? And so we could enunciate many similar questions, but they all revolve around a central question. What is the nature of rent, the income that defines the landlords as a class?

So let's start by the answer that Marx gives to this question, because it is the cornerstone of his theory. Rent is a part of the social surplus, and more specifically of surplus value, extracted by the capitalists to workers. It is a mechanism for diverting a portion of the social surplus, that instead of going to feed the fund of profit that capitalists grab, goes to the hands of a social class that is different to the latter, the landowners .

But, why and how capitalists resign a portion of their profits for landowners? Land is a mean of production (object and mean of labor at the same time) that is outside the control of capital as such. No capitalist industry produces land, and many of its individual features are irreproducible. But besides that land is not reproducible at will by capital, it can be monopolized, ie, individually appropriated. The one who exercises dominion over the legal ownership of land controls actually a condition of accumulation that is external to capital. Thus, the landowner, without participating in the production, is able to claim a share of the profit as a condition of his authorization to access the capitalist to land, and therefore, as a requirement for agricultural production can take place. This participation of the landowner in the profit is rent. In its development, the theory of Marx specifies under what circumstances, in what way, in what quantities and in relation to what events, the landlord is able to claim the rent to the capitalist.

Marx also specifies that although land ownership and rent historically precede societies governed by capital, its existence in capitalism is not due to residual survival of previous modes of production. In fact, once capitalist relations dominate completely agricultural production, previous rent, which he calls *pre-capitalist,* changes its nature and becomes *capitalist*, and the latter is that really interests him. His analysis is developed in terms of abstraction rather general (full domain of agriculture by capital, free competition between capitalists and between agricultural land owners, etc…) which shows the compatibility he attributes to rent with the most basic substrate of capitalist relations.

1.2.2 Land Rent and Price of Land

For the theoretical tradition that analyzes the capitalist society under the imprint of the Theory of Labor Value, as we have mentioned, the fact that land has a price, is traded on the market, in other words, operates as a commodity, involves certain paradox. Indeed, in this tradition, the fact that commodities are priced and exchanged on the market is based on the condition that they represent a portion of social labor: in order that production takes place it is required that society has aimed to their processing a portion of the overall productive energy. This is not the case of land, which appears as a gift of nature and is not the product of labor. Does this imply an inconsistency in the Labor Theory of Value? Marx does not think so and points out that the emergence of a price for the land is a result of the operation of the law of value under certain circumstances.

To analyze these circumstances he begins by reversing the relations spontaneously established between rent and the price of land. Indeed for the landlord, the fact that the property of his terrain allows him to receive a periodical rent, ie, a portion of value received in a continuous manner, has nothing mysterious: this occurs because land has a price. The receipt of the rent is due to the fact that he has paid a price for the land. Marx notes that despite this spontaneous representation, what actually happens is the opposite: the land, which in itself has no value, acquires a price as a result of the existence of rent. This is the "imaginary" construction (he qualifies that as such), but no less effective, of a price through a mechanism he called *the capitalization of rent.*

Let's examine this issue. In a capitalist economy, in which the practice of lending money has been consolidated, the owner of a mass money can get periodically, in exchange for the provision of this sum of money to a debtor, a portion of value that we call interest. The relationship between this interest and the borrowed sum (which can be called capital), is known as interest rate, and is generally an amount determined overall in the lending market. Schematically this can be expressed as follows:

$$i = \frac{I}{K}$$

where

i = interest rate

I = interest

K = Capital

This can also be written as follows:

$$\frac{I}{i} = K$$

However, *capitalization of rent* consists on the assimilation of this mechanism, which is fully understandable, to the phenomenon of perception of rent. A landowner who owns a piece of land, which for now has no price, due to his property right, may periodically receive an amount of value, which is what we call rent. It is a sum of money that for him has no difference with the interest that receives the owner of a real capital. Given the existence of an interest rate, the landlord treats the possession of his plot of land as the possession of a capital that would give him an interest similar to the amount of money he perceives as rent.

Thus, land, which is not produced by the social labor, and that is not a true commodity, acquires a price and is exchanged on the market. Actually what is traded in the transactions of land plots, rather than the land itself, is the right to receive a rent. The irrational or delusional character of this category does not dampen in the least its corporeal and real economic implications, says Marx.

This could be expressed as follows:

$$\frac{r}{i} = PL$$

where

r = rent

PL = price of land.

A simple quantitative example can clarify this issue. Suppose a landowner receives an annual income of 20 units of value for the possession of a land which for now has no definite price. If the interest rate in the economy is 0.2, this means that a capital to yield in terms of interest 20 units per year must have a magnitude of 100.

The landowner, for whom is indifferent to perceive these 20 units as interest or as rent, will estimate the price of his land in 100, because he only may rid of it in exchange for a capital that

would give to him an interest of 20 units, the same value he perceives as rent. Thus, the price of the land, through this derivative manner, may be fixed in a magnitude of 100.

This, of course, does not solve the question we are investigating about land ownership, but shifts the focus of inquiry: what we should be examine is not the price of land, but rent, which is what develops Marx further. On the other hand, this shift in the relationship between price and rent is very important in the analysis of land markets in operational terms: it is not the magnitude of the price of land that determines the size of rent, but just the opposite.

1.2.3 The notion of Land Rent

As we have announced, we will introduce the notion of Land Rent, departing from a hypothetical example proposed by Marx.

Suppose that there is a commodity that is produced in a capitalist manner in normal terms. For its production each capitalist must incur a number of expenses: the purchase of a set of already produced goods (inputs, machinery, fuel), to what Marx called *Constant Capital*, and the purchase of a certain quantity of labor (which he pays as wages) called *Variable Capital*. Suppose that in our case this sum is 100 value units. This would be the *Total Capital* of the capitalist. Let´s think that in this economy, where there is full competition among capitalists, exists a uniform rate of profit, *the average rate of profit* that in this case would be 40% on invested capital. This means that every capitalist can appropriate a profit, which is a part of the total surplus generated in the economy, proportional to the amount of his capital: the ratio is precisely the rate of profit. In our case, this profit, which we call normal profit, would be 40 units, because the capital invested is 100 and the average profit rate is 0.4. Marx called *Price of Production* the price at which capitalists are willing to sell the product and obtaining the normal profit: it would be equal to capital increased in a proportion equal to the average profit rate

$PP = K(1+g)$

where

PP = Price of Production

g´= average profit rate

The price at which commodities are exchanged, which Marx called Market Price, in circumstances of full competition, tends to converge quantitatively towards this Price of Production. If in the short run the Market Price differs from the Price of Production, the mechanism of competition, through the flow of capital between branches, makes it converge in the medium term. If the Market Price is greater than the Price of Production, the capitalists in that industry would be making profits above average. This would be an attraction to capitals operating in other branches to move to this one to obtain this profit, and that increases the quantity of product supplied and brings down its price. If, however, the Market Price is less than the Price of Production, capitalists in that branch would get profits lower than they could have in other industries: this would encourage some capitals to migrate to other branches seeking higher returns, restricting production in the original branch, and raising its price. In our example, the Price of Production, towards which tends the Market Price, would amount to 140, as the capital is 100, which should be multiplied by one plus the rate of profit, ie, 1 +0,4.

To continue our example, suppose that all these capitalists operate in a physical place, in a piece of land. For now these plots have no price. Suppose further that part of the constant capital to be spent by capitalist in production consists of renting a steam engine that provides the energy needed for the production process. Suppose the rental fee is 20 value units, representing the wear value of the machine (which is a real commodity and therefore transmits its value to the product). The rent arises from the following event: some capitalists occupy lots where there is a fortunate natural phenomenon, the existence of falls of water that can be used for power generation. In other words, the steam engine can be replaced by these water falls. Then capitalists operating in these lots can produce the same goods than their competitors that use normal pieces of land, without incurring the expense of renting the machine.

Let´s look what are the implications of this technical circumstance in economic terms. In principle, the price of the product on the market does not change and remains equal to the price of production of the capitalists located in normal lots. If the commodity is homogeneous for the consumer, the latter does not make any difference between products produced in either type of plots: capitalists who have access to land with water fall will have the same sale prices than their competitors. But the presence of the waterfall implies that they have lower costs: indeed the capital they should advance is only 80 units, if the machine rental is paid at beginning of the period.[1] Since the selling price of the product is 140, they will obtain a surplus of 60 units. If their real capital is 80,

[1] If the rental fee is paid at the end of the period, its amount should be 28 value units, because it must include the yield of the original 20 units at the 40% rate.

with 32 units of surplus they normally can remunerate their investment. This would be their average profit. The remaining 28 units would be an additional gain we call *extraordinary profit*.

In this event what would happen with the mechanism of competition? Obviously all other capitalists who produce this good would want to be located in the privileged land and get this exceptional profit. A struggle erupts between them to achieve the use of these particular areas.

Note that this excess of profits do not emerge out of any particular feature of the capitalist producer: any of them operating in these areas could achieve it. Actually the extraordinary profit, as we have seen, is associated to a feature of the terrain itself, having a water fall. The owner of the lot, through his legal dominion over it, controls the disposition of this circumstance. This way he can take advantage of competition among the capitalists: he may ask to any capitalist willing to use this terrain at least a portion of the excess profits as a requirement for that access. If one of them is reluctant to make that payment, there will be another to replace him.

Through this mechanism, in the limit, the capitalists will be willing to give all excess profits to the landlord.

Note that this excess of profits do not emerge out of any particular feature of the capitalist producer: any of them operating in these areas could achieve it. Actually the extraordinary profit, as we have seen, is associated to a feature of the terrain itself, having a water fall. The owner of the lot, through his legal dominion over it, controls the disposition of this circumstance. This way he can take advantage of competition among the capitalists: he may ask to any capitalist willing to use this terrain at least a portion of the excess profits as a requirement for that access. If one of them is reluctant to make that payment, there will be another to replace him. Eventually, for them, it will be indifferent to invest in a normal soil, which means rent the machine, invest 100 units of capital, and get the average profit, or produce in a soil with water fall, investing only 80 units of value, preserve 32 units as normal gain and give the remaining 28 as rent.[2]

[2] This if the rent is paid at the end of the period. If it is paid at the beginning, the options are even more comparable. The capitalist may invest 100 in a normal field including the rental fee of the machine, or he could invest 80 in a soil with waterfall, but pays 20 units as initial rent. For the perception of the capitalist, he pays as land rent which he saves on renting the machine.

Thus, the landowner may enjoy by virtue of their ownership of the land for a rent of 28 units, collected in each production period. The land, which initially had no price, acquires a value. Assuming an interest rate of 0.1, the land can be sold for a total amount of 280 units of value. Any other agent can buy it and get the annual rent, which would be equivalent to placing a capital of 280 units at an interest rate of 10%.

Let´s examine some implications of what has been presented here. The element that triggers this fact is a circumstance, in this case something natural, the presence of the waterfall, which in principle allows the emergence of excess profits. It is a fact that is literally irreproducible by capital, because the waterfalls are not produced by it. This makes a case of excess profits that have specific characteristics. Exceptional profits above the average profit rate are common occurrences in the capitalist economy. We have already mentioned that in cases of excess demand in certain branches, capitalists may temporarily get exceptional gains when the market price exceeds the price of production, due to this temporary mismatch. But, as we have seen, the flow of capital ends up converging the market price towards the magnitude of price of production and the exceptional gain disappears. The same is true of technological innovation. A capitalist may introduce a technical process enabling him to produce the same goods than his competitors with less cost. For a time he can sell the product at the same price as other capitalists and obtain an extraordinary profit. But to the extent that this technological innovation spreads and is adopted by the majority of producers, the price of production of all capitalist decreases, which lowers the market price and, again, the extraordinary profit disappears. In contrast, in the case under consideration of the waterfall, the exceptional profit is permanent. To the extent that the natural event is irreproducible by capital (no one can produce a water fall at will) competition is unable to eliminate the extraordinary profit and the latter becomes stable.

Now, let's examine the role of the property. By itself, while purely legal phenomenon, it does not guarantee the existence of rent. An illustration of this is that in our example, the owners of the normal lots, which have no waterfalls, can´t collect any rent even if they are legal owners of their land. Rent arises in the privileged lots because the legal power of their owners allows them to control the circumstance that makes possible the excess profits. What makes property is to transfer this value, which would otherwise be appropriated by the capitalist, to the coffers of the landlord: ie convert the extraordinary profit in rent.

On the other hand, rent implies that consumers of the product pay an over price for it. Indeed, the goods produced with hydraulic power actually required only 80 units of capital, which paid at the average rate of profit, imply a potential of 112 units of value. But consumers pay 140. In other words, consumers pay for these goods as if in their production, the capitalists should have had to use the steam engine. Consumers pay a value that is higher than the social labor that was actually used.

From the above it may be concluded that rent is a consequence of the "productivity" of land. Pointing out a bit, this could be expressed saying that land with exceptional condition makes labor more productive, because with less effort more goods are produced. One could conclude from there that this would legitimize the existence of rent. But if this is discussed in more detail in the example mentioned this potential to do more productive labor in physical terms refers to relative conditions among different plots. If the matter is dealt with as a whole, in aggregate terms, the conclusion is just the opposite. The rent actually emerges in this case because the land with better conditions is limited. It is because there is little land with waterfalls that rent arises: if all the plots had this circumstance, all the capitalists could produce without having to use the steam engine. In these terms the capital needed for production would reduce and so the price: but in that situation no rent would be paid. Here it is appropriate to bring to mind the words of David Ricardo who claimed that rent arises because land is mean to mankind, not because it is generous.

Another conclusion to be drawn from this example is that the rent is a deduction of profit: it is a portion of surplus value that escapes from capitalists and goes into the hands of the landlords. However one should be careful with the precise meaning of this statement. Of course this doesn't mean that rent is a deduction from the normal profit of the individual capitalist who pays rent: as seen in the example, rent is compatible with a uniform average profit for all capitalists, including those who pay rent. Even it is incorrect to suggest that it is a deduction of the profit to be applied exclusively to the capitalists in the branch that pays rent. Actually what it is, is a deduction from the profit of all the capitalists.

Let's expand our example a little to illustrate this point. Suppose the branch that uses land and pays rent is composed of just two producers, one of them operates in a normal batch and other operating in a plot with waterfall.

If we keep the same figures above, that means that the investment of the first capitalist is 100 units of value and that of the second would be of 80, for a total capital in the branch of 180.

Furthermore we will assume that the rest of the economy, the branches that do not use land and / or do not pay rent, employ a capital of 200 units. The total capital in the economy, counting the two branches is 380 units. Let's suppose that in the whole economy 180 units of surplus value are produced. Let's look initially how this surplus value would be distributed and how the prices of these two branches would form, if there wasn´t rent.

The overall rate of profit of the economy would be 0.47, which is the ratio between 180 units of surplus value and 380 units of capital. When there is a uniform rate of profit, the entire surplus value is distributed according to the proportion of capital in each branch on the total capital. The landless branch, which has 52.6% of the total capital, would get this share of the total surplus value: it receives 94.74 as profit. The branch that uses land, which has 47.4% of the capital, would receive 85.26 for this item. This is actually equivalent to calculate the profit of each branch as a proportion, the average profit rate, of their respective capitals. The value of each branch would be the sum of capital and profit: the total value of the economy would be 560 units, of which 294.74 would be represented by the price of goods of the first branch, and 263.26 by the price of commodities of the second.

Table 1.1 Formation of a uniform profit rate without rent

Branch	Capital	Profit (Surplus value)	Value	Rate of profit
TOTAL	380	180	560	0,47
Without land	200	94,74	294,74	0,47
With land	180	85,26	265,26	0,47

Now let's examine what happens when there is rent. From the total surplus value produced, as we said, 28 units are converted into rent, and therefore not distributed among capitalists. Only then are 152 units of surplus value for the capitalists, divided by 380 units of capital yields a profit rate of 0.4, which we had used in the example. This total is divided in the proportions mentioned among the capitalists of the two branches, so that 80 correspond to the profit of the investors in the landless branch and 72 to the profit of the investors of the sector that does use land. In the latter, the profit appropriated by capitalists is added with 28 units of value corresponding to the rent, to complete 280 units of value paid for the total production.

Table 1.2 Formation of a uniform profit rate with rent

Branch	Capital	Profit	Rent	Value	Rate of profit
Total	380	152	28	560	0,4
Without land	200	80		280	0,4
With land	180	72	28	280	0,4

As seen, then, the rent is a deduction of the profits of all capitalists. The capitalists of the branch that does not use land, without the presence of rent could appropriate 94.74 units of surplus value as profit; with the presence of rent they appropriated only 80. The capitalists of the branch that need land, who could appropriate 85,76 units of value as profit, only get 72. With rent there is an average rate of profit of 0.4, that is lower than that of 0.47 that corresponds to the situation of no existence of rent. It can be seen in these accounts something we had noted earlier: in the presence of rent the consumers pay for the commodities of the second branch 280 units of value, a sum that is greater than 265.26 they would pay if there was no rent.

1.2.4 The rent in agriculture and its modalities

From this introductory example (which we have exposed in a way that is not exactly the original), Marx goes on to examine how these general notions are embodied in agriculture, taking into account the technical and social conditions of this branch. He distinguishes different types of rent that will be presented here.

1.2.4.1 The Differential Rent Type 1

In agriculture there are two circumstances that could play a role similar to that of the presence or absence of waterfalls in the above example: one is the fertility of the land which is not uniform in all lots. This means that, regardless of the characteristics of individual capitalists, those who operate in more fertile lands can obtain, with investments of similar magnitude, different physical yields and therefore profits of diverse magnitude. On the other hand the land at different locations, involves

different transport costs, both related with the displacements of inputs to the production site, and the products from there to the place of marketing. These transportation expenses are part of the capital that investors must advance, and if these costs are different will make that the individual profits are in principle of different amount: those that are better located will enjoy extraordinary profits.

Marx calls the modality of rent that arises from these events Differential Rent, because it is associated with differential conditions of production of the land. And he adds categorization "type 1" to refer that it appears more clearly when similar amounts of capital (called normal quota of capital on land) apply.

Let´s examine the operation of this type of rent, with a numerical example involving fertility.

Imagine a situation in which there is a kind of land we will call type A, in which an application of 100 units of capital (the normal quota of capital on land) can produce 1,400 units of physical product. If the average profit rate is 0.4, the price of production of these agricultural investors is 140. If such lands are sufficient to produce an amount of product to meet demand, the Market Price of this production (we call it Total Market Price TMP) approaches this magnitude of 140. Each physical unit of product will have a unit price of 0.10 (call Unit Market Price UMP). In these circumstances there is no rent, nor extraordinary profit. This could be summarized as follows:

Table 1.3

Type of land	Capital	Normal Profit	Price of Production	Physical Production	Total Market Price	Unit Market Price	Rent
	K	P	PP	PhP	TMP	UMP	R
A	100	40	140	1400	140	0,10	0

p= 0,4

Suppose then that the demand for these agricultural commodities grows to a point where these lands type A, having a yield of 1,400 physical units to 100 units of invested capital, are depleted. From that point, to expand total production is required the use of lands that are less fertile, which we will call type B, where with an investment of 100 units of capital are obtained only 1,000 units of

physical product. In the first instance this additional production wouldn´t be carried out, because if the unit price of the product remains at the same level of 0.10, the capitalists that have to produce in lands type B would get as Total Market Price an amount of value of 100 (their 1.000 physical units multiplied by the unit price 0,1). With these 100 units in sales they could not remunerate their capital at the average rate of profit (in this case they would not obtain any profit) and probably would prefer to invest their capital in other options in which they can enjoy a normal return.

But the price of agricultural products begins to grow for a reason: if demand has increased but production is fixed there will be a relative shortage situation. In these circumstances, competition among consumers of agricultural goods will cause that some of them to ensure their transaction would be willing to pay a higher price. This pushes the general price up. When the unit market price reaches a magnitude that makes that the Total Market Price equals the price of production of the capitalist who can potentially operate on land B, this investment becomes acceptable to them and opens the possibility of exploiting these less fertile lands and increases production. In our example, this level of the unit Market Price is 0.14. Let's look at what happens in type B land when this price is reached:

Table 1.4

Type of land	K	P	PP	PhP	TMP	UMP	R
B	100	40	140	1000	140	0,14	0

p= 0,4

But for the capitalists who are still producing on the land type A, the physical performance of their land remains unchanged: with an investment of 100 units of capital they get 1,400 units of physical product. As the physical product is homogeneous and consumers do not differentiate between goods produced on land type A or B, the new unit market price also applies to the products of the land type A. Thus, the capitalists operating in the land type A would have a Total Market Price of 196 (1,400 physical items multiplied by the unit price of 0.14). Thus, the difference between these sales of 196 and their costs (capital) of 100, will reach an amount of 96 units of value. Of these, 40 would be the normal profit at the profit rate of 0.4 and the remaining 56 would be in principle an extraordinary profit. (It can also be thought of as the difference between the Total Market Price and

Price of Production: 196-140 = 56) But here the competition among capitalists that we had seen in the introductory example begins to operate: many capitalists would want to access the land type A. The owners of the latter may eventually claim as rent the whole extraordinary profit. Let´s look how are these value quantities in the production on the two types of land:

Table 1.5

Type of land	K	P	PP	PhP	TMP	UMP	R
A	100	40	140	1400	196	0,14	56
B	100	40	140	1000	140	0,14	0

Let´s note some facts that arise from this exposure. While in a normal branch the Market Price tends to converge to the magnitude of the price of production of all capitalists operating in the sector, in the situation analyzed the Market Price converges towards the price of production of the capitalists operating in the more disadvantaged plots. Marx then says that in presence of differential rent, are the conditions governing production on marginal lands which regulate the Market Price.

From there emerges something that was already mentioned in the opening example: the rent involves an over price, because the Market Price, which is uniform, applies to goods produced in the best land in which the price of production is lower. In other words, consumers pay for products as if they all had been produced in the less fertile land.

Finally, note that in this case, in the marginal land the amount of this type of rent is zero.

1.2.4.2 The Differential Rent Type 2.

Marx finds that besides fertility and location, the magnitude of rent in various lots also seems to be associated with the amount of capital applied to land (defined capital as the total investment of capitalists, both Constant and Variable Capital). He understands that this is a phenomenon that

is embedded with the above but it has its own specificity. Therefore he proposes the notion of Differential Rent that he calls Type 2, to distinguish it from the previous one and would follow, given the prior existence of the Differential Rent Type 1, from *a different intensity of application of capital on land.*

Let´s examine this by extending the previous numerical example for this purpose. We have noted that the normal quota of capital on land was 100 units of capital on a typical plot of a certain area. Let's assume, however, that there is a capitalist who has capital of a greater magnitude, and he is able to invest not only 100 units of capital, but 200. Consider that his investment is done on a parcel of land type A, where there is already a Differential Rent Type 1, which in our example was of 56 units. Assume that doubling the invested capital, the physical production also doubles. In other words, with the investment of this capitalist of 200 units of capital, he gets 2,800 units of physical product.

If the unit market price remains 0.14 Total Market Price for this capitalist would be 392 units. The surplus obtained, which is the difference between what he gets in the market and his capital, is then 192 units. 80 of them would be his normal profit, as it would be 40% (the average profit-rate) of his 200 units of capital. There would be 112 additional units of value. Considering that as Differential Rent type 1 the landlords claim 56 units as rent, yet another 56 units would be left, that now appear as extraordinary profit (EP).

Table 1.6

Type of land	K	P	PP	PhP	TMP	UMP	DR1	EP
A**	200	80	280	2800	392	0,14	56	56
A*	100	40	140	1400	196	0,14	56	0
B	100	40	140	1000	140	0,14	0	0

Marx argued that the conversion of this second portion of extraordinary profit in rent is not automatic and presents some difficulties for that. While capitalists who can make these applications of capital on land higher than normal are relatively few and exceptional, the landlords don't have

many opportunities to collect this excess profits as rent, and the latter may remain for a considerable time as extraordinary profits of these capitalists. But if this kind of investors proliferates and they become numerous, the mechanism of competition operates and all the exceptional profit passes to the landlords as rent. In this case the capitalists pay as rent in these parcels a whole sum of 112 units, that we call Total Rent. However, within this sum, the first 56 units, which is what the capitalists who invest their normal quota of capital on the land pay as rent, could be identified as Differential Rent type 1. The remaining 56 units would then be what Marx called Differential Rent Type 2. The corresponding figures would be as follows:

Able 1.7

Type of land	K	P	PP	PhP	TMP	UMP	TR	DR1	DR2
A**	200	80	280	2800	392	0,14	112	56	56
A*	100	40	140	1400	196	0,14	56	56	0
B	100	40	140	1000	140	0,14	0	0	0

Then summarize some of the main conclusions of this analysis of Marx.

A new form of differential rent arises, in this case not derived from fertility or location, but from the different intensity of application of capital to land.

However, these two types of differential rent are articulated. In fact there must be Differential Rent Type 1 to pop Differential Rent type 2.

Note that if this exceptional quota of capital on land is applied to land type B, where there is no differential rent type 1, no extraordinary surplus would be formed to become Differential Rent type 2. The same could be said of a situation in which all lands were homogeneous and there were no Differential Rent type 1 in any parcel. What determines that an exceptionally high quota of capital on land is applied? Marx replied that this depends on the existence of capitalists who are able to do so, ie, that have a level of accumulation of capital that makes that possible, and that are higher than that of their competitors. This type of rent, then, would be associated with an unequal distribution of capital among agricultural capitalists.

As mentioned, the second portion of exceptional profit has difficulties to become rent. For a while it remains as extraordinary profit and not dissipated (and becomes rent) but when capitalists with these exceptional conditions are sufficiently numerous to make operate the competition and enable the transfer of value to landlords. It could be said that here happens something similar to what happens with technological innovation: the capitalists are drawn permanently to technical improvements because it allows them to capture windfall profits, which although temporary, can enjoy them for a while. In the agricultural case, those capitalists who have solvency for it, will be encouraged to increase capital intensity on land, because that allows, at least for a period of time, preserve as an extraordinary profit something that will become Differential Rent type 2.

1.2.4.3 Absolute Rent.

One of the developments of Marxist conceptualization about rent to which Marx himself gave more importance is the question of what he calls Absolute Rent. He considered it one of his most valuable contributions to knowledge on this topic, and so is still taken in this theoretical tradition.

His reflection starts from the following concern: as we have seen, the analysis about Differential Rent concludes that the marginal land bears a zero rent. That for the use of land with the most unfavorable conditions of production nothing is paid. He found, first, that this is something that contradicts empirical observations. In his analysis, Marx used British agriculture as factual reference, which at the time was the most developed and which showed the clearest features of the operation in it of capitalist relations. But the statistics that were available for him showed that in the end of XIX century, even the most remote and barren lands of the British Isles were appropriate privately, were priced and for their use were paid positive rents. The theory of differential rent, which was initially formulated by David Ricardo and that Marx's analysis owes much, seems to him insufficient to explain this empirical phenomenon. But the conclusion of the zero rent for the marginal land also was for him difficult to accept in intuitive terms. It implies that the owners of these lands would be willing to allow the access of the capitalists to them free of charge. For him, this was not a typical behavior of landowners and in fact seems inconsistent with the institution of private property.

Marx thus explores an additional source of rents other than the differential productive conditions of land (thus something absolute), which may be present even in lands that do not enjoy relative productive advantages. This source is for him the same institution of private ownership of land.

Marx's thinking on this could be divided into two components. The first deals with the mechanism by which the property can induce the existence of a rent with these features. In the second, Marx reasons about the articulation of this mechanism with the overall functioning of value and considers the peculiar conditions that must have the Organic Composition of Capital in agriculture in order to be compatible with the operation of this type of rent.

Marx draws a contrast between the Differential and Absolute Rent about the relationship between the exceptional price of the product and the rent. In the first case, as we have seen, he perceives that the extra price is induced by the productive heterogeneities of land, which is passed on to the rent. For Absolute Rent he proposes the opposite: the land owners claim the payment of a rent as a condition to supply their land for production, and is precisely the existence of this rent what makes up the price of the product. In virtue of what can landlords require a rent? Marx says, it is their *retention power* on land that gives them the legal dominion over it; if they are not paid anything, they simply subtract their parcels from the production and the land cannot be exploited.

Marx however made a clarification that is decisive in his argument: it is not the legal property alone. If the rent that is paid depended solely on the unilateral demands of the landlords, the amount of such type of rent would not only be undetermined but its magnitude would be infinite, because it is expected that the owners want to have the highest possible payments. In order that retention power generates a rent an additional economic condition is required: that the subtraction from production of the lands in question would lead to an imbalance between supply and demand of agricultural goods that may makes raise the price thereof.

This, of course, refers to the conditions of demand: the size of the Absolute Rent will depend on how much the consumers are willing to pay more for agricultural goods in this trance of tension between supply and demand. (Marx gives an example of a situation in which there is legal ownership of land, but this does not generate rent: the case of the open frontier in the nineteenth century in America. Although the colonists were legal owners of their land, they could not demand a rent for their use: as land was abundant, if they retained their lots, another producer would be installed in

the surrounding land and the retention of land by its legal owners would not have any effect on the amount of agricultural goods produced or on their price)

Absolute and Differential Rent, despite having different natures and determinants interact simultaneously in the land market. All terrains would have a total rent that would be the aggregate of the Differential and Absolute Rent. The latter would have a uniform size for all terrains, while the Differential Rent would depend on the productive conditions of each lot. On marginal lands, which have zero differential rents, appears only the Absolute Rent. In other words, the Total Rent in the marginal land is composed only by the Absolute Rent.

Let's look at this in our example. Suppose that in the land type B, where is not paid any amount of Differential Rent, now is required the payment of an Absolute Rent of 20 units as a prerequisite for their use by the capitalists. As we have seen, if the unit Market Price of agricultural goods remained 0.14 no capitalist would pay this rent because doing so is impossible to get the normal profit. But let's consider that the tension generated by the potential retention of land access makes consumers pay a higher price: in order to pay this Absolute Rent of 20, the price of the product would have to rise to 0.16. Thus, the capitalists operating in the marginal land would get on the market a total value of 160 units: 140 would be the price of production that would guarantee their normal compensation, and they could pay as rent the remaining 20 units. So, that constitutes the Absolute Rent, which for this marginal land would be equal to the Total Rent, because in that place there is no Differential Rent. Given the unit market price of 0.16 the capitalists operating in the lands type A would obtain on the market a total amount of 224 units of value. This exceeds their Price of Production in 84 units, which would be equivalent to their Total Rent. If we consider that the Absolute Rent is here of the same magnitude as in the land B, ie 20 units, the remaining 64 units would be Differential Rent. (Note that the presence of the Absolute Rent affects the magnitude of the Differential Rent: in our example in land A, the Differential Rent was 56 units when there was not Absolute Rent. When it exists, the Differential Rent increases to 64)

Table 1.8

Type of land	K	P	PP	PhP	TMP	UMP	TR	DR	AR
A	100	40	140	1400	224	0,16	84	64	20
B	100	40	140	1000	160	0,16	20	0	20

The second part of the reflection of Marx on the Absolute Rent refers, as we have said, to its interaction and possible compatibility with the overall operation of competition at the level of the whole economy or, to put the expression that he uses, with the operation of the Law of Value. To fully understand the meaning of his concern we must make some digressions.

It is often stated about Marx (and something similar is said of Ricardo and other classical political economists) that his conception of price formation does not take into account the phenomena of demand: the only relevant factors in the quantitative determination of prices of goods are for him those concerning production. Proof of this is the notion of Price of Production, which is entirely determined by aspects related to the offer as the costs and the profit rate. This is at least debatable. Indeed, first the perspective of Marx does not ignore that the confrontation between supply and demand is critical in setting prices. But he makes a distinction between what would be the instant prices, which may be subject to multiple determinants (temporary shortages, opacity information, market structure, etc..), and what he called "natural prices" that would be structural and as we have seen, are the ultimate action of competition. As we have seen, the mechanism of the flow of capital between branches leads the "Market Price" to converge towards the Price of Production, which would be the natural price and imply a uniform rate of profit among all capitalists. For an analysis of the structural phenomena of capitalism, which is what matters to Marx, are these natural prices which seem relevant, and he assumes that the adjustments induced by competition have already taken place. The "instant" market prices would be reserved for more superficial, or rather focused juncture phenomena.

But even the notion of demand is present in his conception of convergence of Market Prices towards the Price of Production. It has been said that the market price exceeds the price of production when the quantity of products supplied by producers is less than the amount that consumers are willing to buy at the price of production. Convergence occurs precisely when capital flowing from other branches makes increase the quantity supplied and thus reduces the price consumers are

willing to pay. And the opposite happens in the symmetric situation. As seen, it is clearly present the conventional notion of demand, which articulates conversely the amount of demanded goods, and the magnitude of the price consumers are willing to pay for them.

In conclusion, however, it is fair to say that Marx envisioned that when competition operates structurally, and when appropriate adjustments occur, the market price would be regulated by the price of production. We might think that a consequence of the full operation of the Law of Value in this level of analysis, where there are no distortions of competition and prevails a uniform profit rate among capitalists, is precisely the tendency of the Market Price to coincide with the Price of Production that is predominant on each branch.

In the analysis of the Differential Rent that we have looked at in the preceding paragraphs, the Market Price of agricultural goods exceeds its price of production. Moreover, this is the key concept that allows excess profits and gives rise to rent. But as we have seen, this difference is not the result of some accidental mismatch between supply and demand, and persists with the full operation of competition. It is therefore a structural fact. The Market Price of agricultural goods is not regulated by the general Price of Production of the branch of agriculture as a whole, but for the Price of Production of the capitalists who invest in marginal land, as seen.

What happens then in the presence of Absolute Rent? A requirement for its existence is precisely that the Market Price exceeds the Price of Production, but this needs to happen even on the marginal land. Then, the Market Price of agricultural goods would not be regulated by any Price of Production. It would be the result of mere confrontation between supply and demand for goods produced with the concourse of land. Does this mean that this is a phenomenon of surface nature, comparable to those emerging from accidental mismatches that lead to instant Market Prices? Would not it be operating there the Law of Value? This is the concern of Marx.

However, Marx proposal proceeds to argue that Absolute Rent is structural to capitalism and therefore compatible with the fully operation of the Law of Value, in the following terms. Although in this case the Market Price must exceed the Price of Production as a condition for the rent being positive, the Market Price is still governed by the Law of Value at a deeper level: this level is that of *values*. This is possible when the Market Price of agricultural goods, surpassing the Price of Production, however does not exceed its value.

Again, to clarify the meaning of this statement is necessary to make another consideration. What is the value of a commodity? What implies that the Price of Production is greater or less than the value? Which means that the Market Price is less than or equal to the value?

In the analysis that Marx makes on capitalism he proceeds following a series of hierarchical levels of abstraction. His reflection on the most basic aspects of this social organization, as regards the market division of labor (which is known as Theory of Commodity) unfolds with a very simplified representation of the economy, in which the mercantile character of the agents is retained, but they are considered in its most elemental form, as mere simple commodity agents. When he addresses the analysis of exploitation in capitalism (Theory of Surplus Value) and some initial features of the operation of capital (Theory of Accumulation) this original configuration is replaced by a more complex one in which these agents are defined as capitalists and salaried workers. In these initial levels of analysis the economy is examined in aggregate terms, without establishing any differentiation among branches or sectors. And there the most basic notion of the quantitative dimension of exchange is used: it is conceived that the goods are changed depending on the amount of abstract (social) labor which is required for the production of each. This notion is what is known as exchange according to their values. The value of a commodity would be equal to the labor which society has aimed to produce it.

Let's examine this with a numerical example in which agents are conceived as capitalists and salaried workers, to connect with the category of Price of Production that we have used before.

Suppose a capitalist economy that produces a set of goods as follows: for processing them requires 200 hours of labor. Moreover, it is also needed the use of some goods that have been produced before (tools, raw materials, etc..) and which for their elaboration are required 100 hours of labor in previous periods. The total value of the commodities produced in this period will be 300 units of value. Now let´s look at the components of this value: 100 units of value of already produced goods must be purchased by the capitalists and therefore are part of their capital. This fraction of the capital is called by Marx Constant Capital (C) as it transmits its value to the product without a change in its magnitude. On the other hand, 200 units of value being added by the workers in this period, under the logic of capitalist commodity operation are divided into two fractions: one of them is what capitalists really paid as wages and is related to the value of the goods to be consumed by the workers to recover their labor power. For the investors, this is the complement of their capital, and Marx called it Variable Capital, because not only transmits its value to the product,

but it makes it grow. This growth is properly the remaining portion of the value added by workers, which capitalists do not pay, and that constitutes their profit: Marx called it Surplus Value (S).

The ratio between Surplus Value and the Variable Capital is called by Marx Rate of Surplus Value (s) and reflects the degree of exploitation of workers. If in our example we take this rate as equal to 1 means that the value generated by the labour of workers is divided equally between Variable Capital and Surplus Value, ie 100 of Variable Capital and 100 of Surplus Value. Thus, the Total Capital of the capitalists would be the sum of the 100 units of Constant Capital and 100 of Variable Capital, ie 200. The notion of profit rate (g´) is the ratio between the Surplus Value and the Total Capital, which in this case would be 0.5 = 100/200. There is another relationship between these components of value that is relevant to the analysis of Marx and what he calls Organic Composition of Capital (Φ): it is the ratio of Constant Capital and Total Capital, which reflects the degree of technical complexity of production. In our case it would be 0.5 since it is the relationship between 100 units of Constant Capital and 200 of Total Capital.

Table 1.9

Constant Capital	Variable Capital	Surplus Value	Value	Rate of Surplus Value	Organic Composition of Capital	Profit rate
C	V	SP	W	s	Φ	g’
100	100	100	300	1	0,5	0,5

Now, to analyze certain more complex aspects of capitalist accumulation, this level of joint examination is not the most suitable and it is necessary to disaggregate into its component branches. The magnitude of the categories we have mentioned would be the sum of its counterpart in each of the branches: Constant Capital as we have shown here is the sum of Total Constant Capital in all branches, and so on with Variable Capital, Surplus Value and the Value of production.

However, there is a circumstance that has many implications for further analysis: there is no reason for the Organic Composition of Capital in the different branches to be uniform. The relationship between Constant Capital and Variable Capital is determined largely by technical circumstances and these may vary from branch to branch.

Let´s illustrate this in our example. Suppose that the figure we have correspond to the addition of two branches, each of which has a Total Capital 100. But the Organic Composition of Capital is not identical. Suppose that in the first branch its Organic Composition of Capital is 0.6.

In other words, the 100 units of capital are the aggregate of 60 of Constant Capital and 40 of Variable Capital. As the rate of Surplus Value is 1 this means that for every unit of Variable Capital there is a unit of Surplus Value: the Surplus Value would be 40 for this branch. The Value of Production will be the aggregate of these three magnitudes, 60 +40 +40 = 140.

The second branch has an Organic Composition of Capital of 0.4 which means that its 100 Capital units are composed by 40 units of Constant Capital and 60 units of Variable Capital. Faced with a rate of Surplus Value of 1 this implies 60 units of Surplus Value to complete a total value of production of 160.

Table 1.10

	Constant Capital	Variable Capital	Surplus Value	Value	Rate of Surplus Value	Organic Composition of Capital	Profit rate
	C	V	SP	W	P'	Φ	g'
Total	100	100	100	300	1	0,5	0,5
Branch 1	60	40	40	140	1	0,4	0,4
Branch 2	40	60	60	160	1	0,6	0,6

This quantitative description (which is generally called Chart of Values) has however an anomalous result: the rate of profit of the different branches is not the same (0.4 for the first segment, 0.6 for the second). Precisely an expected result of competition among capitalists is that, in the relentless pursuit of individual capitals to have the greatest possible profit, which makes them migrate from one branch to another, the rate of profit tends to equalize between the different branches.

This is just what happens: the capitals that are in branches with lower profits migrate to those which offer higher returns. But in doing so, alter the levels of production and therefore the magnitude of the prices. In the branches of exit of capitals, the amount produced decreases, and therefore the price rises. In the branches of arrival of these capitals, production expands and the price is reduced. It is expected that this movement ceases precisely when profit rates are equalized in the various branches. This mechanism implies, however, that at this level of analysis, when considering various branches and a uniform rate of profit, the prices of commodities of every branch suffers a deviation from what we have called their values.

The resulting prices must have a defined amount: if the rate of profit has to be uniform, it is required that the resulting price, which Marx called Price of Production has to be equal to capital employed in each sector increased at the average rate of profit:

$$PPi = (Ci+Vi)\ (1+g')$$

This implies a change in the distribution of the overall Surplus Value between capitalists. If in the Chart of Values the Surplus Value was allocated among the capitalists in function of the magnitude of the variable capital of each branch, in what might call Chart of Prices of Production, this distribution is done in relation with the ratio of each of the branches in the Total Capital. Marx called this process General Equalization of the Rate of Profit and the quantitative conversion between the initial and the final prices is known as the Transformation of Values into Prices.

In our quantitative example, since the two branches employ 100 units of Total Capital and the rate of profit is 0.5, the price at which production should be sold in each of the branches, their respective Price of Production, would be 150. [(100 x (1 + 0,5) = 150].

Table 1.11

	Constant Capital	Variable Capital	Organic Composition of Capital	Chart of Values			Chart of Prices of Production		
				Surplus Value	Value	Rate of Profit	Profit	Price of Production	Rate of Profit
	C	V	Φ	SP	W	p	P	PP	p'
Total	100	100	0,5	100	300	0,5	100	300	0,5
Branch 1	60	40	0,6	40	140	0,4	50	150	0,5
Branch 2	40	60	0,4	60	160	0,6	50	150	0,5

Then comparing the Chart of Values with the chart of Prices of Production, we can observe that to go from the first to the second, ie in order to have a uniform profit rate arises a flow of Surplus Value from the second branch, which has an Organic Composition of Capital (0.4) below average (0.5) towards the branch that has a higher Organic Composition of Capital (0.6). 10 units of Surplus Value pass from the second branch to the first.

This, of course, is reflected in quantitative differences between the value and the price of production of each branch, which is precisely what we were looking for with this digression. The value of the production corresponding to the industry that has an Organic Composition of Capital above average is 140, which is less than its price of production of 150. Conversely, the branch with a lower Organic Composition of Capital has a Price of Production that is less than its value.

It can be seen then that in this reflection of Marx, the value and the price of production of each branch are not identical but are related. The gap between the two depends on the offset of the respective Organic Composition of Capital with the average. Values would be the basic determinant of the price of production. Moreover, we have seen that the market price should converge towards the price of production. But since the latter is determined by the value, arguably ultimately value also determines the Market Price.

Well, this is precisely the relationship that Marx was looking for his reflection on Absolute Rent. In its presence, as we have seen, the market price differs in a stable manner from the price of production and must be bigger in order that the rent could exist. But if the organic composition of capital in agriculture is below average, as in the case of our branch 2, it is possible that the

market price would be higher than the price of production, an even so, not exceeds its value. In these circumstances, Marx thinks, the market price consistent with the Absolute Rent would remain regulated ultimately by value. There would be no violation of the Law of Value.

Let us adapt our example to illustrate this. Suppose that branch 2 is agriculture and, as we have seen, there the landowners claim 20 units of value as Absolute Rent (to simplify the analysis we do not consider the existence of differential rent).

Similarly as it was proposed in the introductory section on the general notion of rent, in this case the 20 units of Absolute Rent are a portion of surplus value that the landowners appropriate and therefore is not distributed among capitalists. Although if in the economy 100 units of surplus value are generated, only 60 of them go to feed the capitalist profit. Then, the rent is a disruptor mechanism of the General Equalization of the Rate of Profit which affects its magnitude. The overall rate of profit will be now 0.4 (80/200) and not 0.5 as when there is no rent.

So, the price of production for the two branches will be 140. In the non agricultural sector, in which no rent is paid, this will be the point of convergence of the Market Price. In agriculture, however, the Market Price does not tend to the Price of Production, but towards a level in which at the price of production are added the 20 units of Absolute Rent. That is, the Market Price shall be 160. But note that in this case the market price, being higher than the price of production, does not exceed the value of the production of this branch, which amounts just 160 units. This is the circumstance that Marx expected: Absolute Rent does exist, but agricultural goods are not sold above their value, implying that the formation of this price continues to respond to the Law of Value, and not only to the tension between supply and demand.

Table 1.12

	C	V	SV	AR	W	PP	MP	p	Φ
Total	100	100	80	20	300	280	300	0,4	0,5
Non agriculture	60	40	40		140	140	140	0,4	0,6
Agriculture	40	60	40	20	160	140	160	0,4	0,4

Note finally that this result is only possible if the Organic Composition of Capital of agriculture is below average. Otherwise, when the Organic Composition of Capital is equal to, or higher than average, the price of production would be equal or higher than value, so any market price higher than the price of production will also necessarily be higher than value.

2.4.4 I Monopoly Rent

Marx poses a further modality of rent he calls Monopoly and is not always taken into account in most exposures on his consideration of the matter. This may be because Marx himself seems to consider it as having a less fundamental nature than the rest. Later we will specify the reasons he posed for that.

Marx proposed as source of this type of rent the *scarcity* of land, which appears as a barrier to the expansion of production. This generates overpricing of goods produced in the land, which eventually turn into rent.

Consider an example that he used to expose this concept. The lands of the French region of Champagne possess a rare combination of characteristics, such as agrological composition and climate, which makes possible the growth of a variety of special grape from which is produced a wine that is much appreciated for lovers of good food.

However, the lands with these features are limited in number. The amount of this wine so appreciated by consumers is therefore limited by this circumstance. If the amount of wine that buyers are willing to purchase for a market price equal to the price of production of the farmers who have access to land in this region is greater than the amount actually offered, there will be a shortage situation. Competition among consumers to ensure obtaining this special wine, would make that some of them may accept to offer a higher price, which ends up generalized. As a result, the market price exceeds the price of production, and the agricultural investors of that region could enjoy an extraordinary profit. But again, the factor that makes the existence of this excess profit rests entirely on the characteristics of this scarce land. No capitalist could produce this wine with grapes from another region, and any capitalist who operates in the region of Champagne could get this exceptional profit. In these circumstances, and similarly as seen this mechanism in previous

modalities, competition between capitalists to obtain this extraordinary profit allows landowners who control this land of exceptional quality to appropriate all excess profits in the form of rent.

Marx noted that in this case the Market Price of wine appears not to be regulated by the productive conditions of any sector but by the struggle between supply and demand. This kind of price is called by Marx Monopoly Price, because for him it responds to an exceptional power of sellers on the buyers. Hence the name Monopoly Rent he assigned to this type of Rent. Perhaps this is the reason why Marx does not put this type of rent in the same level as the preceding: it seems to respond to eventual imbalances in supply and demand, and not to the structural functioning of the Law of Value.

Marx suggests that with this category is possible to explain the rent arising in some areas that have exceptional circumstances of various kinds, and simultaneously are scarce, and are usually confined to certain places or regions. This modality could be called *focused* Monopoly Rent. In fact this precision should be done because he also points out the possibility of a *generalized* Monopoly Rent: this would be a situation in which land scarcity is not confined to any particular region, but there is a general shortage of land. In this case the mechanism described is not limited to the prices of certain agricultural goods, but extends to the agricultural goods in general. In that situation the products of agriculture in general also have monopoly prices.

1.2.4.5 The varieties of agricultural rent and their sources.

This way we can outline the different types of rent arising in agriculture in the following table:

Table 1.13

Kinds of rent		Source
Differential Rent	Type 1	Differences in Fertility and Location
	Type 2	Differences in Intensity of Capital on land. Unequal distribution of capital among agricultural investors
Absolute Rent		Private property of land. Organic Composition of Agriculture inferior to the average.
Monopoly Rent	Focused	Scarcity of certain type of lands.
	General	Scarcity of agricultural land in general.

They interact in the various plots, intertwining between them. All lands share the Absolute Rent, which have a uniform magnitude. Each of the lots has a particular quantity of Differential Rent in modalities 1 and 2 depending on their specific characteristics as regards the sources of this rent: fertility, location and capital application on land. Some land in certain areas would bear the Focused Monopoly Rent. In certain circumstances, when there is widespread scarcity of land, all land would have a General Monopoly Rent.

Chapter 2

Notes and Reformulations to the General Theory of the Land Rent

As announced, this chapter is devoted to examining some comments and objections that have been raised over the years to the original exposure of the General Theory of Land Rent, to discuss their implications and to propose some adjustments to this analytical framework.

We will focus mainly on three aspects. The first relates to the presentation made on the Absolute Rent. As we have seen, in his reflection on this, Marx makes depend the existence of this type of rent to the presence of an Organic Composition of Capital in the branch of agriculture below the average. This notion seems problematic from several points of view: its justification within the Marxist analytical scaffolding is doubtful; it leads to paradoxes; and it does not seem to be coupled to the empirical evidence. The second topic that is addressed is the presentation of the Differential Rent Type 2: in its original explanation it exists an implicit reasoning, call it "micro-economic", that generates some doubts and leads to debatable conclusions (the need for existence of a unequal distribution of capital among the capitalists, etc.) some of which are not consistent with the widespread empirical evidence. The third issue relates to the distinction that Marx establishes between Differential and Absolute Rent: he asserts that these are two mechanisms that coexist and intertwine, but that have a fundamentally different nature, with different determinants and different consequences. This has led inter alia, in the subsequent Marxist thought, to recommend measures and lines of action that are specific and different for each of these forms of rent, which are conceived as economic phenomena that are essentially heterogeneous. In light of our discussion of the notions that are at its base, the role of property, scarcity and retention of land in agricultural prices, we will try to show that the aforementioned distinction at this level is debatable, and therefore are also controversial the conclusions afore mentioned that flow from it.

In discussing each of these topics we will not limit ourselves to point out and clarify the possible internal inconsistencies, difficulties in coherence with the broader analytical framework of Marx on the capitalist economy, or eventual inconsistencies with empirical perception of the corresponding phenomena. We will try to perform two additional operations. One is to try to identify the analytical springs that may be responsible for the emergence of such difficulties. The other task is to propose modifications to these formulations to attempt to overcome these problems. Therefore we do not intend a refutation of the General Theory of Land Rent, but the

opposite. We reiterate our view that this body of analysis is very powerful for interpreting the social existence of landed property in capitalism. What we want is precisely adapt their specific formulations to enhance its explanatory power. Precisely, the final section of this chapter outlines a general reformulation of this theoretical framework that would allow us to use it fully, without the disturbances that often carries its original formulation.

2.1 Absolute Rent, Monopoly Rent and Organic Composition of Capital.

We have seen that Marx poses the category of Absolute Rent in order to interpret a specific phenomenon: the fact that he finds empirically in the Britain of the time that even the marginal land, the most remote and less fertile, have a positive rent, something that the notion of Differential rent does not foresee. He formulates the category of Absolute Rent, which would have a source that is alternative to that of the Differential Rent: the same private ownership of land. One part of his analysis indicates that the Absolute Rent would be generated from the power of retention of the owners on the land, which eventually allows them to raise the price of agricultural goods above the price of production of the capitalists operating in the marginal land. But he develops a second thought about it, whose intention is to make compatible this notion with the general operation of the theory of value. His intuition is that this Law of Value continues to operate, even if the market price exceeds the price of production (and this is necessary, in order that could arise an excess profit that may be transformed in rent), while if at the same time, the price at which the agricultural good is traded does not exceed its value. To make this possible, he concludes that agriculture must have an Organic Composition of Capital below average.

This category of Absolute Rent has been considered by the Marxist tradition as a central thing in its analysis, and a significant contribution to the understanding of land ownership. It should highlight two concepts that are derived from there. The first, that Absolute Rent would be consubstantial to the private ownership of land. Second that the magnitude of the Absolute Rent is associated with the productive backwardness of agriculture

Let´s examine this last point. On the one hand, the level of the Organic Composition of Capital of a branch, ie the proportion of Constant Capital in Total Capital reflects the complexity of the technical processes prevailing in it. A sector where prevail manual and simple processes,

generally has a low amount of constant capital, since in the production is used primarily labor force, ie Variable Capital. A branch employing sophisticated instruments, complex machines and expensive inputs, generally has a higher proportion of Constant Capital and therefore greater Organic Composition of Capital

On the other hand, as we have seen, the magnitude of the Absolute Rent would be quantitatively related to the degree of mismatch between the organic composition of capital in agriculture and the corresponding average for the economy. Recall that in the terms proposed, the Absolute Rent is compatible with a situation in which the market price exceeds the price of production that corresponds to the capitalist operating on marginal land, but at the same time, is less than or equal to the value of the goods produced by him. Ie:

$$W \geq M\ P > PP$$

But the difference between these two limits, between the price of production and the value, is associated as we have seen, with the difference between the Organic Composition of Capital in agriculture and the average for all branches of the economy. Therefore, a considerable delay in the progress of the productive forces in agriculture should involve an Absolute Rent high, and the opposite if the technical processes in agriculture are more advanced and are closer to those of the rest of the economy.[3]

A first comment is that this does not seem empirically corroborated. The degree of technical progress in agriculture across countries varies greatly. But if we interpret the magnitude of the Absolute Rent like the price of soil (or the rent) which statistically appears on the lands with less advantages (or the minimum level of rent) this does not appear to be higher in countries with more backward agriculture. By contrast, in countries with technically advanced agriculture, the level of the rent on marginal land is comparatively quite high.

[3] In our numerical example in section 1.2.4.3 if we keep constant what corresponds to the non-agricultural branch, when the relationship between the Organic Composition of Capital in Agriculture and the average is 0.8, the difference between the Value and Price Production in agriculture, in other words, the maximum Absolute Rent is 20. If the relationship between the organic compositions passes to 0.9 maximum Absolute Rent would be 10.8. If the ratio increases to 0.95 the maximum Absolute rent is reduced to 5.9.

But if this reflection is extended to the limit we would end on a more serious inconsistency. Suppose the Organic Composition of Capital in agriculture grows so it reaches the average of the economy. In that case the price of production of agricultural goods produced on marginal land would be equal to its value. In these circumstances if the market price does not exceed its value, it cannot exceed its Price of Production neither. That is, in this case, the Absolute Rent defined in this manner, would be zero.[4] If we assimilate this Absolute Rent with the rent that arises in the marginal land, we would arrive to something that comes into collision with the starting point: in the marginal land could not be charging any rent. And this despite the fact that it does not exist any reason to believe that the institution of landed property has ceased to exist. Or this could be interpreted in the sense that if the Organic Composition of Capital in agriculture equals the average, it cancels Absolute Rent and therefore implies the collapse of private land ownership? There does not seem to be the case, like we will develop later.

Let us pause a moment to reflect on the possibility that indeed this equalization in organic compositions may take place. One of the most known arguments of Marx is that in capitalism there is a tendency for the Organic Composition of Capital to increase with time, in each of the branches and as a whole, and this seems to be confirmed empirically. (As it is known, this leads him to conclude that in capitalism exists a symmetric downward trend in the rate of profit). In principle there seems no reason to believe that in this course of growth of the Organic Composition of Capital, agriculture would be an exception.

Then let´s briefly recall how this fact of the increase in the Organic Composition of Capital develops to see if there are any circumstances in agriculture that blocks or impedes it.

The phenomenon is associated with the way in which technological innovation operates in the capitalist market, or at least the most frequent case of productive innovation. Under normal circumstances, and in the simplest case, the Price of Production takes form in relation with the most efficient method that is available, and which all competitors have access. But capitalists are attracted to individually seek even more effective methods, ie, which enables them to produce the same amount of goods with fewer total capital. This for the following reason: the capitalist who can introduce an innovation of this kind, initially would be able to sell their products at the same price

[4] In the aforementioned example, when the relationship between the Organic Composition of Capital between agricultural and non-agricultural branch is 1, that is, when they are equal, the Absolute Rent is 0

than his competitors. Since his costs are lower, he would enjoy an exceptional profit. In a second time, if there is no barrier to prevent it, the rest of capitalists will want to use this new technique to enjoy the extraordinary profit. When this becomes widespread, the same competition among capitalists will lower the prices to a level in which everyone gets the average profit with the new procedure. In that circumstance the old method is no longer economically viable and is abandoned. All capitalists will produce with the new technique which is more efficient and there will not be extraordinary profits anymore. But the search for new exceptional profits, which are not permanent but exist for a while, shall be a permanent incentive to search subsequent innovations.

The increase in the Organic Composition of Capital is given for the following reason: the most widespread modality of innovation, mechanization, consists on the introduction of new procedures that while as a whole imply lower costs, usually involve the use of a larger amount of constant capital, but save Variable Capital more than proportionately. As this technique is finally imposed, at the end of the process the branch will have a lower Organic Composition than at the beginning.

A simple example can illustrate this more precisely. Suppose a branch in which a typical producer (A or B) to produce a certain amount of physical units must invest a total capital 100 units of value. 40 of these units are represented in machinery and inputs and 60 in wages. The Organic Composition of Capital is 0.4. Assuming a rate of profit of 0.5, the total production is sold to 150 units.

Table 2.1

	Constant Capital	**Variable Capital**	**Total Capital**	**Surplus Value**	**Price**	**Organic Composition of Capital**	**Rate of Profit**
A y B	40	60	100	50	150	0,4	0,5

Let us assume now that a capitalist B finds a new more sophisticated procedure, which involves increasing the amount of constant capital, let´s say in 60 units, but that in turn allows him to reduce the number of salaried workers employed: this reduction, let´s suppose, is 40 units, greater than

the 20 units in which increased Constant Capital. That means that his Total Capital will comprise 60 units of Constant Capital and 20 of Variable Capital, for a total of 80. If at first he can sell his product at the same price than his competitors, at 150, he will be getting a rate of profit of 0,875, higher than that of his counterparts of 0.5.

Table 2.2

	Constant Capital	Variable Capital	Total Capital	Surplus Value	Price	Organic Composition of Capital	Rate of Profit
A	40	60	100	50	150	0,4	0,5
B	60	20	80	70	150	0,75	0,875

In a second stage, when all capitalists adopt the new technology, the price will drop to 100, which is equal to the capital of 80 increased with a surplus value of 20 (assuming a rate of exploitation of 1),which is also equal to the value used in the new procedure.. The extraordinary profit will disappear and the prior technique will not be economically viable. But the new Organic Composition of Capital will be now 0.75 higher than the initial 0.4.

Table 2.3

	Constant Capital	Variable Capital	Total Capital	Surplus Value	Price	Organic Composition of Capital	Rate of Profit
A y B	60	20	80	20	100	0,75	0,25

Is there any reason to think that the mechanism thus described does not occur in agriculture? If there is full competition among agricultural capitalists, which is the assumption made by Marx in all his analysis of the rent, is there any element in this branch that inhibits or hinders this process?

There is an argument in this sense, it is good to note, is not that of Marx. It is the claim that the barrier that impedes the Organic Composition of Capital in agriculture reaching the average is the very

existence of private property. So the possible inconsistency is saved: as it is the same property which prevents the Absolute Rent annulment may not be the paradoxical situation of a null Absolute Rent and the full operation of land ownership. But how land ownership prevents the equalization of the organic compositions of capital? According to this thinking, this is because the agricultural capitalist must pay the rent, unlike those operating in other branches. This would cause that his ability to reinvest, and presumably his access to more sophisticated procedures, is lower than the investors in the other branches. (It appears under a new light the notion that Absolute Rent requires or emerges from, a technical backwardness of agriculture). This latter belief is widespread in Marxist literature. But as such, it rests on an analytical imprecision. The eventual technical backwardness of agriculture can indeed exist under certain circumstances, but does not seem rigorous attribute it to the need to pay a rent on the branch. In order that rent affects in a particular manner the accumulation capacity of agricultural capitalists it must be needed that the rent would be derived solely from the profit of agricultural capitalists. We have seen that this is not the case in Marx analytical device. The rent is a deduction of profit, but of capitalists as a whole. In fact a formal requirement for his reflection is that agricultural capitalists, despite paying rent, can obtain the average rate of profit, the same of the capitalists operating in the other branches. Therefore, there wouldn´t be inequality, nor any disadvantage of the agricultural investors to innovate.

A variant of the above argument refers to the situation where the agricultural capitalist instead of paying rent regularly and at the end of the production period, should purchase the land (or pay the rent, but in advance at the beginning of productive period). In these circumstances the agricultural capitalist, to trigger the production require not only provide capital, but an additional amount to pay land. (To this sum of Capital + Land Price, which the agricultural capitalist who buys the land understands as his investment, we will call Apparent Capital, and will use it later). There he would be at a disadvantage compared to the capitalists of the other branches because he would have less resource for innovation. Neither this variation seems satisfactory. First, the impossibility of matching the Organic Composition of Capital would be restricted to this way of paying the rent, which is not something general. Secondly there is a misunderstanding: the notion of Organic Composition of Capital relevant to the argument at hand refers to the weight of Constant Capital, not in the Apparent Capital, but in the Capital itself; still paying rent this relationship could equal the average of the economy. Finally it seems to reappear here the perception that when the land is purchased, the remuneration of agricultural capital is different from the rest. It is not the case: even when the land is purchased, the return on investment, ie the aggregate Apparent Capital obtains the

average rate of profit: what is paid to buy the land is compensated at the time of selling the product because the capitalist can keep the extraordinary profit that otherwise would become rent, and in this situation it can be kept by the agricultural investor. In principle, also in this case, one cannot think, at least at this level of abstraction, that the agricultural capitalist may have a rate of profit lower than their counterparts in other branches of accumulation

The concept consistent with the approach of Marx is that in agriculture it is also present the tendency to growth of the Organic Composition of Capital, which furthermore can be seen in the statistical figures. However, Marx argues a number of reasons to explain the fact that at the time it seems that the Organic Composition of Capital in Agriculture actually had a lower level that the other branches. Let us examine them:

One reason for this result refers to a legal practice prevailing at the time. When an agricultural capitalist rented a parcel of land, and made in it an investment in fixed assets whose useful life exceeds the term of his lease, at the end of the contract he should return the field to the landlord including this investment for free. For example, if he invested in an irrigation system, at the end of the contract he should return the land with this improvement without any recognition for that. For this reason, agricultural capitalists were reluctant to make such investments in durable fixed capital (part of Capital Constant) which contributed to the Organic Composition level was lower.

A second reason relates to the relatively shorter temporal trajectory of capitalist relations in agriculture. The historical development shows that capitalist relations are introduced gradually in the various sectors of economic activity: first trade and banking, then in the industry, and only later, in agriculture. This gap would make that the process of increasing the Organic Composition of Capital had operated during longer periods in the other branches, and therefore, there it had the time to reach higher levels.

Finally Marx held up as an additional reason for this outcome differences in the degree of development of the sciences that he observed in his time: he judged much more advanced physics and mechanics, more linked to industrial production, than biological sciences, more relevant to agriculture.

These three arguments may well explain a lower level of the composition of capital in agriculture in the late nineteenth century. But they are not situations that are permanent, nor structural to capitalism. The aforementioned legal scheme reflects a moment when capital has not yet managed

to adapt contractual rules to the logic of its development. But this will be done soon: long this has gone, and today, the law requires that when the permanent investments made by the capitalist tenant exceed the term of the lease, the landlord must recognize them in terms of improvements. This is no longer a barrier to investment in fixed capital in agriculture. There would be no reason to think that the time lag in the arrival of capital to agriculture continues manifesting permanently, century and a half after Marx's observation. Today it does not seem wise to continue arguing on the basis of the diverse degrees in the advancement of different sciences: not only many of the recent innovations in agriculture are related to mechanics (not coincidentally it is said "mechanized agriculture", referring to the extensive use of tractors, combines, etc.) but the most remarkable leaps in knowledge and current techniques relate precisely to the biological sciences, and their application to agricultural activities (genetic engineering, etc.) What Marx points may be relevant to a phase of capitalism, but does not refer to any mechanism that belongs to the essential structure of the capitalist economy, and certainly not explain the current development.

The truth is that the recent history of capitalist agriculture shows the massive introduction of complex technical procedures that make the Constant Capital gets a higher weight in relation with the Variable Capital: machinery, fertilizers, pesticides, improved seeds, etc. And during this time, the rent or the land price of the relatively less favored parcels have not decreased, but rather tend to grow. This can be seen in the temporal development of each country over time. And cross comparisons indicate something similar, as we have seen. In countries with technically advanced agriculture, the price of marginal lands is higher. Moreover, in some of the developed countries, technical procedures in agriculture do not seem to be less advanced than in other branches. The statistical approximation to the Organic Composition of Capital (the ratio in the monetary aggregates of nonwage capital over total) is not lower than in other branches. One might think that in such cases the equalization of the Organic Composition of Capital in agriculture with average is complete. But the rent on marginal lands has not disappeared, and instead, is quite high.

It could be concluded that this reflection of Marx about the Absolute Rent is inadequate because it does not correspond to objective facts. However the issue is not so simple. A careful reading of the writings of Marx allows clarify that what he says is not that when the Absolute Rent (as he defines it) is zero the rent on marginal land also is zero. Absolute Rent may be zero, yet the rent on marginal land can be positive: his approach, which also merits discussion, is that in the latter case this rent changes its nature.

Recall the reflection of Marx on the rent on the marginal land. He points out that in certain circumstances the landowners are able to demand a rent even in the bad ground. This makes that the market price of agricultural goods produced on that land must exceed the Price of Production. The magnitude of this discrepancy in the price, and therefore, the magnitude of the rent thus formed, is not unilateral: depends on the relations of power between the actors involved, ie to what extent the consumers of agricultural goods are willing to pay an overprice for them. What is crucial is the following reflection of Marx: while this gap in the price at which agricultural goods are traded does not exceed the value, we can say that the mechanism that is in play is compatible with the operation of the Law of Value. It is not impossible, however, that the strength of the bidders could increase the price with which the commodities are traded even above this limit. However, Marx seems to have the idea that In this case, we are faced with another situation: we passed to mere fleeting confrontation between supply and demand which corresponds to a more superficial level of manifestation of economic events in contrast to the plane more deep in which he treats, in this case, the notion of rent. It is perhaps for this reason that Marx in his vocabulary, he called those prices for agricultural goods that exceed not only the price of production, but the value, as Monopoly Prices, alluding perhaps that they are not normal prices, fruit of the structural operation of the competition. Thus, it is not that the value is displayed as an absolute limit to the prices at which agricultural goods are traded. But when this limit is exceeded, and we are before Monopoly Prices, the rent that is concomitant with this is no longer Absolute Rent. Marx has a category to address this possibility: is the Generalized Monopoly Rent, in which the struggle between buyers and sellers of agricultural goods drives up prices even above the value. In the event of an equalization of the Organic Composition of Capital of agriculture with average, the rent on marginal land does not become zero, but we would be dealing with a Generalized Monopoly Rent and not with Absolute Rent.

If this seems to be the position shown in the writings of Marx, partly explicitly and partly implicitly, let us now examine how appropriate it is. In particular let´s discuss two items: Is it reasonable to infer that when the price at which goods are traded in the market exceeds its value, this by itself would alter the nature of the economic mechanism that is at its base? And something that is connected with this: to be able to say that the law of value is operating (the basic concept that Marx used to understand the structural functioning of the capitalist economy) is it necessary that the transaction prices do not exceed the value?

These issues are connected with something we have already mentioned in the first chapter: what Marx called the General Equalization of the Rate of Profit and the Transformation of Values into Prices. These points, that have general implications on Marx's analysis of capitalist economy, have been the subject of much discussion, and some of the results of these debates have impacts on the reflection about the rent we are analyzing. It is argued that the solution provided by Marx to the transformation of values into prices is inadequate, and that when this is corrected, some of his analysis becomes affected, including his treatment of the Absolute Rent.

Let's start with the same solution of Marx, and let us give it as valid in principle. There already seems to be a disparity that does not seem justified in Marx's treatment of these issues with respect to his analysis of the Absolute Rent.

Recall that Marx develops his examination of the capitalist economy through a scheme of hierarchical levels of abstraction. At the most abstract level, where it is assumed that agents are simple commodity producers, or later, when they are conceived as capitalists and salaried workers, but the economy is not disaggregated into industries, the notion of price formation that he uses is also simple: the prices at which goods are traded should converge at a magnitude consistent with the abstract labor required for their production. Marx calls this the value of the commodity. At one level of abstraction immediately successive in which full competition is maintained, an additional determinant is introduced: the breakdown in different branches. In this case, competition among the capitalists, and their flow between the various branches, generate the existence of a uniform rate of profit between them. In these circumstances, the transaction prices do not converge to their values, but to a systematic transformation of them: the Price of Production, equal to capital that is socially required for the production of the commodities, increased at the average rate of profit. In this case, for Marx, although individual transaction prices do not coincide with their respective values, this does not imply that the law of value does not operate. Instead, this is how the law of value works in this level of abstraction.

In the formal solution proposed by Marx, this transformation of values into prices, implies that the distribution of global surplus value is made with other criteria (it is distributed not in proportion with the share of each capitalist in the aggregate Variable Capital, but in terms of his share in the aggregate Total Capital). While individual prices differ between the chart of values and the chart of prices of production, the aggregate coincides.

This has been illustrated in section 1.2.4.3 of the previous chapter. But note there a specific point: when the aggregate economy is divided into two branches with different Organic Composition of Capital, and the Price of Production of each does not match its value, of course, in some circumstances the Price Production (which determines the extent to which converges the transaction price) is less than its own value. But in other circumstances, the price of production, and therefore the transaction price, exceeds its value. But here Marx does not call it Monopoly Price nor argues that this is the result of faulty or unusual operation of the law of value. No: this result is precisely the effect of the operation of the value at this level of abstraction. In fact at this level of analysis, the magnitude of value is not a reference for the capitalists in setting their prices, since the determination of value on them is indirect. (Capitalists do not perceive directly the magnitude of the value, for which a process of abstraction is required, that is not relevant to them, we might add). The fact that the price is above or below that value is not an element for claiming that they operate or not under the law of value, since this magnitude corresponds to a more general level of abstraction. But instead, when Marx discusses the formation of prices in presence of Absolute Rent, which would be a level of abstraction even more specific than the simple Prices of Production, his treatment is different: there he uses again the magnitude of the value of the individual commodities as something directly relevant. It doesn't seem somewhat consistent.

Let's expand a little the aspect of the use by Marx of the device of the abstraction levels. In the first level, Marx conceives the capitalist economy in aggregate terms and hence the logic of the price formation, corresponding to this simplified view of the economy, is that of values. At a second level of abstraction, Marx introduced unbundling in diverse branches, and the concomitant logic of price formation corresponds to the Price of Production. There, however there is a major simplification: he assumes that all processes have the possibility of reproduction without limits. Capitalists can expand production without obstacles, different from the availability of capital to the economy. (So maybe we should talk about simple Prices of Production). When Marx examines the rent he actually enters a more precise level of abstraction; preserving all assumptions of full competition and a uniform rate of profits, he introduces an additional element of great importance: the existence in some industries of limits to reproduction which are external to capital. The clearest and most relevant case is that of agriculture in which the characteristics of homogeneity and land availability operate as a barriers to the unlimited expansion of production. In this case, the mechanism of price formation is that transaction prices no longer converge toward simple prices of production, but to the Price of Production with Rent (perhaps would be appropriate to baptize this with an univocal

name but in order to not complicate the already extensive vocabulary of Marxist tradition, let´s continue calling it like that). This is how the Law of Value operates at this level of abstraction.

The Prices of Production with Rent cannot be assimilated to the short-term transaction prices which result of many immediate determinants that Marx does not consider relevant for structural analysis. The Prices of Production with Rent are natural prices, and transaction prices converge towards them although this may have immediate mismatches, as in the level of prices of production. Let´s recall that all assumptions about full competition and free flow of capital between branches remain. And as we have seen, in accordance with Marx view, the aggregates are also preserved: paralleling the passage from the level of values to the level of prices of production, in the passage from simple Prices of production to Prices of Production with Rent, what is introduced is that total surplus value is not distributed solely among the capitalist, but a portion is deviated and a goes to the landlords. But every operation follows the norms of the law of value, including full competition among land owners. But in the same way as it is not licit to argue that, in their convergence towards the simple price of production, the transaction prices exceeds their value, that this would be the result of dysfunction in the Law of Value, it does not seem appropriate to say the same when transaction prices, converging towards the Price of Production with Rent exceed their value.

From the above we can draw a conclusion. If the general logic that Marx used to analyze the capitalist structure is accepted, it does not make sense the restlessness that seems to originate his reflection on the abnormal level of Organic Composition of Capital in agriculture. The fact that when there is rent, transaction prices of agricultural goods converge to a natural price which quantitatively exceeds its value, this does not indicate that the law of value is not operating, nor can be likened to inadvertent disturbance of competition. In other words, there is nothing to reconcile. Considerations on the Organic Composition of Capital in agriculture are redundant, and as we have seen, drawbacks. Without them not in the least affect the consistency of general Marxist analytical device, and instead makes it more consistent.

This conclusion is reinforced if we examine it in the light of the discussions about the transformation of values into prices. It is known that the solution given by Marx to this problem, which is what we illustrate in our example, has an impairment: in the Chart of Prices of Production, the quantities related to the products are transformed, but those referred to the inputs (the Constant and Variable Capital) are computed in terms of values. Ie they are not transformed. This is something that Marx himself seems to be aware: he recognizes that his procedure is incomplete (hence his

solution is called Incomplete Transformation of Marx), but he felt that in that completion, the transformation of inputs was a relatively simple task which would not offer greater difficulties, and should not alter his main conclusions. The most widespread attempt to "complete" the transformation of Marx using a procedure of simultaneous algebra draws some unexpected conclusions, among them include one that concerns us directly to what we are trying: from the chart of values we can know the relationship between the prices of different production branches, but not their absolute magnitudes. For a defined set of values corresponds a family of charts of prices of production that maintain a certain quantitative ratio between the price of production of the various branches, but these prices of production can take an undetermined amount of absolute magnitudes..[5] In other words, we cannot say that a magnitude of value corresponds to an absolute amount of price of production. In logical terms cannot say that the price of production is higher or lower than its value: this comparison does not make sense.[6]

The consequences of this debate on the transformation problem are less catastrophic than some think, and even granting that Marx's solution is inadequate, the bulk of his analysis is not affected by it. But the arguments based on quantitative comparison between values and prices of individual goods, do seem to lose their sense. The above reflection on Absolute Rent and its dependence on prices of agricultural commodities that exceed their value, seems to be one of them.

Under these conditions, to explain the existence of a positive rent on marginal lands, which the theory of differential rent does not seem to explain, we should use the first part of the reflection of Marx on the Absolute Rent. The fact that rent does not vanish on marginal land would be explained by the ability of landowners to assert their exclusive dominion over it to require a portion of the excess profits gained by the capitalist who operates there, due to the capacity they have under certain circumstances to make pay a surcharge to consumers of agricultural goods. But it seems desirable

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5 Steedman, Ian *Marx after Sraffa.* NBL London 1977 Cuevas, Homero *Valor y Sistema de Precios.* Universidad Nacional de Colombia. Bogotá 1985

6 Other answers to the Transformation Problem estimate that the relationship between values and prices is qualitative in nature and that the two planes are immeasurable quantitatively, which leads us to a similar conclusion: cannot be said that the price of production is lower or higher the value. De Vroey, Michel "La Théorie Marxiste de la valeur version travail abstrait: un bilan critique" in Dostaller, Gilles (ed) *Un échiquier centenaire: Théorie de la valeur et formation des prix*. La Découverte. Presses Universitaires du Québec. 1984 Other responses to the transformation problem, like that of Duncan Foley (The Value of Money, the Value of Labor Power and the Marxian Transformation Problem "in Review of Radical Political Economics. Vol 14, No 2 1982 New York) that does consider the equalization of prices and values as something possible, believes that the level of values is compatible with any theory of prices, which implies that the quantitative relationship between these quantities of individual prices does not condition their configuration, ie does not have the sense that Marx seems to give to it..

to dispense with the second part of the reflection of Marx, referred to the relationship between the price and the value of agricultural goods, and the Organic Composition of Capital in agriculture.

We make one final observation. The mechanism just described for forming Absolute Rent seems to coincide very closely with the one presented for the Generalized Monopoly Rent. In the original exposure, the only difference that is established with Absolute Rent was precisely that the price of agricultural goods did exceed its value. But if this last comparison is illegitimate or impossible, the difference between the two types of rent disappears.

Let´s illustrate this with our example. We have noted that the rent arises in the marginal land when owners, in exchange for allowing the use of their land, ask and achieve that consumers of agricultural goods pay a market price higher than the price of production in the most disadvantaged land. In figures of our example if this rent has a maximum level of 20 units, we should take it as Absolute Rent, since the unit market price of agricultural goods would be 0.16, which is equal to its value. But if landowners continue to press and manage to get a rent of 21 units, then we would be talking about Generalized Monopoly Rent because the market price exceeds its value. Is it reasonable to think that the simple surpass of this quantitative limit implies that this is a substantially different economic process? The rent that emerges from that point, would it have a different nature? It seems not. But this is exacerbated if we remember, first, that this limit in prices is not perceived by agents, for whom what are evident are the prices of production and eventually, market prices. In the worst case, this boundary is incalculable or doesn´t have sense, so it does not seem wise to rely on its overshooting as a mutation of nature in economic phenomena involved.

The logical conclusion then is: if the reference of the quantitative relationship between the price of agricultural goods and their individual value dissapears, this eliminates the distinction between the two types of rent, and we should accept that Absolute Rent is indistinguishable from what Marx called Generalized Monopoly Rent.

2.2 Differential Rent Type 2, the unequal distribution of capital and the "capital intensity on the earth."

Recall that the aim of the category that Marx called Differential Rent Type 2 is the explanation of a phenomenon that is very relevant in agriculture. Marx poses it as follows: under certain circumstances one can register that there is a certain uniformity in the ratio of capital applied for productive purposes on land and the magnitude (area) of such batches. But sometimes, there are some parcels in which capitalists make investments of capital proportionately higher. When this occurs, the amount of rent that arises in these lots is higher than normal. This is what is proposed to explain: the relationship between what is known as Capital Intensity on Land, and the increase in the magnitude of rent or, as he presents it, the emergence of a type of rent that is based on Capital Intensity on Land particularly high.

Let us specify what is the exact meaning of the concept of Capital Intensity on Land that Marx uses in his argument, because often there is some misunderstanding about it. It is not that some capitalists use a larger amount of constant capital. Therefore it does not refer that these capitalists have an organic composition of capital higher than their competitors. What he means is that capitalists involved apply a greater amount of Total Capital on lots of a similar area. Neither Marx refers strictly to the notion of scale: the latter term refers to the enlargement of the volume of production, by scaling all elements of production, in this case both Total Capital and land. It then refers not to the fact that some capitalists who have more resources to exploit more land, and thus produce on a larger scale than their competitors (with the same ratio Capital / Land). What interests him is the situation in which some capitalists who have more money than their counterparts, do invest more capital in similar amounts of land (arguably they exploit the land more intensively) Capital Intensity on Land is then the ratio between Total Capital (the sum of Constant and Variable Capital) and the amount of land.

Given a predominant level of Capital Intensity on Land, which means that for a typical lot size there is what is called a Normal Quota of Capital on Land, some capitalists are able to invest in the grounds more capital, that is, an Additional Quota of Capital on Land. The key insight of Marx is: under certain circumstances of physical productivity, and level of the price of the product, this additional investment can report to the capitalist a return that exceeds the Price of Production of the Additional Quota of Capital on Land. Thus, it arises an additional Extraordinary Profit that can become rent, and that be added to the rent that already exists on the land in question (which would

be Differential Rent Type 1). It is this additional rent we will call Differential Rent Type 2, and as seen, is structured not from the differential characteristics of the land, but from the diverse intensity of capital that supports.

This intuition is indeed very interesting. But the way it is formulated in the original exposure has several problems.[7]

One of them has to do with the level of abstraction at which the reflection on this category is located, and therefore its degree of generality. When asked, which is crucial for this analysis, why some capitalists may decide and can implement the application of a Capital Intensity on Land higher than their counterparts, Marx replies that that is mainly due to that they have a higher level of accumulation. This implies that this type of rent requires for its emergence of an unequal distribution of capital among capitalists.

Note the contrast with the procedure with which Marx develops his reflection at this level in which he examines the Price of Production and particularly the other forms of rent, where it is assumed the full operation of the competition, which includes a very large number of capitalist without any mention of differences in the magnitude of capital that they have. The introduction of this restriction, the unequal distribution of capital among capitalists, would put this kind of rent in a more specific level, and thus its generality would be more limited, than the other modalities of rent. We can extract the opposite conclusion: if this inequality between capitalists is not present, one could not say that the Intensity of Capital on Land is diverse and influences the magnitude of rent. As we will try to show later, this is not strictly accurate.

Let us consider a derivation of this exposure that extracts Marx himself, and we have mentioned in the corresponding section of Chapter 1: the relative instability of this type of rent. Marx argues that the additional excess profit that appears in this process has difficulties to become rent. If capitalists with this exceptional endowment of capital are few, landlords will find difficulties to require this excess profit and it can be kept by these entrepreneurs as Extraordinary Profit. Only

[7] If in general the materials of Volume III of Capital, including in them those in which the rent is treated, have a provisional character that the author had no time to sharpen for final publication, the text on the Differential Rent Type 2 is a draft particularly crude. As noted by Engels in general is a series of often unconnected sketches that certainly are notes for a reflection still underway, with significant gaps that the editor had to complete with approximations. Even there are calculation errors and inconsistencies in the quantitative definition of certain categories. We cannot therefore expect from this text a definitive sharpness and it has explainable, but significant absences.

when these capitalists multiply, the landowners can trigger the competition between investors and can charge as rent any gain which exceeds the average profit. The scenario described here seems much closer to the immediate struggle between agents with multiple "superficial " determinations that Marx associates with what he calls Market Prices, not the structural phenomena for which he takes into account the operation of competition on a deeper level, in which all these accidental disturbances are compensated.

In logical terms this leads to something that seems more compatible with this more superficial analytical plane, a situation in which we can have prices (or rents) of different magnitudes for similar plots of land. In the short term, possibly two identical goods can be traded for different prices, depending, for example, of accidental characteristics of the agents: a buyer or seller more or less informed, with some exceptional urgency to complete the transaction, etc. But the full operation of the competition should neutralize these anomalies leading to normal situation in which homogeneous goods have the same price, which seems to be relevant for structural analysis. According to the statement we are examining the land prices would approach the first situation: two identical parcels may bear rents (or prices) of different sizes, depending on the capitalist who wants to hire them: if he has less capital he would only pay Differential Rent Type 1; if his capital is greater, he would pay also the Differential Rent Type 2.

However, the difficulties of the original presentation of the Differential Rent Type 2 are not limited to these potential mismatches in the technical rigor of certain analysis, or that this type of rent is classified at a level of abstraction that does not belong. Thus presented, also shows inconsistencies with the development of certain phenomena empirically perceived in agriculture.

A very relevant aspect in agriculture is precisely related to the capital intensity applied to the soil, and more precisely with its modulation. Let us look at this in dynamic terms: if at one point the demand for agricultural goods expands this requires, and usually causes, an expansion of the supply of them. But this answer can be given, in the limit, in two ways: it can be done by applying more capital on land already in use, ie intensively. And on the other side, production can be increased by using additional land with the same prior intensity, alternative that we can call extensive. What is observed is usually a combination of these two possibilities: the extra production is done in part by increasing the intensity of exploitation of cultivated land, and partly by the use of new land, widening the agricultural frontier. Is this completely random, or does it respond to some pattern? What is the weight of an option with respect to the other? Marx's insight suggests that this obeys

to a mechanism that regulates it internally, and in that, what he called Differential Rent Type 2 has a central role. This is something very interesting in his intuition and deserves more development. But paradoxically, the original presentation of this category leads to rather unexpected, even irrational conclusions on the dynamics of expansion of the agricultural frontier and the intensification of exploitation of land.

The disruptor point of this development seems to lie in an analytical decision seemingly rather remote from these conclusions. Has to do with the considerations he makes about the form of the incremental returns on additional investments of capital on the land. Controverting Ricardo, who had a similar elaboration and considered that these returns should be decreasing, Marx replies that they may be increasing, constant and decreasing, and there is no reason to think only in terms of the latter. Then, he develops his analysis according to this consideration.

However, reasoning more thoroughly, we can state that it has very different analytical consequences if we think this issue with diminishing returns, than with constant or increasing returns. The latter leads to irrational conclusions about the dynamics of the application of capital intensity on the ground, and is probably also responsible for the more general difficulties we have initially pointed out.

Let us examine this by extending the numerical example we used in the previous chapter to introduce the concept of Differential Rent Type 2, which was precisely built considering constant returns. We took a land type B, the marginal land, which with an investment of 100 units of capital has a physical yield of 1,000 units of product. Let us assume that there is only differential rent, so in this land rent is zero. If the profit rate is 0.4, the Total Market Price of its production is 140 and the unit Market Price is 0.14. In a land A, an investment of the same 100 units yields a greater physical output of 1,400 units. If we have the same Unit Price Market, the Total Price of the production would be 196, in other words, 56 more than the price of production. These 56 units are those that become rent, which in this case is Differential Rent Type 1. We add here a datum: let's suppose that the batch size (**L**) is in all cases 100 square meters. Therefore the unit rent per square meter of land (**r**) is 0.56.

Now, let´s examine the possibility of a capitalist who can invest 100 additional units of capital on the same lot of 100 m2. Considering that yields of Capital Intensity on Land are constant, if capital doubles, physical production doubles too. In these circumstances the capitalist can get on the

market 392 monetary units, 112 more than his price of production. From this amount, 56 are paid as Differential Rent Type 1 like any of his competitors who invest with less intensity. There remain another 56 units that at first, to the extent that the capitalists who can invest with high intensity are few, they can be retained as Extraordinary Profit by them. When these capitalists with higher accumulation proliferate, this sum becomes Differential Rent Type 2 and is added to the previous rent to achieve a 112 Total Rent of 112. The unit Total Rent will be 1.12 per square meter of land.

Table 2.4

Type of land	K	P	PP	PhP	TMP	UMP	TR	DR1	DR2	L	r
B	100	40	140	1000	140	0,14	0	0	0	100	0
A*	100	40	140	1400	196	0,14	56	56	0	100	0,56
A**	200	80	280	2800	392	0,14	112	56	56	100	1,12

Let´s continue with the analysis and assume that the latter capitalist has 100 additional units of capital. He has two options: either invest in the same land that was already cultivated (intensive option) or invest in a new batch on land B (extended option) (For simplicity, we assume that there is unlimited availability of marginal land and that the regulator price is not affected). If he develops his investment on marginal land, he will get on the market simply the price of production, ie a normal return and he will not pay any rent. If he invests in land already cultivated, he increases his investment until 300 units of capital. If the physical production grows proportionally, it will reach 4,200 physical units, which will bring 588 value units as Total Market Price. This is higher in 168 units to its price of production which is 420. If he pays 112 units of Total Rent corresponding to the previous situation, there will be 56 units of Extraordinary Profit. It is evident that he will prefer the intensive option instead of the extensive one: even if in the long run this Extraordinary Profit will become Rent (increasing even more the Differential Rent Type 2) he can enjoy the exceptional profit for a while. And so on with additional quotas of capital.

Note the following consequences of the mechanism defined in this way: for the capitalists will always be preferable the intensive option instead of the extensive one. In the first, at least in the short term, they can get an extraordinary profit, although this eventually dissipates. In the

second alternative, they always will obtain just the average profit. If this is so, what is expected is that the agricultural frontier would never grow: all capitalists would reinvest their additional capital accumulation in the lands that they were already exploiting. The price of land would be very volatile (actually indeterminate) with an unlimited upward trend: the only limit should be the amount of capital that each investor can and would be willing to apply to his individual lot.

None of this resembles what actually happens: the agricultural frontier does expand, the land prices have some stability and regularity, and similar plots tend to have similar prices.

But the above discussion can be extended logically and that path would lead us to an absurd conclusion. In the initial case the investor who has only 100 units of capital could also achieve a Capital Intensity on Land similar to that of his competitor who owns 200 units. For that it suffices that this agent would invest his 100 units of capital on a half of the land previously used. Thus, the 56 units of excess profits that he still gets, would be diffused among only 50 square meters of land. In a first instance, he could pay for the land the prevailing unit rent of 0.56 x m2, which would imply a total payment of 28 units of value. The other 28 units would be retained as Extraordinary Profit. When the latter becomes rent, the unit rent would amount to 1.12, which would be happened in parcels cultivated by capitalists with only 100 units of capital. And that could be repeated: why not invest the same amount of capital in a quarter of the land? This way, the investor would get a further Extraordinary Profit which would increase again the unit rent. And so would proceed all investors, even those with more capital: all of them would concentrate until infinity their investment in smaller and smaller amounts of land. The availability of capital would not be a barrier for this process, land prices would tend to rise without limits, and the agricultural frontier rather than expand, would shrink. The latter even until an infinitesimal point, in a similar way that in astrophysics it is thought that a "black hole" concentrated material with an infinite density. Of course this is an irrational result very far from what is perceived empirically.

Table 2.5 Differential Rent Type 2 and constant returns of Capital Intensity on Land

Type of land	K	P	PP	PhP	TMP	UMP	TR	DR1	DR2	L	r
B	100	40	140	1000	140	0,14	0	0	0	100	0
A*	100	40	140	1400	196	0,14	56	56	0	100	0,56
A*'	100	40	140	1400	196	0,14	56	28	28	50	1,12
A**	200	80	280	2800	392	0,14	112	56	56	100	1,12
A**'	200	80	280	2800	392	0,14	112	28	84	50	2,24

We do not get to this result if we use diminishing returns of capital intensity on land. But first let's discuss how reasonable is to have this starting point.

In the above discussion with Ricardo, it looks fully justified the consideration of Marx about that the economies of scale may be increasing, constant or decreasing, and that seems whimsical restrict the analysis to the latter possibility. In fact, in the same spirit, the bulk of economists of Marxist and neo-Ricardian tradition, build their structural analysis of price formation and about the main interactions between agents in capitalism, with the reference of constant returns of scale, the simplest option. Also, the consideration of increasing returns to scale is vital to understand various central phenomena in capitalism: nothing less than the proletarianization (the capitalist can enjoy productive advantages linked to the scale that can be achieved with its capital while the simple commodity agent cannot access them, and as a result of this uneven competition gets out of the market and should become proletarian) or the concentration and centralization of capital (uneven level of accumulation among the capitalists, generates productive disparities in favor of the larger ones, that sharpens inequality).

But here it appears the ambiguity to which we have alluded. When speaking of returns of capital intensity on land, this is not strictly synonymous with returns to scale. Returns to scale refers to the increase in the physical product versus proportional increases in all inputs. The returns of capital intensity on land regard to increases in the amount of capital (both constant and variable) against fixed amounts of land.

In the latter case it is conceivable that increasing the initial amount of capital applied to land the product can be multiplied proportionally or more than proportionally. But it is intuitive to think that if this operation is repeated again and again, it would come the time when constraints of the vegetal cycle or the same physical congestion, may generate a saturation effect that will make decline the incremental yields. [8] What it is proposed here is that in the sections of constant or increasing returns Capital Intensity on Land, agricultural entrepreneurs behave as described previously and repeatedly increase their capital intensity and do raise the level of rent. But precisely, and as a result of the development of this structure, this pushes them toward the stretch of diminishing returns. When this happens, and we reiterate that this is a trend that generates the same development of this structure, the mechanism of rent operates as an internal modulator and disappear those volatile results which we alluded earlier: capital intensity on land finds a limit and converges to a definite magnitude, and so does both the land prices and the proportions between the intensive and extensive options of increments in agricultural production.

Let´s examine this in our example. The only novelty in the figures is that we assume that additional applications of capital over the land yield less and less. The first quota of 100 physical capital produces 1400 units of output. The second quota of 100 units of capital produces only 1200 units of product (ie an application of capital 200 produces 2600 physical units) The third quota of capital produces only 1000 physical units and the fourth 800.

The capitalist who invests 100 units of capital in the land A can produce 1400 physical units that, at a price of 0.14, allows him to get a total price of 196 units. This exceeds his price of production by 56 units, which become rent. Let's say this is the Differential Rent Type1. Now suppose he has 100 additional units of capital. If he invests them in a new field of quality B, he would obtain the normal profit, because there he would produce 100 physical units, which at a price of 0.14 yields a total market price of 140, equal to his price of production. If he decides to invest this new capital in the same land type A, ie the intensive option, the 200 units of capital will enable him to produce 2600 units of product. With this he will get 364 units as Total Market Price, 84 more than his price of production, which in this case is 280. Suppose that initially the landowner requires him 56 units as Differential Rent Type 1. He still has 28 units that initially he may retain as Extraordinary Profit. He will prefer the intensive option, even that over time, if his behavior is

[8] Entering a tractor in a culture can dramatically increase physical production. But if one keeps adding tractors to the exploitation of the same plots in certain moment it would not be room enough to operate efficiently and this may hinder the production instead of improving it.

imitated by many capitalists, also this gain will become rent, to arrive at a Total Rent of 84 units (the first 56's we will call RD1 and the second 28, RD2).

What happens if he has another 100 units of capital? If he invests back in the same plot he would get 3600 physical units and a total market price of 504 units. This would exceed by 84 units his Price of Production, which in this case it would be 420. The extraordinary profit would keep unchanged from the previous case and the rent would remain at the same level. Note that in this case for the capitalist would be indifferent to invest these additional 100 units in the same plot or in a new peripheral land. In this second option he would get on the market the same amount of value than in the first one. For the 200 units that he invests initially he obtains 364 units of value and applying 100 to the marginal land, he would get 140, whose sum is equal to those 504 obtained by investing 300 in the land type A. In the second option he would get on the market the same amount of value than in the first one. For the 200 units that he invests initially he obtains 364 units of value and applying 100 to the marginal land, he would get 140, whose sum is equal to those 504 obtained by investing 300 in the land type A. The same would happen with the profit he gets, after deducting the rent that he has to pay: in both cases would be the normal profit. For him, in this level of investment, the extensive and the intensive options of investment are equivalent.

Let´s suppose he has a fourth quota of capital of 100 units. If he invests it in land type A, he would get 4400 physical units and a Total Market Price of 616 units. This just exceeds his Price of Production (560) in 56 units. This is what could become rent. If the landowners require him 84, the level of rent that corresponds to the previous capital intensity, the only way for the investor to pay would be sacrificing part of their normal profit. Obviously in this case is more convenient to the capitalist investor to operate in a plot of marginal land, which ensures him his average profit. This Capital Intensity on Land of 400 units of capital per 100 square meters of land will not be viable in the market.

Table 2. 6. Differential Rent Type 2 and diminishing returns of Capital Intensity on land

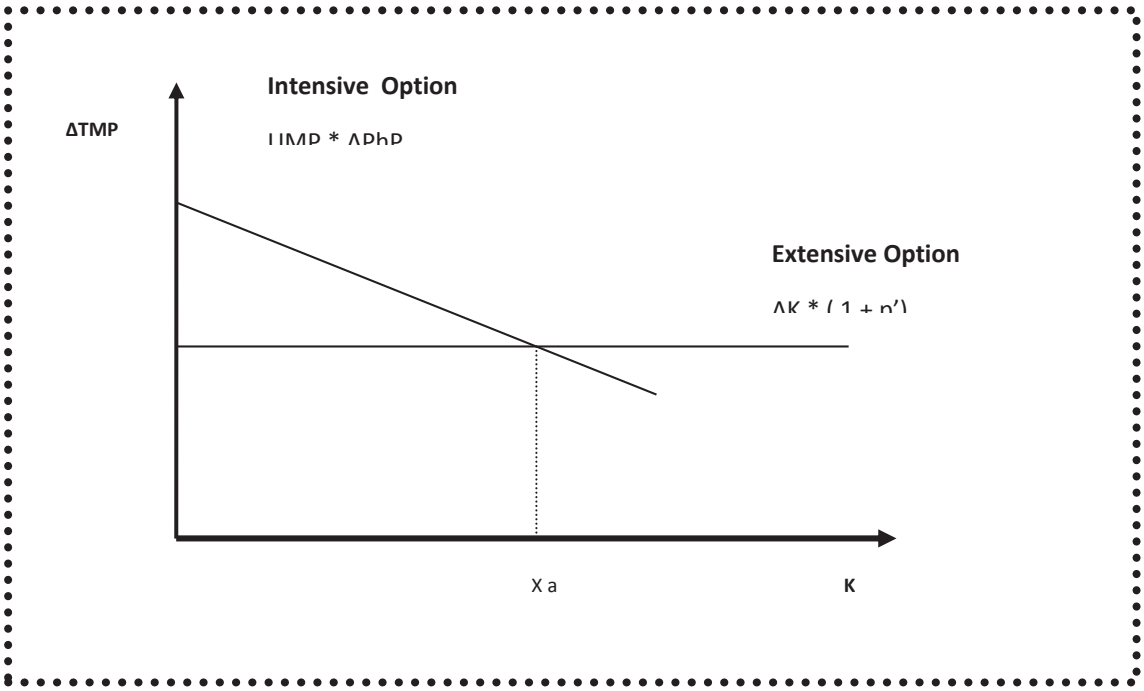
Type of land	K	P	PP	PhP	TMP	UMP	TR	DR1	DR2
B	100	40	140	1000	140	0,14	0	0	0
A*	100	40	140	1400	196	0,14	56	56	0
A**	200	80	280	2600	364	0,14	84	56	28
A***	300	120	420	3600	504	0,14	84	56	28
A****	400	160	560	4400	616	0,14	56	56	0

Let's highlight some results then. Capital Intensity on Land has a limit, beyond which investors prefer the extensive alternative for their additional investment. There is no an infinite tendency to capital intensity on land and the agricultural frontier does not shrink and can expand. This limit is not determined by capital accumulation of the capitalists: even if in our case the investor owns 400 units of capital, he invests only 300 in the land A.

The logic of the mechanism becomes clear if the marginal analysis is employed, which in this case is fully justified, although not widely used by the Marxist tradition (which here does not imply any violation of its principles). The investor compares the incremental yield that gets his additional investment in the intensive and extensive options. In the example, the yield of the extensive option is always equal to the price of production. The incremental yield of the intensive option descends while the level of capital intensity grows. Investors increase their capital intensity to the point that matches their yield with the extensive alternative. If they go further, actually lose money. From that point, then, they prefer the extensive option and invest on a new batch of marginal land. Making continuous our analysis (in the example we use discrete quotas of 100 units of capital) the matter can be illustrated by Figure 2.1:

Figure 2.1

Intensive and extensive options in agricultural investment



The incremental revenue of the capitalist under the extensive alternative is represented by the horizontal line ΔK (1 + p´), since his investment yields the Price of Production over and over again. The incremental revenue under the intensive option is represented by the decreasing line PUM x ΔPhP, ie the physical yield of the incremental investment, which is decreasing, multiplied by the unit price of the product on the market. Investors increase their capital intensity while the intensive option exceeds the extensive one and stops if they are equal, Xa point (in our example, 3 ie 300 units of Capital on 100 m2 of land) because whenever the extensive option is greater this would be the alternative that will suit him.

While this reformulation of the operation of this mechanism dissolves the mentioned inconsistencies of the original presentation, it has a consequence: it makes difficult to distinguish between the Type 1 and the Type 2 of Differential Rent. As we have seen, in the Marxist tradition it is proposed to make this distinction bisecting the total differential rent that arises in a parcel: the first portion, which is called Differential Rent Type 1, corresponds to the rent that the land generates if it is applied the Normal Quota of Capital. If there is a residue, concomitant with an Additional

Quota of Capital, this is called Differential Rent Type 2. In our example when 300 units of capital are applied on land A, the total differential rent is 84 If it is applied the Normal Quota of Capital, which we have made equal to 100, the land would yield 56 units of rent, which we call Differential Rent Type 1. The residue of 28 units we can identify it as Differential Rent Type2.

The procedure of distinguishing between Differential Rent type 1 and type 2 has the merit of presenting neatly and intuitively the interface between Capital Intensity on Land and the amount of rent which, as we have seen, is two-way. It is no small merit. But for doing the reasoning uses references of this mechanism that are deliberately simplified. When moving a bit on the degree of specificity, these criteria become difficult to apply. The unfortunate thing is that often this category is projected in a somewhat succinct way, creating confusion in the concrete analysis. One difficulty is that the notion of Normal Quota of Capital on Land, which is essential for this distinction between the two types of differential rent, becomes difficult to identify in a minimally complex context.

Let's start with the Quota of Capital that really comes on the market in each kind of land. Contrary to what expects the original exposure, in each type of land the market makes emerge a quota of capital that is unique to this type of land and, at the same time, is different between lands with diverse features.

It is expected that in a situation of a fully competition, the capital intensity on land that should prevail is what yields the greatest amount of rent: this is what interests the landowner and he is not willing to hand over his land for a lower rent considering particular circumstances of the capitalist tenants.

In our example, the reason why the capitalist does not increase his intensity beyond 300 units of capital is because that implies that what he can pay as rent, retaining his normal profit, is less than when he invests 300. Obviously the owner is not willing to reduce him the amount of the rent because the investor made a wrong business decision. If this capitalist incurs in an excessive intensity, he will have to sacrifice part of his normal profit in order to pay the required rent. Therefore this option is not economically viable. But something similar happens in the opposite direction. If an investor decides to apply a quota of capital lower than 300, say 100, the rent that he can pay is also lesser than that he should pay off if his investment would have been 300. Neither the landlord would be willing to reduce the rent charged, and would rent his land to another capitalist who should be able to pay

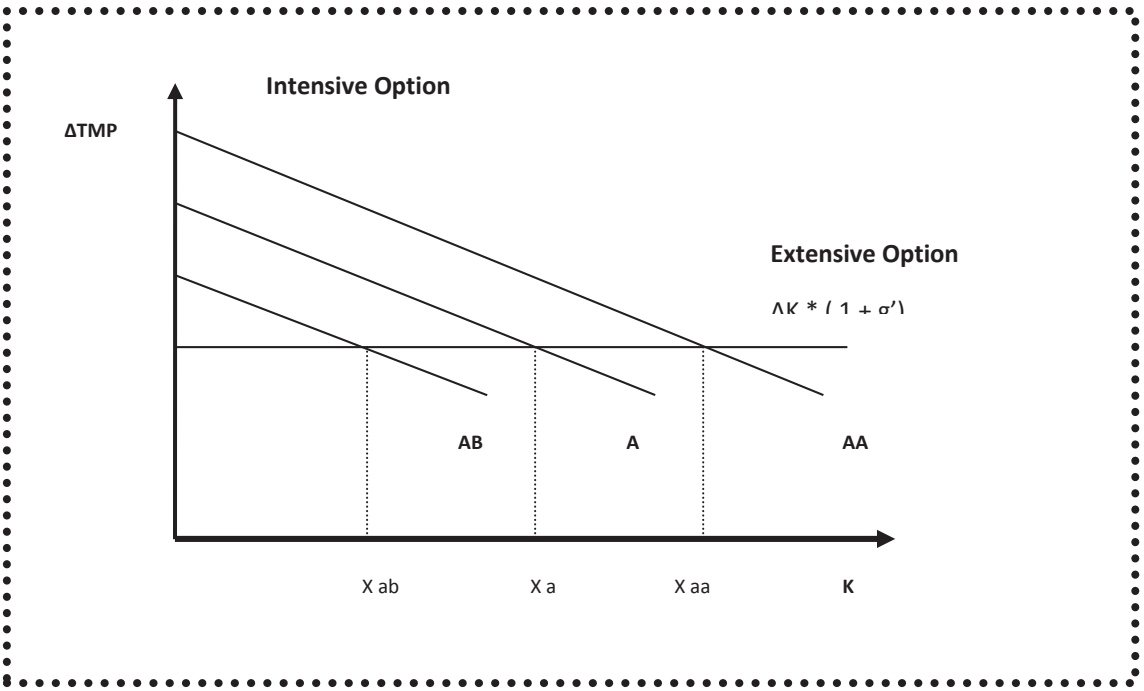
the maximum rent (and who may invest 300). Therefore, these lower intensities are not economically viable either. If a capitalist does not have sufficient accumulation he would be obliged to reach the maximum intensity applying his capital to a field of lesser extension, or simply, he would not be able to make his investment. The capital intensity under which tend to be exploited all lands type A will be 300 units of capital for each 100 square meters of land, and what we have identified as Normal Quota (100 K per 100m2 of land) will not show up on the market.

But the unique magnitude towards which the capital intensity converges within each type of land is not the same between different types of land.

Suppose in our example that there is a category of land even better than the land A, which we will call land type AA. There, the first quota of capital yields 1,600 physical units (more than 1,400 in the land A). Suppose that the incremental quotas of 100 units of capital produce 200 physical units less than the former one, as in the previous case. When 200 units of capital are invested, the incremental quota of capital of 100 produces 1,400 units of product, completing a total of 3,000. When 300 units of capital are invested, the last quota of 100 units of capital yields 1.200 physical units of product, and so on. In this case the maximal intensity of capital in land AA which matches the yield of the extensive option will be 400 units of capital. In the same way we might consider a land with an intermediate performance between land type A and the marginal lands type B, which we will call AB. Assuming that there, with an investment of 100 the physical production is 1200 and that the performance of incremental quotas descends at 200 each time, we arrive to the conclusion that the maximum capital intensity in these lands will be 200 units of capital for each 100 square meters ground. Figure 2.2 illustrates this:

Figure 2.2

Intensive and extensive options in agricultural investment in different types of plots



What is expected to find as manifestation in the land market, then, is a set of soil classes that, according to their productive characteristics, each has a different combination of capital intensity and magnitude of rent. What capital intensity should we choose as a reference? In our example we used the predominant intensity on marginal land and this allowed us to clearly distinguish between the two forms of differential rent. But the latter is possible because in this case in the marginal land are given simultaneously two circumstances: the amount of rent is the lowest (in this case, zero) and the level of capital intensity is also the lowest. But this is not the general case.

It is often considered that some lands are worse for production precisely because to put them to produce requires incurring in extraordinary expenses (eg drying works are needed, or spend on fertilizers or additional supplements, etc.). That is also the very relevant case of location factor: the more remote lands involve increased investment in transport. In these circumstances we may have the following: in a more productive land and with a greater rent, we could calculate the rent that it would throw if it would be exploited with the capital intensity of marginal land, intensity that is higher than that it actually shows. This magnitude of rent must be less than that shown in the

market, because it corresponds to a degree of capital intensity that is "excessive" for this type of land. This would be the Differential Rent Type 1. But to get the total rent we should decrease and not increase the intensity of capital. We would have something rather difficult to interpret: a negative Differential Rent Type 2, as to obtain it we should decrease and not increase the intensity of capital.

We would be in a similar problem if we use as a reference something which seems reasonable in practical terms: the more frequent capital intensity in the agricultural economy. The circumstance that it may exist a Capital Intensity on Land especially prevalent may have statistical sharpness, but it is good to clarify that this reflects the fact that some kind of land is more abundant than the others. If this more frequent intensity of capital does not yield the minimum rent, all lands that have lower intensity of capital, but higher rent, face the curious circumstance that we have seen: they would have a negative Differential Rent Type 2.

To prevent this from happening we can choose as reference the minimum intensity that is on the market, although it would not correspond to the majority. We end, however, in a symmetrical and equally irrational situation. Lands with higher intensities, but with a rent lower than the reference, if exploited with a capital intensity considered "normal," would have negative Differential Rent Type 1, because with that capital intensity it would arise rents lower than that of the reference.

A contemporary analyst who has dealt with this topic, Guillerrmo Flichman, proposes the extension of the concept of differential rent to the two forms, Type 1 and Type 2, enunciated by Marx and suggests a reframing of this unique differential rent "formulating it as the extraordinary profit that arises because of the difference in fertility between different land simultaneously exploited in capitalist form (...) not necessarily the amount of investment per hectare must coincide in various lands; rather, it is logical to think that in general they do differ ".

I recommend to accept this suggestion which has relevance mainly in order to be aware that in certain circumstances it makes no sense to differentiate between the two types of rent and therefore it is better not to do it. However, because of its intuitive power that makes clear the role of capital intensity in the magnitude of rent, it seems advisable to retain the vocabulary of Marx, especially in certain contexts in which it has no internal difficulties.

Let us summarize then the main conclusions of our proposed reformulation of the Differential Rent Type 2, which as noted, is based on considering that what is relevant for structural analysis (and

which leads the development of this mechanism) involves having as reference decreasing returns of Capital Intensity on Land:

The first conclusion is that the link between Capital Intensity on Land and the magnitude of differential rent has an internal regulation that modulates them simultaneously. It consists on the equalization of the monetary return obtained by the capitalist with his incremental investment in his intensive and extensive investment options. The capitalist will only increase the intensity of capital to the extent that these quantities are equal: there the rent that land yields is maximum.

The second conclusion is that in these terms, it operates independently of the distribution of capital among capitalists. This last condition is not necessary for the existence of this mutual regulation between capital intensity and magnitude of land rent. Therefore we have a mechanism that is structural to the operation of the capitalist economy.

The third conclusion is that the magnitude of the rents that emerge in this manner is not erratic or unstable by nature and converges to defined quantities.

The fourth conclusion is that this reformulation of the operation of this rent makes difficult a rigorous distinction between Differential Rent Type 1 and Type 2. However, as for some purposes this distinction is useful, it can be preserved in situations not involving internal inconsistencies, and in other cases approximate methods may be employed for this purpose.

2.3 The distinction between Differential and Absolute Rent and the role of private ownership of land in the existence of rent.

Another aspect that gives rise to controversy in the original formulation of Marx is the difference of nature which he established between the Differential and the Absolute Rent. For him the two mechanisms are essentially different, and although overlap and combine in practice because they operate simultaneously on the same space, the comprehension of each body requires a different analysis. Indeed, when Marx discusses the Absolute Rent, points out that this reflection is independent of which he has done about the Differential Rent, and that its conclusions or possible deficiencies in the treatment of one does not affect the other.

Let´s examine the contrasts that Marx finds between the two types of rent. The first and most important consists on the source he proposes for each of the modalities of rent. As we have seen, in the case of the Differential Rent the origin of the extraordinary profit that supports the rent is a circumstance that could classify as technical, the heterogeneity in the productive condition of the parcels of land. The role of property in this case is limited to transfer this exceptional profit from the pockets of agricultural capitalists operating in the best land, to the coffers of the owners of those lots. That is, the property transforms the extraordinary profits generated by this technical peculiarity in rent. In contrast, Absolute Rent emerges from the property itself. It is private ownership of land, a social phenomenon, not a technical one, which determines the existence of an exceptional profit that feeds this type of rent.

This distinction is reflected in a corresponding contrast in the direction of causality between rent and the formation of agricultural price. In the Differential Rent, as noted, the competition sets a price that is based on the conditions of production on marginal land (the price of production in these lands) and the rent of the other lots emerges as a derivation of it (the difference between the price of production on marginal land and the individual price of production for each particular type of land). In Absolute Rent, is the magnitude of the rent, the amount of money which landlords achieve to charge for the use of their land, even the most disadvantaged, which increases the price of agricultural goods. In Marx's terms, in the Differential Rent the price of agricultural commodities determines the size of the rent, while in the Absolute Rent is rent that defines the magnitude the price of the product.

As mentioned, in practice these two types of rent overlap, and the Total Rent of each batch is an addition of an Absolute Rent, whose magnitude is general for all lots, and a Differential Rent which varies in each parcel. But the determinants and evolution of each of these components would be different.

This consideration has a policy implication that is very peculiar in the Marxist tradition. Many analysts conclude that these differences deserve to develop different courses of action for each type of rent. If the source and magnitude of Absolute Rent emerge from the capacity for action of the landlords, the amount of this rent, and therefore the price of agricultural goods, can be modified by actions that erode social strength of this class of landowners. For the Differential Rent, similar measures all that would achieve would be to divert any eventual exceptional profit to other agents: this could be that agricultural capitalists themselves would keep this value, or

that it might be appropriated by the state or by a third agent. But the price of agricultural goods would not suffer any modification and to affect it would be necessary to alter the actual technical conditions of production.

To discuss this concept and its implications is useful to examine closely one of the considerations that give it substance and that has been discussed from different points of view: it is the explanation given by Marx of how private land ownership makes emerge and determines quantitatively the Absolute Rent.

Recall that Marx warns that the ability to enforce the requirement for rent by owners, even in the worst land, lies not only in the legal domain of the landlord on the ground, nor can it be understood as a unilateral practice of this agent. In order that property would be not only something nominal it is necessary that the legal control on land can unfold into an economic fact. For that, Marx proposes the notion of retention of the land by the owner. The legal monopoly over land allows the owner eventually to withdraw his land from production: this will limit the production of agricultural goods, will unleash competition among consumers for them, which would increase the price of the product and would make possible the existence of a positive rent.

This reasoning that seems consistent in principle, have an Achilles heel, as noted, among others, by Pierre Philippe Rey. If we examine in some detail the logic of the individual behavior of a landowner in a context of general competition between many owners, we find the following: if he withdraws his field from production and this pushes up the price of the product, who may enjoy the rent that comes from there would be the owners of the other lots. He himself could not do it, because by definition he would not lease the land and no one would pay for its use. Paraphrasing Marx, it is implausible that a behavior like this so disinterested and in the benefit of their colleagues (and competitors) without receiving anything in return would spread. If looking for some gain our landowner reintegrates his land to exploitation and leases it to a capitalist entrepreneur, the quantity of product would grow again, the price would be reduced and the rent would be zero again. In contrast to the first impression, the mechanism described is not consistent with a positive rent on marginal land in a situation of full competition, including competition between landowners.

This inconsistency may be overcome under certain assumptions, as would be the full concentration of land ownership (monopoly in the strict sense) or, when that would be possible, a

very close cooperation between owners that would allow that certain pieces of land, deliberately and in a concerted way, would be excluded from the production and left idle in order to value other plots owned by the same proprietors. But these are very restrictive assumptions that are far from being the most common in capitalism, where it is not unthinkable frequent situations of considerable fragmentation of land ownership, which is the reference for the general analysis of this structure (as well as competition between producers is thought in principle with the presence of a plural number of them and the analysis does not depart from the rare cases of monopoly or oligopoly).

Rey rescues the notion of Marx as an analytical tool less limited than the previous comment would suggest, and he reinterprets it since an angle of historical reflection. During the emergence of capitalism in Western Europe, the landlord had a reference that makes no unreasonable for him the withholding of his land, as Marx poses. In the transition from the Old Regime the landowner had an alternative to lease his land to an agricultural capitalist: that was to make it available to a pre-capitalist agent (peasant, serf) under the rules of feudal logic. In this case his rent would not be nil; he could collect the *corvée* or equivalent category, corresponding to the pre-capitalist or feudal rent. According to this interpretation, the Absolute Rent can only be explained by the property as an external force to capitalism, which survives as a remnant of the Feudal Mode of Production. The rent would be an adaptation of a relation of production of a previous mode of production that is internalized as a relation of distribution in capitalism, and expresses the articulation of different modes of production which coexist in contemporary society.

It should be mentioned however, and among other things, that the vision of Rey shares with the approach of Marx the difficulty of explaining the existence of absolute rent and the role of private ownership in those capitalist societies that did not receive the same inheritance of European countries who lived the classic transition from feudalism to capitalism. Besides, his reasoning is unconvincing to understand the role of land ownership in most central countries in the advanced stage of capitalism, where the landlord class has been weakened and subdued as such, and if survives retains no important feature of their feudal origin: however, in this case land prices, and what could be considered statistically absolute rent grow endlessly.

Then, let`s explore a variant in this line of thought, for which we propose to follow a track that provides Marx himself. He gives notice that for Absolute Rent to exist, it is not sufficient with the existence of property as a merely legal relationship, but that it is necessary that it has a repercussion on the economic sphere. It is indispensable that the power of withdrawing his land

that a landowner has can alter the conditions of confrontation between suppliers and buyers of agricultural goods. Using his terms, only under these circumstances it is the case that merely legal or "nominal" property gets transformed in "real" property. As a negative illustration of a situation in which this conversion does not take place, let us recall, Marx presents the case of the open frontier in the nineteenth century's United States. There the colonists, as they went on occupying the conquered lands, little by little, used to attain acknowledgement of their legal rights on the land. This enabled them eventually to exercise their right to withdraw their land from production. But to the extent that this action did not have any effect on the goods on the market, because the withholding of any plot of land did not prevent the expansion of the amount of agricultural goods produced (the new producers could employ for that purpose the next free plots of land), neither the price of the agricultural goods would increase nor could there emerge a positive Absolute Rent.

What differentiates this case from the case which Marx considers to be the more general one and in connection with which he explains that Absolute Rent does get consolidated? We would have to say that the evident contrast consists in that, in the case of the open frontier, the availability of land is unlimited and this annuls the economic effect of withdrawing the land. Instead, in the general case, the amount of land is restricted. It is this limitation in the quantity of land available for exploitation that prevents the increase in agricultural production, which unleashes the bidding confrontation among the buyers for a rationed amount of agricultural goods, raises their prices and allows the emergence of rent. In other words, for legal property to have the economic effects that would make plausible the emergence of a positive rent even in the worst land, the concurrence of another complementary circumstance is required: the *scarcity* of land. In our view it is this notion of scarcity of land what provides a logical link between the legal rights on land and their economic effects on a structure of capitalist commodity production.

Let's discuss, then, the implications of this statement. Let's clear we are not talking about eventual shortages which could be eliminated in the medium term by the action of competition. What we refer to is a sort of shortage situation in which the flow of capital is unable to remove because its base is the limited availability of land, an element that is not produced by human action, and is beyond the control of capital. Of course we are talking in a level of abstraction more specific than that in which Marx makes his reflection on the Prices of Production. There, his reference is the emergence of a uniform rate of profit among all capitalists, assuming that in the various branches there are no more barriers to expand production that the same availability of capital.

As noted above, his reasoning about rent involves entering into a more concrete plane of analysis in which the additional determinant that is introduced is precisely that he no longer considers that in all productive sectors the production can expand freely: in those who use the land, the latter can erect as a barrier to expansion. The scarcity of land would be the element that serves as a blockade for this potential expansion. The natural price that arises under these conditions is what we call "price of production with rent", which would operate as a "center of gravity" of short-term market prices. Then it is not a surface phenomenon subject to the vagaries of instantaneous supply and demand, but this is how structurally operates competition when the determinant of the irreproducibility and scarcity of land as a factor of production is considered.

To state more precisely our approach we present the following proposal to formalize the process of price formation in line with the central tenets of the Marxist tradition, and that in this case includes both the situation where there are no limits to the expansion of production, as one in which the restricted availability of land operates as a limitation in agricultural sector. This will allow us to examine more conveniently other aspects such as how the magnitude of rent on marginal land is fixed, and other related issues, including the relationship between Differential and Absolute Rent.

We often hear the claim that both the Classical Political Economists and Marx, share a deficiency in their analysis that consist on that they disregard the demand to explain the formation of prices. Their reflection would focus on issues relating solely to supply, as the technical components, the costs of factors of production and eventually the rate of profit. To our knowledge this is inaccurate and perhaps that departs from a misunderstanding of the methodological procedures followed by these authors, and in particular the distinction between "market" prices and "natural" prices. Precisely the way they present the relationship between these two categories makes evident their conception of demand, without which the link they propose between these two elements would be inconsistent. Marx is very emphatic in stating that for him the prices are structured simultaneously in "production and circulation" and even defends Ricardo from accusations that allege his ignorance of the phenomena of demand. In our view the reluctance of these theorists to reduce the determinants of prices to "the mere play of supply and demand" refers to the attempt to understand price formation with reference only to circulation, ie, the instantaneous confrontation between buyers and sellers (determinants of short-term) ignoring the reactions taken by the producers in a circular structure of production-circulation-production.

In Marx there is a clear notion that in circulation, at a given moment and in aggregate terms, there is an inverse relationship between the quantity of a commodity and the price at which consumers are willing to pay for it. We have seen that repeatedly in his references to the rent, when he says that when the monetary demand for a good exceeds the supply, consumers pay a higher price for it. The reason given for this is the competition between consumers to ensure their access to the goods. Here also is present in competition among buyers the notion of "dangerous leap" in circulation: there is no assurance that the plans of buying a commodity that prospective acquirers do, come true, and when the amount of goods in the market is tight, the way to ensure the transaction over competitors consists on increasing the price paid for them. Although some believe that here the demanded quantity is conceived as a fixed point, there seems no reason to discard a two-way relationship between variable magnitudes of supplied quantity and magnitude of price. Given greater gap between the "demanded quantity" (or monetary demand) and "supplied quantity" the higher the price. Something similar could be said for the opposite situation: when the "supplied quantity" exceeds the "demanded quantity" the risk to sellers is that they cannot make the sale. Competition among bidders for guaranteeing the realization makes them willing to hand out their goods for a lower price.

As shown, this behavior can be represented in conventional manner in a Cartesian diagram that puts in relation two axes that express prices and quantities, as a downward curve. I will call it Curve of Price of Circulation. Let us specify what it means: to each quantity of a commodity in the market, each point on the curve shows the magnitude of the price resulting from this struggle of the buyers among them and with suppliers. This magnitude is associated with the purchasing power of consumers, the distribution of income among them, the size of the population, cultural patterns, etc. It refers to the aggregate scale, and this is compatible with the eventuality that at each price the different individual consumers can purchase different quantities of good, some of them higher than others, and even some may not have access to it. It would be therefore a notion of aggregate character.

As mentioned, Marx does not ignore this aspect of the formation of prices. But he finds insufficient that the confrontation between buyers and sellers exclusively in the sphere of circulation can explain the structural magnitude of prices, ie, what he calls Natural Prices. To do this properly it is necessary to take into account the articulation of this sphere of circulation with the sphere of production, in which competition reigns too. Furthermore, this can also be represented in a curve

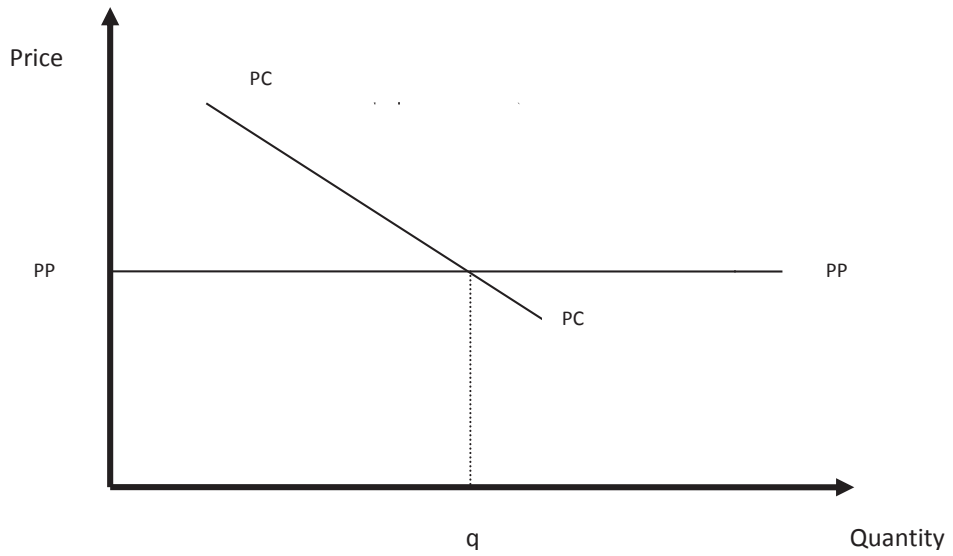
that describes the aggregate behavior of producers and the competition that exists between them. Let's look at how we can present that and how that can be formalized in a manner consistent with what has already been proposed for circulation.

If we consider the simplest situation of competition between producers, where they have similar magnitudes of capital and access to comparable techniques, the way to increase the quantity of goods is through the incorporation of new producers. Under the referred circumstances, the price at that the different producers would be willing to deliver the goods would be identical between them, and would be related to the capital required for their production (costs, which are the same) plus the normal profit (which is uniform) : in other words, is the price of production. In graphic terms we could build a Curve of Price of Production, which again is an aggregate concept that describes this situation in the same Cartesian system linking prices with quantities: in this case it would be a horizontal line. Its interpretation is as follows: the level at y-axis is the price of production. Each point in the direction of the x-axis represents both a quantity of commodities offered and the corresponding number of capitalists who offers them. What it tells us is that the aggregate quantity supplied increases while maintaining the same price, since the new capitalist that makes grow the production has the same production conditions as the other producers who were already producing. As shown, this notion also has a kinship with the neoclassical notion of supply, but here it is a category of aggregate character and in this case refers to the competition between producers. This approach implies that there is no impediment for new producers to enter the market and enjoy similar productive conditions than those of their competitors. This annotation allows us to explain the fact, which may seem unusual, that our curve may be horizontal. We are accustomed to rising supply curves, but these relate to individual behavior of each firm, and a in a "short term", ie in a period in which the producer cannot change some factors of production. In our case the curve refers to the aggregate behavior and in a medium term, which includes the time required for new producers may come to the branch to expand production.

The interaction between these forces is then represented by the superposition of the curves that describe them. The intersection between them define the "center of gravity" to which the market is driven. The natural price coincides with the price of production **PP**, and the quantity **q** would be one that, according to the guidelines of the competition in the circulation, is compatible with the aforementioned price of production.

Figure 2.3

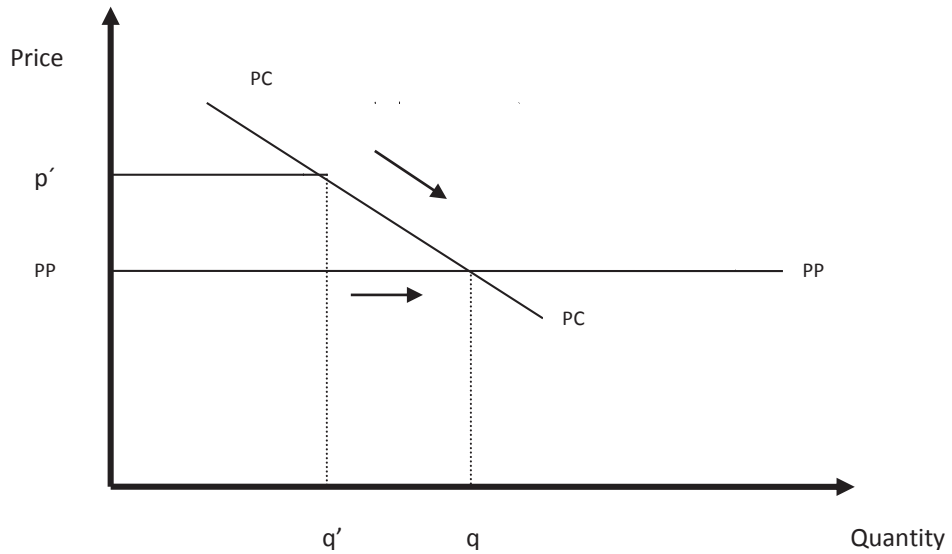
Formation of the price of production as a natural price



Of course this is a result of "medium term", ie taking into account the reactions of the agents in the production. Let's examine the issue in the "short term". The quantity supplied by producers at a given time could be less than the amount that for the potential buyers is consistent with the price of production (this is what is meant to when it is said that "demand exceeds supply "). On the Curve of Price of Circulation this quantity **q'** corresponds to a price **p'** that exceeds the price of production. So, in the short term, the suppliers are winning more than normal, in an amount equivalent to what the market price exceeds the price of production.

Figure 2.4

Tendency of the market price towards the price of production



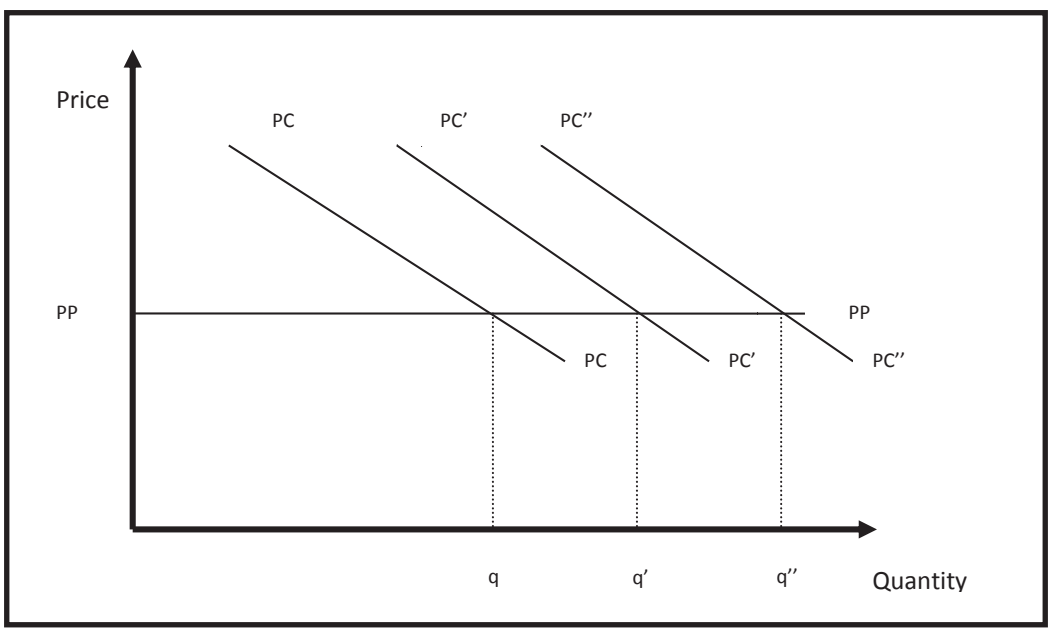
In this theoretical tradition, the factor that is considered as the engine that pushes this transitory state to a structural situation (towards a "center of gravity") is the flow of capitals. The capitalists who are investing their capital in other branches, and presumably get there only a normal profit, realizing that their competitors in the concerned industry perceive an extraordinary gain, will want to move their investments to this branch and capture this exceptional remuneration. Doing this generates two effects: on the branch that receives them, their arrival increases the production (In Figure 2.4 q' moves to q). At this higher level of commodities on the market the buyers pay a lower price, thus the transaction price approaches the price of production (p' goes to PP). In the branch that these capitalists have left the effect is exactly the opposite. There, their emigration restricts the quantity produced of these goods, does raise their price to reach a rate of profit with a level similar to that is finally achieved in the branch initially examined. In fact this is the mechanism through which consolidates a uniform rate of profit.

As shown in our example in the short term there is a shortage of produced goods which makes that their price exceeds the price of production. But in this case it is a temporary shortage, the action of competition is capable to dissolve it, while at the same time eliminates the extraordinary profit that is associated with it. Finally, therefore, is the price of production which regulates market prices and operates in their regard as their "natural price".

However, in these terms, and under such circumstances, the factors that determine the magnitude of the price of production correspond to production. Its amount varies if a technical change occurs that implies that to produce the good are required fewer inputs or less labor, or if there is a change in the prices of these inputs or in the wages, or if there is a change in the rate of profit. The changes in demand (that correspond to the sphere of circulation), however, influence mutations in short-term market prices, but not in the Natural Prices, because the response (in the medium term) of producers absorbs this effect. The Figure 2.5 illustrates the impact of an increase in demand generated by a population growth of the consumers or by an expansion in their purchasing power. This could be represented by a rightward shift of the curve of Price of Circulation from **PC-PC** to **PC'-PC'**. In the short term if supply continues in **q** level, the market price will rise, but if the producers react and expand the quantity following the Curve of Price of Production **PP**, finally the transaction price converges back to the Price of Production, producing a larger amount of **q'**. And this works on with further increases in demand as long as producers can respond unhindered increasing their production in similar circumstances as the previous ones.

Figure 2.5

Permanence of the Price of Production in the long term face to succeeding expansions of the curve of Price of Circulation

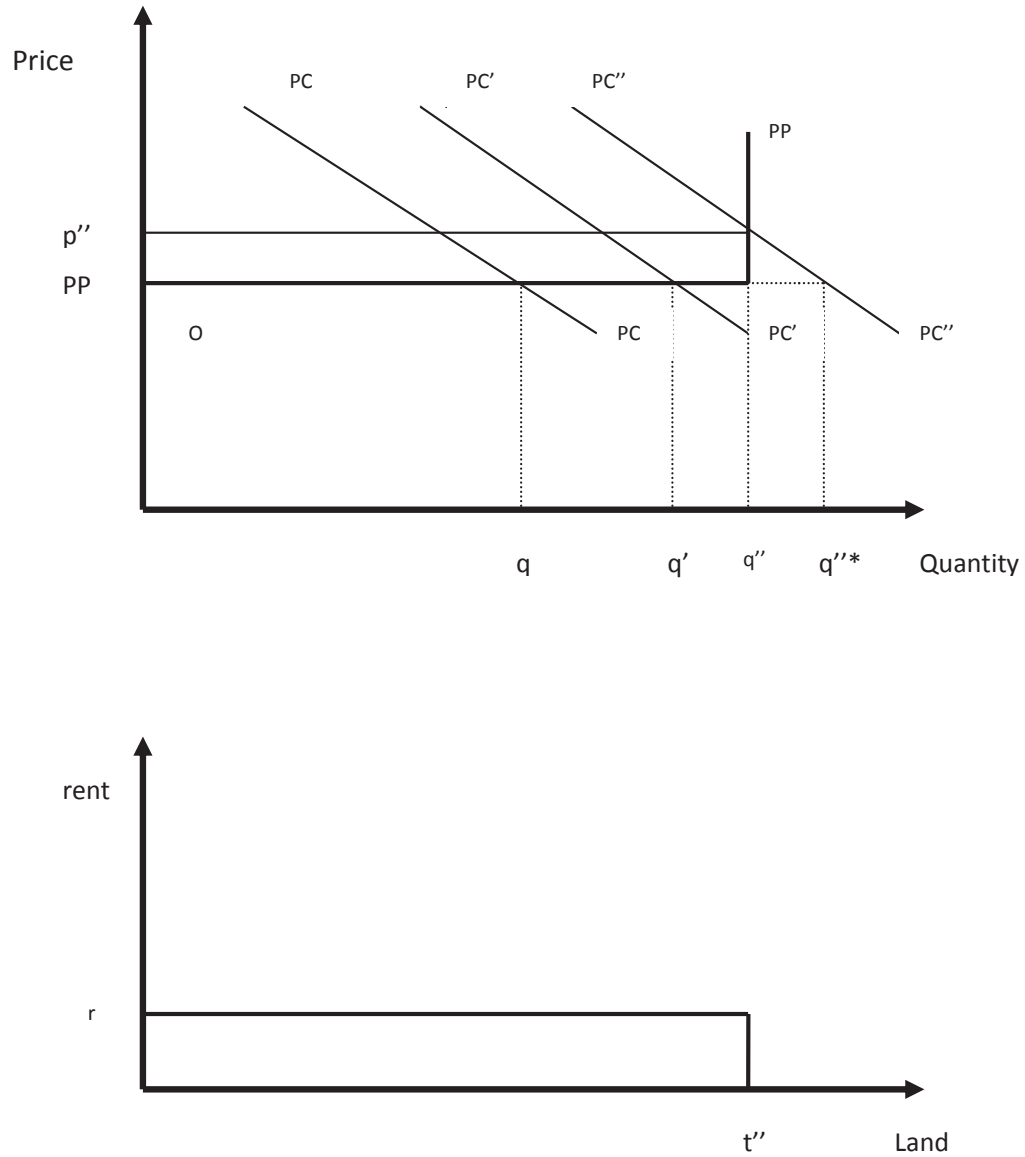


Is this what justifies the decision to focus on supply factors in the determination of prices: if what is relevant is the "natural price", in this case the Price of Production, they are the ones that are meaningful under these assumptions of full competition and unlimited possibilities of expanding production. It is not that demand is ignored: it influences the short-term, and certainly involves changes in the medium term in the quantities traded. But for the formation of the Price of Production is assumed that the productive adjustments of the producers are taken place unhindered.

Now let us examine the price formation in circumstances in which the eventual scarcity of land operates as a barrier to the expansion of agricultural production. We will initially assume that the land is homogeneous and has no productive differences. If there is full availability of it to expand production, the branch of agriculture behaves as the general case we just evoked. In Figure 2.6 if we pass from **PC-PC** to **PC'PC'** the quantity of goods supplied increases, and the transaction price must converge at the same previous Price of Production. But suppose that at the point **q"** land is exhausted. From that point on, agricultural production cannot expand even if there were capitalists eager to do it, because there is no land available for it. But still the demand continues to increase. This can be represented by a shift of the Curve of Price of Circulation **PC"PC"**. The result, as we can see, is that the price resulting from this interaction raises to **p"**, which is above the Price of Production. The difference with the previous case is that this gap cannot be filled by the competition even in the medium term. To do that, it would be needed to expand production to **q"*** although the lack of additional land does not permit that. The capitalists who have access to these scarce land, and therefore that can produce, would obtain, in principle, as extraordinary profit, the difference between **p'** and **PP**. But, as this result depends entirely in the capability of using the land, and who controls this possibility is precisely its legal owner, the latter may condition this access to the payment of this exceptional profit under the form of a rent.

Figure 2.6

Increase in transaction price of agricultural products face to a scarcity of land



The bottom of the figure illustrates the structure of rents corresponding to the top. The abscissa shows the lands used (each point is a plot corresponding to a capitalist in the corresponding axis of the upper part of the figure). On the y-axis is shown the amount of rent for each field, which is nothing but the translation of the distance between **p"** and the price of production in the upper section. In this case all fields have the same magnitude of rent. The point **t"** shows the edge of the available land.

As can be seen, this way of representing this interaction permits to visualize the emergence of rent regardless of the heterogeneity of the different terrains, which means that it is relevant to explain its presence even in the "marginal" land. For this result is not necessary a particularly strong concentration of land ownership nor the possibility of collusion between the individual owners. However it is necessary that there is a shortage of land in the sense that its quantitative limitation hinders the expansion of production.

Note, on the other hand, that this allows to represent the Marx intuition about the fact that the amount of this rent is not unlimited nor unilaterally dependent on the willingness of landowners. Our presentation of the Curve of Price of Circulation helps to set the level of **p"** and thus involves the "conditions of demand" of which Marx speaks, and that are involved in the determination of this magnitude.

This is not inconsistent with the possibility that the deliberate action of the proprietors may affect the existence and amount of the rent, which appears to be the reference that Marx has in mind in his formulation. Concerted action by the owners can influence, but here we can examine this more precisely: this practice bears fruit in insofar as it can generate what might be called "induced" land shortage. This would apply to situations, rather rare, of absolute monopoly, or an acute concentration of ownership that allows the owners to retain some idle or weakly exploited plots to put in value others.

Another concrete historical event is what brings up P. Ph Rey. In a composite agrarian structure in which converge capitalist and non-capitalist (feudal) producers, from the point of view of the landlord the minimum rent at which he will be willing to cede his land to a capitalist producer is equivalent to that pre-capitalist rent that could offer the servile producer, which is not governed by the strict conditions of market competition. The pre-capitalist option supports the retention power as long as the result of scarcity is sufficient to raise the price above the price of production of capitalist exploitation: if not, the land will be cultivated entirely by non-capitalist producers.

Marx seems to make reference to the British situation of his time, which has elements of the previous two: the landowners, with feudal origin, had accumulated vast extensions of land. It seems that they didn't operate with feudal relations of productions since a long time, but their concrete historical trajectory allowed them to keep super structural elements that enabled them to act collectively as a class in a very active way, even in the current economic development. This was

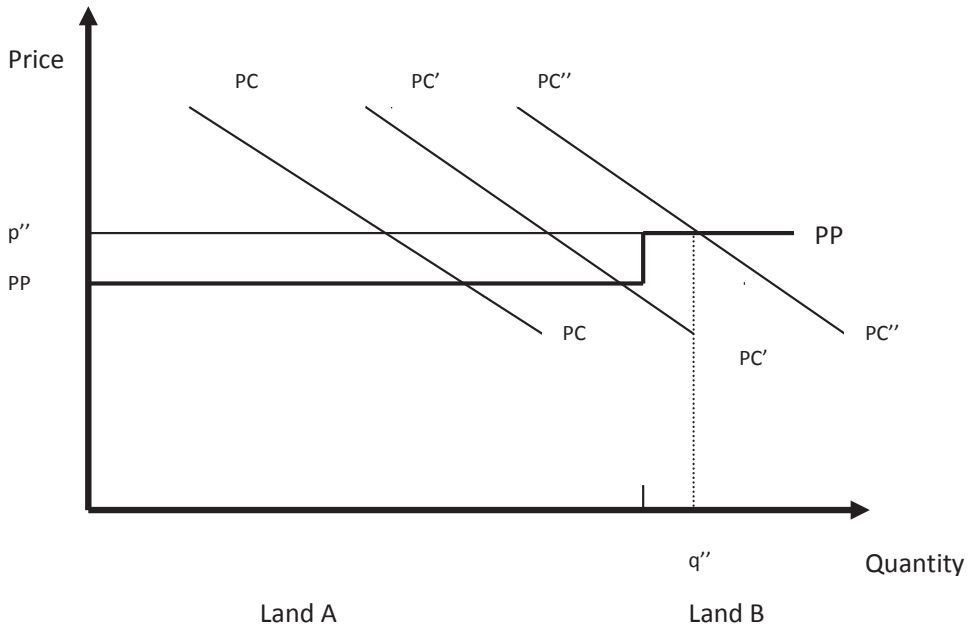
the case of the prohibition they could keep for a long time to import grain from overseas, when it was clear that the British lands were already inadequate to meet the growing demand for food in urban proletarized masses. So to speak, their political power made feasible in this case to induce a shortage of land that raised the price of agricultural products and fed the rent.

Let us examine now in this analytical framework what we have exposed as Differential Rent and let us search what differences it presents as economic mechanism with what have just stated. Suppose we have two kinds of lands, type A, which are more fertile and type B that are less. As we have seen, while the demand for agricultural goods is moderate, it would be attended by producers who use land type A. The natural price would equal the price of production of the capitalists operating there, ie, it would be a situation identical to that of a normal branch that does not use land, or agriculture when there is no shortage of land. The parcels would not generate any rent. But suppose the demand continues to grow, which may be represented in Figure 2.7 as a shift of the curve of the Price of Circulation towards **PC'PC'**. Producers can only increase the amount of goods offered at a price equal to the previous price of production until the level **q'** because from there the land type A has been exhausted and it would be necessary to employ land B that involves higher costs. In the first instance the price rises to **p'** which is higher than the previous price of production, but not high enough to make feasible the use of land B. The producers on land A will generate a rent equivalent to the difference between **p**' and Price of Production of the producers in A. As can be seen, this is a situation very similar, if not identical, to that described before.

But suppose that the demand is further extended until the curve **PC"PC"**. In this case the price reaches a level equal to the price of production of the investments in land B. So, the quantity supplied extends again until **q"** because the production on land B becomes viable. In the land A it arises a rent equivalent to the difference between **p"** and the Price of Production of the investors in A. In B the rent is void since, by definition, in these lands the transaction price is equal to the price of production of the capitalists who exploit them.

Figure 2.7

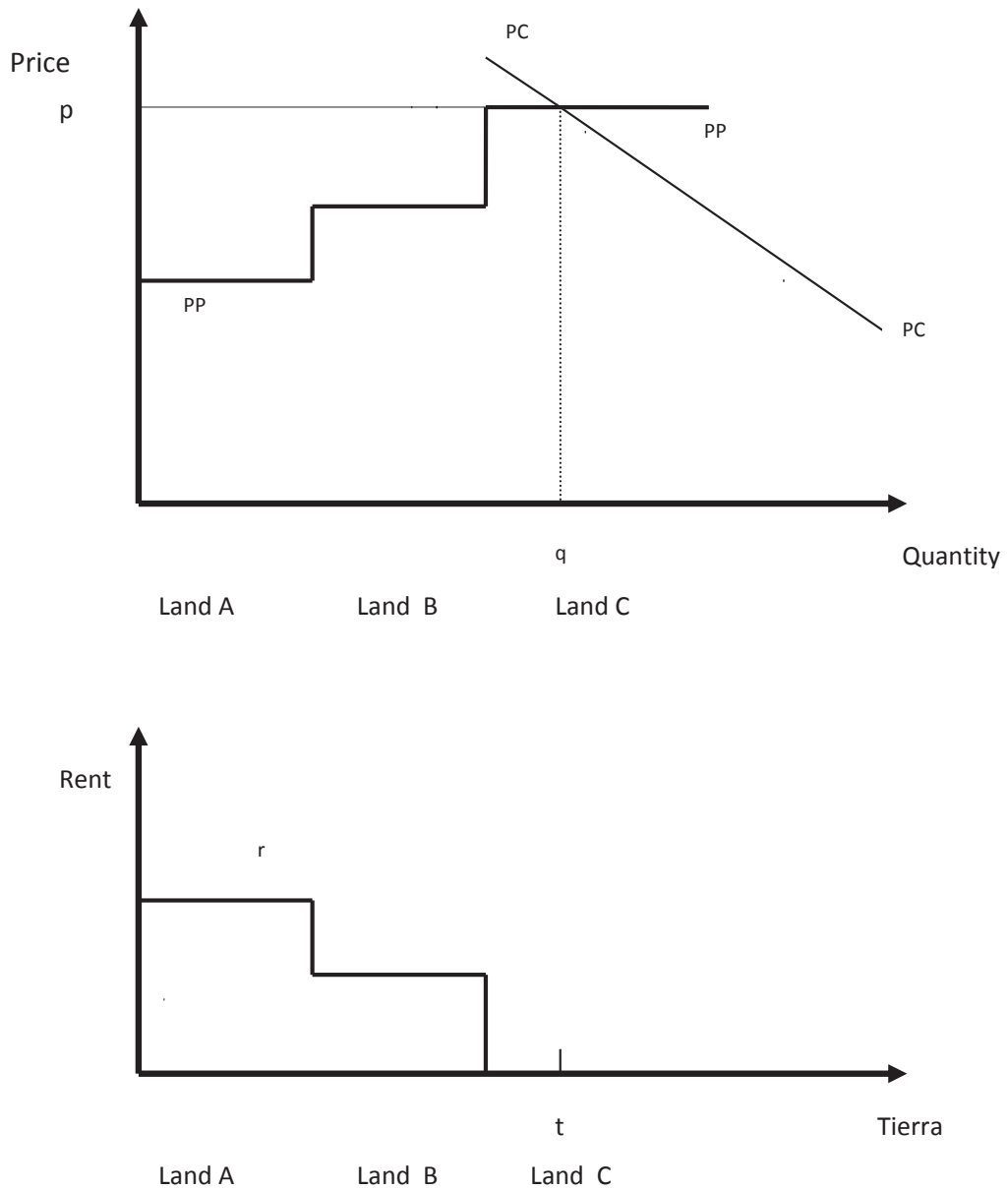
Increase in transaction price of agricultural products face to a gradual scarcity of land



This could be reiterated considering additional increases in demand that may make raise the price to make possible the exploitation of even less productive land, Type C, Type D, etc. The structure of rents that arises from that has a staggered form where the magnitude of the rent for each type of land is equal to the difference between the Individual Price of Production and that which corresponds to the land in use that can be considered marginal at that time.

Figure 2.8

Increase in transaction price of agricultural products face to a gradual scarcity of land and the emergence of staggered rents



Let us underline one aspect which basically approaches these two types of rent under consideration. The mechanism of formation of the price of the goods and of the emergence of rent is virtually the same and its base is the notion of scarcity of land. But this shortage would be presented in two ways: "absolute" scarcity in the first case, because production cannot be extended

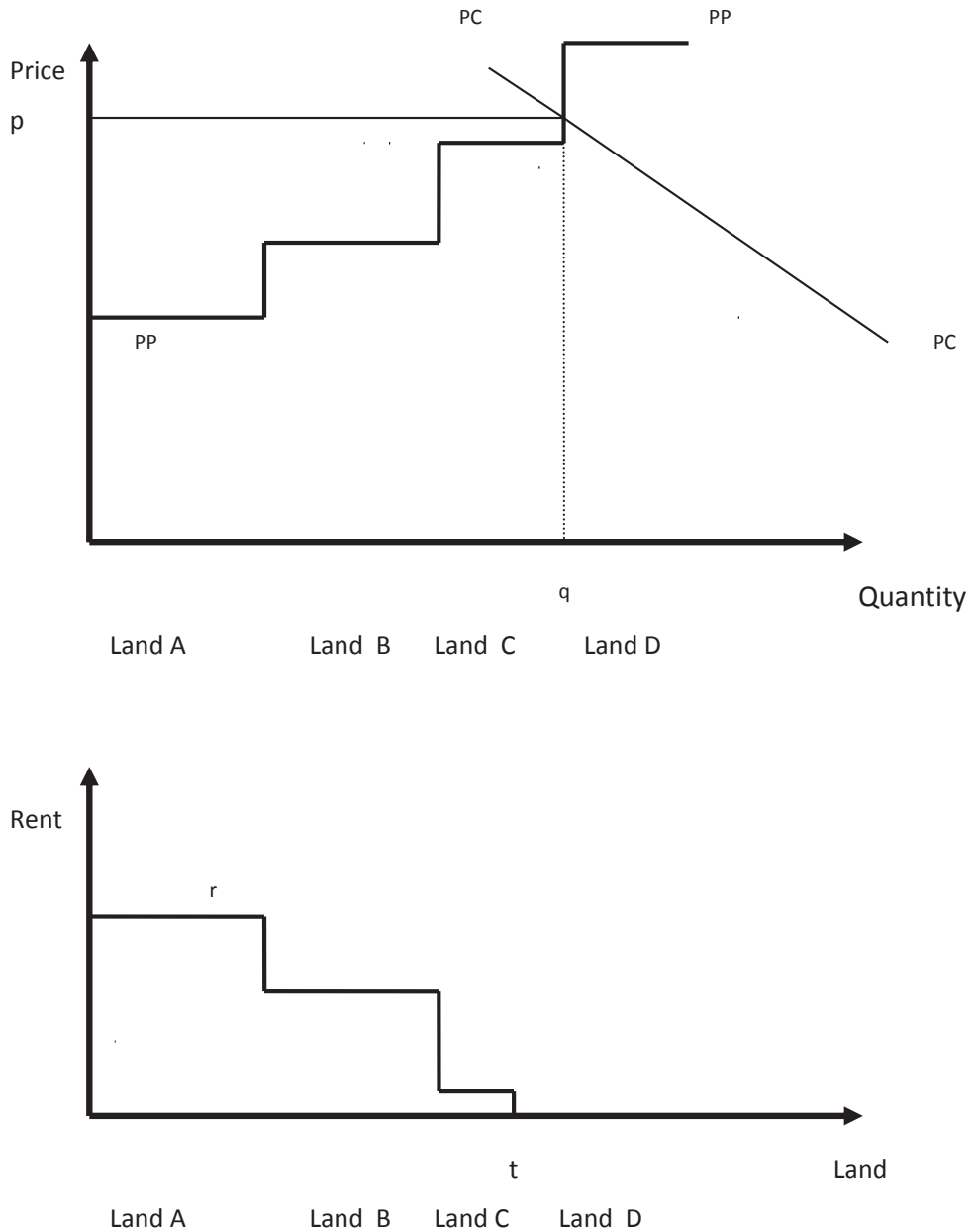
in any way (although we will introduce below some nuances about this character of "absolute"). And "relative" scarcity in the Differential Rent because there land also exhausts, only that the land that runs out is that of better quality. Production can be extended, alleviating relatively this shortage, but in less favorable conditions of production.

Let us note the following issue. In this way of representing the phenomenon in which we assume sets of land of different quality (A, B, C ...) the Curve of Price Production appears increasing and staggered, with horizontal sections (tracks where it is possible to have more lots of land of the type that at each time is considered marginal) and vertical sections where, even if the price of good increases, it does not do it sufficiently to let enter immediately in the market the following type of land. If the Curve of Price of Circulation intercepts the Curve of Price of Production in a horizontal section, as in Figure 2.8, the rent on the land which at that time is marginal would be zero, which is consistent with the conventional conclusion of the notion of Differential Rent. But if the curves intersect in the vertical sections of the Curve of Price of Production, as in Figure 2.9, marginal land would bear a positive rent.

If we give a temporal dimension to this, and assume that the Curve of Price of Circulation is moving to the right ("demand grows") it will cut the Curve of Price of Production in horizontal sections at times, and then, the rent on marginal land would be void; later, the interception would be in a vertical section, and the rent of the marginal land would be positive; later on one would pass to a new horizontal section and the rent in the new marginal land would be zero again, and so on. The development of the same structure of rents would lead to the intermittent existence and disappearance of positive or zero rent in marginal lands at successive moments.

Figure 2.9

Temporal successionof null and positive rents on marginal land

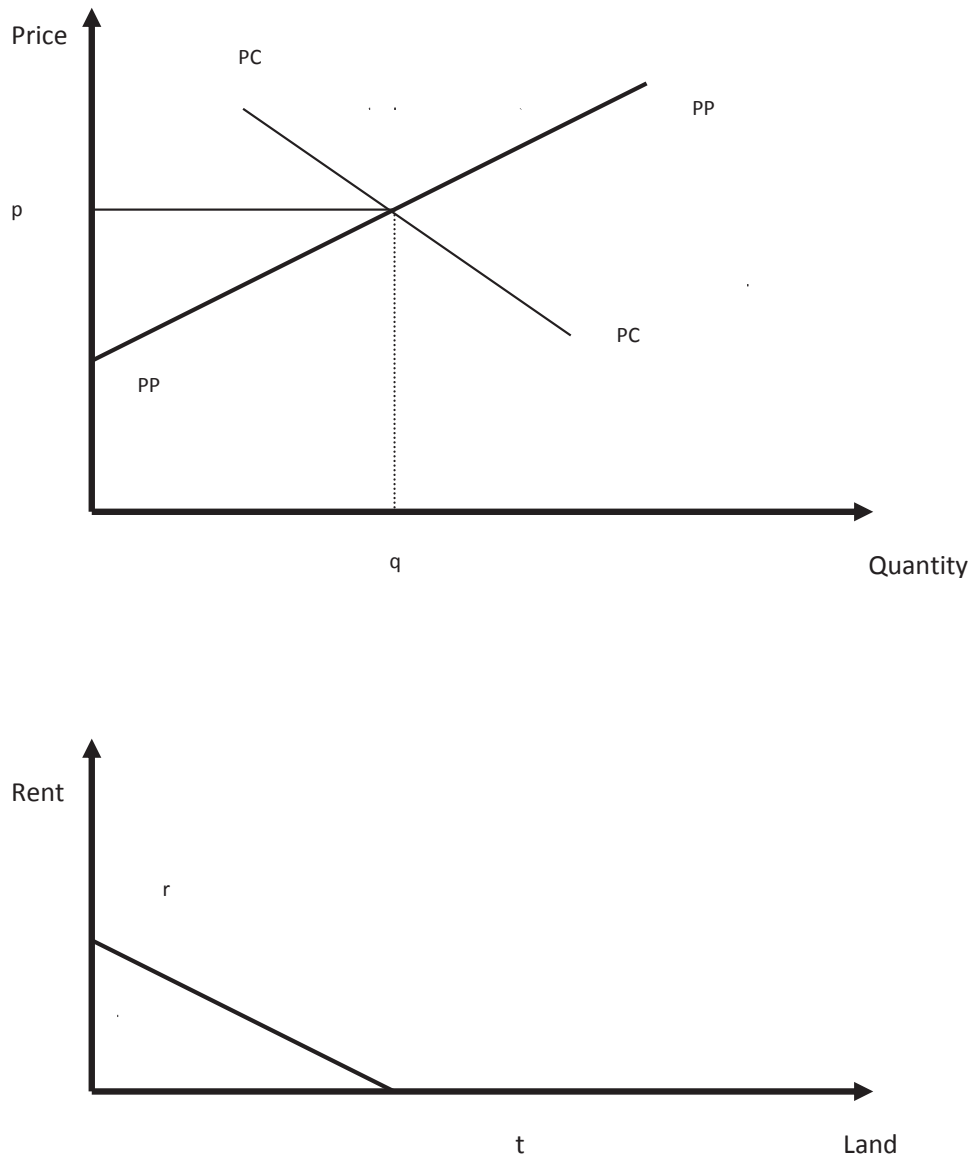


The most familiar presentation of the Curve of Price of Production in agriculture has a growing and relatively continuous form. If the conditions of fertility and location are combined, the first producer will use the most favorable parcel according with these two concepts; the second most likely will use a slightly longer far field, etc. The horizontal axis shows, at the top section, the

producers ordained according to the progression in the quality of land, and at the bottom, the lands ranked by this same criterion. If plots are used with a quality that declines gradually, the result is a Curve of Price of Production increasing and continuous and a structure of rents continuous and downward (Figure 2.10). This is the conventional way to show a structure of rents with Differential Rent. The marginal land, at the point **t**, would have a rent with zero magnitude.

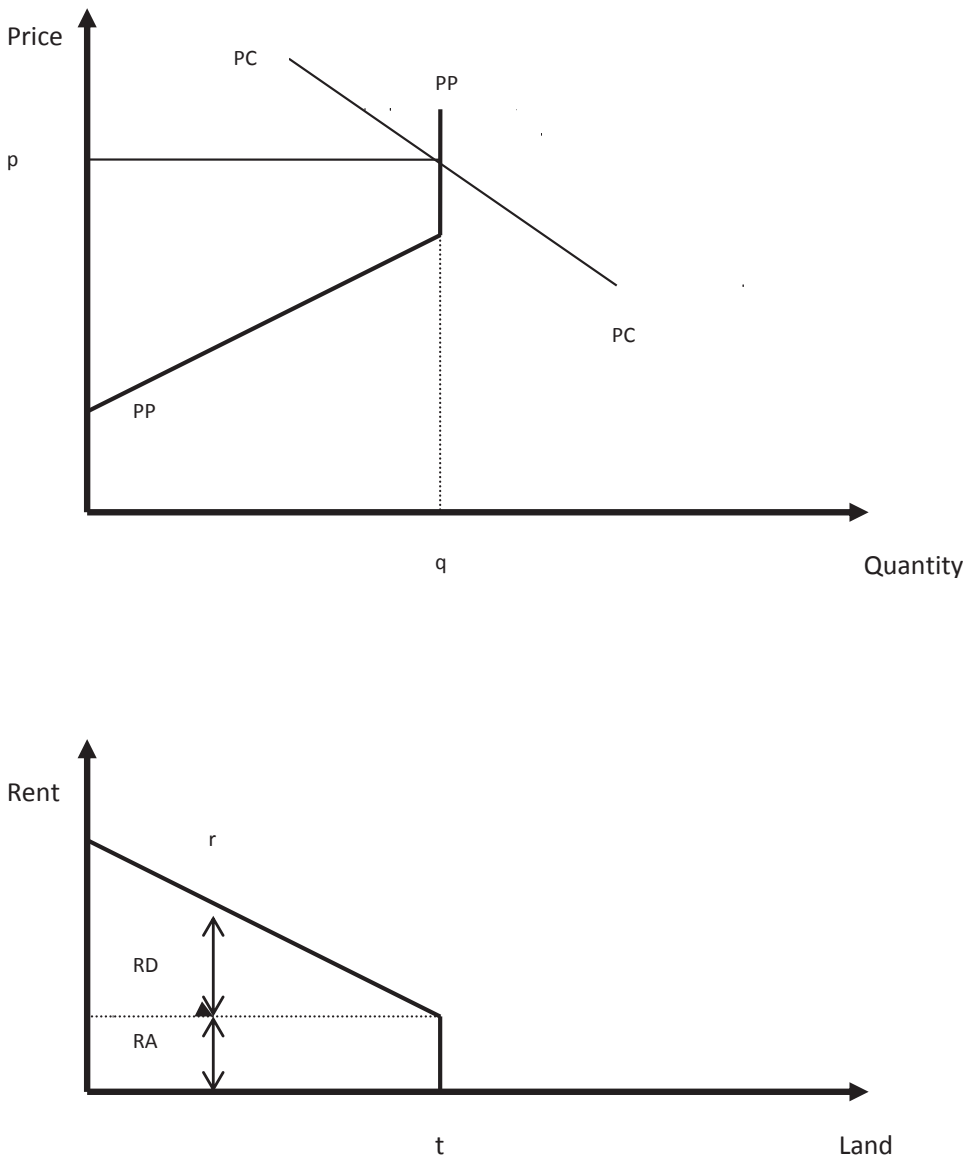
Figure 2.10

Structure of rents with only Differential Rent



However, it is possible that here may appear some vertical sections of the Curve of Price of Production. It may be thought that production can expand using land whose quality declines gradually, but beyond a point, for example **t** in Figure 2.11 no additional similar lands are available. From there on although the price rises, the quantity produced cannot expand. All rents rise, including that of the marginal land which acquires a positive magnitude. As can be seen, we came out in the representation that is familiar, which consists in a structure of rents with Differential and Absolute rents. We can call Differential Rent to the gradual section of the curve of rent, and Absolute Rent to the fixed part.

Figure 2.11 Structure of rents with Absolute and Differential Rent



At this point, however, we see that it is difficult to keep the assertion that the two types of rent are different economic categories that only overlap in their operation. The common ground of the two seems to be the scarcity of land whose only difference is that one is "relative" and the other "absolute". We can conclude instead that both forms of rent are quantitative expressions of a single economic mechanism. Both can be represented in a unified manner and the distinction between Absolute and Differential Rent seems to obey to peculiarities in the shape of the Curve of Price of Production, which eventually has horizontal sections (expressing that more batches of the same type of soil are available), ie inclined sections of gradual growth (which show that production can be expanded but which involve land with gradually higher costs) and vertical sections (which show a discontinuity in the type of land available) .

Assume that the direction of causality between the price of agricultural produce and land rent changes in vertical and sloped sections of the Curve of Price of Production does not seem to make much sense. They are, we repeat, expressions of a single mechanism, and here it is also conceivable that positive and null rents on marginal land could alternate along time.

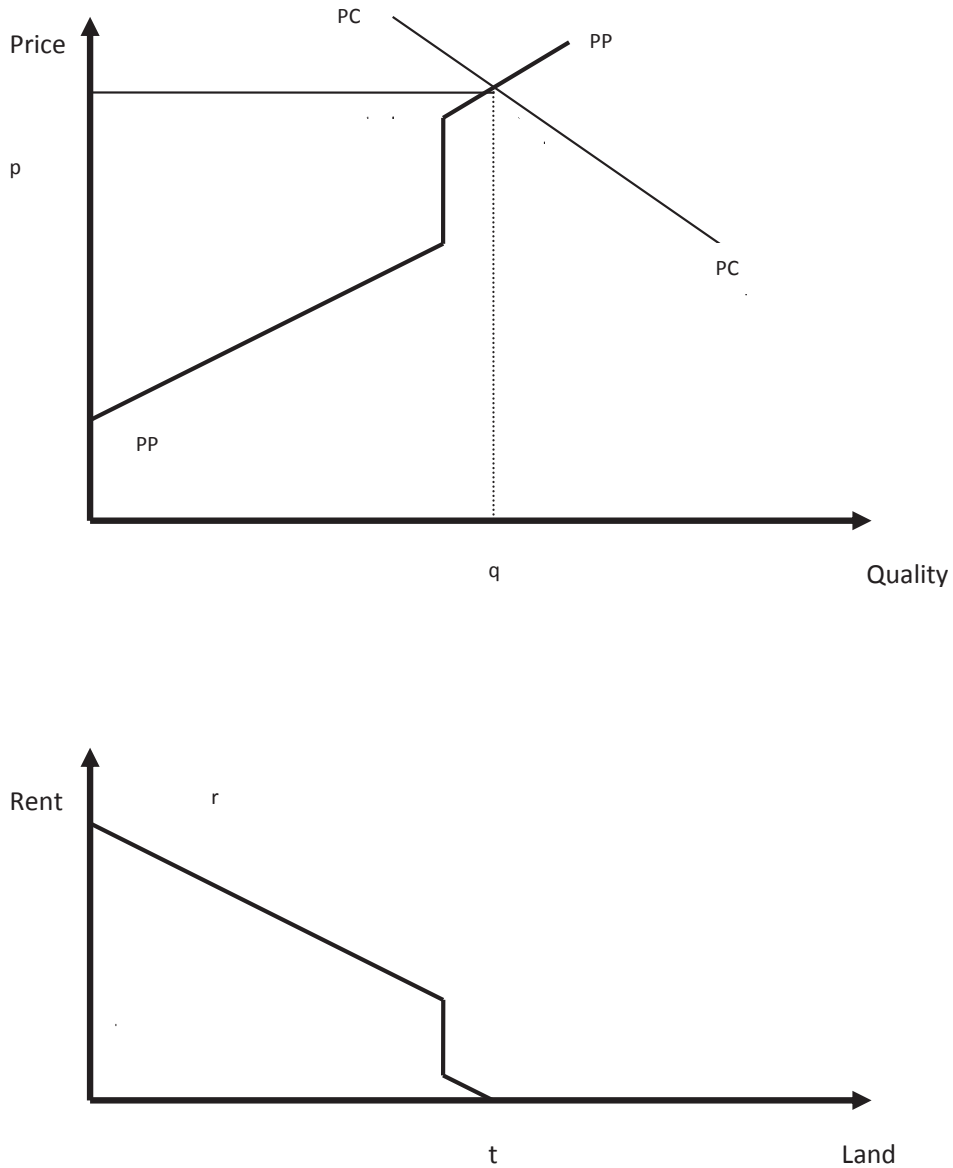
Let us connect this with the historical reference that seems to have in mind Marx for his reflection, the British agriculture of his time. Figure 2.10 that shows a structure of rents with only Differential Rent and in which marginal land has a zero rent, may correspond to an initial situation in which demand for agricultural goods made necessary the gradual introduction of lands of diminishing quality, but did not exhaust the totality of British land.

What appears in Figure 2.11 would be a further situation in which all the lands of the island have been occupied and the demand of agricultural goods continues to expand, driving up their price and generating a rent even in the last British farm. We could say that this is an "absolute" scarcity of land and call with this appellation the rent in the marginal land. But clearly, strictly speaking not all lands are exhausted. Beyond the sea, in continental Europe or America, there was more land that could have been cultivated to produce agricultural goods for British consumption. This becomes possible only when the price would rise further up and could absorb the cost of shipping

When this happens, which is illustrated in Figure 2.12, this makes worth incorporating the overseas lands and they become the new marginal lands. As we see, we go from a situation in which the marginal lands, the meanest British soil, have a positive rent (which could be called Absolute Rent) to one in which the new marginal overseas land, get a zero rent. In the worst British lands

the rent that emerges there would pass from Absolute to Differential Rent. This mutation could not be attributed to a change of nature in the economic processes involved, because, as we see, it is the result of the deploying of the same mechanism.

Figure 2.12
Temporal successionof null and positive rents on marginal land



The conclusion, of course, is that we must abandon the idea that Differential and Absolute Rents are essentially different economic facts, and we rather should take them as expressions of a single phenomenon, whose core is the role of the scarcity of land (either absolute or

relative) to prevent the expansion of the production of agricultural goods in the same previous conditions.

Let us close this section with a discussion of two topics that arise from this development. The first one is the actual possibility of the existence of a null rent on marginal lands, which seemed something rather inconceivable for Marx and was one of the starting points of his reflection. Let us note that in what has been presented appears explicable the eventual emergence of positive rent on land considered marginal (when the curves of Price of Production and Price of Circulation cut into vertical sections of the latter, in other words, when there is a discontinuity in the quality of available land). But this is only one possible case. The other one is that marginal land actually gets zero rents, which theoretically would be recurring in time. The truth is that this is absolutely consistent with the empirical perception. When we say that the lands have been exhausted "absolutely" we refer to a country, a region, to something spatially limited. Paradoxically, it is a relative consideration. So far at least not all the lands of the planet have been exploited and there are huge tracts whose exploitation is not economically viable and nobody is willing to pay anything for their use. Ie their rent is zero. Sometimes private property is present in those lands, which can be explained by the expectation that rents may appear in the future (and this may bring out a "anticipation price"). But there are lands with zero rent. ¿Does this dislocate the institution of private ownership of land? No way. Although there are marginal land unexploited, land ownership consistent with capitalist relations may exist in areas where rent is positive. One can even say that structurally the very existence of positive rent *generates* the private ownership of land, which is nothing other than the power to collect the rent.

This leads us precisely to the next topic, the relationship between scarcity of land and property. Marx, at least in his analysis of the Absolute Rent and the Monopoly Rent, argues that it is the private ownership of land that generates its scarcity, and by this way generates the rent.

As we have seen above, from this perspective, situations in which the deliberate action of landowners achieve growing land prices by imposing induced scarcity are not inconceivable. But we must make two observations. The first is that such action would not necessarily affect exclusively the "absolute rent" if by that we mean what is associated with the discontinuous portion of the Curve of Price of Production. It is quite conceivable that if the landowners kept idle the best land, production have to scroll towards worst lands with higher costs and this does raise the price of agricultural goods and the land rents. But this can occur in a situation where the rent of the marginal land is zero, and the action of landlords would oblige an expansion of the agricultural

frontier incorporating land that otherwise would not be put into production. But this can occur in the absence of "absolute rent" and thus, impacts the magnitude of the "differential rent", in the sense that it is absent a discontinuity in the quality of land: this only makes move upward the curve of gradual rents.

The second comment is that this situation where the owners induce unilaterally a scarcity of land is an event that requires relatively exceptional circumstances such as the extreme concentration of land ownership or the existence of extra-economic privileges of the landlords as a class. While these are cases that have social and historical significance, they are not a structural result of the operation of capitalist relations in agriculture nor of the land markets.

The general case must be thought precisely through an inverse causality. The characteristics of the land are not reproducible at will by individual capitalists, ie the land becomes eventually scarce in the sense we have discussed here, and this generates exceptional gains that competition does not dissolve. Then, the scope of competition extends toward capturing these exceptional gains. This takes a mercantile form through private property to the extent that the latter allows the control of the irreproducible aspects of land that are relevant for production. This allows the conversion of the extraordinary profits in rent. If we add the transmissibility of this legal dominion over the land, the requirements are completed so that the land can function as a commodity, ie that can be owned and traded. As mentioned, which is appropriated and traded is basically the privilege of capturing the rent that arises from the operation of capitalist relations in agriculture before the mentioned land features.

But this legal regime consistent with the logic of capital is a historic construction. In the case of the classical development of capitalism in Europe, it existed the favorable antecedent of the feudal property, but the latter had to be transformed and adapted. In other historical variants in which capital extends to territories in which the previous domain of land presented other legal traits, the operation of capitalist relations also require their transformation into patterns consistent with capital.

Then summarize the main conclusions of this section.

The first one is that the land rent as a general phenomenon is based on the scarcity of land in the branches they need it for production (both in the "relative" or "absolute" sense of this scarcity) that generates permanent exceptional profits that competition cannot dissolve.

The economic ownership appears as the mechanism that transmits the exceptional profits from the agricultural capitalist to the legal owner of the land, provided that the aforementioned circumstance of scarcity is present.

Both Differential and Absolute Rent are part of this unique economic mechanism, and actually they are quantitative expressions of it. Therefore they share a basic substrate, and in the two, both scarcity and property play the same role. Therefore, we cannot speak of essentially different categories.

Given their quantitative nature, in the dynamic dimension of a structure of rents, the sections of "gradual scarcity" and "discontinuous scarcity" (which are assimilated respectively to the Differential and Absolute Rent) alternate and combine into a single mechanism.

It is entirely plausible that there are lands with zero rent, without this calls into question the operation of private ownership of land, which has economic sense for land with positive rent. The operation of a structure of rents makes thinkable the alternation of situations where the "marginal" lands of each moment may have positive or zero rent.

The property of land as a social phenomenon can affect the magnitude of rent if it can induce a scarcity of land in the sense evoked here. Its impact on land prices is not confined to the Absolute Rent (the discontinuous portion of the succession of rents) but extends to the Differential Rent (continuous portion in the gradation of rents).

From this it follows that seems not to make sense differentiate between policy instruments that have impact on one or another form of rent.

2.4 General reformulation of the mechanism of Land Rent in capitalism

In this section we present a proposal to reformulate the category of land rent that seeks to present in a net manner the related basic notions in the Marxist theoretical tradition, purging it of what we believe are inaccuracies, and trying to enhance its scope. I will try to articulate the most important conclusions we have drawn from the discussions of the above (I apologize if by doing

this I appear repetitive) and my aim is to present a version of this notion, that should be consistent with the current state of this conceptual apparatus and that can be useful for the general analysis I intend to make.

The first aspect that we must discuss is the location of this category, the land rent, in the Marxist analytical device. It is a topic of importance because as we have seen, some of the misunderstandings about this seem to emerge from a mischaracterization of this issue.

For the analysis of the capitalist economic structure, Marx employs an approach known in this tradition as a scheme of hierarchical levels of abstraction. It consists in starting with a very simplified and abstract representation of what is considered the substantial and basic elements of the phenomenon that is object of study, in principle excluding other aspects that do not play that role. The aim of this is to make a clear reflection on these essential elements, isolating them from other components that may interfere with the understanding of the former. Once the main conclusions are drawn from this analysis is undertaken a path towards concretion. This is attempted in a gradual and systematic way: a determinant that has been excluded in the initial procedure and is considered to be subsequent in order of importance is reintroduced. With this, one can think with a framework of analysis a little more complex, but conceptually controlling this increase in complexity. In this way, it is constructed a scale of "levels of abstraction" that claim to be articulated and that is ordered from the most general and abstract to the more specific and concrete, to reach a representation of reality that makes it possible to act on it, but based on its thorough understanding. The differentiation between these levels of analysis and its methodological concatenation are a key part for this procedure.

In the exposition that Marx makes in Capital, we can distinguish the first three of these levels of abstraction. In the initial and most basic one, corresponding to the first chapters, Marx discusses the analysis of what he considers the essential matrix of capitalist society, its market character. Thus he analyzes the mercantile division of labor (the "Theory of the commodity") and its relevant aspects: value, exchange, realization, money, etc. For doing that, he uses a highly simplified representation of the economy, in which participants are simple commodity agents operating in full competition. The overall labor is embodied in its quality of abstract labor as value and he claims that the prices of individual goods, as a result of competition under these assumptions, is governed by the portion of this abstract labor required for their production. This would be the "natural price" at which converge transaction prices, ie it is the most basic determinant of price formation.

A second level of abstraction immediately thereafter corresponds to the analysis of exploitation in capitalist society (the "Theory of Surplus Value"). Under the market division of labor discussed above, in presence of certain circumstances it is possible to understand the differentiation of agents in their modern categories: capitalists and salaried workers. Marx presents an explanation of the basic determinants of this process. A crucial difference at this level of abstraction is that here the total value provided by the labor of the workers is not entirely appropriate for them, since that a portion, the surplus value is captured by the capitalists. At this level, the prices of goods remain regulated by the abstract social labor required to produce them. That is what is known as the "Values".

At the third level of abstraction, Marx introduces the breakdown of the economy in several branches or "departments" to treat crucial aspects of the process of accumulation. Therefore these sectors are classified according to the role that their products play in this process: productive goods (intended to operate as Constant Capital), goods consumed by workers or "wages goods" (which operate as Variable Capital) and goods consumed by the not producing classes or "luxury goods". This diversification in branches leads to the following notion: competition, through the flow of capitals between the different branches, makes the emergence of a uniform rate of profit in all of them.

In terms of price formation, the passage from the previous level of abstraction to this one implies a novelty: since the Organic Composition of Capital is not identical among the branches, to maintain a uniform rate of profit requires that the unit prices of goods do not respond directly to the amount of abstract labor required for their production, but in terms of their Price of Production, which implies, as we discussed in reference to the Transformation of Values into Prices, that changes the logic of allocation of total surplus value between capitals. Instead of being distributed in proportion to variable capital of each branch (or every capital) it will be in proportion to the amount of total capital of each of these branches or capitals. This price of production, meaning the total capital required for production increased in proportion to the uniform rate of profit, then operates as a natural price at which immediate transaction prices converge. There may be mismatches in the short term between these transaction prices and the prices of production, that generates extraordinary profits, but the operation of competition makes them converge and eliminate these exceptional gains, that become momentary.

What is proposed here is that the analysis referred to the category of land rent would constitute a level of abstraction immediately following that of the price of production. Its differentiation revolves around the following: at the level of price of production we have as implicit assumptions

that the quantity produced in all branches can be expanded without any obstacle (different from the availability of capital needed to this purpose) and that this expansion can be performed in the same conditions as the previous production. Is the notion of "infinite production" which is a useful abstract simplification to examine this phenomenon of accumulation. Moving to the next level involves relaxing this assumption and considering that there are elements outside the capital that hinder or prevent this expansion in some branches. Its effect is the creation of permanent extraordinary profits that competition between capitalists is unable to eliminate. The scarcity of this non reproducible element (which may be "relative scarcity" in the sense that for the capitalists who made this expansion cannot reproduce exactly the same productive conditions of initial capitalists, or "absolute scarcity" when no availability of this non reproducible condition obstructs the same expansion of production) affects the confrontation with demand and pushes up prices of products. The capitalists who do have access to the not reproducible factor, enjoy in a stable manner of these exceptional prices, thus seizing a further portion of surplus value compared with their peers.

This implies that the surplus value represented in these permanent extraordinary profits deviates from the general stream of surplus value that is distributed among the capitalists to generate the average rate of profit. In other words, the latter is formed by distributing among capitalists (in proportion to the magnitude of their individual capital) not all of the surplus value produced, but the amount of it after deducting these extraordinary profits that the action of competition cannot suppress. With this in mind, we can see that at this level of analysis, some "natural prices" do arise, that function as centers of gravity of the transaction prices, which could be called to Prices of Production with Rent. They constitute the way the law of value operates at this stratum.

The rationale for taking the specific relaxation of this assumption as a criterion for defining the next level of abstraction is justified because this operation makes possible to approach the analysis of a phenomenon of great importance in capitalism and that had particular relevance at the time that this reflection was originally formulated: the existence of a class of rural landowners. Indeed, agriculture is a prominent case of a branch that faces a not reproducible factor that interferes the action of capitalist to expand the production. There, the specific features of the land that are relevant to this production process, are not reproducible at will by the capital, and when they are scarce in the sense that we have indicated, hinder the expansion of agricultural production, generating exceptional profits, which exclude one portion of surplus value from the general fund of profits of the capitalists as a whole.

It is clear however that there are other cases where this same phenomenon occurs in capitalism and have been taking on greater importance in recent times: the mining activity in which the availability of minerals and various technical conditions for extraction in different portions of the subsoil have a similar role; electromagnetic frequencies that are crucial for contemporary communication techniques, etc. And of course, there is the remarkable case of the activities taking place in cities and require urban land: that is the subject of this text.

The role of property could be stated as follows. If in the legal structure it exists the possibility of a control on the irreproducible features that are at the base of the permanent extraordinary profits, it can arise economically an unfolding in the agents involved in this process. When this circumstance is present, is not necessarily required to be the direct investor to enjoy the mentioned extraordinary profits: who gets the legal property of these not reproducible circumstances can cede their access to a producer agent. This will be done, of course, in exchange for the assignment by the agent of part or all of the extraordinary profit, concomitant with this access (competition makes that this transference reaches the totality of the extraordinary profit). Thus, the extraordinary profit becomes rent. Whoever receives this portion of surplus value is no longer then a capitalist producer, but just a landowner. He can get this rent by virtue of his legal ownership.

Of course, in order that this legal ownership can create the possibility of receiving a rent, it is necessary the existence of an extraordinary profit that can become rent. And for this extraordinary profit occurs, it is required that irreproducible conditions of production effectively hinder the expansion of the quantity of produced goods, ie it is needed that these productive conditions be scarce, in the meaning we give to this term. Otherwise, legal ownership, even of productive conditions that are not replicable, has no economic impact.

The historical case examined by Marx had an antecedent particularly favorable for the operation of the mechanism thus described: in the Old Regime, with its feudal origin, there was a statute of private ownership of land that allowed the conversion of extraordinary profit in rent. The replacement of servile productive agents by capitalist agricultural entrepreneurs, in an economy where agriculture had a huge weight, and the capture under the form of rents of these extraordinary profits (which replaced the "feudal" or "pre-capitalist" rent) allowed the consolidation of a powerful class of landowners whose *raison d'etre* was no longer feudal relations of production, but capitalist.

If this legal domain on irreproducible conditions of production acquires another feature, the transmissibility, the requirements for full adaptation of this relationship to capitalist logic is complete. If the legal control over these not reproducible aspects can be transmitted and freely alienated, in fact this can be done on market terms. These not reproducible conditions can be traded: what is traded is actually the right to capture the rent that is associated with this property. Thus, these not reproducible conditions, which by their very definition are not the result of social labor, acquire the status of "commodities": get a price and are exchanged for others that condense value. This is the explanation given in this tradition of the paradox of "goods" that acquire a price and do not have value.

In Marx's analysis on agriculture in the classical development of capitalism, this transmissibility (which had to be introduced, as in feudal law dominion over the land was not transmissible freely) generated the emergence of the price of land with a particularity: as agricultural rent is mainly periodic, the price of land appears as the capitalization of that rent. What is traded when the land is purchased and sold is the right to appropriate these periodical rents associated with the legal land ownership.

It is good to note that in those circumstances where the legal background is not suitable for the operation of this device, capitalist relations tend to adapt it, or even create it ex nihilo. For example, the expansion of capitalist agriculture to areas of the world where the original property is different from the feudal (or even in areas not occupied) pops up a private property regime in which land functions as a commodity. This is particularly relevant to understand the emergence, with new technologies, of this mechanism of rent in realms which were not subject to private property: for example, today, control of electromagnetic frequencies constitutes very considerable patrimonies, as far as it implies the capture of rents of great magnitude.

It should also be noted that this approach does not underestimate the possibility that the deliberate action of the owners might affect the magnitude of rent. However, for that to take place it is necessary that those activities which can be supported by the structure of the land market (concentrated ownership) or extra-economic privileges of the owners, actually can induce a shortage of the not reproducible elements and generate the excess profits.

Marx's original exposition of the Theory of Rent developed these general notions for the specific case of agriculture. The categories that Marx forged meet the technical and social characteristics of this production process. Hence his reflection on the differential fertility of the

land, on the disparities in transport costs linked to different locations of the lots, on the form taken by the intensity in the application of capital over land and on the discontinuities in the availability of land.

In order to its more general use is necessary to make some clarifications about it, which are a result of its analysis and criticism. From this discussion it must be concluded that the rent as such is a mechanism that is intrinsic to the operation of competition in capitalism. For its understanding is not necessary any restrictive assumption about the persistence of previous modes of production, or on a peculiar phase of capitalism in which competition operates with restrictions: they are unnecessary therefore considerations such as the unequal distribution of capital among capitalists, one abnormally low organic composition of capital in agriculture, a monopolistic or oligopolistic concentration of land ownership or extra- economic powers of landlords to influence the market for agricultural products. Moreover, it can be said that the rent plays a regulatory role of competition before the existence of these disturbances on the accumulation (the elements of it that are not reproducible). The rent regulates in economic terms the flow of capitals to the branches where these disturbances generated extraordinary profits, in this case agriculture, and economically regulates the distribution of land of different yield between capitalists. This, of course, does not eliminate the essentially parasitic nature of this land ownership, nor their possible role as obstacle to the accumulation in general, nor the contradictions it engenders between landlords and capitalists. The different types of rent that are distinguished in this analysis should be interpreted as forms of quantitative presentation of a single mechanism.

Then, the task that appears here, is to grasp how these general categories embody in a case different to rural land, for our purposes, the case of urban land. It is what I intend to undertake in the following chapters.

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