DETERMINATION OF MARKET VALUE WITHIN A FRAMEWORK OF STRUCTURAL MEDIUM-RUN DISEQUILIBRIUM (DRAFT)

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INTRODUCTION

The magnitude of value is defined by Marx as the labor-time socially necessary for the production and reproduction of commodities under the normal production conditions for a given society (Marx, vol. 1, chp. 1). When he considers the determinations of competition, the magnitude of value is specified as *average social value* (market value defined as the weighed average of individual values) -which incorporates the determinations of intrasectoral competition (Marx, vol. 3, chp. 10)- and as *price of production* -which simultaneously incorporates the determinations of intrasectoral and intersectoral competition (Marx, vol. 3, chp. 9). As forms of manifestation, in different levels of abstraction, of socially necessary labor-time, average social value and price of production are considered by Marx as the gravitation center, also in different levels of abstraction, of market prices (Marx, vol. 3, chp. 10).

The negative hypothesis of this paper is that average social value -defined as the weighed average of individual values- and price of production -defined as the sum of cost-price plus average profit- are categories that, because of their quantitative determination, do not express adequately *in the analytical level of competition* the socially necessary labor-time for the *production and reproduction* of commodities. Consequently, these categories can not explain satisfactorily, on the grounds of the normal conditions of production and reproduction, the gravitation process of market prices.

This double inadequacy greatly hinders the explanatory capability of Marxist theory of labor-value in several ways. One example is the difficulty in explaining the formation of absolute rent without making any assumption about the capital composition of sectors which pay rent, or without any reference to market prices. Another example is the fact that average social value and price of production can only function as the gravitation center of market prices in the long-run (Moseley, 1999) which, however, is not the time horizon in which the *normal* conditions of production and reproduction of commodities are determined.

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The explanatory limitations of average social value and of price of production are based on the fact that both categories incorporate the determinations of intrasectoral competition only partially: they contemplate the relations of competition within each sector *formally*, but not in their *quantitative* contents. The positive hypothesis of this paper is that, to adequately categorize the magnitude of value in the analytical level of competition, it is necessary to incorporate the quantitative determinations of intrasectoral competition.

Marx himself was aware of the above inadequacy, as well as of the general course to correct it. Although in his works he did not cope systematically with this problem, in some of its passages a general analytical framework to solve it, surely unfinished, can be traced. His elaboration of the category *market value* (Marx, vol. 3, chp. 10) is centered in the analysis of competition relations within each sector, not only in their formal aspect, but also in the quantitative one. However, his exposition is not able to clarify the specific difference between market value and average social value. Likewise, his elaboration of the category *market price of production* (Marx, vol. 3, chp. 38) is aimed to resolve the specification of the gravitation center of market prices in sectors that pay rent, in which the determination of the magnitude of value is accomplished on the basis of intrasectoral competition relations with a very particular quantitative content, inasmuch as the utilization of non-reproducible natural resources imposes objective restrictions to normal levels of production.

Based on the distinction of the specificity of market value in relation with average social value and on the recuperation of the category market price of production, the objectives of this paper are the following:

i) Discuss the hypothesis that the specification of the magnitude of value, either as average social value or as price of production, is inadequate, proposing an analytical framework which, through the incorporation of the quantitative determinations of intrasectoral competition, specifies the magnitude of value as market value -which differs quantitatively from average social value- and as market price of production -which differs quantitatively from price of production. These two categories express adequately, in different levels of abstraction, the socially necessary labor-time for the *production and reproduction* of commodities and, on this basis, explain adequately the gravitation process of market prices.

ii) Expound the specification of market value as an adequate expression of socially necessary labor-time in the analytical level of competition and as gravitation center of market prices. Although the general arguments and conclusions of this exposition refer only to market value, they can be extended to the specification of market price of production (Mariña, 1999).

1. INTERSECTORAL COMPETITION AND MAGNITUDE OF VALUE

The magnitude of value is determined by the normal conditions of production and reproduction of commodities. Because of the mercantile nature of capitalist production, the regular production of commodities -that is, their reproduction- is necessarily mediated by *competition* relations. Intrasectoral competition, one of the dimensions of competition, synthesizes three types of relations established simultaneously within each sector: competition among all individual capitals that manufacture the same type of commodity, among all consumers of that type of commodity and, finally, between all capitals and consumers. The interaction of these three forms of competition within each sector leads to the formation of a *unique social value* for each type of commodity, independently of the magnitudes of normal sectoral volumes of supply and demand. But it is the proportion between these two magnitudes which determines the dimension of that unique social value.

1.1. The implicit assumption of equilibrium in average social value and in price of production

The determination of the unique social value as average social value or as price of production presupposes that neither excessive productive capacities nor unsatisfied consumption needs exist. Therefore, it presupposes the exact correspondence of normal volumes of supply and demand of commodities produced in each sector.[1] At a social level, this assumption implies the existence of an *equilibrated distribution* of social labor among sectors, and this in a double manner. Firstly, it implies that the quantities of past-labor (means of production) and live-labor (labor-force) allocated in the various sectors shape a productive structure that can generate normal sectoral volumes of supply which coincide exactly with the system's material reproduction requirements (fixed capital goods, intermediate goods, wage goods). Secondly, it implies that the structure of *solvent* social demand (monetary funds for the reposition of fixed capital and intermediate goods, wages and profits), determined by the distribution of the value of total output, coincides exactly with the value of total output of the corresponding sectors; that is, it implies that the volumes of labor normally allocated, through solvent demand,

[1] *Normal* volumes of supply and demand result from the average equalization, during certain period, of the short-run fluctuations of the *effective* volumes of supply and demand.

to purchase each type of commodity coincide with the volumes of labor expressed by the value of total output of the corresponding sectors.

The assumption of equilibrium in the intersectoral distribution of social labor has been made by Marxists in two different perspectives that share one common feature: they both incorporate intrasectoral competition only in its formal (qualitative) aspect, not in the quantitative one. More abstract analysis make downright abstraction of the quantitative relation between normal volumes of supply and demand in the determination of the magnitude of value. The result is that intrasectoral competition establishes a unique social value for each type of commodity, but does not intervene at all in the determination of its dimension. The quantitative determination of average social value and of price of production exclusively by sectoral conditions of production (and, in the case of price of production, also by the general rate of profit) is, in more abstract analysis, the consequence of a simplifying *assumption*.

Less abstract analysis that explicitly incorporate the quantitative relation between normal volumes of supply and demand as a determinant of socially necessary labor-time, usually do it within a long-run time horizon. Actually, these analytical perspectives also assume the equality of normal volumes of supply and demand inasmuch as in the long-run, in which free intersectoral mobility of capitals operates absolutely, the relation between both magnitudes necessarily reaches a state of equilibrium. In these cases, the specification of the magnitude of value as average social value and as price of production, only on the basis of the sectoral conditions of production (and of the general rate of profit, in the case of price of production), has more profound theoretical implications: it appears as the long-run *result* of the competitive process.

Both of these analytical perspectives are inadequate because they account for socially necessary labor-time unilaterally: only from the point of view of normal conditions of production, but not of normal conditions of reproduction. In the first case, determination of average social value and of price of production, simply makes abstraction of the quantitative content of intrasectoral competition, while in the second case such quantitative content is dropped when the analysis is set in a long-run time horizon.

If average social value and price of production do not express adequately the magnitude of value, they can neither function as the gravitation center of market prices, center that in the framework of the law of labor-value must be determined on the basis of *normal* conditions of production and reproduction of commodities. Fluctuations of market prices express the *short-run* divergences of supply and demand from their normal levels. The abstraction of the quantitative relation between normal levels of supply and demand hinders any analysis of its short-run fluctuations. The analysis of market prices fluctuations in a long-run time horizon, refer them to long-run production and reproduction conditions, *which are not the normal operation conditions of capital*.

1.2. The medium-run as the time horizon for the determination of the magnitude of value

Average social value and price of production can function as gravitation center of market prices only in the long-run because only in this time horizon intersectoral capital migration renders an *equilibrium* in the intersectoral distribution of social labor and, therefore, the *equality* of sectoral profit rates (in the case of price of production). But, as mentioned above, the long-run conditions are not the normal conditions of production and reproduction of commodities and of the capitals that manufacture them.

Between the *short-run*, in which productive capacities are given, and the *long-run*, in which free mobility of capital operates fully, a *medium-run* time horizon can be delimited. This medium-run is characterized by the presence of changeable productive capacities and of *technical barriers* to free intersectoral mobility of capitals. These technical barriers configure a framework of *structural disequilibria* in the distribution of social labor among sectors and of differences in the normal sectoral profit rates in which the normal conditions of production and reproduction of commodities are determined. Therefore, the *medium-run* is the time horizon in which the magnitude of value and, hence, the gravitation center of market prices is specified as *market value* and, in a more concrete analytical level, as *market price of production*.

Within this non-equilibrium analytical framework, in which the equivalent exchange of values is based in the non-equivalent exchange of labors and in the heterogeneity of sectoral profit rates, the formation of absolute territorial rent can be explained without making any assumption concerning the capital composition of the sectors that pay rent and without any reference to market prices.

2. DETERMINATION OF MARKET VALUE

Market value, specified in a medium-run time horizon, expresses the *normal* conditions of production and reproduction. Therefore, its determination is based in the determination, at a lower level of abstraction, of average social value, also specified in a medium-run time horizon, which expresses the *normal* conditions of production.

2.1. Average social value

Although average social value is not an adequate form of expression of the magnitude of value in the plane of competition, it expresses the way in which the normal conditions of production of each type of commodity are determined upon the technical conditions of production of the different individual capitals that operate in each sector. Moreover, its determination reveals a crucial fact: that production, although carried out through formally independent private production units, is in fact social production destined to satisfy social needs.

2.1.1. Production conditions

The constitution of average social value rests on the particular conditions of production of all the productive units that compose a sector. The direct conditions of production of each productive unit depend on several factors: physical, social and cultural environments; technical characteristics of machinery and equipment, and of raw and auxiliary materials; quality of the labor-force; organization of labor and of the productive process; length of the working day and level of labor intensity; scales of production. The combination in each productive unit of all these factors determines the concrete forms of embodiment of useful-labor which, as a general rule, are different.

Different production conditions of individual productive units imply, firstly, differences in the consumption of machinery and equipment and of raw and auxiliary materials per unit of output, caused by the heterogeneity of the means of production used or by different patterns of depreciation of fixed capital and of productive consumption of intermediate goods; secondly, different levels of live-labor productivity, that is, of the mass of commodities produced per unit of live-labor and, therefore, of the requirements of live-labor per unit of output. These differences are particularly ample among productive units that operate with different technologies and/or that use labor-forces with different qualities. But they also exist when productive units operate with the same techniques and using relatively similar labor-forces.

2.1.2. Individual values

As a result of the heterogeneity in the production conditions within a sector, the quantity of labor-time -live and past- necessary to produce the same type of commodity in different productive units usually differs, as well as total costs per unit of output and surplus-value per unit of output and per unit of capital. The labor-time necessary in a particular productive unit, expression of its direct conditions of production, determines the individual value (expressed in monetary terms) of the produced commodity in that productive unit (v_i) upon the following elements:[2]

i) Live-labor requirements per unit of output (l_i) and the value of money ($1/m$) that, jointly, determine new value created per unit of output (Moseley, 1993).

ii) Fixed capital requirements per unit of output (k_i), the rate of fixed capital consumption (d_i) and its exchange-value (that, in this level of abstraction is its average social value: vs_k) that, jointly, determine the value of fixed constant capital per unit of output.

iii) Raw and auxiliary materials requirements per unit of output (a_i) and their exchange-values (which are their average social value: vs_a) that, jointly, determine the value of constant circulating capital per unit of output:

$$vi_i = d_i\, k_i\, vs_k + a_i\, vs_a + l_i\, m \qquad (1)$$

Considering that the development of the monetary expression of value (of exchange-value) through different levels of abstraction implies the transformation of the quantitative content of the magnitude of value, its important to notice that it is not the quantity of labor *actually* embodied in the means of production consumed by each individual capital, but the quantity of social labor represented by the exchange-value of the means of production which determines the past-labor necessary in each productive unit (Wolff, Callari and Roberts, 1984; Moseley, 1993; Kristjanson, 1998).

2.1.3. Competition and average social value

The coexistent individual values for the same type of commodity express the different degrees of productive efficiency of the capitals that compose the sector. In an economic system in which the articulation between social production and social consumption and, therefore, in which social reproduction is carried out in a decentralized way through the fetishized relations established in the market among multiple private and formally independent sellers and buyers, the persistence of multiple individual values for the same type of commodity as the allocation mechanism of social labor is impossible. If, hypothetically, each producer would offer its product according to its individual value, eventual buyers -with the objective of increasing their consumption- would aim their demand toward commodities offered by more efficient capitals at lower individual values. This would generate a double motion: firstly, those offering their product at higher individual values, being less efficient, would not encounter any demand, so they would have to decrease their posture to be able to sell;

[2] From hereafter, the exposition refers to the monetary expression of value.

secondly, those offering their product at a lower individual values, would potentially concentrate all demand -which they could not fully satisfy-, so they could raise their posture with the objective of increasing their total revenue and, yet, encountering enough buyers. This double motion would stop when less efficient producers decrease their selling posture down to a level which generates a volume of demand sufficient to sell all their product. This level could not be undermined by more efficient producers who would loose buyers and, therefore, end up with part of their output unsold. This is the way in which the incessantly renewed confrontation between sellers and buyers, among sellers and among buyers -that is, intrasectoral competition-, tends to establish a unique social value for each particular type of commodity (Marx, vol. 3, chp. X).

Because in this level of abstraction only sectoral conditions of production are considered, the unique social value that allows for the equalization of normal volumes of supply and demand is quantitatively determined as the average of the individual values of the different types of producers (vi_i), *weighed* by their respective share in the total mass of use-values produced (X_i/X_s), that is, as *average social value* (vs_s):

$$vs_s = \frac{\sum_{i=1}^{n} vi_i X_i}{X_s} = \frac{vs_k \sum_{i=1}^{n} dk_i X_i + vs_a \sum_{i=1}^{n} a_i X_i + m \sum_{i=1}^{n} l_i X_i}{X_s} \qquad (2)$$

Average social value results of the division of the monetary expression of the total mass of labor necessary to produce total sectoral output, past ($vs_k \sum_{i=1}^{n} dk_i X_i + vs_a \sum_{i=1}^{n} a_i X_i$) and live ($m \sum_{i=1}^{n} l_i X_i$), among the total mass of use-values produced (X_s). Therefore, the formation of average social value depends not only on the technical conditions of production, expressed through the structure of individual values associated to different capitals, but also on the normal sectoral scale of production. Inasmuch as the relative share in sectoral output of different types of producers is different for different levels of output, average social value is also different with different volumes of sectoral output.[3]

That the weighed average of individual values allows for the equalization of normal volumes of supply and demand presupposes that the social labor allocated in the sector is sufficient to satisfy the respective social need. In this level of abstraction, intrasectoral competition relations play a mere *formal* role. That is, they are a necessary condition for the formation of the unique social value, but they do not intervene in its quantitative determination. Consequently, normal production conditions appear as the *sole* quantitative determinant of unique social value, specified as average social value.

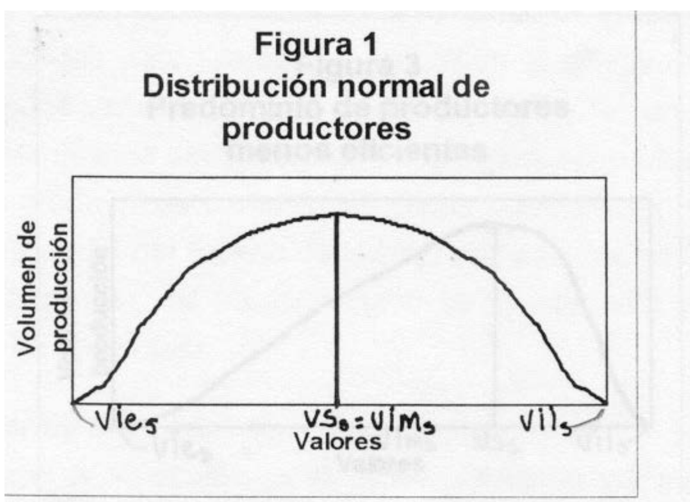
[3] For average social value to be independent of productive scales, all individual values would have to be identical, or else, the different types of productive units would have to have the same share in total output independently of the sectorial scale of production.

2.1.4. Relative share of different types of producers

In the competitive process that settles average conditions of production, the relative share in total sectoral output of each of the different types of productive units is quite significant. Individual capitals operate with relatively high, low or intermediate efficiency conditions, so their respective individual values can be relatively low, high or intermediate. Which type of production conditions actually regulate average social value depends on the share of each type of producer in the global sectoral supply. Average social value approaches the individual value of the type of capitals which regulate it, although, being an average, it can never equalize the individual value of the capitals situated in both efficiency extremes. The production conditions of the regulating capitals tend to be socially enforced as the sectoral normal conditions of production.

In statistical terms, a *normal* distribution of producers is symmetrical, firstly, if producers of intermediate efficiency predominate by contributing with the largest portion of the global mass of commodities produced and, secondly, if producers with higher and lower efficiency levels counterbalance each other by having a relatively similar share in the sectoral output. Only in this case (FIGURE 1), average social value (vs_s) is regulated by the production conditions of capitals of intermediate efficiency and, therefore, it coincides with their individual value (vim_s) (the average equals the median):

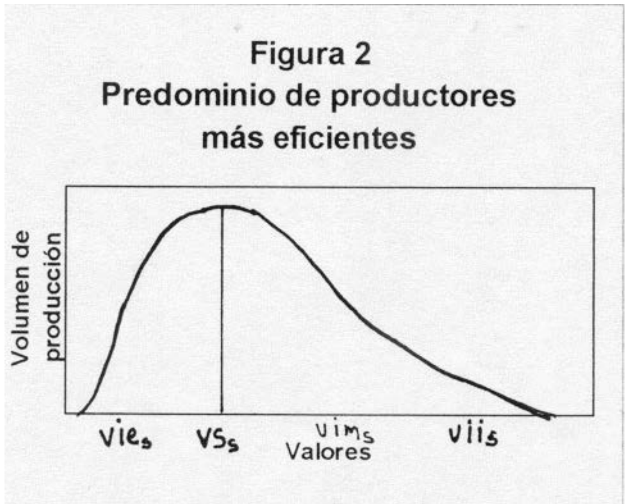
$$vs_s = vim_s \qquad (2a)$$



Cases of *asymmetrical* distribution -statistically non-normal- of the different types of producers result from the predominance, in terms of their relative share in total sectoral product, of more or less efficient producers, whose respective production conditions regulate average social value. When more efficient producers predominate

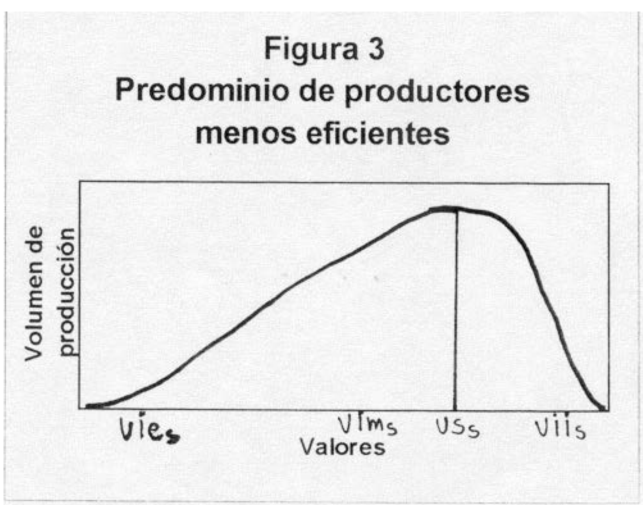
(FIGURE 2), average social value (vs_s) is lower than the individual value of the intermediate efficiency producers (vim_s) and tends to approximate (although never to equalize) the lowest individual value (vie_s):

$$vie_s < vs_s < vim_s \qquad (2b)$$



When less efficient producers predominate (FIGURE 3), average social value (vs_s) is higher than the individual value of intermediate efficiency producers (vim_s) and tends to approximate the highest individual value (vii_s).

$$vim_s < vs_s < vii_s \qquad (2c)$$



<u>2.1.5. Average social value and abstract labor</u>

The production conditions settled as *normal* by intrasectoral competition through average social value synthesize the characteristics of the sectoral productive structure:

firstly, the technical production conditions of the different types of individual capitals; secondly, the relative share in total sectoral output of each of the different types of capitals. The determination of the normal conditions of production in each sector implies the *subsumption* of particular labors to social labor. On one hand, particular labors actually incorporate as part of social labor by satisfying, as a whole, the social need for a particular commodity. On the other, the subordination of particular production conditions to social normal conditions result in the upsurge of differences between surplus-labor exploited and surplus-value generated by each individual capital. Therefore, the formation of average social constitutes the first stage of the social process of *qualitative* specification of abstract labor -the substance of value-, not as an analytical presupposition, but as a *result* of competition. The qualitative reduction of different particular labors to average abstract social labor is based in the *quantitative* comparison and equalization of the necessary labors embodied in each of the different particular productive units. At this level of abstraction, this comparison and equalization results in a first determination of socially necessary labor-time, which is specified as average social value; therefore, only in relation with sectoral production conditions.

2.2. Market value

Market value is the form of expression of socially necessary labor when the quantitative relation of normal volumes of supply and demand are considered in a medium-run time horizon, in which technical barriers to free intersectoral mobility of capital exist. In contrast with average social value, in the level of abstraction in which market value is specified intrasectoral competition relations *do* intervene in the quantitative determination of the unique social value of each type of commodity.

The formation of market value, which in general does not coincide quantitatively with average social value, expresses, as the later, the social nature of the production carried about by private capitals. Additionally, it manifests that in a market economy the distribution of social labor among different sectors generally is not equilibrated; therefore, that usually there is no exact correspondence between productive capacities and the normal volume of social need for each commodity. This implies that the average equalization, during certain period, of the *effective* volumes of supply and demand of each type of commodity is not realized through average social value, but through market value, which functions as the gravitation center of market prices.

Within an analytical perspective that only considers production conditions in the determination of value, the quantitative dissociation of market value and average social value seems contradictory. How is it that value, which is created in the production sphere, is linked with the expression "market", when no value is created in the circulation sphere? How is it that socially necessary labor-time can have other determinants than labor productivity?[4] This apparent contradiction vanishes when one considers the specific determinations of the products of labor when they are produced as commodities. Since commodities are use-values not produced to be consumed by their direct producers, but by others, their progression from products to satisfactors of needs in the consumption sphere requires the mediation of circulation and distribution. Commodities have to be sold -exchange for some quantity of money- to reach consumers. Once bought, they can demonstrate they are needed and their realization as use-values in consumption can be accomplished. But for consumers to buy commodities it is not enough that they need them. Consumers must have purchase power, which they get from their participation in the distribution of the value of total output. Therefore, although the specific use-value of a commodity is posit by the particular productive process in which it is manufactured, only through the mediation of circulation and distribution it can demonstrate its real utility; that it actually is a use-value for those who will consume it.

Likewise, the progression of labor expended in production to socially necessary abstract labor -substance of a definite magnitude of value- is not immediate, because it is also conditioned by the consumption of produced commodities. Not by the fortuitous consumption of individual commodities, but by the continuously renewed consumption during certain period of the total mass of commodities produced by the global mass of sectoral labor. Therefore, although value is posit in the sphere of production, it can be credited as a *specific* quantity of socially necessary abstract labor only through the mediation of circulation and distribution. Not by circulation and distribution as isolated acts, but as *moments* of the social process, continuously renewed, that mediates social production and social consumption; that is, as moments of the *reproduction* of social capital (Marx, 1857).

Therefore, although commodities originate in their double nature in the productive sphere, upon the basis of the double nature of labor that produces commodities, in that sphere the social need for them is only a presupposition that has to be continually demonstrated in the consumption sphere. To be credited in their double nature of use-values carriers of a definite magnitude of value, commodities must continuously pass through the circulation sphere. This double progression of commodities and labor

[4] One example is Rubin (1928: 236), who criticizes those who support such possibility saying that they "..break the close relation between the concept of socially necessary labor and the concept of productive power of labor, admitting that the former changes without corresponding changes in the latter." [My translation-AMF]

from the productive to the consumption sphere, with the mediation of circulation, which itself is conditioned by the distribution of the value of total output as the income of different social groups, is not automatic.

The subsumption of use-value and consumption to the logic of value and accumulation explains the anarchical nature of the capitalist economic system. Nothing guarantees that the supplied volume of each type of commodity corresponds with the volume required to satisfy the respective necessity. On the contrary, the general rule is the relative permanent overproduction of some commodities and the relative underproduction of some others, due to the fact that in some productive spheres more labor than socially required is allocated, while in others an insufficient mass of labor in relation to the respective social need is allocated.

This is the reason of the continuous short-run fluctuations of supply and demand, inventories, utilization levels of productive capacities and market prices. Even considering integrally the period in which these fluctuations tend to compensate -period which, in its total extension, delimits certain *normal* levels of supply and demand, of inventories, of utilization levels of productive capacities and of prices-, nothing guarantees either that the portion of social labor allocated to each sector corresponds exactly with the mass of labor that society requires and can expend, through solvent demand, to satisfy the respective need.

This disequilibrium in the distribution of social labor is the foundation of the quantitative determination of market value as different from average social value. Although market value is based on the average social value of a specific volume of output which constitutes the normal level of sectoral supply, it incorporates as a new determination the quantitative relation between that normal volume of supply and the normal volume of demand.

2.2.1. Normal volumes of supply

The normal volume of supply of a type of commodity during certain period depends on various conditions which, inasmuch as they do not change in the short-run, delimit the qualitative and quantitative *structural* features of the sector in which such commodities are produced. In a general plane, it depends on the dimension and productive diversification of the economic which are determined by several factors such as: the size of the natural and demographic resources; the volumes of capital historically accumulated; the general level of development of science and technology; the progress of the social division of labor.[5]

More particular aspects of the system's structure condition the number and size of capitals and productive units that operate in each sector, which determine the normal volumes of supply of each type of commodity: specificities of the social division of labor; availability of specific means of production (machinery and equipment, raw and auxiliary materials) and labor-force (in quantity and quality); the volume of accumulated capital historically in the sector; the development of science and technology in specific manufactures and the corresponding average levels of technical composition and size of productive unit required to operate competitively; the accessibility by different individual capitals to different technologies; the normal utilization levels of installed capacity and of inventories, which differ in each sector due to technological and conventional factors; *the degree of intersectoral mobility of capitals*, which depends on various technical factors, among them, the minimal amount of capital required to install a competitive productive plant and the availability of labor-force to operate a new plant, which act as technical barriers to the entrance of capitals into a sector; the volume of fixed capital invested in the productive plant and the proportion of that capital that has not been depreciated, which act as technical barriers to the departure of capitals from a sector.

These general and particular structural features of the productive system have as synthetic expression the normal scale of reproduction of the economic system as a whole which, upon the basis of the structure of intersectoral relations, condition the normal scale of reproduction of each sector.

2.2.2. Normal volumes of demand

The normal volume of demand for each type of commodity during certain period depends on the structural features of the productive system, as well as on the social relations established between classes and class fractions.

The volume of global demand depends on the dimension of total product which through its sale, constitutes the source of all disposable incomes in the economic system. The structure of demand, that is, the magnitude of social necessities for different types of commodities and their relative proportions, are determined in a general plane by the structural features of the productive system (specificity of the social division of labor and, therefore, of intersectoral relations) because, for the system to reproduce continuously, the different components of consumed productive capital (fixed capital,

[5] Other factors are: when considering an "open economy", international economic relations; when considering the State, the size and characteristics of government's economic activities.

raw and auxiliary materials) and of wage goods have to be replaced materially. In this sense, the normal levels of supply imply certain normal levels of demand of means of production, of labor-force and of wage-goods.

The determination of the demand for means of production is predominantly technical, because it is conditioned by the requirements of the individual capitals for the reproduction of their productive consumption. The sale of their product directly provides industrial capitals of monetary revenues which constitute the basis of the solvent demand they use to replace the consumed means of production. In contrast, the demand for non-productive consumption goods has a social determination. Although in its total volume this demand is determined by the magnitude of new value created by live-labor in the productive sphere, its composition depends on the distribution of new value created among different classes and class fractions, which have different patterns of final consumption.[6]

The distribution of new value created comprehends its initial distribution between variable capital and surplus-value, which express the rate of exploitation; the division of surplus-value between profits and territorial rent; the division of profit between industrial and commercial profit; the use of part of business profit -industrial and commercial- to pay for pay unproductive workers; the appropriation of part of new value created by lending capital, as interest, and by the State, as taxes (Marx, vol. 3, chp. 10).

The normal magnitude of social need *backed with purchase power*, that is, the magnitude of normal solvent demand in certain period for each particular commodity not only depends on the distribution of the value of total product among different types of income. It also depends on the average social value of particular commodities, which is the base of the offer postures of producers.

2.2.3. Relation between normal volumes of supply and demand

The reproduction of the economic system as a whole and of the different sectors is founded on the relation between the normal volumes of supply and of solvent demand of each particular commodity. Assuming normal levels of inventories and of monetary funds for reposition and accumulation kept out of circulation, at an aggregate level the value of the normal volume of supply is equal to the value of the normal volume of demand. This identity expresses the three properties that socially necessary labor (and, therefore, value) unfolds during the determination process of the magnitude of value: it

[6] The consumption patterns of different social groups have an objective foundation. In general, individuals with lower income, destine the greater portion to buy basic consumption goods; individuals with higher income tend to diversify their consumption by including "luxury" goods.

manifests, firstly, as *expended* labor in the productive sphere according to the prevailing normal conditions of production; secondly, as socially *distributed* labor under the form of the different types of monetary incomes, according to the relative strength of classes and class fractions; thirdly, as labor transformed in *purchase power* allocated to the different productive spheres according to the particular social necessities that have to be satisfied with production.

If in the short-run the *effective* volumes of supply and demand show quantitative divergences, the fluctuations of market prices, of inventories and of utilization levels of installed capacity tend to equalize the volumes of supply and demand over a specific period around certain normal levels. The quantitative equality during that lapse between normal volumes of supply and demand is not necessarily accomplished through a market value that coincides with average social value. Moreover, the general rule is that it is accomplished through a market value situated above or below the average social value.

2.2.3.1. Correspondence of market value with average social value

The normal volume of supply equalizes with the respective normal volume of demand at a market value coincident with average social value only when the mass of live and embodied labor allocated productively in the sector generates a productive capacity that coincides *exactly* with the mass of labor that society as a whole directs normally to that sector -through average solvent demand- to satisfy a specific social need through consumption. When the sectoral productive capacity corresponds with the normal magnitude of the respective social need, the normal volume of supply encounters sufficient solvent demand at the average social value.

This situation of equality between the productive capacity and the normal social need determines a situation of equilibrated competitive power of producers and consumers. Under these conditions, capitals which, having a high specific weight in sectoral product, regulate average social value -being of intermediate efficiency or not- also regulate market value. Consumers accept a market value equal to average social value because it permits them the complete satisfaction of their normal needs.

In quantitative terms market value (vm_s), being equal to average social value (vs_s), *appears* as the weighed average of individual values and, therefore, as if it was determined solely by the production conditions of the total mass of commodities supplied:

$$vm_s = vs_s = \frac{\sum_{i=1}^{n} vi_i X_i}{X_s} \qquad (3)$$

In this case, exceptional in the context of an economic system not regulated rationally, the totality of labor expended in the sector demonstrates completely to be socially necessary. This determines that the market value of the global mass of commodities produced is equal to the sum of the individual values of total sectoral production:

$$vm_s\, X_s = \sum_{i=1}^{n} vi_i\, X_i \qquad (3')$$

Depending on the relative share of the different productive units in the generation of total sectoral supply, market value -identical to average social value- is regulated by the intermediate (vim_s: 3a), better (vie_s: 3b) or worse (vii_s: 3c) production conditions (FIGURE 4):

$$vm_s = vs_s = vim_s \qquad (3a)$$

$$vie_s \approx vm_s = vs_s < vim_s \qquad (3b)$$

$$vim_s < vm_s = vs_s \approx vii_s \qquad (3c)$$

2.2.3.2. Divergences between market value and average social value

Equality between sectoral productive capacities and the respective normal magnitudes of social necessities is an exceptional situation. Generally, there exists a structural disequilibria in the productive allocation of social labor among different sectors in relation with the structure of social necessities. The inequality between productive capacities and normal social needs, which lasts during the lapse in which technical barriers to free intersectoral mobility of capitals remain, certainly can imply the existence of unsold products or non-satisfied solvent demand. Labor embodied in unsold commodities is wasted absolutely, so it does not create value and does not generate any income; non-satisfied solvent demand for a type of commodity, sooner or later is redirected to some other type of commodity.

As the volumes of supply and demand tend to equalize on the average over certain period, the disequilibrium between sectoral productive capacities and social necessities expresses through a disequilibrium in the relative strength of the two blocs which oppose in the ambit of intrasectoral competition -producers and consumers-. The result is that such equalization is accomplished through a market value *different from average social value.* Quantitatively, market value does not longer *appear* as the weighed average of individual values. Depending on which of the two competitive blocs predominates, one of them is benefited by this situation, which reveals outrightly the relevance of use-value in the quantitative determination of socially necessary labor-time.

FIGURE 4
FORMATION OF MARKET VALUE UPON THE ARTICULATION OF NORMAL CONDITIONS OF PRODUCTION AND NORMAL CONDITIONS OF REPRODUCTION (RELATION BETWEEN NORMAL VOLUMES OF SUPPLY AND DEMAND)

		NORMAL CONDITIONS OF REPRODUCTION (RELATION BETWEEN NORMAL VOLUMES OF SUPPLY AND DEMAND)		
		Mass of labor allocated in the sector excessive in relation with the mass of labor destined to the consumption of good (Departure barriers)	Mass of labor allocated in the sector correspond with the mass of labor destined to the consumption of good	Mass of labor allocated in the sector insufficient in relation with the mass of labor destined to the consumption of good (Entrance barriers)
		vm<vs	vm=vs	vm>vs
NORMAL CONDITIONS OF PRODUCTION	Predominance in the total mass of use-values produced of more efficient producers (vie) (Asymmetrical distribution) vs<vim	vm<vs<vim (4b)	vm=vs<vim (3b)	vm>vs vim>vs (5b)
	Predominance in the total mass of use-values produced of intermediate efficiency producers (vim) (Symmetrical distribution of producers) vs=vim	vm<vs=vim (4a)	vm=vs=vim (3a)	vm>vs=vim (5a)
	Predominance in the total mass of use-values produced of less efficient producers (vii) (Asymmetrical distribution vs>vim	vm<vs vim<vs (4c)	vm=vs>vim (3c)	vm>vs>vim (5c)

2.2.3.2.1. Excessive productive capacity

In some sectors the total mass of commodities normally supplied does not encounter sufficient solvent demand at the average social value. In these cases, the mass of live and embodied labor employed for sectoral production -determinant of the productive capacity and of average social value- proves to be *excessive* in relation with the mass of labor that consumers normally allocate through their solvent demand to satisfy their need of the produced commodity.

The relative excessive productive capacity causes that in the intrasectoral competitive confrontation consumers predominate over producers. Among producers inventories tend to accumulate, and pressures to decrease the rate of utilization of installed capacity appear. In this context, the competitive struggle among producers is severe, which weakens producers as a whole against consumers (Marx, vol. 3, chp. 10). Individual capitals that produce with better conditions, having wider margins of operation because of their low individual value, tend to regulate market value even against the interests of less efficient producers. In order to sell all their product -maintaining their normal levels of inventories and of utilization of installed capacity- they consistently offer their product at prices below the average social value, renouncing to the extraordinary profits they could potentially obtain because of their low individual value. In contrast, within the bloc of consumers the competitive struggle is attenuated, which strengthens its position against producers.

In this competitive context, *fluctuations* of market prices gravitate around a center situated below the average social value. The determination of a market value lower than average social value constitutes, in this case, the social rule. With it, all consumers benefit in detriment of all producers, particularly the less efficient. This market value (vm_s), situated in an inferior level than in a situation of correspondence between productive capacity and social necessities (vs_s), allows for the realization of the normal volumes of supply during the reference period (which is the medium-run):

$$vm_s < vs_s \qquad (4)$$

Therefore, as a result of the fluctuations of market prices within the reference period (and of inventories and utilization rates of installed capacity around their normal levels), the excessive supply can find during the reference period sufficient solvent demand. With a market value below the average social value, the mass of products demanded tends to be higher, which tends to eliminate the excessive relative supply.[7]

[7] If the mass of product demanded does not increase, then the excessive supply remains unsold, proving that the excessive productive capacity is *absolute*. Labor embodied in unsold commodities is not socially necessary, so it does not create value, nor intervenes in the determination of the magnitude of value.

The higher social consumption of the offered commodity can take place with a total expense equal or lower than would be necessary at the average social value, depending on the magnitude of the market value that permits the increase in the mass of product demanded.

In any case of excessive sectoral productive capacity, labor expended does not credit *fully* as socially necessary. Therefore, it does not generate value in proportion to its own magnitude. This situation affects negatively all capitals because, independently of their particular conditions of production, their total revenues are negatively affected by the determination of a market value inferior to average value. The quantitative implication of this situation is that the market value of the global mass of commodities produced is lower than the sum of the individual values of total sectoral production:

$$vm_s X_s < \sum_{i=1}^{n} vi_i X_i \qquad (4')$$

Depending of the relative share in total output of the different types of producers (FIGURE 4), the tendency that more efficient capitals regulate market value (4a) can be reinforced when they are predominant (4b), or partially counterforced when less efficient capitals predominate (4c):

$$vm_s < vs_s = vim_s \qquad (4a)$$

$$vm_s < vs_s < vim_s \qquad (4b)$$

$$vm_s < vs_s \;\; y \;\; vim_s < vs_s \qquad (4c)$$

The absolute *inferior limit* of market value in a sector with relative excessive productive capacity is given by the cost-price of less efficient capitals (actually, because of the capitalist nature of production, to guarantee their operation these capitals must obtain some minimal mass of profit). A market value below this limit can not function as gravitation center because it does not guarantee the reproduction of the totality of the sectoral capital and, therefore, can not express the normal conditions of production and *reproduction* of the type of commodity produced, which not only depends on technical conditions, but also on the volume of sectoral supply.[8]

The relative waste of labor in a sector with excessive productive capacity affects the magnitude of surplus-value produced, inasmuch as market value must permit the replacement, at least, of the value of sectoral capital consumed. Therefore, an important result of the competitive predominance of consumers against producers in the formation of market value is that not all surplus-labor extracted by sectoral capital credits as

[8] Hoverak (1988) and Kristjanson (1997 and 1998) propose as inferior absolute limit of market value the individual value of the most efficient capitals, arguing that in this way the determination of market value by the conditions of production is preserved. This opinion does not consider that if the individual value of the most efficient capitals is inferior to the price-cost of the least efficient capitals, the reproduction of total sectoral capital can not be accomplished.

creator of surplus-value and, therefore, of profit. This has a negative impact on the normal (medium-run) rates of profit of all capitals within the sector and, consequently, on the normal sectoral rate of profit, which is lower than the one that would prevail in conditions of equilibrium between sectoral productive capacity and normal volume of social need. If individual capitals continue operating in spite of the low levels of normal profitability is because within a medium-run time horizon they confront departure barriers from their sector and/or entrance barriers in other sectors.

The total loss of surplus-value (and profit) suffered by producers in a sector with excessive productive capacity implies, in fact, a transfer of substance of value (more specifically, of surplus-value) to consumers and, through them, to other sectors. If consumers are able to satisfy their normal need of a commodity expending an income which is lower than the one they would expend if the productive capacity were not excessive (if market value were equal to average social value), they can allocate a higher portion of the social labor represented by their global income in the acquisition of commodities produced in other sectors.

The structural disequilibrium in the allocation of social labor implies that the equivalent exchange of values (of equal amounts of socially necessary labor) is accomplished through a non-equivalent exchange of value-creating labor. In a sector with excessive productive capacity, consumers obtain a quantity of labor embodied in the commodities they get which is higher than the quantity of social labor which they give through the income they expend in the sector. This type of intersectoral transfer of surplus-labor, that results from the non-equilibrated productive distribution of social labor, is qualitatively *independent* of the intersectoral transfers which determine the formation of prices of production upon the tendential equalization of sectoral profit rates.

2.2.3.2.2. Insufficient productive capacity

In some sectors the normal volume of supply is not sufficient to satisfy solvent demand at the average social value. In these cases, the mass of labor allocated in the sector reveals to be *insufficient* in relation with the labor that consumers are willing to allocate normally in that sector, through their solvent demand, to satisfy their need of the produced commodity.

The relative insufficiency in the productive capacity determines that in the intrasectoral competitive confrontation producers prevail over consumers. Among producers, the competitive struggle is relatively attenuated. Capitals that operate with relatively worse efficiency conditions tend to regulate the market value inasmuch as they can find sufficient solvent demand for their product even if they consistently offer it at prices above the average social value; this, with the acceptance of more efficient producers.

At the same time, among consumers, the competitive struggle is implacable. Facing an insufficient productive capacity, consumers with higher purchase power tend to establish a rationing system based in higher prices, against the well-being of consumers with lower purchase power (Marx, vol. 3, chp. 10). In this competitive context, the fluctuations of market prices gravitate around a center situated above the average social value. With this situation, all capitals benefit in detriment of all consumers, particularly the ones with lower acquisitive power which end up with non-satisfied needs. Market value (vm_s), determined at a level above average social value (vs_s), allows for the satisfaction of the normal volume of *solvent* demand (which is lower than if market value equals average social value) during the reference period:

$$vm_s > vs_s \qquad (5)$$

The regulation of market value by less efficient producers makes the volumes of supply during the reference period relatively sufficient because, with a market value superior to average social value, the mass of product demanded tends to be lower. The lower social consumption of the offered commodity requires that consumers as a whole expend a total income equal or higher than they would need to expend at the average social value, depending on the magnitude of market value which makes possible the reduction of the mass of product demanded.

In all cases of insufficient productive capacity, the labor expended in the sector credits itself, from the perspective of social necessities, as *multiplied* labor. Therefore it generates value in a higher proportion than its own magnitude. This does not mean, in any way, the creation of value outside the productive sphere. It only implies that, due to the insufficient productive sectoral capacity, society as a whole is compelled to allocate a higher quantity of labor than the one which is actually expended in production to buy the volume of product required to satisfy a specific need. Quantitatively, this manifests in the fact that the market value of the global mass of commodities produced is higher than the sum of the individual values of total sectoral output[9]:

$$vm_s X_s > \sum_{i=1}^{n} vi_i X_i \qquad (5')$$

Depending on the relative share in the sectoral output of the different types of capitals (FIGURE 4), the tendency that less efficient capitals regulate the market value

[9] Even Rubin, when he analyses territorial rent, accepts that "...the coincidence of these two aggregates [market value of all produced commodities and the sum of the individual values of those commodities-AMF] is maintained only for *all* the productive sectors or for the social economy *as a whole*." (1928: 229)

(5a) can be partially counterforced when more efficient capitals predominate (5b), or reinforced when the less efficient are themselves predominant (5c):

$$vm_s > vs_s = vim_s \qquad (5a)$$
$$vm_s > vs_s \;\; y \;\; vim_s > vs_s \qquad (5b)$$
$$vm_s > vs_s > vim_s \qquad (5c)$$

The *superior limit* of market value in a sector with relative insufficient productive capacity is not determined by the production conditions in that sector, but by the volume of surplus-labor transferred out of sectors with relative excessive productive capacity. The positive difference between the market value and the average social value of the output of all sectors with insufficient productive capacity must be equal to the negative difference between the market value and the average social value of the output of all sectors with excessive productive capacity.

An important result of this analytical perspective is that the formation of territorial rent -both *differential* and *absolute*- can be explained as a particular case of the formation of market value under conditions of insufficient productive capacity, in which the difference between the market value and the average social value of sectoral output is appropriated by land-owners under the form of rent.[10] Differential rent would be determined by the difference between the individual value of the least efficient capitals and average social value; absolute rent, by the difference between market value and the individual value of the least efficient capitals.[11] The relevance of explaining the formation of absolute rent as a particular case of market value determination is that it does not require any assumption about the organic composition of capital in sectors which pay territorial rent in relation with the organic composition of social capital (inasmuch as the explanation is independent of the formation of production prices), nor any reference to market prices (inasmuch as the explanation is independent of market price levels). This implies that the formation of rent can be explained *convincingly* in the ambit of the theory of labor-value, which by the way, was a central objective of Marx when he developed the theory of price of production. (Letter from Marx to Engels, August 9, 1862, cited by Dussel, 1990, 426). Consequently, within this analytical perspective, the theory of labor-value is a satisfactory base for the *exhaustive* explanation of the determination of the prices that function as gravitation centers of market prices.

[10] Kozo Uno (1964), Itoh (1988) and Kristjanson (1997) explain the formation of *differential* rent as a particular case of the determination or market value. Nevertheless, when they propose the individual value of the least efficient capitals as the superior absolute limit of market value, they can not explain in a similar perspective the formation of *absolute* rent.

[11] Any rent above this difference would be a monopoly rent *additional and different* from absolute rent and, therefore, not explainable by the law of labor-value.

The socially multiplied quality of labor expended in a sector with insufficient productive capacity manifests in the fact that surplus-labor exploited in the productive sphere also has a multiplied expression in the generation of surplus-value (and, therefore, of profit when no rent is paid), which is proportionally higher than its own magnitude. This has a positive effect on the normal (medium-run) rates of profit of all sectoral capitals and on the normal sectoral rate, which has a higher level than in conditions of equilibrated distribution of social labor. The reason why the high relative levels of normal profitability do not generate, at least automatically, capital inflows that increase the sectoral productive capacity is the persistence within a medium-run time horizon of entrance barriers -which can have a natural origin, as in the case of the sectors which pay rent- and/or departure barriers from other sectors.

The mass of additional surplus-labor appropriated by producers in sectors with insufficient productive capacity implies an intersectoral transfer of the substance of value, which comes, immediately, from consumers that have to allocate a higher portion of social labor, through their solvent demand, to satisfy their specific need, than they would have to allocate if the productive capacity were not insufficient. That consumers allocate a higher portion of their solvent demand to these sectors implies, in counterpart, that they allocate lower portions in other sectors. Therefore, non-immediately, the mass of additional surplus-labor value appropriated by sectors with insufficient productive capacity comes form the sectors in which market value is specified below average social value.

Once again, the equivalent exchange of values is accomplished through non-equivalent exchange of value-creating labor. In this case consumers obtain a quantity of labor embodied in the commodities they get which is lower than the quantity of social labor that they give through their solvent demand. Consequently, to sustain the condition -postulated by the law of labor-value-, that the global mass of value created in the productive sphere is not modified by determination of prices, the existence of one sector with insufficient productive sectoral capacity implies the existence of *at least* one sector with relative excessive productive capacity.

2.2.4. Market value and abstract labor

The quantitative specification of market value expresses, firstly, the normal conditions of production associated with the general determinations of intrasectoral competition; secondly, the normal conditions of reproduction associated to the specific quantitative articulation between productive capacities and social solvent necessities resulting from the intersectoral distribution of social labor.

Leaving aside the long-run, in which no technical barriers to free intersectoral mobility of capitals exist, in general the determination of market value excludes any situation of intersectoral equilibrium. On the contrary, in the medium-run the general rule is the existence of structural disequilibria in the intersectoral allocation of social labor. Therefore, although the realized value of normal volumes of supply and demand are on the average identical, the tensions provoked by the structural intersectoral disequilibria determine the quantitative differences between market values and social average values.

Except in the exceptional case in which there exists an exact correspondence between the productive capacity and the normal volume of social need, in general there is no exact proportionality between the mass of abstract labor expended in each sector -which depends solely on the sectoral production conditions- and the magnitude of value *created* in the respective sector -which also depends on the relative magnitude of social necessities. In sectors with excessive productive capacity, labor expended expresses in a proportionally lower magnitude of value. In sectors with insufficient productive capacity, labor expended expresses in a proportionally higher magnitude of value. Therefore, there is a quantitative difference between the quantity of the creative substance of value expended and the magnitude of value created, inasmuch as labor expended in the productive sphere creates value not only on the basis of its own magnitude, but also on the basis of its capacity to demonstrate it is *socially necessary*.

In this analytical perspective, without denying labor as unique substance of value, nor production as the unique space of creation of value, the quantitative determination of the magnitude of value -of socially necessary labor-time- is a process which necessarily presupposes consumption and, due to the mercantile nature of production, distribution and circulation. Therefore, if average social value incorporates the particular production conditions of the individual capitals which conform a sector as determinants of socially necessary labor-time, market value incorporates a new determination: the articulation between production and consumption, mediated by distribution and circulation, that is the reproduction conditions. The unity between production, consumption, distribution and circulation -as moments of reproduction- in the determination of socially necessary labor-time is, nevertheless, asymmetrical in favor of production. Firstly, because only in the productive sphere value is created. Secondly, because the prevailing conditions of production (social division of labor; social distribution of the means of production) and of exploitation of wage-labor (division of new value created) determine income distribution, the consumption capacity of the different economic agents and, therefore, the structure of solvent demand (of social necessities backed with purchase power). Thirdly, because the total volume of social labor transferred (reallocated) among sectors is limited, in absolute terms, by the global magnitude of social labor and, more particularly, by the production conditions prevailing within each sector.

Inasmuch as the absolute inferior limit of market value in any sector is the cost-price of the least efficient producers, the mass of surplus-value transferable *from* the sectors with excessive productive capacity has precise limits. But this limit is also the limit for the mass of social labor transferable *into* sectors with insufficient productive capacity. The positive difference between market value and average social value in these last sectors, therefore, also has precise limits.

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