

# Determining Prices of Production and the General Rate of Profit\*

by  
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## The privately capitalist society

§1. In this paper, we shall present a theory of price and income in the privately capitalist society. For this purpose, we shall set out as characteristics of the privately capitalist society, which influence the shaping of these two [i.e. price and income – G.S.], the following:

1. Production to a great extent serves external needs [i.e. not needs of the producer per se – G.S.]. If one calls each good, which is produced for the purpose of [satisfying – G.S.] external needs, a *commodity*, then this type of production is respectively called *commodity production*.

2. The productivity of labour creates more than the naturally defined cost of maintaining the persons engaged in production, the workers in the broad sense, where by naturally defined cost of maintaining we mean the minimum cost for the constant maintenance of the labour power from a purely natural point of view. If one calls this cost together with the correspondingly necessary means of labour [i.e. means of production -G.S.] a *naturally defined necessary product*, then regarding the surplus of production beyond the production of the naturally defined necessary product, the term *surplus production* would be fitting for this type of production.

3. The means of labour are in the ownership of a limited number of members of society. This institution of the privately capitalist society is for brevity's sake called private ownership in the means of labour<sup>1</sup>.

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\* Under this title we present pages 3-9 and 20-27 of Muehlpfordt's thesis, Preis und Einkommen in der privatkapitalistischen Gesellschaft, Inaugural-Dissertation zur Erlangung der Doktorwürde von der philosophischen Fakultät der Albertus Universität zu Königsberg i. Pr., genehmigt und am Freitag den 22 Dezember 1893, mittags 12 Uhr, mit den beigefügten Thesen öffentlich verteidigt, Königsberg, Hartungsche Buchdruckerei 1893, in which the author determines production prices and the general rate of profit, i.e. solves the problem of transforming labour values into production prices – G.S.

1. The expression 'private ownership in the means of labour' does not very correctly render the

4. Economic activity is subject to the will of the single individual to the extent that s/he has this possibility. The term that succinctly characterises this situation is *free competition*.

The proof, that it is precisely these three aspects of the privately capitalist society that determine price formation and incomes, will, I hope, be provided by that which follows. We shall refer to further separate items of proof of this type, which however emerge also from that set out so far, at the appropriate opportunity. Lastly, the reason why we chose the term 'privately capitalist' for this type of society will also be clarified by the theory set out below. The respective answer will be emphasised in particular.

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### **Types of natural price**

§5. I believe that I adequately set out the general significance of the use value for the exchange value in the previous section. What remains is to further investigate the ratios of exchange value in correlation with the aforementioned

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thing to which it is supposed to refer, to the extent that it is not adequately expressive of the fact that only some and not all the members of society have such ownership. Seen in an absolute perspective, each person capable of working could theoretically be the owner of means of production, e.g. as a shareholder. In such a case however, logically speaking, first of all the possessors [of the means of production – G.S.] would jointly organise production (see point 4 above) and they would subsequently grant to each new member of society a participation in the possession of the means of labour so that they could be used by the new member and they would also control, in correspondence to the organisation of the productive mechanism, the distribution of goods through the social approval of prices. Thus, the private ownership of all the members of society in the means of production would lead to social ownership of the means of production, the organisation of production and of consumption [he obviously means the conscious organisation of production and consumption by society – G.S.], i.e. to democratic socialism. We must observe here that the form of guarantee for the possibilities of labour and income as well as the [democratic socialist – G.S.] organisation of production and consumption may differ according to the technical level of the economy. Both agricultural communism and the institution of guilds in each period of acme of each guild respectively undoubtedly belong to the above schema. It emerges for us that private ownership in the means of production may exist only in the hands of a limited number of members of society. Bearing this in mind, we can then use the aforementioned expression [i.e. the expression 'private ownership in the means of production' instead of the expression 'private ownership of some members of society in the means of production', which he clearly considers to be more correct, but because it is too long, is not used by Muehlpfordt – G.S.].

distinction (rarity [on the one hand – G.S.] and unlimited possibility of acquisition [of a good – G.S.] with expenditure the [corresponding – GS.] cost [on the other – G.S.]). For, although the affect of rarity is perfectly clear (see p. 7), the notion of expenditure of cost is still very general. According to this, the issue remains open as to what form the expenditure of cost takes in the privately capitalist society and to what extent its effect is linked, if and when it is linked, to that of rarity. In fact the goods themselves may by virtue of a property similar to rarity, namely the possibility, of an intentional or unintentional increase [of their quantity – G.S.], to affect price formation. The interaction of all these conditions must be analysed below.

We can distinguish: goods, which, in order to be used, must be produced, and goods, which are given in the sphere of man's dominance without his contribution. Just as the difficulty of acquiring the goods of the first type lies in the necessity of their production, so the goods of the second type may acquire an exchange value, only if they are in the hands of single individuals, who do not give them to anyone without some equivalent. This possession is called a natural monopoly, when the acquisition of the said goods outside the sphere of power of their possessor is physically impossible, and a legal monopoly, when the law prohibits such acquisition. The combinations of these two terms and their opposites give the following possible cases:

1. Absence of monopoly (free competition) and [consequently – G.S.] necessity to produce [the respective good – G.S.].
2. Monopoly with or without the necessity to produce [the respective good – G.S.].

Goods without a monopoly and without the necessity to be produced, the so-called free goods, do not belong to the cycle of economic goods.

However, the monopoly may, if I am permitted to express it thus, cast its shadow over the sphere of free competition, to the extent that in each branch of production, the cost is not the same for all the entrepreneurs of that branch. For some of them partly use a type of means of labour, which, while demanding the same labour expenditure, have a different productivity than others, and partly enjoy advantages of nature, to the extent that this affects their production, which are not enjoyed by their competitors. The reason why these latter producers are, with regard to production, taken into account [they continue, that is, to produce and for this reason are taken into account – G.S.], lies in the fact that the former producers cannot with their production and for

any one of a variety of possible reasons satisfy total needs (with respect to the good that they produce – G.S.).

Lastly, these cases appear also in combination with the aforementioned property of the goods, namely the different possibility of increasing [their quantity – G.S.].

Consequently, the last picture that we have of the different types of economic goods is:

1. Commodities which are capable of increasing at will in conditions of free competition,
2. Goods which are not capable of increasing at will in conditions of free competition,
3. The same cases as *Vorzugsproduktion*<sup>1\*</sup>,
4. Goods which are capable of increasing at will or given goods with a monopoly.

I should like to note that the second category contains only an, almost non-existent, small number of cases and we are including it chiefly in order to make a more systematic examination of the issue.

It also still remains for us to explain in what way and in what form we should imagine the effect of the expenditure of cost. In this regard, we are enlightened by the usual production process in privately capitalist society. This process is as follows: A person with property places part of his property in production, by purchasing the means of labour belonging to a certain branch of production (tools and raw materials) and taking in his employ the respective workers. From his earnings from the commodities produced, he pays the cost of the used up means of labour and the corresponding wages (known as the capital of the enterprise) and he keeps any remaining amount as profit. The profit is as high as the prices for the wages [i.e. for the labour power – G.S.] and the means of labour are low.

In view of this, we can begin to determine the natural prices for the separate categories of economic goods.

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1\* It is not clear what Muehlpfordt means by *Vorzugsproduktion*. He possibly means a market, in which, although the commodity which is being offered is the same, each buyer prefers a certain producer and seller of that 'same' commodity. It is more likely however that by *Vorzugsproduktion* he means the fact that the producers of one and the same good attain, because they use production techniques of different productiveness, different rates of profit. This latter interpretation is strengthened by the little written by Muehlpfordt (p. 27, par. 7) about the meaning of *Vorzugsproduktion* – G.S.

VI. In the case of *goods which are capable of increasing at will in conditions of free competition*, the entrepreneur will firstly try to get the workers to work at the lowest possible production cost and then, given the cost, to make the highest possible profit. Because of free competition, this attempt tends to result in all the enterprises that produce the same product making equal profit in the same period and for the same cost. According to this, the natural price of the respective commodity is equal to the price of the lowest production cost increased by the equal profit for all in proportion to capital (natural business profit). The price shaped under these conditions is called the *competition price*. Expressed as a formula, this price is therefore

price of commodity = price of capital + business profit:

$$\Pi(W) = \Pi(C) + G.$$

That part of the said quantity of the commodity [of the quantity, that is, to which the calculated price refers – G.S.], which represents profit, is the social necessary surplus product<sup>2\*</sup>. Consequently, the formula may be written as follows:

$$\Pi(W) = \Pi(C) + \Pi(M),$$

[where M is the surplus product and  $\Pi(M)$  the price of the surplus product, i.e. the profit G – G.S.].

With this formula however we did not get to the root of the difficulties of composition [of the price – G.S.]. What I want to say, that is, is that we revealed only the external social form of its presence by reducing it to the aggregate of two prices. Its ultimate cause will become apparent firstly in the following. If we consider goods which are capable of increasing at will in conditions of free competition, in contrast with goods that are given in unlimited quantities [not produced goods – G.S.] without a monopoly, which have no exchange value, then the cause of the exchange value of the former goods becomes quite clear. It is the necessity of using labour for their production, something which is expressed also in the difference between the phrases ‘capable of increasing at will’ and ‘given in unlimited quantities’. According to this, it is labour that creates the exchange value of goods that are capable of increasing at will in conditions of free competition. The only thing that remains unclear is how to

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<sup>2\*</sup> This would appear to be an unfortunate expression. Because the surplus product of course does not depict profit, but, conversely, profit depicts the surplus product – G.S.

measure the extent of its effect on the prices of the separate types of commodities. And we are taught this from the production process and the exchange process. The production process tells us that, at the present-day level of the technique, means of labour are required for production, while the exchange process tells us that these means of labour are in the possession of single individuals, who require for their use an equal profit in proportion to the quantity of these means of labour. It follows from this that the separate commodities are exchanged in modified proportion to production costs, the modification of which is defined by the phrase: equal profit for equal capital. If we symbolise the production times [he means labour values – G.S.] of the separate commodities  $W_1, W_2, \dots, W_n$ <sup>3\*</sup>, with  $a_1, a_2, \dots, a_n$ , then we can represent the different ratios of exchange in the following way:

$$\frac{\Pi(W_q)}{\Pi(W_p)} = \frac{a_q x_q}{a_p x_p},$$

where the coefficients [he means  $x_q$  and  $x_p$  – G.S.] which have been assigned to the symbolised labour times [he means the symbolised labour values of commodities, i.e.  $a_q$  and  $a_p$  – G.S.] depend on natural business profit. If we place successively in the place of  $q$  all the arithmetical values [he means whole numbers – G.S.] from 1 to  $n$ , where  $n$  is the aggregate of all the commodities that are capable of increasing at will in conditions of free competition [he apparently means the number of those goods – G.S.] and add up [in parts – G.S.] the equations which we thus get, then the following emerges

$$\frac{\Pi(W_1) + \Pi(W_2) + \dots + \Pi(W_n)}{\Pi(W_p)} = \frac{a_1 x_1 + a_2 x_2 + \dots + a_n x_n}{a_p x_p},$$

Because

$$a_1 x_1 + a_2 x_2 + \dots + a_n x_n = a_1 + a_2 + \dots + a_n,^{4*}$$

the following also holds

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3\* To be precise, they are not commodities but quantities of –different– commodities, which constitute the units of measurement of any quantities of commodities. The separate commodities are symbolised not with  $W_1, W_2, \dots, W_n$  but with 1, 2, ...,  $n$  – G.S.

4\* This equation, which means that the aggregate of prices (left side) is equal to the aggregate of values (right side), does not necessarily hold, but is introduced here arbitrarily by Muehlplfordt. It is in fact a normalisation equation for prices, i.e. an equation, by virtue of

$$\frac{\Pi(W_p)}{\Pi(W_1) + \Pi(W_2) + \dots + \Pi(W_n)} =$$

$$= \frac{a_p x_p}{a_1 x_1 + a_2 x_2 + \dots + a_n x_n} = \frac{a_p x_p}{a_1 + a_2 + \dots + a_n}.$$

The price coefficient of a commodity [he means the coefficient  $x$  – G.S.] thus remains both in relation to the total labour time [he means the aggregate of the total necessary dead and living labour for the production of one unit of each commodity, i.e. the aggregate of the values  $a_1 + a_2 + \dots + a_n$  – G.S.] as well as in relation to that [the labour time, i.e. the labour value – G.S.] of any commodity whatsoever, multiplied by the price coefficient of that commodity, invariable<sup>5\*</sup>.

The capital used by an entrepreneur in his enterprise is presented in two ways, once in the sense of that which is required for the means of labour and wages and later in the sense [of that part – G.S.] of the commodities that he himself produces, which he must sell in order to be able to buy the means of labour and wages [read: labour power – G.S.]. The price of commodities must be equal to a certain percentage of the price of the commodities produced during the using up of the means of labour and the spending of wages, which is set by the law of natural business profit.

Therefore

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which the price of a commodity or of a bundle of commodities, is set equal to a positive constant. In the given normalisation equation of Muehlfordt, the price of one unit of each commodity comprising a bundle of commodities is set equal to a positive constant, which is equal to the *labour value* of that same bundle of commodities. The labour value of the said bundle is a constant because the values of all the commodities are here, owing to the given and invariable production technique, given and constant magnitudes – G.S.

5\* This sentence of Muehlfordt apparently has no meaning – apart from the ‘meaning’ that the price of a commodity remains the same regardless of whether the said commodity is exchanged for a bundle of commodities consisting of one unit each of  $n$  commodities or with any single commodity. Because, if during these exchanges the coefficient of the aforesaid commodity, here commodity  $W_p$ ,  $x_p$ , remains invariable, then the price of  $a_p x_p$  also remains invariable, since the value of  $a_p$  is also a constant magnitude.

Muehlfordt’s ascertainment is devoid of meaning because it is self-evident that the price of a commodity does not vary according to the commodity or the commodities with which the aforesaid commodity is exchanged – G.S.

$$\Pi(W) = \Pi(C) + \Pi(M)$$

$$\Pi(M) = p\Pi(C),$$

where  $p$  is the natural rate of profit.

$$\Pi(W) = \Pi(C) (1 + p)$$

$$\Pi(C) = \frac{1}{1 + p} \Pi(W) = x_0 \Pi(W).$$

On the other hand, capital is presented as the aggregate of used up means of production and wages in the following form:

$$\Pi(C_p) = a_{p1} \Pi(W_1) + a_{p2} \Pi(W_2) + \dots,$$

where  $a_{p1}, a_{p2}, \dots$  are the fractions of different quantities of commodities  $W_1, W_2, \dots$ , which are required for the production of the entire quantity of commodity  $W_p$ . If some of these percentages do not come from enterprises of free competition, then in such a case their prices should be considered known magnitudes.

According to the above, we get the following equations:

$$x_0 \Pi(W_1) = a_{11} \Pi(W_1) + a_{12} \Pi(W_2) + \dots$$

$$x_0 \Pi(W_2) = a_{21} \Pi(W_1) + a_{22} \Pi(W_2) + \dots$$

.....

$$x_0 \Pi(W_n) = a_{n1} \Pi(W_1) + a_{n2} \Pi(W_2) + \dots$$

or

$$x_0 a_1 x_1 = a_{11} a_1 x_1 + a_{12} a_2 x_2 + \dots$$

$$x_0 a_2 x_2 = a_{21} a_1 x_1 + a_{22} a_2 x_2 + \dots$$

.....

$$x_0 a_n x_n = a_{n1} a_1 x_1 + a_{n2} a_2 x_2 + \dots$$

If we add also the above equation [he means the equation that we introduced above – G.S.]

$$a_1 x_1 + a_2 x_2 + a_3 x_3 + \dots + a_n x_n = a_1 + a_2 + a_3 + \dots + a_n,$$

then we have  $n+1$  equations for the  $n+1$  unknown  $x_0, x_1, x_2, \dots, x_n$ . In this way, these unknowns are determined; the deviations of prices from production

times [he means labour values – G.S.], which are symbolised by the price coefficients  $x_1, x_2, \dots, x_n$ , as well as the natural rate of profit  $p = \frac{1}{x_0} - 1$  are known magnitudes. If we characterise the labour time necessary for the production of a commodity as the natural value [he is obviously referring to labour value – G.S.], then we call the quantity [of labour – G.S.], which is distributed in this commodity and which, determined by the form of privately capitalist society, determines its ratio of exchange, the social value of that commodity<sup>6\*</sup>.

That which influences the natural price of competition is, according to the above, the magnitudes

$$a_1, a_2, \dots, a_n ; a_{11}, a_{12}, \dots ;$$

$$\dots ; a_{21}, a_{22}, \dots ;$$

in other words, apart from the production times [i.e. values – G.S.], the composition and quantity of used means of labour and wages [he means wage commodities, i.e. real wages – G.S.] as well as the volume of production of all the competitively produced commodities.

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<sup>6\*</sup> By social value of a commodity, Muehlfordt clearly means here the natural price, i.e. the price of production of that commodity. The fact that here he calls the natural price, i.e. the price of production of a commodity, “quantity [of labour – G.S.], which is distributed in that commodity”, is explained as follows: Because of the normalisation equation used by Muehlfordt, according to which the aggregate of the prices of production is equal to the aggregate of values, the production prices of commodities which differ from values appear as the redistribution of labour necessary for the production of all the commodities, i.e. the aggregate of values, in the various commodities – a redistribution, which, because of the deviations of prices of production from values, naturally differs from the distribution of that same quantity of labour in the various commodities on the basis of the criterion of (non-living and living) labour that was required for the production of each of the said commodities – G.S.