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21 June 2011

Crowding out Capitalism: A Law of Historical Materialism

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Abstract: *This paper presents a modern response to the problem imposed by Marx in Capital in 1867, "to lay bare the economic law of motion of modern society" and to provide a vision on how on the basis of this law of motion the transformation of the capitalist mode of production to the socialist mode of production can be perceived. The analysis begins with a discussion of the Marxian analysis of labour values. To overcome the difficulties the marginal analysis of labour values is introduced and it is shown that in an optimal economy where labour is used in an efficient manner commodities exchange by their labour values. The transformation problem is thereby eliminated. In a further step the socially necessary character of surplus value as a fund of capital accumulation in order to increase and maintain the productivity of labour is presented and opposed to the capitalists strife for the private exploitation of surplus value. It is argued that the capitalist harmful practices, leading to economic and social crisis, can and must be overcome by the labour movement via economic democracy and collective capital formation thereby eliminating the 'ultima ratio' of the capitalists, the supply of and control over capital. Finally this process of crowding out capitalism is contrasted with the orthodox reformist and revolutionary approaches.*

Keywords: Crowding out capitalism, Historical Materialism, labour theory of value, marginal analysis, Marxian economics, political economy, social revolution, Rosa Luxemburg, transformation problem.

JEL classification: B51, D46, P16, P51

I. Introduction

Crowding out Capitalism is a term in the theory of *Historical Materialism* referring to a) the process of the historical transformation of human society from the capitalist mode of production to the socialist mode of production, b) to the strategy of the labour movement in its struggle for emancipation, and in a more narrow sense c) to the economic policy as part of this strategy. In this article we concentrate only on the first concept of Crowding out Capitalism as a law in human history characterizing the essential conditions of the transformation of human society from the capitalist mode of production to the socialist mode of production. The analysis is confined to the economic aspects of this process only.[1]

The fundamental idea, introducing the concept of "the materialist conception of history", is found in Marx's *A Contribution to the Critique of Political Economy*:

> "In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relations of production appropriate to a given stage in the development of their material forces of production. The totality of these relations of production constitutes the economic structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness. At a certain stage of development, the material productive forces of society come into conflict with the existing relations of production or – this merely expresses the same thing in legal terms – with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution. The changes in the economic foundation lead sooner or later to the transformation of the whole immense superstructure.
>
> In studying such transformations it is always necessary to distinguish between the

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1 This work suffers from the very serious shortcoming of ignoring - with the exception of Leonid Kantorovich and some fundamental textbooks on Marxist-Leninist Philosophy as these have been translated into English - the all important works of the Soviet scientists. Russian scientists are invited to contribute to this discussion by introducing the relevant Soviet and Post-Soviet literature.

material transformation of the economic conditions of production, which can be determined with the precision of natural science, and the legal, political, religious, artistic or philosophic – in short, ideological forms in which men become conscious of this conflict and fight it out. Just as one does not judge an individual by what he thinks about himself, so one cannot judge such a period of transformation by its consciousness, but, on the contrary, this consciousness must be explained from the contradictions of material life, from the conflict existing between the social forces of production and the relations of production. No social order is ever destroyed before all the productive forces for which it is sufficient have been developed, and new superior relations of production never replace older ones before the material conditions for their existence have matured within the framework of the old society.

Mankind thus inevitably sets itself only such tasks as it is able to solve, since closer examination will always show that the problem itself arises only when the material conditions for its solution are already present or at least in the course of formation. In broad outline, the Asiatic, ancient, feudal and modern bourgeois modes of production may be designated as epochs marking progress in the economic development of society. The bourgeois mode of production is the last antagonistic form of the social process of production – antagonistic not in the sense of individual antagonism but of an antagonism that emanates from the individuals' social conditions of existence – but the productive forces developing within bourgeois society create also the material conditions for a solution of this antagonism. The prehistory of human society accordingly closes with this social formation."
(Marx, 1859, 1904, Preface).[2]

Marx subsequently concentrated on trying to work out the "material transformation of the economic conditions of production, which can be determined with the precision of natural science" notably in his *Capital : A critique of Political Economy* (1867). In the preface to the first edition of this book he writes: *"it is the ultimate aim of this work, to lay bare the economic law of motion of modern society" (Capital,* vol. I, preface, p. 14).[3]

Rosa Luxemburg states in her criticism of Eduard Bernstein's *Evolutionary Capitalism (1899, 1904)*:

"The fundamental idea consists of the affirmation that capitalism, as a result of its own inner contradictions, moves toward a point when it will be unbalanced, when it will simply become impossible. There were good reasons for conceiving that juncture in the form of a catastrophic general commercial crisis. But that is of secondary importance when the fundamental idea is considered.

2   The reference refers to the classical Kerr edition of Capital. The text cited is from Marxists.org, S.W. Ryazanskaya; Progress Publishers Moskau; 1993.

3   The references of type (*Capital*, vol. I, ...) refer to the Kerr edition of Marx's *Capital: A Critique of Political Economy*, with the volumes I, II and III published in 1906 and 1909 respectively.

> The scientific basis of socialism rests, as is well known, on three principal results of capitalist development. First, on the growing anarchy of capitalist economy, leading inevitably to its ruin. Second, on the progressive socialisation of the process of production, which creates the germs of the future social order. And third, on the increased organisation and consciousness of the proletarian class, which constitutes the active factor in the coming revolution." (Luxemburg, 1900, 1938, chap. 1)

Firstly we shall refute the "collapse of capitalism" theses, because the capitalistic economic systems have become highly organized coordinated systems that can suffer serious breakdowns even on a World scale - as the actual situation shows - but due to the introduction of institutions of economic control a total breakdown should be avoidable as emergency general economic plans should always be possible to be implemented even under the conditions of bourgeois societies.

The more important aspects are the 3 principle characteristics of capitalist development, its growing anarchy, its progressive socialisation of the production processes and finally the increased organisation and consciousness of the proletarian class "which constitutes the active factor in the coming revolution". The core of this proletarian consciousness is Marxian Political Economy. But it turned out that this analysis is much more difficult than it was perceived by the Classical Marxists. Marx and Engels had well been able to pose the proper questions, to open up the vision what to look for, but they were not able to provide us with a satisfactory answer and even more important there is not a definite answer as the conditions of the class struggles are constantly changing. The most important impact were surely the two World Wars and the Great October Revolution in 1917. Consequently the problem of understanding the neuralgic points of capitalism has become the subject of armadas of social scientists and is very much at the centre of the social theory of today.

On the other hand Western Marxism has not succeeded in providing a satisfactory economic theory of the transformation of the capitalist mode of production to the socialist mode of production and this is mainly due to failures in the proper understanding of the labour theory of value. Marxian

economics is totally discredited amongst modern economists as the Marxian labour theory of value with its *transformation problem* of values into prices is full of contradictions. But with every *Krach* Marxism blossoms anew like the daffodils at Easter and on the contrary it is mainstream economics which is repudiated by the facts of live. Orthodox economists are regarded as meteorologists who deny the existence of the four seasons.

When we observe the antagonistic conflict between Western Marxists[4] and bourgeois economics this should not lead us into the error to believe bourgeois economists have failed to contribute to provide crucial insights and concepts to understanding the problem at hand. On the contrary, it is a rather tragic circumstance that Marx and Engels did not know or were unable to make use of the extremely important contributions of the bourgeois mathematical economists such as Jules Dupuit, Auguste Cournot, H. H. Gossen, Léon Walras and others, although they were well aware of these mathematical developments in political economy. We shall not get into any further discussion of the development of economic thought but shall try to operationalize the problem of the *materialist conception of history* by expressing it in terms of modern economic terminology and in the course of this we shall provide a proper interpretation of the labour theory of value.

II. A First Economic Formulation of the Problem

The core of the process from the economic point of view is:

> "At a certain stage of development, the material productive forces of society come into conflict with the existing relations of production or ... with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces, these relations turn into their fetters." (Marx 1859, 1904; preface)

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4 Here again we need to emphasise the lack of Soviet literature in this discussion. At the end of this article we shall refer briefly to the Program of the Communist Party of the Soviet Union of 1986 which hints to the intellectual level of the discussions within the CPSU at that time.

When we attempt to find the proper economic formulation of this process we have to specify what is meant by productive forces. These are first of all the human beings that is labour, involved in the production process as well as the technical, scientific and social know-how, the skills to organise themselves in the production process on the level of the production unit, the industry, the national economy and on a global scale. Furthermore the means of production which have been accumulated over time are of greatest importance. In addition to the physical stock of capital, the transportation and communications networks, we must add also the market structures and the control institutions of the economic processes. And most important is Nature, we have to regard the ecosystems we are exploiting and living in as a stock of natural capital.

But at the centre of these productive forces is the human being, the labourer and the sacrifice of her live time, her working effort, in order to produce the "conveniences of live". Through this the labour theory of value attains a central role. The benefits of the outcomes of the production processes are evaluated against the costs in terms of labour which have to be sacrificed in order to obtain them. The optimal use of labour, the organisation of labour such that it's productivity is highest and the full utilization of the economic resources is the *sin qua non* of any modern mode of production, and also of capitalism.

We want to advance the following hypothesis: In the productive, fertile phase of the capitalist mode of production the production relations allow the optimal use of the productive forces, i.e. labour, and this leads in turn to the commodities being evaluated by their labour values – prices being proportional to labour values. However due to a lack of appropriate institutions of economic control and its anarchistic nature the early development of capitalism is just as violent as the more modern phases. It is precisely this the major object of the orthodox Marxist studies. But in spite of the later improvements of the social control of the economic processes notably through the influence of the

great bourgeois economist John Maynard Keynes, the class antagonisms lead to the capitalistic economy being deformed into a system of monopoly capitalism of over-exploitation of the labouring classes with the consequences that labour is no longer efficiently used. The occurrence of unemployment is the most obvious indication of this. In such a state commodities are no longer evaluated by their labour values but by monopolistic market conditions. In the following we shall present the essentials of this analysis in greater detail, beginning with the critique of the orthodox Marxian value analysis.

III. The Problem of Orthodox Marxian Value Analysis

First we should point out a very important but simple aspect. Usually bourgeois economists do not speak of labour values, they speak of average and marginal cost and prices. The link between them and labour values is very simple under optimal conditions.[5] The price of a unit of labour is the wage rate, **w**. In order to obtain the average and marginal costs corresponding to the labour values one multiplies the labour values with the wage rate and *vice versa* divides the costs by the wage rate to obtain the labour values. It can be shown that this procedure is valid for equilibrium positions under perfect competition.

In contrast to Soviet value analysis the orthodox Western Marxian value analysis is not based on a proper and thorough theory of cost but on some axiomatic definition of embodied labour, e.g. (Flaschel 2010) which appears to be rather intuitive to the non-economist. But the generally used definition implies a very unrealistic form of the average cost curve, a horizontal line parallel to the x-axis. The *Cambridge Marxists* (Dobb, Meek, Morishima, Okishio, Sraffa, etc.) have indeed

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5   Bourgeois economists refer to an optimal economic system as a system of perfect competition. Although we do not agree to such terminology we have to adhere to it in order to be understood. We prefer to speak of a perfect economy.

succeeded to impose upon generations of post-World War II progressive students of economics this type of reasoning and have prevented them to study the history of economic thought properly.
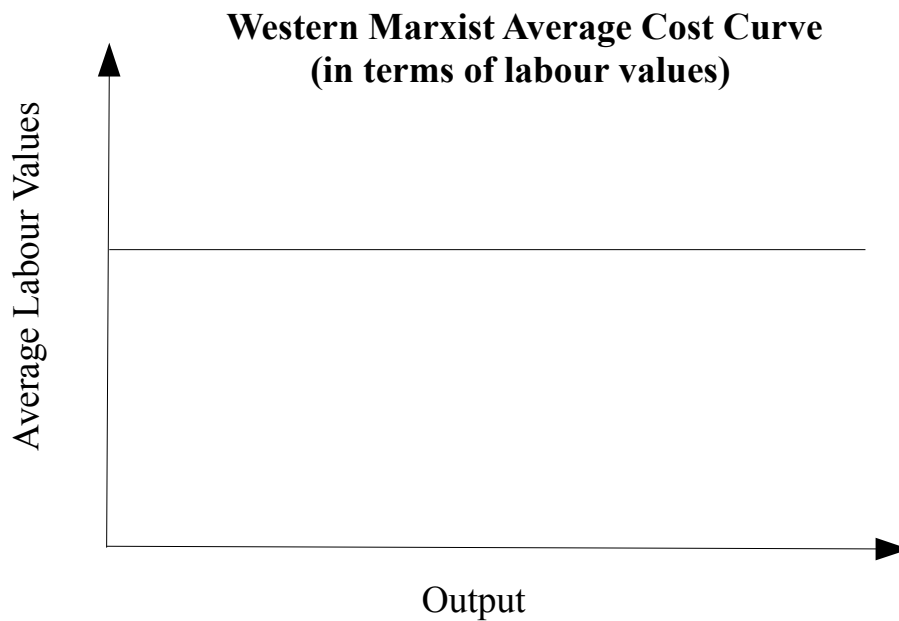
Western Marxist Average Cost Curve
(in terms of labour values)

Figure 1.

Then we should realize that wherever the line of the average cost curve in **Figure 1** is cut by an inverse demand curve (in terms of labour values, prices divided by the wage rate) the equilibrium point is on the curve of average labour values. Considering several commodities it is clear that the labour theory of value applies and commodities exchange according to their labour values.

However, for orthodox Marxists things are not as easy as that. The labour content of a commodity consists of several parts: First, there is the labour, which is the direct labour used for the production of the commodity and we denote as direct labour, **L$_d$**, part of it is paid labour, **L$_w$**, the other part represents surplus value, **L$_s$**. Surplus value is the part of the labour time which is not paid. Direct labour per commodity is:

$$\frac{L_d}{Q} = \frac{L_w}{Q} + \frac{L_s}{Q}$$

(1)

Q - quantity of commodity produced, output

In addition there is the constant capital of the means of production which represents some stored up labour or indirect, dead labour. We take only a fraction of the labour value of the means of production that corresponds to the depreciation caused by the production process and we denote it with L_c. The whole labour content of a commodity is therefore:

$$\frac{L}{Q}=\frac{L_d+L_c}{Q}=\frac{L_w+L_s+L_c}{Q} \qquad \textbf{(2)}$$

When we multiply the equations **(1)** with the wage rate, **w**, we obtain the sum of wages and profits per unit of commodity as

$$\frac{w\,L_d}{Q}=\frac{w\,L_w+w\,L_s}{Q}=\frac{W+P}{Q} \qquad \textbf{(1a)}$$

$$W \text{ - wages}, P \text{ - profits}$$

Marx considered wages as variable capital. Up to the late 19th century wages were part of capital. Only later they were excluded from the balance sheet.

Average cost is the sum of wages, profits (cost of capital services) and consumption of fixed capital per unit of commodity.

$$w\,\frac{L}{Q}=w\,\frac{L_d+L_c}{Q}=w\,\frac{L_w+L_s+L_c}{Q} \qquad \textbf{(2a)}$$

$$w\,\frac{L}{Q} \text{ - average cost}$$

The ratio L_s/L_w is called the rate of surplus-value or the rate of exploitation. Marx distinguishes between *absolute surplus value* in so far as just the part of the working day not paid is considered. Concerning absolute surplus value it depends only on the amount of labour time, the amount of direct labour in our terminology and on how much of it is paid labour, L_w. But surplus value can also be increased by increasing the intensity of the labour process and then it is considered as *relative surplus value*. The variation of the capital labour ratio has an effect on the productivity of the labour process and therefore of the relative surplus value.

"The mass of the surplus-value produced is therefore equal to the surplus-value which the working-day of one labourer supplies multiplied by the number of labourers employed. But as further the mass of surplus-value which a single labourer produces, the value of labour-power being given, is determined by the rate of the surplus-value, this law follows: the mass of the surplus-value produced is equal to the amount of the variable capital advanced, multiplied by the rate of surplus-value; in other words: it is determined by the compound ratio between the number of labour-powers exploited simultaneously by the same capitalist and the degree of exploitation of each individual labour-power." (Capital, vol. I, chap. XI, 331 f).

One should notice that Marx considers here individual rates of surplus-value for each labourer. And he observes:

"the masses of value and of surplus value produced by different capitals - the value of labour-power being given and its degree of exploitation being equal - vary directly as the amounts of the variable constituents of these capitals, i.e., as their constituents transformed into living labour-power.

This law clearly contradicts all experiences based on appearance. Every one knows that a cotton spinner, who, reckoning the percentage on the whole of his applied capital, employs much constant and little variable capital, does not, on account of this, pocket less profit or surplus-value than a baker, who relatively sets in motion much variable and little constant capital. For the solution of this apparent contradiction, many intermediate terms are as yet wanted, ..." (*Capital*, vol. I, chap. XI, p. 335 f).

The effects which are in contradiction with "all experience" could be explained by the increased productivity resulting from an increased capital labour ratio (organic composition of capital) and an increase in relative surplus-value. However, in the volumes II and III of *Capital*, posthumously published by Engels one finds only an average rate of surplus-value and in chapter 10 of volume III the following statement:

"If capitals employing unequal amounts of living labor are to produce unequal amounts of surplus-value, it must be assumed, at least to a certain degree, that the intensity of exploitation, or the rate of surplus-value, are the same, or that any existing differences in them are balanced by real or imaginary (conventional) elements of compensation. This would presuppose a competition among the laborers and an equilibration by means of their continual emigration from one sphere of production to another." (*Capital*, Vol. III, X, p. 206).

Here is made the assumption that the ratio of L_s/L_w, the rate of surplus value or the rate of exploitation is constant and equal in all employments. But at the same time it is commonly accepted

that the rates of profits in all industries should be identical in a (long term) equilibrium. In our notation this would mean for the rate of surplus value:

$$s = \frac{L_{si}}{L_{wi}}; \ for \ i = 1, 2, \ldots$$

(3)

s - rate of surplus value

and for the rate of profit:

$$\pi = \frac{P_i}{K_i} = \frac{w \, L_{si}}{w \, L_{ci}} = \frac{L_{si}}{L_{ci}}; \ for \ i = 1, 2, \ldots$$

(4)

π - rate of profit

We take it as a matter of fact and in accordance with actual accounting procedures that wages are not regarded as capital but are paid *ex post* and therefore do not enter the formula of the rate of profit. Notice that this has usually not been the case at the times of the Classical economists and Marx. As our analysis is concerned with modern economic systems and procedures we adhere to this definition of the profit rate.

We may now express the rate of profit also as the product of the rate of surplus-value with the labour capital ratio (the organic composition of capital).

$$\pi = \frac{L_{si}}{L_{ci}} = \frac{L_{si}}{L_{wi}} * \frac{L_{wi}}{L_{ci}}; \ for \ i = 1, 2, \ldots$$

(5)

$\frac{L_{wi}}{L_{ci}}$ - labour capital ratio, organic composition of capital

Now if the rates of surplus value are all the same the labour capital ratios also have to be the same in all industries for the rate of profit to be unique.

$$o = \frac{L_{wi}}{L_{ci}}; \ for \ i = 1, 2, \ldots$$

(5a)

o - organic composition of capital

But this is obviously not the case and contradicted by the facts.

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The first to recognize this was Marx himself. He did not publish the volumes II and III of Capital which contain the *solution* to this problem, the so called *transformation problem. It was* Engels who had presented it: prices would be determined by the prices of production, that is by average cost as

$$AC = \frac{C}{Q} = \frac{W + P + \delta K}{Q} = \frac{w L_w + (\delta + \pi) K}{Q}$$

(6)

AC - average cost, C - cost, δ - rate of depreciation, K - value of capital

Notice that **(6)** corresponds to **(2a)** because

$$w L_c = \delta K \text{ and } w L_s = \pi K$$

(6a)

According to this interpretation the rates of profits are identical in all industries and profits distributed amongst the industries according to the amounts of capital. On the other hand surplus labour is considered as being created in proportion to the amount of direct labour, L_w. So the surplus value, the labour exploited, is redistributed in the exchange process. According to this labour values are not proportional to prices any more.

> "In the case of capitals of average, or approximately average, composition, the price of production coincides exactly, or approximately with the value, and the profit with the surplus-value produced by them. All other capitals, of whatever composition, tend toward this average under the pressure of competition. But since the capital of average composition are of the same, or approximately the same, structure as the average social capital, all capitals have the tendency, regardless of the surplus-value produced by them, to realise in the prices of their commodities the average profit, instead of their own surplus-value, in other words, to realise the prices of production.
>   On the other hand it may be said that whenever an average profit, and a general rate of profit, are brought about, no matter by what means, such an average profit cannot be anything else but the profit on the average social capital, the sum of these average profits being equal to the sum of surplus-values produced by the average social capitals, and that the prices brought about by adding this average profit to the cost-prices cannot be anything else but the values transformed into prices of production." (*Capital*, vol. III, chap. X, p. 204, 205).

It was first Böhm-Bawerk (1896, 1898) who had correctly shown the inconsistencies of this approach but the discussion continues up to the present.

The "error of Marx" is the assumption of a unique rate of surplus value. His argument for its justification is purely logical. In Political Economy the concepts of a unique wage rate, an average profit rate etc. are abstractions, but necessary abstractions to understand the underlying economic laws. And because the labourers are competing for the better working conditions this would lead to equal rates of exploitation just as the competition amongst capitals leads to the tendency of profit rates to equalize in the long run. (*Capital*, vol. III, chap. X, p. 206).

One could object to economic models which use notions of a unique wage rate and/or profit rate because the social system and competition lead to very different outcomes. In fact, it has been shown that wealth and earnings are distributed according to Pareto's law, that is highly unequally. This applies also to the wage rates and the profit rates. The compensation of labour should be proportional to the sacrifice of human life involved in the labouring process, determined by ergonomic analysis. There can be hardly any doubt that this does definitely not happen in a capitalist system. Those who earn higher wage rates do suffer less in a physiological sense which can be easily verified by comparing the life expectancies of wealthy and poor labourers.

We touch here upon another aspect of this kind of analysis the assumption of homogeneous labour and how to calculate homogeneous labour units. In our context this can be ignored as we outline only the most basic aspects of the law of motion of the capitalist system.

We do not want to use the arguments above as a refutation of a unique rate of exploitation but shall show that in a perfect economy where homogeneous labour and other resources are used in an optimal manner the rates of surplus value are generally not equal. It is then another question if the observable distributions of wealth, income and earnings are consistent with such theorizing. From

an ethical perspective it could be desirable to introduce social-economical institutions to equalize the rates of exploitation understood in terms of physiological, ergonomic conditions. This has been a factor determining the wage structure in the Soviet Union and other socialist countries.

Instead of abandoning the labour theory of value as Engels had done, we shall do a more rigorous analysis of cost which leads to more complex average cost curves and the necessary introduction of marginal analysis.

IV. The Marginal Analysis of Labour Values

When we are searching for the optimal use of labour we are facing what is called in mathematics an optimisation problem. To solve such problems marginal analysis is most important. We shall clarify this point by presenting a simple microeconomic analysis of the production of a commodity. We are assuming that the productivity of labour is a function of output. In the short run one may consider the capital stock (the production plant) as given and varying amounts of labour yield different quantities of output. Notice that we make here the assumption that the only *variable cost in terms of labour* is directly used labour, $\mathbf{L_d} = \mathbf{L_{w,}}$.[6]

Then there is likely to be some capital-labour combination at which the marginal productivity is highest. We do not intend to provide a realistic function but we use Gossen's approach (1854, p. 10), we take a form as simple as possible to highlight the essence of marginal value analysis. We assume

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6   One could easily include that labour embodied in the materials which also are part of variable cost; to obtain it one just divides the money value of the materials by the wage rate. We neglect it for simplicity.
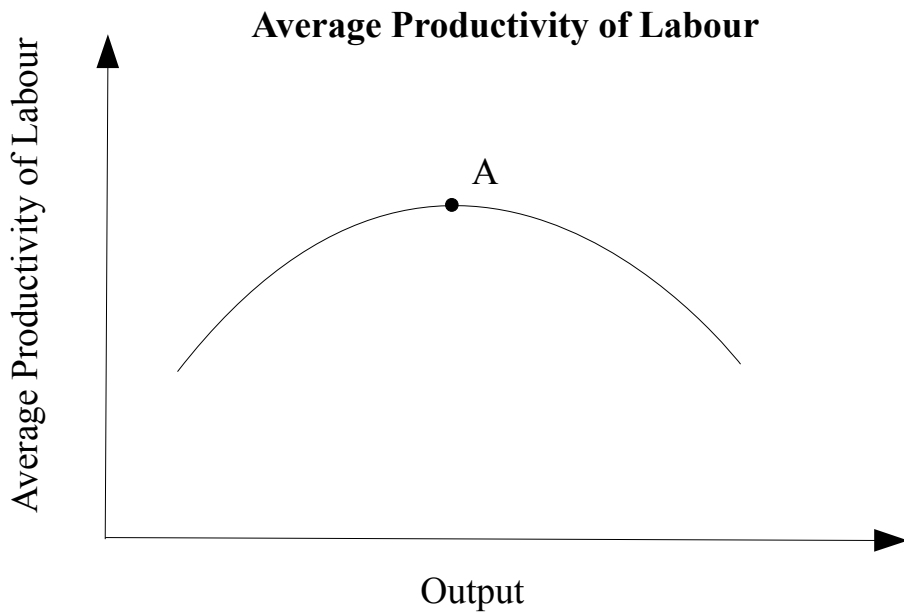
that the function looks like in **Figure 2**.

Figure 2.

Maximizing the productivity of labour means to find the point **A** of the curve in **Figure 2**. At that point the average productivity of labour is at its maximum and so the socially necessary labour is at its minimum. To interpret it this way we have to include in the labour all labour, not only the directly used labour but also the labour of the means of production used up in the production process and we have to distinguish between the variable part of this labour and the fixed part.

$$L = L_d + L_f$$

$$ (7) $$

L - total labour , L_d - direct labour , L_f - fixed labour

The variable part is the direct labour, L_d, measured in terms of hours worked in the production process and we have assumed that it is equal to L_w, ignoring the material inputs.

The fixed labour, L_f, is the labour embodied in the used fixed capital, L_c, and the cost of using the constant, fixed capital, L_s.

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$$L_f = L_s + L_c$$

L_s - surplus labour , L_c - constant capital

The consumption of fixed capital, **L$_c$**, is calculated as

$$L_c = \delta \frac{K}{w}$$

δ - rate of consumption of fixed capital

Notice, that **w L$_c$** is constant capital in terms of money value.

The cost of using the constant capital, **L$_s$**, is the surplus-value.

$$L_s = \kappa \frac{K}{w}$$

$\kappa -$rate - corresponds to the rate of interest in orthodox microeconomics
K - money value of constant capital , w - wage rate

Notice, that **w L$_s$** (multiplication of **(10)** with **w**) is profits in the sense of the cost of using capital. The **κ**-rate (**κ** for Kantorovich) could be interpreted as the average rate of profit in the Marxian analysis but here we define it in the sense of a "norm of effectiveness" (see below). Equation **(10)** eliminates the transformation problem as now surplus labour is proportional to constant, fixed capital, **K**.

We have used again the simple method of calculating the labour values by dividing the money values by the wage rate, **w**. This procedure is applicable only in a perfect economy where prices reflect labour values. This will be an important problem in the further dynamic analysis of capitalism.

Using the expressions above we get the equation for fixed labour:

$$L_f = L_s + L_c = \frac{1}{w} \kappa K + \frac{1}{w} \delta K = \frac{1}{w}(\kappa + \delta) K$$

κK - price of capital services = profits , δK - consumption of fixed capital

and adding direct labour, $L_d = L_w$, for total labour:

$$L = L_d + L_f = L_w + L_s + L_c = L_w + \frac{1}{w}(\kappa + \delta)K \tag{12}$$

Equation **(12)** expresses total labour in terms of direct labour, fixed capital, the depreciation rate and the **κ**-rate.

The concept of the average productivity of labour is usually defined as **Q/L_w** and relates output only to direct labour, **L_w**. Our concept aims at defining the socially optimal use of labour and there we have to take into account all labour, direct as well as indirect labour. So we use the expression

$$\frac{Q}{L} = \frac{Q}{L_w + L_s + L_c} = \frac{Q}{L_w + (\kappa + \delta)\dfrac{K}{w}} \tag{13}$$

for the average labour productivity. The problem is to find the maximum average labour productivity defined this way.

The dual to this problem is the minimization of average labour value. This is of particular interest as one could perceive this as the *socially necessary labour value*. One obtains average labour values as a function of output, as shown in **Figure 3a,** by calculating the reciprocal of the average productivity of labour:

$$\frac{L}{Q} = \frac{L_d + L_f}{Q} = \frac{L_w + L_s + L_c}{Q} = \frac{L_w + (\kappa + \delta)\dfrac{K}{w}}{Q} \tag{14}$$

Equation **(14)** is just the reciprocal of equation **(13).**

The curvature of the average labour value curve in **Figure 3a** is of an U-shape. In fact it is exactly like the average cost curve in ordinary cost analysis. Its slope is at first negative, then at the minimum at point **A'** the curve has a slope of zero and progressing further to the right the slope becomes positive.
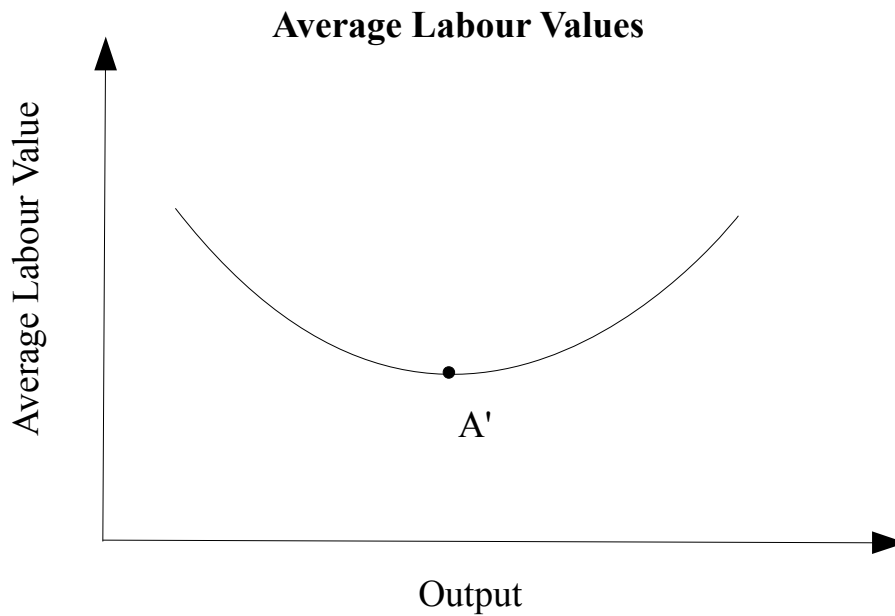
Average Labour Values

Average Labour Value

A'

Output

Figure 3a.

Bourgeois economists carefully avoid using the concept of marginal labour value in order not to discuss labour values. They lead the discussion in terms of cost. The curves of average and marginal cost as usually discussed in microeconomic theory look the same as those of average and marginal labour values. Under perfect competition they differ only by the factor **w**, the wage rate. Multiplication of the labour values in equation **(14)** with the wage rate, **w,** yields average costs.

$$AC = \frac{C}{Q} = w\frac{L}{Q} = \frac{W+P+\delta K}{Q} = \frac{w L_w + (\delta + \kappa) K}{Q}$$

(15)

AC - average cost, C - cost, W - wages, P - profits

The minimum of average labour values, **A',** is there where the slope of the curve in **Figure 3a** is zero. At first with small quantities of output, **Q**, this slope is negative but it approaches zero. It is zero in **A'** and then becomes positive as shown in **Figure 3b**.

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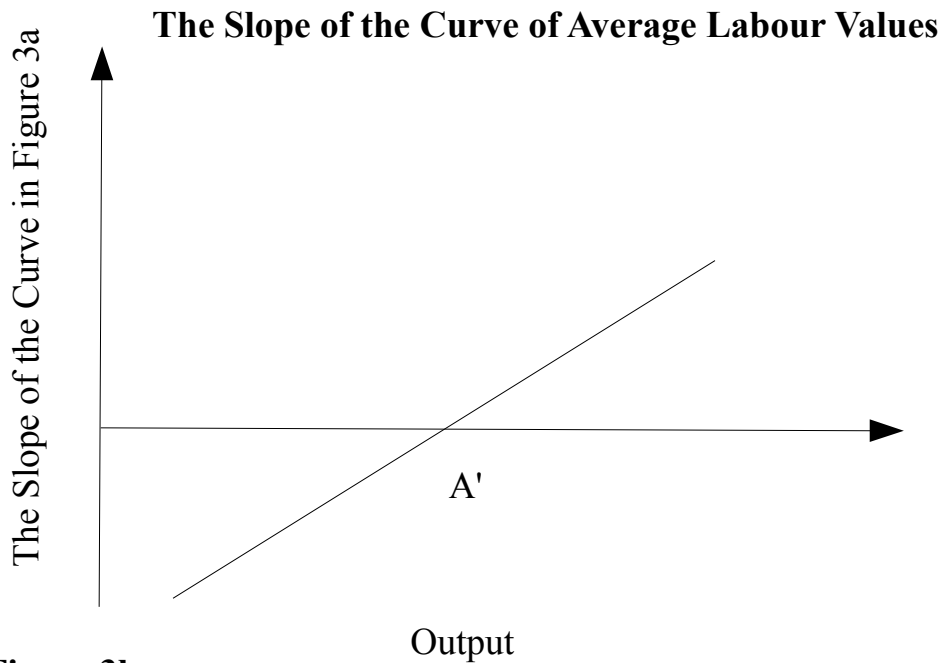**The Slope of the Curve of Average Labour Values**

Figure 3b.

Mathematically one obtains the curve in **Figure 3b** by differentiating the function of average labour values **(14)** with respect to output. In order to do so we have to distinguish between that part of labour which varies with the quantity of output and that part of labour which remains constant. This is why we had defined total labour as in **(7).**

At this stage we confine the analysis to the short term as already mentioned above. A production plant with the value **K** is given, the wage rate, **w**, for labour is given as well as the cost of capital services, to which we refer to as the **κ**-rate. The rate of depreciation of the production plant is the rate **δ**.

We assume a production function which has all the properties of the neoclassical production function as this is necessary to be able to find the minimum!

$$Q = f(K, L)$$

Q - output, K - capital, L - labour

(16)

- everywhere twice differentiable, monotonic increasing, diminishing marginal productivities of the inputs - and capital is assumed to be fixed (in the short run).
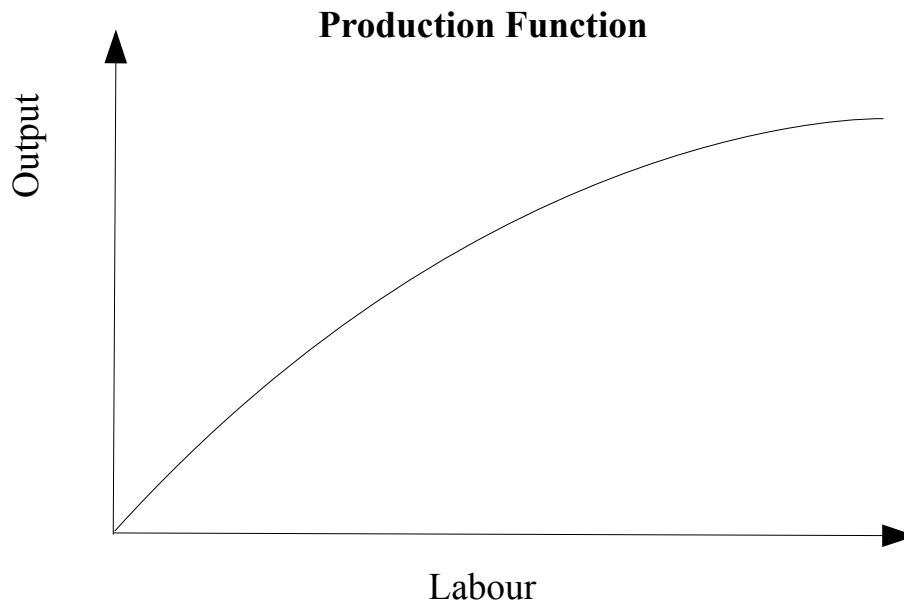
Production Function

Figure 4a.

In **Figure 4a** such a function is shown. The capital input is considered as fixed at some constant

level (the plant size) and output is shown as a function of labour only.

One can invert the function and express labour as a function of output:

$$L_d = f_{inv}(Q)$$

L_d - direct labour

(17)

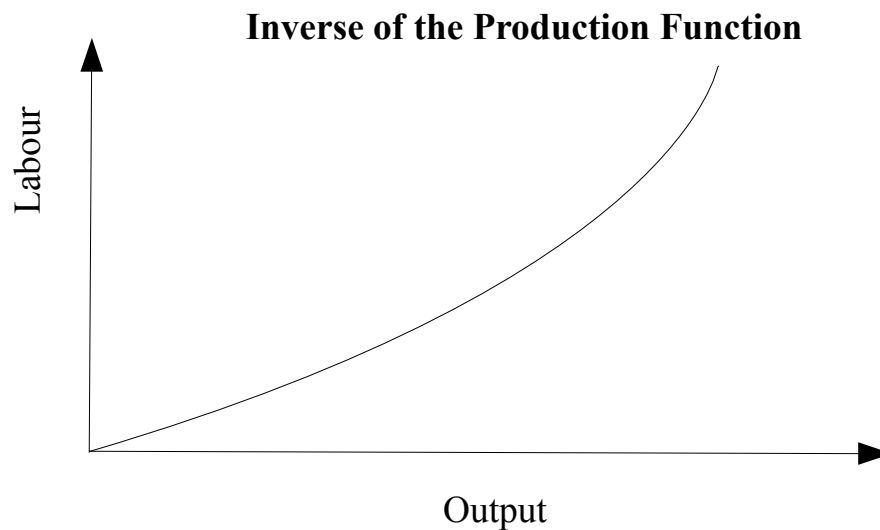In **Figure 4b** the function has been inverted, labour is a function of output.

Inverse of the Production Function

Figure 4b.

This function gives us the amount of direct labour needed to produce a given quantity of output.

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Average Fixed Labour Values

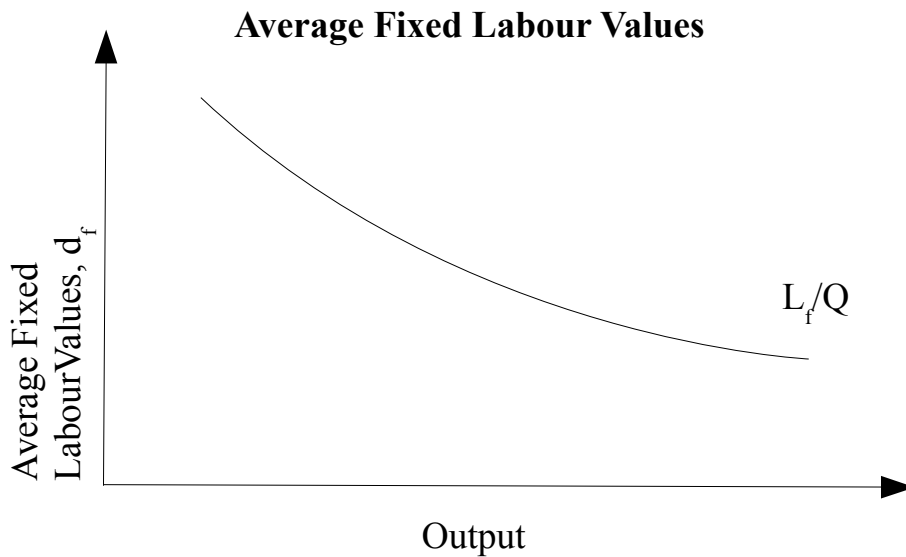Average Fixed Labour Values, d_f

L_f/Q

Output

Figure 5a.

But we have to consider total labour as in **(14)**. Notice that the fixed labour, L_f, related to output as average fixed labour, L_f/Q is decreasing with output increasing. This is shown in **Figure 5a**.

When we construct the curve of *average variable labour values,* L/Q*,* from **Figure 4b** we find that it is increasing. Both curves, *average fixed labour values* and *average variable labour values* are shown in **Figure 5b**.
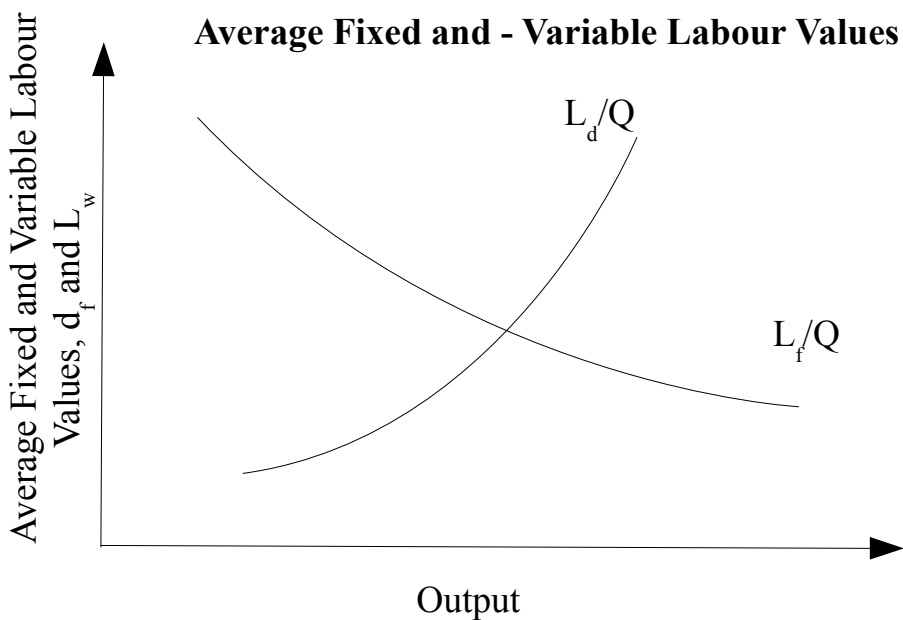
Average Fixed and - Variable Labour Values

Average Fixed and Variable Labour Values, d_f and L_w

L_d/Q

L_f/Q

Output

Figure 5b.

Combining both curves we obtain **Figure 3a**.

Notice that the term **L_f/Q,** average fixed labour, is steadily decreasing with increasing output. This leads to the curve **L/Q** being at first downward sloping. But then the decreasing marginal productivity of labour of the production function sets in, the average variable labour increases steadily and outweighs the decreasing factor at some point, exactly at the minimum.

We derive a new function of total labour values on the basis of equation **(7)** and the inverse of the production function **(17)**:

$$L = L_d + L_f = f_{inv}(Q) + L_f \qquad (18)$$

It is important to see that the derivative of function **(18)** with respect to output, **Q,** is the same as the one of function **(17),** because **L_f** is a constant. It is

$$\frac{dL}{dQ} = \frac{df_{inv}(Q)}{dQ} = \frac{1}{f'(L)} \qquad (19)$$

This equation states that the function of marginal labour values is the reciprocal of the function of marginal productivity of labour.

Now we can reformulate the equation of average labour values, **(14),** on the basis of the inverse of the production function as

$$\frac{L}{Q} = g(Q) = \frac{L_d + L_f}{Q} = \frac{f_{inv}(Q)}{Q} + \frac{L_f}{Q} \qquad (20)$$

This is the mathematical expression for the curve in **Figure 3a**. To find it's slope we need to differentiate this function with respect to **Q**:

$$\frac{dL}{dQ} = \frac{dg(Q)}{dQ} = \frac{d(f_{inv}(Q)/Q)}{dQ} + \frac{d(L_f/Q)}{dQ} \qquad (21)$$

Applying the chain rule we differentiate equation **(21)** and obtain

$$\frac{dg}{dQ} = \frac{f'_{inv}Q - f_{inv} - L_f}{Q^2} \qquad (22)$$

And at the minimum the derivative is equal to zero and under the condition that output, **Q**, is

positive:

$$f'_{inv} Q = f_{inv} + L_f \tag{23}$$

or

$$f'_{inv} = \frac{f_{inv} + L_f}{Q} = \frac{L_d + L_f}{Q} = g(Q)^{min} \tag{24}$$

and considering **(19)** we can write

$$f'_{inv} = \frac{dL}{dQ} = \frac{1}{f'(L)} = \frac{f_{inv} + L_f}{Q} = \frac{L_d + L_f}{Q} = g(Q)^{min} \tag{25}$$

The minimum average labour value is there where the curves of average and marginal labour values intersect, i.e. *where the average labour value equals marginal labour value*.

From the above we see that marginal analysis allows us to find the minimum average labour value, the socially necessary labour value. It is that amount of labour necessary to produce an additional unit of output with a maximum average productivity of labour. Obviously it is ridiculous that Western Marxists, in particular Sraffa, have condemned marginal analysis. One must condemn the bourgeois Marginalist economists instead who have systematically banned labour values from economic analysis.

The interesting point is that at the minimum of the curve of average labour values, (point **A'** in **Figure 3a)**, the derivative of $f_{inv}(Q)$ with respect to **Q,** the marginal labour value function, $f'_{inv}(Q)$, is equal to **g(Q)min**. This follows directly from **(22)** by setting it equal to zero. This function indicates for each level of output the minimum labour necessary to produce an extra unit of output. It is a marginal cost function in terms of marginal labour values.

It is for this reason that John B. Clark states: "...taking marginal labour as the test of cost. … This virtually unaided labour is the only kind which can measure value" (Clark 1892, 263). This is

nothing else but the correct definition of the Marxian concept of socially necessary labour. It goes without saying that John B. Clark was not a Marxist but a vehement anti-communist and so he, like the other Marginalists, had carefully avoided to refer to Marxian concepts in such analysis. And, contrary to the proper analysis of these marginal labour values he insists that capital creates value. Again, the use of capital does increase the productivity of labour but in itself it does not produce or create value.

In **Figure 6** both curves, marginal and average labour values are shown. In fact one can interpret that part of the curve of marginal labour values which is above average labour values as the supply curve of the firm in terms of labour values.
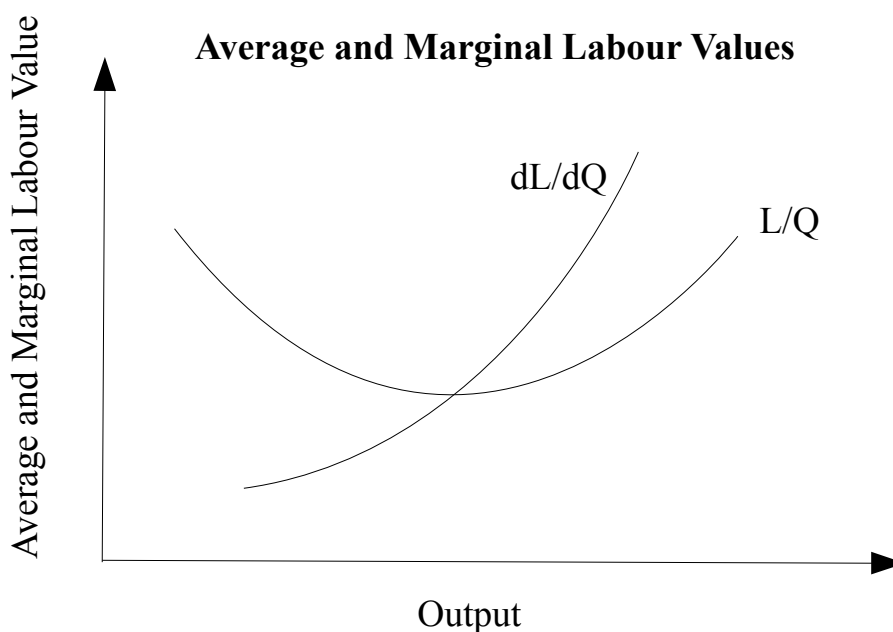

Figure 6.

One obtains the marginal cost curve by multiplying the function of marginal labour values with the wage rate, **w**, the price of a unit of labour as in **(15)**. The marginal cost curve is the supply curve of the firm in terms of money. Under competitive conditions the firm maximises its profits by producing that amount of output at which its marginal cost equals the market price. This is standard

microeconomic theory (Henderson, Quandt 1980). For this case the maximization problem consists of finding the maximum of the profit function which is sales revenue minus costs:

$$\Pi = pQ - C$$

Π - profits, p - price, C - cost

(26)

The derivative of this profit function with respect to output is

$$\frac{d\Pi}{dQ} = p - \frac{dC}{dQ}$$

(27)

When marginal profits are zero price equals marginal cost.

$$p = \frac{dC}{dQ}$$

(28)

From cost minimization follows that marginal cost is marginal labour value multiplied with the wage rate:

$$p = \frac{dC}{dQ} = w\frac{\partial L}{\partial Q}$$

(29)

Under perfect competition the price is equal to marginal labour value times the price of a unit of labour, the wage rate.

This equation and its interpretation one simply does not find anywhere in the literature. What one finds is:

$$w = p\frac{\partial Q}{\partial L}$$

(30)

Under perfect competition, in equilibrium, the wage rate is equal to the value of the marginal product of labour. This is how bourgeois economists hide away labour values. And most of them deny the validity of the labour theory of value simply by referring to some obscure definition of labour values as supposed to be Marxian.

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In this simple microeconomic analysis of the theory of the firm we have shown that labour values are underlying the firm's economic decision processes. This can easily be extended to the demand side. The division of the values of a traditional inverse demand function - price as a function of the quantity - by the wage rate gives the inverse demand function in terms of labour values. These labour values can be regarded as labour commanded in the sense of Adam Smith, they indicate how many units of labour can be obtained by an amount of money. The labour values of the supply function can be regarded as labour embodied, indicating the cost of producing that quantity of a commodity. At the intersection of both curves labour commanded is equal to labour embodied as is shown in **Figure 7**.
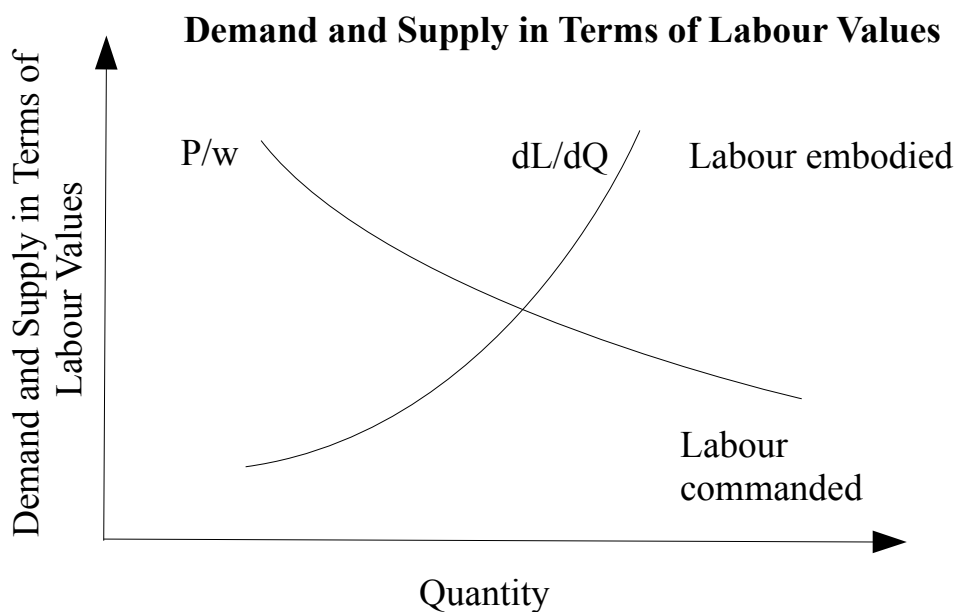

Figure 7.

This analysis can be extended to many markets and to the whole economic system which is done in the theory of General Economic Equilibrium.

V. Remarks on the Labour Theory of Value and General Economic Equilibrium

Beginning with François Quesnay's *Tableau économique* (1759) economists have developed models

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of the economy as a system. Marx had developed 2 models of reproduction, the model of simple reproduction and the model of accumulation (*Capital*, Vol. II). A complete General Equilibrium model has first been introduced by Léon Walras (1874). Such models allow the analyses of the economic system as a whole.

In the context of our discussion it is important to realize that these General Equilibrium models do *not* represent an actual capitalistic economy but serve as a kind of optimal system, the actual system can be compared with. In fact, quite often the General Equilibrium model represents only an exchange economy without production. Quantities of commodities are treated simply as given and this is used to show that 'embodied labour' does not matter at all in the determination of prices. These theoretical models have found very fruitful applications, notably in Input-Output models. The Input-Output model had been developed by the Russian economist Vladimir Leontief (1941). These input-output models are the most complete realistic presentations of the national economy as a whole or regional models, but they are obtained by introducing important limitations, i.e. linear production relations, i.e. constant average cost.

In the theory of General Economic Equilibrium even when production is considered, labour values are carefully avoided in the discussions. They are like God, one can't see them but they are there everywhere. The term referred to is marginal cost which is - as we have shown above under conditions of perfect competition - just the monetary expression of marginal labour values. Another shortcoming of the actual discussion of the general equilibrium system is that it regards competitive processes as fundamental but at the same time are hold assumptions which are incompatible with private competitive profit and utility maximizing behaviour, e.g. perfect information about technologies. The discussion of an optimal economic system should use terms appropriate for such a system whereas the language actually used is simply bourgeois neo-liberal apologetics.

The conditions under which labour and the means of production and raw materials are used in an optimal manner are called the *1ˢᵗ order Pareto-Optimality Conditions* (Mas-Colell, Whinston, and Green 1995). What is not stated is that these conditions are precisely those conditions necessary for the labour theory of value to hold.

We have left aside the demand conditions which form the other part of the 1ˢᵗ order Pareto-optimality conditions. Those demand conditions express that the ratio of marginal utilities equals relative prices just as the ratio of marginal labour values equals those relative prices. These Pareto-optimality conditions have been anticipated by H. H. Gossen in his "Entwickelung" (1854). Bourgeois economists carefully avoid any such interpretation of these conditions in terms of labour values as we have presented them here. But Tugan-Baranovsky in his "Grundlagen der marxistischen Theorie" has pointed out Gossen's Fundamental Theorem of the theory of pleasure:

> "This relationship between the labour effort for the production of a good and its value was very clear to the founder of the marginal utility school, Hermann Gossen: 'In order to maximize his life pleasure, man must distribute his time and energy among the preparation of various pleasures in such a way that the value of the last atom yielding each pleasure shall be equal to the magnitude of discomfort experienced by him if this atom had been created in the very last moment of the employment of force.'" [Gossen 1854, p. 45, translated by the editor]. (Tugan-Baranovsky 1905, p. 158).

The Keynesian economist Nicolas Kaldor has criticised the neo-classical economic theory along the following lines:

> "Professors Samuelson and Modigliani [(1966), the editor] have written a long critical essay on macroeconomic theories of distribution which demonstrates, not only the splendid analytical powers of the two authors, but also the intellectual sterility engendered by the methods of Neo-classical Economics. The assumption of Profit Maximization under conditions of Universal Perfect Competition involves, as a logical step (given the postulate of substitute relationships between factors), the assumption of production functions which are linear homogeneous and "well behaved" (with isoquants asymptotic to the axes). In addition, it has also been found necessary to assume either that capital is completely "malleable", or else that capital-labour intensities are identical in all industries in all circumstances so that real capital can be uniquely measured in value (money) terms - and that there is no technical progress, except of the "Harrod neutral" type which falls like manna from Heaven. Given sufficient refinement of

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analysis no doubt many other such "assumptions" may have to be added ... There is no room here for increasing returns, learning by doing, oligopolistic competition, uncertainty obsolescence and other such troublesome things which mar the world as we know it. Markets operate in such a way that "competition will *enforce* [their italics] *at all times* [my italics] equality of factor prices to [the values of (correction by the editor)] factor marginal productivities" (p. 271) and even if marginal productivities did not exist (in the " fixed coefficient case " on pp. 287-289) "markets" would still operate in such a way as to punish immediately a factor in excess supply, be it Capital or Labour, with a zero price."

And after questioning the realistic character of these assumptions he continues:

"It is the hallmark of the neo-classical economist to believe that, however severe the abstractions from which he is forced to start, he will "win through" by the end of the day-bit by bit, if he only carries the analysis far enough, the scaffolding can be removed, leaving the basic structure intact. In fact, these props are never removed; the removal of any one of a number of them as for example, allowing for increasing returns or learning-by-doing - is sufficient to cause the whole structure to collapse like a pack of cards."(Kaldor, 1966, p. 305 f.).

However, Nicholas Kaldor does not give us a proper clue why the neo-classical economists stubbornly insist of using these unrealistic assumptions. But there is a very important reason for this. The foundation of this scaffolding is the labour theory of value! A Pareto-optimal equilibrium implies the optimal use of labour and the validity of the labour theory of value. And it is clear, there is no alternative to attempting to formulate an economic theory by trying to figure out the precise conditions guaranteeing the optimal use of labour. The task of the heterodox economist becomes evident: Criticising the hypocritical attitude of the bourgeois economists who deny the very foundations of the science of economics but use mathematical models perfectly in line with a labour theoretical interpretation and it is even more important for heterodox economists to pose proper questions like: Can capitalist institutions, private production and profit maximization guarantee the optimal use of labour? Before we are turning to the last question we have to improve our analysis and consider not just a short term static situation but a growing economy. We are turning to the dynamic analysis of labour values.

VI. The Dynamic Analysis of Labour Values

We now come again to the issue raised above in the static analysis that surplus labour is considered as fixed. In the short run this is so, because the rate of interest and the amount of fixed capital are fixed, and therefore profits are fixed when production takes place at minimum average labour values. The question arises, how the rate of interest has to be interpreted in the context of the theory of production where it is the price of capital services, the cost of using capital. We are ignoring here the rate of interest as a price for loans in the money market and confine the analysis to the sphere of production. Money is simply taken as an accounting unit.

A proper interpretation of the cost of capital services has been given by Kantorovich who considered the cost of capital services in the context of an optimal socialist economy (Kantorovich, Bogachev 1970). The basic idea is very simple. We are taking the optimal point of production as presented in **Figure 2**. At the point A where labour's productivity is maximized there is a specific capital-labour ratio which guarantees this productivity. In the context of a growing economy this optimal capital-labour ratio can be maintained only, if capital as well as labour grow at the same rate. This rate of proportional economic growth is called the steady-state rate of growth, **g**. To provide for the accumulation of capital to maintain the optimal capital-labour ratio the cost of production have to include not only the direct labour inputs and the labour embodied in the depreciated fixed capital to replace that capital but also in addition the increase of that capital by the rate **g,** the steady-state growth rate. When these conditions are fulfilled the 1ˢᵗ order Pareto-optimality conditions hold also dynamically. This economic growth is called the Golden Rule of economic growth as it assures the optimal use of labour and the optimal consumption per capita. Notice that under these conditions the rate of capital accumulation is equal to the rate of growth of the labour force, labour force understood as efficiency units taking account of technical progress.

The optimal use of capital requires that the marginal productivity of capital is as high as this rate of capital accumulation. Kantorovich has chosen the term "norm of effectiveness" for this rate (Kantorovich; Vainshtein 1976) and he considered that this norm only makes sense in a planned socialist economy and that in a capitalist anarchistic economy no such norm exists as the interest rate is determined by money market conditions and expectations.

However, in economic theory we can still use the concept in order to calculate the appropriate labour values. We shall introduce the term **κ**-rate (Kantorovich-Rate) to indicate the rate of capital accumulation which guarantees the optimal use of labour in the context of a growing economy. It is this **κ**-rate which enters the cost of production formulas as in equation **(15).**

We have assumed so far that the economy is already on the Golden Rule path and the capital-labour ratios are optimal ratios. This is of course usually not the case, usually capital is lacking and the capital-labour ratios are suboptimal.[7] Because of diminishing marginal productivities in production, of labour as well as capital, this implies that the marginal productivity of capital is usually greater than the optimal rate. But to approach the optimal Golden Rule path it is necessary that all returns to capital are reinvested, i.e. accumulated, to obtain the optimal capital-labour ratio as soon as possible.

VII. The Contradictions of Capitalistic Economic Development

Here we come to an important limitation of capitalistic institutions. The capitalists aim to make profits not in order to maximize the productivity of labour but to live on the profits gained by economic activity. A part of the surplus value, or profits when expressed in monetary terms, is not reinvested as a socially necessary cost but privately appropriated and consumed. This is an all

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7   The analysis of disequilibrium is beyond the scope of this paper.

important aspect of the antagonism of the class interests of labour and capital. The part of profits which are not reinvested do not serve to maintain and increase the productivity of labour. In practice this part of not reinvested profits which is either consumed or exported, is increasing in Western economies. The aim of profit maximization in order to consume profits is contradictory to the optimal use of labour, the capitalistic profit-maximization is incompatible with the optimal economic development. Due to the liberalisation of international capital flows the export of profits has become a very important aspect of modern economic development and this is reflected in the discussions by bourgeois economists. But again one finds no reference to the underlying labour values, instead one speaks of the Feldstein-Horioka paradox (Feldstein, Horioka 1980) by which is meant a close relationship between domestic savings and investment rates with liberalized capital markets, which existed in the period after WWII until the beginning of the 80ies and is disappearing. These phenomena should rather be discussed in the sense of Hilferding's Finance Capital (1910, 1981) as an aggravation of the class antagonism between capital and labour.
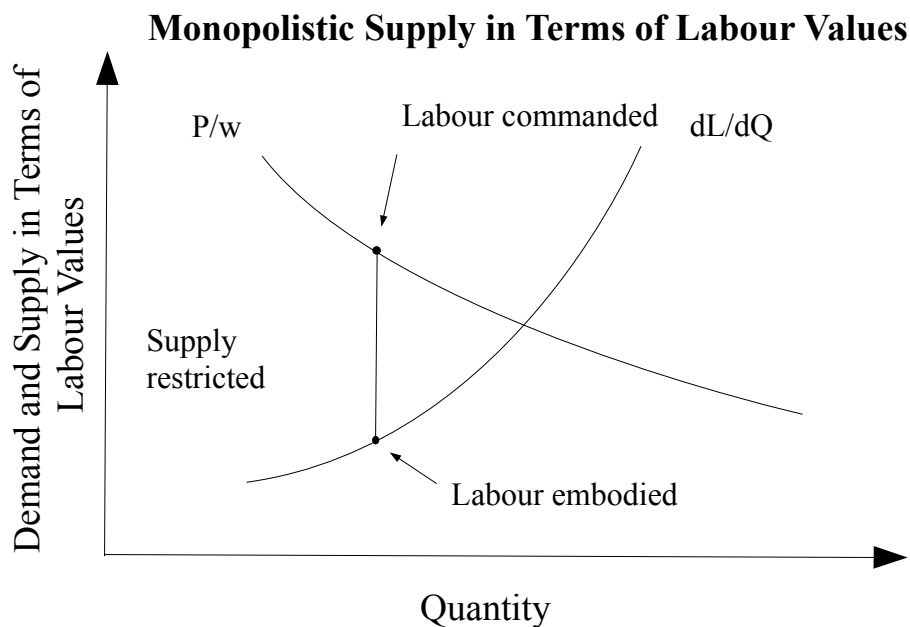
Monopolistic Supply in Terms of Labour Values

Figure 8.

It is not only the hindrance the capitalists seek to impose upon the accumulation of capital, by consumption of profits, exports of capital or by diverting profits towards military expenditure

(Luxemburg 1913, chap. 32,) but capitalists strive also to increase profits by restricting competition and directly preventing the exchange of commodities according to their values, instead exchanging them at monopolistic prices. Under conditions of monopolies, prices exceed the socially necessary cost of production, the value of labour commanded exceeds the value of labour embodied, and the consumers are overexploited as is shown in **Figure 8**.

VIII. The Law of Crowding out Capitalism

We are now capable of formulating the fundamental problem of the transformation of the capitalist mode of production into the socialist mode of production in the theory of Historical Materialism. In its fertile phase the capitalist mode of production allows capitalists to organize wage labour in such a way as to maximize its marginal productivity or to minimize its marginal labour value, its ultimate cost of producing a commodity expressed in terms of labour value. In such a state of affairs the commodities exchange according to their marginal labour values. The labour theory of value holds, prices are proportional to the marginal labour values. But due to the antagonistic character of the capitalistic production relations it's development is hampered and inefficiencies necessarily arise. To overcome economic downturns and crisis the progressive forces introduce newer, more efficient organizations of labour. These new methods of social production engender the reform of the superstructure, the socio-economic institutions. The ever increasing control mechanisms of the economy are improved and finally is recognized that the profits of capital investments constitute a socially necessary part of the cost of production and have to be reinvested in their entirety to obtain a maximum productivity of labour as long as the return on investment is superior to the rate of growth of the labour force. But this is contradictory to the most elementary interests of the capitalists who aim at exploiting the profits for their own consumption.

Society, in order to avoid economic and social crises, turns against the capitalist class interests by assuring an optimal supply of capital via collective capital formation and optimizes the productivity of labour and eliminates the *ultima ratio* of the capitalists, the supply and control over capital. But as the capitalistic control over capital is democratically crowded out of the social relations the capitalists, threatened to loose control, turn themselves against the democratic institutions and finally resort to the use of violence in order to maintain their privileges. Only when the labour movement is well enough organized it can overcome the regressive attacks against the social progress.

When this scenario is depicted as the "real" law of the transformation of capitalism towards socialism it is obvious that only now this is a realistic opportunity. At the times of the II. International such an outlook was absolutely impossible. Only after the introduction of the Keynesian methods of control of the capitalist economies with the development of the systems of national accounts and the institutionalization of the political control of the economy in the context of the competition of the socialist and the capitalist systems on a world scale and the formation of welfare states this "way" has become a realistic one. The question is, if it will remain so or if we are loosing this chance as the labour movement fails to take up the opportunity. The course of the class struggle will decide our destiny.

IX. Political Aspects of The Strategy of Crowding out Capitalism

Rosa Luxemburg's criticised the revisionist position of Eduard Bernstein (1899) in: *Social Reform or Revolution*:

> "At first view the title of this work may be found surprising. Can the Social-Democracy be against reforms? Can we contrapose the social revolution, the transformation of the

existing order, our final goal, to social reforms? Certainly not. The daily struggle for reforms, for the amelioration of the condition of the workers within the framework of the existing social order, and for democratic institutions, offers to the Social-Democracy an indissoluble tie. The struggle for reforms is its means; the social revolution, its aim.

It is in Eduard Bernstein's theory, presented in his articles on Problems of Socialism, Neue Zeit of 1897-98, and in his book Die Voraussetzungen des Socialismus und die Aufgaben der Sozialdemokratie [here quoted as *Evolutionary Socialism* (Bernstein 1899) the editor] that we find, for the first time, the opposition of the two factors of the labour movement. His theory tends to counsel us to renounce the social transformation, the final goal of Social-Democracy and, inversely, to make of social reforms, the means of the class struggle, its aim. Bernstein himself has very clearly and characteristically formulated this viewpoint when he wrote: "The Final goal, no matter what it is, is nothing; the movement is everything." (Luxemburg, 1900, Introduction).

And again in chapter 6 on *Economic Development and Socialism* she contrasts the perspectives of

Socialism of the Blanquists and Bernstein against the proper social-democratic perspective as the

integrity of social reform and the struggle for political power:

"To the Blanquists, who represented a socialist and revolutionary tendency, the possibility of the economic realisation of socialism appeared quite natural. On this possibility they built the chances of a violent revolution – even by a small minority. Bernstein, on the contrary, infers from the numerical insufficiency of a socialist majority, the impossibility of the economic realisation of socialism. The Social-Democracy *does not, however, expect to attain its aim either as a result of the victorious violence of a minority or through the numerical superiority of a majority. It sees socialism come as a result of economic necessity – and the comprehension of that necessity – leading to the suppression of capitalism by the working masses.* And this necessity manifests itself above all in the anarchy of capitalism." (l.c., chap. 6, Economic Development and Socialism)

At the beginning of the discussion of *economic development and socialism* she refers directly to the

historical materialist conception:

The greatest conquest of the developing proletarian movement has been the discovery of grounds of support for the realisation of socialism in the *economic condition* of capitalist society. As a result of this discovery, socialism was changed from an "ideal" dreamt of by humanity for thousands of years to a thing of *historic necessity*. (l.c.).

"The secret of Marx's theory of value, of his analysis of the problem of money, of his theory of capital, of the theory of the rate of profit and consequently of the entire existing economic system is found in the transitory character of capitalist economy, the inevitability of its collapse leading – and this is only another aspect of the same phenomenon – to socialism."(l.c.).

Her perception rests upon the believe that capitalism would collapse because of its anarchic character. At the same time she rejects the "gradual introduction of socialism":

> "The theory of the gradual introduction of socialism proposes progressive reform of capitalist property and the capitalist State in the direction of socialism. But in consequence of the objective laws of existing society, one and the other develop in a precisely opposite direction. The process of production is increasingly socialised, and State intervention, the control of the State over the process of production, is extended. But at the same time, private property becomes more and more the form of open capitalist exploitation of the labour of others, and State control is penetrated with the exclusive interests of the ruling class. The State, that is to say the political organisation of capitalism, and the property relations, that is to say the juridical organisation of capitalism, become more capitalist and not more socialist, opposing to the theory of the progressive introduction of socialism two insurmountable difficulties." (l.c., chap. 4, Capitalism and the State)

To deny the existence of incredible difficulties of introducing economic reforms which ultimately eliminate the capitalist mode of production is certainly not defended here. On the contrary, the experiences in Sweden in the 1980ies (Sjöberg, 2006) underline the highly realistic arguments of Rosa Luxemburg. On the other hand we have to reject the *collapse of capitalism thesis* as argued above and we know that these reforms are necessary and the collective formation of capital will lead to the elimination of the capitalist mode of production. This fundamentally changes the political scenario as it has been perceived hitherto. There are types of reforms which introduce significant changes in the mode of production although one must admit that these changes are the result of the class struggle. The Keynesian policies have been adapted as a result of the *Social Threat of Communism* by the maturing Soviet Union. As the title of W. Beverage's book indicates *The Price of Peace* had to be paid (Beverage 1945).

The crucial problem for labour is to overcome the obstacles imposed by the capitalist mode of production of consuming profits, leading to underinvestment and unemployment and international conflicts and the over-exploitation, by imposing social, political and economic institutions and production procedures guaranteeing the optimal use of labour and respecting the labourers. Obviously this is possible only under a state of political democracy. On the basis of political

democracy the labour movement extends the sphere of democratic control over the economy and even over Nature. It overcomes the supremacy of the capitalists not by military action but by eliminating the *ultima ratio* of the capitalists, the supply of capital, by collective capital formation. In this way capitalism is crowded out of the reproduction process of society.

Our analysis - which is *mathematically* perfectly in line with neo-classical analysis but in its interpretation the anti-thesis - shows the way of perceiving the process of transformation from capitalism to socialism. The elimination of the *ultima ratio* of the capitalists, the supply of capital is not a means to achieve as an aim the revolution. It constitutes the core element of a "*socialist transformational politics*, a politics that seeks to change the real relationships, the ownership and power relationships in such a way that thereby capitalism is pushed backwards and inklings of non-capitalist relationships develop." (Brie, Klein 2004, p. 6).

A major problem of such a political approach is the avoidance of violent counter-revolutions. The contradictions of the class interests of capital and labour are of an antagonistic character and the imposition of economic democracy, the elimination of the capitalistic private appropriation and consumption of profits and finishing up with the exploitation of the working classes - the crowding out capitalism - is the revolution.

Paris, 26.6.2011

Klaus Hagendorf

References

Bernstein, Edward. (1899; 1909).

Evolutionary socialism : A criticism and affirmation. (translated from: *Die Voraussetzungen des Sozialismus und die Aufgaben der Sozialdemokratie*,). London: Independent Labour Party. Available online at: http://ia600408.us.archive.org/21/items/cu31924002311557/cu31924002311557.pdf

Beveridge (1945).

The price of peace. New York: W. W. Norton.

Böhm-Bawerk (1896, 1898)

Karl Marx and the Close of His System. London: T.F. Unwin; 1898. Translated from the German article: Zum Abschluss des Marxschen Systems. In: Boenigk, Otto Johannes Eugen Ferdinand Wilhelm (Freiherr von). *Staatswissenschaftliche Arbeiten. Festgaben für Karl Knies zur fünfundsiebzigsten Widderkehr seines Geburtstages in dankbarer Verehrung dargebracht* von Eugen v. Böhm-Bawerk ... O. v. Boenigk ... J. B. Clark ... Berlin: O. Haering; 1896. Available online at: http://www.marxists.org/subject/economy/authors/bohm/index.htm

Brie, Michael; Klein, Dieter (2004).

"How: The ways - revolution, reform, transformation - Marxist-inspired reflections". Contribution to the Seminar of the Rosa Luxemburg Foundation: *Reform or Revolution? Social conflict, concepts, actors, strategies of the battle against neoliberalism;* Rio de Janeiro, June/July. Available online at: http://www.transform-network.net/uploads/media/Michael_Brie_-_Dieter_Klein_-_How_-_the_ways_-_revolution__r.doc

Capital, Vol. I

Marx, Karl. (1867). *Capital : a critique of political economy. The process of capitalist production.* eds. Friedrich Engels and Ernest Untermann. Translated from the third German edition by Samuel Moore and Edward Aveling. Chicago: Charles H. Kerr & Company; 1906. Available online at:

http://www.archive.org/download/capitalcritiqueo00marxiala/capitalcritiqueo00marxiala.pdf

Capital, Vol. II

Marx, Karl. *Capital : a critique of political economy. Volume II. The Process of Circulation of Capital.* Ed. Friedrich Engels. Translated from the second German edition of 1885 by Ernest Untermann. Chicago: Charles H. Kerr & Company Co-operative; 1909, 1933. Available online at:

http://www.archive.org/stream/capitalcritiqueo02marxiala#page/n5/mode/2up

Capital, Vol. III

Marx, Karl. *Capital : a critique of political economy. Volume III. The Process of Capitalist Production as a Whole.* Ed. Friedrich Engels. Translated from the first German edition of 1894 by Ernest Untermann. Chicago: Charles H. Kerr & Company Co-operative; 1909. Available online at:

http://www.archive.org/stream/capitalcritiqueo03marx#page/n7/mode/2up

Clark, John Bates. (1892).

The Ultimate Standard of Value. *The Yale Review* I(3): 258-274. Available online at:

http://www.bibliotheque-institutdefrance.fr/numerisation/Clark%201892/Clark%201892%20-%20The%20Ultimate%20Standard%20of%20Value.pdf

Feldstein, M.; Horioka, C. (1980).

Domestic Saving and International Capital Flows. *The Economic Journal* 90(358): 314-329.

Flaschel, Peter (2010).

Baseline Approaches to the Labour Theory of Value. In *Topics in Classical Micro- and Macro-economic Theory. Elements of a Critique of Neoricardian Theory*. New York et al.: Springer-Verlag, p. 15-40. Available online at: http://books.google.fr/books?id=pdnsCqL0aLcC&lpg=PR1&dq=Topics%20in%20Classical%20Micro-%20and%20Macroeconomics.%20Elements%20of%20a%20Critique%20of%20Neoricardian%20Theory&hl=en&pg=PR1#v=onepage&q&f=false

Gossen, Hermann Heinrich. (1854).

Entwickelung der Gesetze des menschlichen Verkehrs und der daraus fliessenden Regeln für menschliches Handeln. 1st ed. Braunschweig: Verlag von Friedrich Vieweg und Sohn. Available online at: http://books.google.fr/books?id=BzFGAAAAYAAJ&dq=Gossen%201854&hl=en&pg=PR3#v=onepage&q&f=false

Henderson, James M.; Quandt, Richard E. (1980).

Microeconomic Theory: A Mathematical Approach. 3rd ed. New York: McGraw-Hill.

Hilferding, R.(1910, 1981).

Finance capital : a study of the latest phase of capitalist development. London: Routledge & Kegan Paul. Translated from *Das Finanzkapital. Eine Studie der jüngsten Entwicklung des Kapitalismus*. Wien: Wiener Volksbuchhandlung; 1910. by T. Bottomore. Available online at: http://www.marxists.org/archive/hilferding/1910/finkap/.

Kaldor, Nicholas. (1966).

Marginal Productivity and the Macro-Economic Theories of Distribution: Comment on Samuelson

and Modigliani. *The Review of Economic Studies* 33(4): 309-319.

Kantorovich L.; Bogachev, V. (1970).

The Price of Time. *Problems of Economics* 12(10): 3. First published in *The Kommunist*, 1969, 10.

Kantorovich, L.V.; Vainshtein, Al'b.L. (1976).

On the Calculation of the Norm of Effectiveness on the Basis of a One-product Model of the

Development of the Economy. *Problems of Economics* 19(4/5/6): 68.

Leontief, Wassily W. (1941).

The structure of American economy, 1919-1929 : an empirical application of equilibrium analysis.

Cambridge: Harvard University Press.

Luxemburg, Rosa (1900, 1937)

Reform or Revolution. Translation of the German book *Sozialreform oder Revolution* (1900). New

York: Three Arrow Press. Available online at:

http://www.marxists.org/archive/luxemburg/1900/reform-revolution/index.htm

Luxemburg, Rosa. (1913, 1951).

The Accumulation of Capital. Edited and introduced by Joan Robinson.London: Routledge &

Kegan Paul Ltd.; 1951. Available online at:

http://www.marxists.org/archive/luxemburg/1913/accumulation-capital/accumulation.pdf

The German original: *Die Akkumulation des Kapitals : Ein Beitrag zur ökonomischen Erklärung*

des Imperialismus. Berlin: Buchhandlung Vorwärts Paul Singer. Available online at:

http://www.babbelclub.org/Bilder/AkkumulationLuxemburg_T2.pdf.

Mas-Colell, Andreu; Whinston, Michael Dennis; Green, Jerry R. (1995).

Microeconomic theory. New York: Oxford University press.

Marx, Karl (1867, 1906)

Capital. A Critique of Political Economy. See: Capital. Vol. I, II and III.

Marx, Karl. (1859, 1904).

A contribution to the critique of political economy. 2nd ed. Chicago: C. H. Kerr & Company.

Available online at:

http://ia600301.us.archive.org/7/items/cu31924011249889/cu31924011249889.pdf

The translation of the text quoted is at:

http://www.marxists.org/archive/marx/works/1859/critique-pol-economy/preface.htm

Quesnay, François (1759)

Tableau oeconomique avec ses explications. Paris: Hérissant. Also in: *Œuvres économiques complètes et autres textes*. Eds. Théré, C.; Charles, Loïc; Perrot, Jean-Claude. Paris: L'institut national d'études démographiques; 2005. P. 391ff. Available online at: http://books.google.fr/books?id=-Q39p0b0JJ8C&lpg=PA439&ots=w4HoylYT3G&dq=%22Tableau%20oeconomique%20avec%20ses%20explications%22&hl=en&pg=PA439#v=onepage&q&f=false

Samuelson, P. A.; Modigliani, F. (1966).

The Pasinetti paradox in neoclassical and more general models. *The Review of Economic Studies* 33(4): 269–301.

Sjöberg, Stephan. (2006).

Collective Capital Formation for Economic Democracy. The Fordist History in Germany and Sweden and the Post-Fordist Future. Stockholm: Centre for Marxist Social Studies. Available online at: http://eurodos.free.fr/mime/articles/Sjoeberg%202006%20-%20Collective%20Capital%20Formation%20for%20Economic%20Democracy.pdf

Tugan-Baranowsky, Mikhail Ivanovich. (1905).

Theoretische Grundlagen des Marxismus. Leipzig: Verlag von Duncker & Humblot. Available online at:

http://ia600306.us.archive.org/24/items/theoretischegru00tugagoog/theoretischegru00tugagoog.pdf

Walras, Léon. (1874).

Walras, Léon. 1874. Éléments d'économie politique pure, ou, Théorie de la richesse sociale. Lausanne: L. Corbaz & Cie. Available online at:

http://ia600201.us.archive.org/15/items/lmentsdconomiep00walrgoog/lmentsdconomiep00walrgoog.pdf