

1 The value of money, the value of labour power and the net product: an appraisal of the ‘New Approach’ to the transformation problem

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The transformation of values into prices of production has been the subject of discussion for over one hundred years. The first shots of this debate were fired even before the publication of Marx’s own treatment of this issue, in the third Volume of *Capital* (see Engels 1981 and Howard and King 1987). A continuous flow of literature has followed, which analyses the relationship between values and prices from virtually every conceivable angle. Today, the polemic is still very much alive, although the matters at stake have changed with the concerns of the writers involved.

Until the mid 1970s, the most important issue in the discussion was the circumstances in which the equalities between total value and total price, and total surplus value and total profit, hold. Marx attributed great importance to them, and they quickly became the conditions which any credible solution to the transformation problem must satisfy – or at least convincingly explain away.

The prominence of these equalities is closely related to the predominance which general equilibrium approaches to the transformation problem have achieved. These approaches follow the tradition of Tugan Baranowsky (1905) and Bortkiewicz (1952, 1984). They became, quite early, the standard way to frame the relations between values and prices (the most typical example is Steedman 1977). Even though many disagreed with them, general equilibrium solutions remained for decades the centre of attention. This has now changed. In the late 1970s and early 1980s Gérard Duménil and Duncan Foley independently proposed the ‘New Approach’ to the transformation problem; one of the most important characteristics of their solution is that it addresses the transformation problem (and Marx’s two aggregate equalities) irrespective of equilibrium.

The increasing popularity of the New Approach has helped shift the terms of the transformation debate into more substantive issues, as far as Marx’s value theory is concerned, such as the nature of value and price, the value of labour power and the value of money. In this chapter, I am concerned with the evaluation of the New Approach from the point of view of its potential

contribution for a non-equilibrium interpretation of Marx's theory of value. Therefore, I do not examine the New Approach as a pretext for proposing another solution to the transformation problem, nor do I engage in eulogy or hairsplitting controversies. On the contrary, my objective is to scrutinize the New Approach searching for its positive contribution, and the means to develop it further.

With this objective in mind, I make a systematic presentation of the context and content of the New Approach in the first two sections of this chapter. This presentation establishes a general framework for the analysis of the New Approach, which is until now absent from the literature. The third critically analyses general equilibrium solutions to the transformation problem (especially the neo-Ricardian), argues for their rejection, and emphasizes the positive contribution of the New Approach in this respect. The fourth, fifth and sixth examine three of the most important contributions of the New Approach for value theory – the operation on the net product and the definitions of value of money and value of labour power. The seventh summarizes the discussion.

1.1 THE CONTEXT OF THE NEW APPROACH

The New Approach to the transformation problem was developed as part of the reaction against the neo-Ricardian critique of Marx. The neo-Ricardian view of the transformation is well known, and does not need to be summarized here (see Desai 1989, 1992, and Steedman 1977; for a critical survey, see Fine and Harris 1979). It suffices to say that, in their approach to the transformation, the neo-Ricardians begin from two systems of equations in equilibrium, one purporting to represent commodity values and the other prices of production. Given these systems, a little algebraic manipulation shows that it is generally impossible to obtain both Marx's equalities between total value and total price, and total surplus value and total profit. This is important, because it follows that either it cannot be shown that unpaid labour is the source of profit, or that prices are forms of value. Either of these results seriously challenges the cogency of Marx's theory of value, and a large part of the transformation debate revolves around claims and counter claims with regard to definitions and the conditions in which these equalities hold.

Therefore, even when challenging the neo-Ricardian results the literature on the transformation problem has often accepted the framework in which the critics of Marx posited the transformation. In particular, it was accepted (if only implicitly) that the validity of Marx's value theory hinges upon the possibility of obtaining the two aggregate equalities, and of connecting the systems of equations representing values and prices in a logically meaningful way. As mentioned above, it was not difficult for the neo-Ricardian writers to show that this is generally impossible. Those who attempted to salvage Marx's theory of value from within this model could at most provide some (generally unconvincing) explanation for the failure of the two equalities to hold

simultaneously (see, for example, Gerstein 1976; his analysis is criticized in Fine 1986b).

By the mid 1970s it was already clear to many that the neo-Ricardian attack was based on a serious misrepresentation of the concepts and the method appropriate to Marx's theory of value (see, for example, Mandel and Freeman 1984, and Yaffé 1974). Awareness of this fact eventually led to the impossibility of meaningful dialogue across the theoretical divide and, subsequently, to the bitter collapse of the discussion. In the following years increasingly sophisticated studies were made, which gave generality and more consistency to Marx's theory of value (see, for example, Elson 1979a, and Hunt and Schwartz 1972). The development of one of these research programmes led, in the late 1970s, to the elaboration of the New Approach to the transformation problem. This innovative approach not only to the transformation but to value theory as a whole was proposed by Gérard Duménil (1980, 1983, 1984), Duncan Foley (1982, 1983, 1986) and Alain Lipietz (1982, 1983, 1984). Their interpretation of value theory owes much to Rubin (1973), and subsequent work draws heavily upon Aglietta (1979).

The distinctive conception of value theory in the New Approach surfaces most clearly through three differences between this and previous solutions to the transformation problem; first, the emphasis on the net, not the gross product; second, the distinctive conception of the value of money and, third, the changed definition of the value of labour power. When looked at under the light of these innovations, the transformation problem becomes trivial and, in effect, vanishes. Let us see why.¹

1.2 THE NEW APPROACH: AN INTRODUCTION

In order to follow the 'New Solution' to the transformation problem, we presume that the economy's wage rate is known.² In addition, the inputs and labour time socially necessary to produce each commodity, and the prices of all commodities, are also presumed known. In other words, we have the hourly wage rate w , the $1 \times n$ price vector p , the $n \times 1$ gross output vector X , the $1 \times n$ labour inputs vector l and the $n \times n$ technical matrix a of the economy.³ These variables may not be for equilibrium, and may not reflect the prevalence of a uniform rate of profit across all sectors.

The value of money (measured in hours of labour per pound sterling) can now be defined. For the New Approach, the value of money is the ratio between the labour performed in the economy and the price of the net product, which is the $n \times 1$ vector Y ; it is identical to $(I - a)X$. Therefore, the price of the net product is

$$pY = p(I - a)X$$

The value of money indicates the quantity of labour represented by the unit of money, or the labour time necessary to add one pound sterling to the value of the final product (see Aglietta 1979:41-44, and Foley 1982).

For example, suppose that we have a very simple economy, where the gross product is one unit of flax (F) and one unit of linen (L) per year. Flax is produced by four hours of labour (l), and linen by two hours of labour and one unit of flax; therefore, all flax is consumed as an input in the production of linen, and the unit of linen is the net product of the economy.⁴ This can be represented as:

$$4l \rightarrow 1F$$

$$2l + 1F \rightarrow 1L$$

It must be stressed that the flax produced in the *current* year will be used as an input to the production of linen in the *next* year; in other words, the flax is *not* consumed in the same period when it is produced. It is immediately evident that the total labour performed in this economy is $6l$, the total gross product is one unit of flax and one unit of linen and, as mentioned above, the net product is one unit of linen. If the linen is sold at £6, it follows that the value of money is:

$$\lambda^m = 6l/\text{£}6 = 1l/\text{£}$$

In more general terms, the value of money is:

$$\lambda^m = \frac{IX}{p(I-a)X}$$

The reader should beware of the fact that the value of money is conceptually distinct from the value of the money commodity. In particular, it does not follow from the definition of value of money that commodity prices are necessarily proportional to the labour time socially necessary to produce them (see below and section 5).

The conception of value in the New Approach begins from the fact that the total labour performed in the period (IX) is equal to the newly created value λY , where λ is the $1 \times n$ vector of commodity values, given by

$$\lambda = l(I-a)^{-1}$$

From this⁵ and the definition of the value of money a highly important conclusion follows: the price of the net product is identical to the total value produced divided by the value of money (if k is the inverse of the value of money, or the money value added to commodities in one hour of labour, then $pY = k\lambda Y$).⁶

According to the New Approach, this is the content of Marx's equality between total value and total price.⁷ The underlying conception is that the labour performed in the period creates the gross product of the economy, but only the value of the net product. The newly produced money value is allocated to the commodities in the net product as their price. Hence, whatever the rules of price formation, Marx's first equality must always hold (the rationale for the emphasis on the net, and not gross product is discussed in section 4).

Let us now proceed to the second equality, between total surplus value and total profit. Define W to be the quantity

$$W = wlX$$

or the total wages of all workers.

The value of labour power, V , is defined as the share of the net product that is appropriated by the workers, and the surplus value is the share of the capitalists (thus, $S = 1 - V$).⁸ The value of labour power is the product of the value of money by the wage rate:

$$w = \frac{wlX}{lX} = \frac{W}{\lambda Y} = \frac{W}{\lambda^m pY} \Rightarrow$$

$$w\lambda^m = \frac{W}{pY} \equiv V$$

In the example above, $lX = \lambda y = 6l$, $pY = \text{£}6$ and $\lambda^m = 1/\text{£}$. If we suppose that $w = \text{£}0.5/l$, then $V = 0.5$ and $S = 0.5$.

The newly created value is distributed to capitalists and workers as wages and profits. Hence, whatever the rules of distribution and price formation the social revenue is equal to the money value (and price) of the net product:

$$W + \Pi = pY$$

$$\frac{W}{pY} + \frac{\Pi}{pY} = 1$$

It follows that:

$$\frac{W}{pY} + \frac{\Pi}{pY} = V + S$$

as $W/pY = V$,

$$\frac{\Pi}{pY} = S \Rightarrow \Pi = kS\lambda Y$$

In the example, we know that $W = 6 \times \text{£}0.5 = \text{£}3$ and $pY = \text{£}6$; thus $\Pi = \text{£}3$. This is equal to the share of the money value created per hour of labour seized by the capitalists, times the mass of new value produced. It immediately follows that the shares of workers and capitalists in the net product are identical, whether they are measured in labour hours or money (see Aglietta 1979:48-49 and Duménil 1980:76, 124). Thus,

$$e = \frac{S}{V} = \frac{\Pi}{W}$$

This ratio is the rate of surplus value, or of exploitation. It is determined when commodities are priced and wages are paid. The ratio is unaffected by the use of wage revenues, which may include the consumption of necessities or luxuries, saving or hoarding (in our case, $e = S/V = 0.5/0.5 = \Pi/W = 3/3 = 100$ per cent).

The New Approach sees this as a proof that profit is merely redistributed surplus value. The (trivial) manner in which Marx's two aggregate equalities are obtained has led Duménil and Lévy (1991:362) to claim that

[r]ather than a ‘solution’ [to the transformation problem], it is more adequate to refer here to an *interpretation*, since there is basically nothing to prove from the formal point of view.

Some writers have objected that the simplicity and generality of this solution is the result of the changed definition of some key variables. Because of this, they argue that the New Approach fails to produce any new insights and reduces the real problems in the transformation into a tautology (see, for example, Bellofiore 1989). However, this is not the whole story. As will be seen in sections 4 to 6 below, this critique of the New Approach is based on a partial reading of Duménil and Foley’s work, which ignores the important contribution that their approach can offer to a non-equilibrium interpretation of Marx’s theory of value.

In my view, the most important issue at stake is that the New Approach obtains the two equalities without presuming general equilibrium or simple reproduction. This is an important step forward, for it shifts the transformation debate away from the (inadequate) terms imposed by the neo-Ricardian approach. Before we evaluate the contribution of the New Approach in more detail, we need to investigate the problems with the equilibrium analysis that it has displaced.

1.3 GENERAL EQUILIBRIUM AND THE DERIVATION OF PRICES OF PRODUCTION

The assumption of either general equilibrium or simple reproduction is an important feature of most solutions to the transformation problem, especially the neo-Ricardian. If general equilibrium is presumed, it follows that the economy can be represented by a price equation such as

$$p = (pa + wl)(1 + r)$$

In other words, the price of each commodity is the sum of the price of the material inputs with the wage cost, marked up by one plus the rate of profit. This equation has been considered a useful depiction of the concept of price of production because of the uniform rate of profit r , which allegedly expresses the results of competition. In addition, it ensures that input prices are identical to output prices, in which case Marx’s alleged error of not having transformed input values is avoided. Let us see how legitimate are these arguments, starting with the uniform rate of profit.

Everyone knows that profit rates are not identical across the economy. The issue is whether, given our interest in the transformation of values into prices of production, the presumption that they are helps us understand some essential features of capitalism, or whether it makes it harder to grasp them. Marx, for example, identifies two qualitatively distinct kinds of competition in his work, between capitals of the same branch and between capitals of different branches.⁹ Competition between capitals of the same branch is analysed in detail in *Capital*

I, where it is shown that this is a powerful force behind the overexploitation of the workers and the introduction of technical innovations in production.¹⁰ Faster and more demanding production lines, new methods of production and more advanced machines reduce the individual value of a commodity relative to its social value and, thereby, grant exceptionally high profits to some producers. These profits are skimmed from their relatively backward competitors, whose unit costs are higher. Therefore, competition between capitals in the same branch leads to the *divergence* of individual profit rates.

In the first two parts of *Capital* III Marx shifts his attention to competition between capitals in different branches. This kind of competition operates through the (threat of) migration of individual capitals towards sectors in which the profit rates are higher. Because of this, commodities are not sold at prices proportional to their labour value (otherwise sectors with a lower than average organic composition of capital would have exceptionally high profit rates). On the contrary, commodities are sold at prices of production formed on the basis of an equal profit rate across all sectors of the economy. Therefore, competition between capitals of different branches leads to the *equalisation* of profit rates across the economy.

Marx's theory of value is a dialectical theory, that recognizes that the contradictory forces put in motion by these two kinds of competition have distinct levels of complexity. Therefore, they cannot be added to give either a uniform rate of profit across the economy (in which case competition within sectors is obliterated) or an ever growing disparity of profit rates (which would lead to the unrelenting monopolization of all sectors of the economy). The most important aspect of this analysis is that it captures the complex, conflicting and dynamic tendencies beneath capitalist competition.

In contrast, the assumption that prices are formed on the basis of the uniform rate of profit eliminates technical progress at its source and, with it, the possibility of conceptualizing these real contradictions. In exchange for the ability to understand the complex processes behind competition (which is one of the most important advantages of Marx's approach over mainstream economic theory), general equilibrium analysis offers a price system that can, in certain (restrictive) circumstances, deliver a determinate price vector; because it is for equilibrium, this vector brings with it the sought-for identity between output and input prices. This bargain has been considered acceptable by many, who felt that an adequate solution to the transformation had to be probed against the (external) criterion of the two aggregate equalities. As this involved the need to determine the sum of prices and the sum of profits, a price equation such as

$$p=(pa + wl)(1 + r)$$

was considered a necessity.

This equation was introduced into the analysis of the transformation by writers who conflated the issues that concerned Marx with those that interested Sraffa (1960): the investigation of the effects of changes in distribution on prices.

Because of the nature of Sraffa's concerns, he uses a price equation tailored to impose equilibrium and preclude technical change.¹¹ Moreover, he feels no need to consider how technologies are determined and why they change, to peer into the origin of the surplus, or to analyse the inner nature of class conflicts in capitalist society. However, these limitations make production in Sraffa's system resemble a purely technical process, while capital can hardly be defined except as a collection of use values. As a result, the social aspect of production is either assumed away or projected upon the sphere of immediate interest, distribution (this argument is developed in some of the best known Marxian critiques of neo-Ricardianism; see, for example, Rowthorn 1974a, and Shaikh 1982, 1984).

This analytical context is clearly distinct from Marx's, where the social and historical aspects of capitalist production are heavily emphasized. For example, in *Capital* I he shows that, despite the fact that technologies are conditions for value creation, they are themselves determined through the law of value (see Carchedi 1991). This conclusion cannot be justified on the basis of general equilibrium models and, particularly, of Sraffa-based ones. Marx also discusses class struggle in production extensively, but his analysis of distributional struggle is much less developed, as opposed to Sraffa's. This is not because Marx considered it unimportant, but because it is more complex and concrete; it would have been considered later, had he been able to fulfil his plans (this issue is discussed extensively in Lebowitz 1992; see also Naples 1989).

Therefore, the use of a price equation derived from Sraffa in the analysis of the transformation is misleading for several reasons (of course, this does not mean that this equation should be rejected in general). First, Marx does not discuss the transformation in the context of equilibrium or simple reproduction, and his own problem does not depend upon the equality between input and output prices. The imposed identity between them is therefore unnecessary and unwarranted, for it eliminates one of the main sources of dynamics in capitalism, competition inside branches. Second, the technical conditions of production are irrelevant to Marx's analysis of the transformation, other than the distinct organic compositions of the capitals involved. In contrast, the use of Sraffa's price equation requires knowledge of the technologies of production. Third, the main subject of Marx's transformation is not the calculation of values or prices, as is the case in equilibrium approaches; on the contrary, Marx's intention is to show that profit is merely a form of surplus value, and that price is a form of value.

In addition, the equilibrium assumption has implications of another order: in equilibrium, the qualitative relations of determination between the variables are lost. Systems of equations such as the neo-Ricardian do not have a clear internal structure, and cannot reflect the distinct levels of abstraction which Marx's theory of value uses to reconstruct the relationship between essence and appearance. Hence, general equilibrium approaches can hardly conceive the transformation except as the attempted construction of a mathematical correlation between

otherwise autonomous price and value systems. As a result, the connection ('transformation') between them is bound to be arbitrary.

This is a result of the misleading opposition between the value system and the price system in which it is 'transformed' (see Kliman and McGlone 1988). The price system has two degrees of freedom (because it has n equations, one for each commodity, but $n + 2$ unknowns, the n prices and the wage and profit rates). Therefore, while the value system can usually be solved (provided that the matrix A is well behaved), the price equations can only be solved if other assumptions are introduced, such as the identity of the value of labour power with the value of a fixed bundle of goods (while the wage is the price of this bundle), plus some normalization condition such as one of Marx's aggregate equalities. However, the solution of this system generally shows that the other aggregate equality is not also possible.

There is surely one major difficulty with this result, and it lies in the model and not Marx's theory of value. For Marx was adamant that these equalities are not independent conditions, but one and the same; the reason why total prices equal total values is that total profit equals total surplus value. Unfortunately, most analysts disregarded the built-in inability of general equilibrium models to represent adequately the concepts which are being investigated, and ignored the problems of trying to represent the complex internal structure of Marx's theory of value in this context. Because of this Marx's theory, and not the equilibrium models which improperly represented it, was blamed for the inconsistent results obtained.

The anomalous results reached by equilibrium analyses are discussed in a vast literature. Because of their misleading representation of Marx's theory of value and, particularly, the conflation of Marx's transformation problem with Sraffa's, several elements of Marx's method and some of his most important conclusions have been deemed to be wrong. This is the case with his 'error' of not having transformed input values, the attribution of 'undue importance' to the value rate of profit as opposed to the price rate, the 'unwarranted' stature of values in the analysis of capitalism, and so on (see Steedman 1977). The New Approach rightly sets these difficulties aside, and obtains the two 'identities' with no need to presume general equilibrium (the formulations in Lipietz 1982, 1983 are more limited). This is one of its greatest merits, and it is against this background that the alternative perspective of the New Approach should be evaluated. In the next three sections the peculiarities of this solution are considered in detail.

1.4 THE OPERATION ON THE NET PRODUCT

Duménil (1980) and Foley (1982) pointed out that the traditional view, in which the aggregate equalities between value and price and surplus value and profit refer to the money value and price of the gross product, is inconsistent with the definition of value adopted in the New Approach because of double counting.

They argue that the profit on the production of means of production, say, counts first as part of the social profit, and again as part of the cost of the means of consumption. The same holds with respect to the other components of the money value of the means of production. Therefore, they must be subtracted, and only the net product and its value can be the subject of the transformation.¹²

This is one of the most important innovations of the New Approach. The rationale for the operation on the net product is not straightforward. Let us start from the circuit of capital:

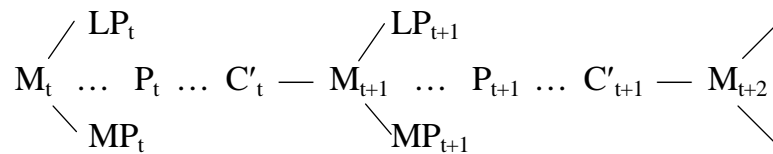


Figure 6.1 The Circuit of Capital

In each period (t , $t + 1$, and so on), the capitalists buy labour power LP and means of production MP . During production ($\dots P \dots$) the workers transform the means of production into new commodities C' . The newly produced commodities have greater value than the capital originally advanced ($M_{t+2} > M_{t+1} > M_t$).

The gross output of each period C' is composed of means of production and means of consumption. The form in which they circulate establishes links between the successive circuits of capital (the proceeds of sales are obviously used as new capital, but the circulation of commodities as use values is also relevant). Different interpretations of this process are partly to blame for divergent views of the transformation. This section discusses the production of means of production and the circulation of constant capital; the value of labour power and variable capital are considered below.

There are two distinct ways to conceptualize the net product. In terms of use value, it is that part of the gross output over and above that necessary to maintain the productive system, or to repeat the same pattern and level of production. Therefore, it comprises the means of consumption and net investment. In terms of value, as was shown above, the value of the net product is identical to the newly applied labour. This raises the issue of what determines the value of the gross product, since the labour applied in a period creates all the gross product but only part of its value.

The part of the value of the gross output that is not produced in the period corresponds to the value of the means of production used up (which Marx calls C). There are different ways to conceptualize this value but, for the New Approach, it is determined by the labour time socially necessary to reproduce the means of production, or to produce them with the present level of technology. In this case, the (possibly distinct) level of social technology when these commodities were originally produced is irrelevant. If this definition is accepted, it follows that the value of the gross output is the sum of the abstract labour

newly performed in the economy and the present value of the means of production necessary to reproduce the commodities in the net product. As the performance of labour upon previously produced means of production not only creates the gross output and produces new value, but also determines the new value of the means of production used up, it is indeed true that the value of the means of production is counted twice in the value of the gross product. It counts first as the value of the newly produced means of production, and again as the new value of the means of production used up. This point will become clearer if we return to the flax and linen example above. We have presumed that the technologies of production are:

$$\begin{aligned} 4l &\rightarrow 1F \\ 2l + 1F &\rightarrow 1L \end{aligned}$$

Given these technologies, the labour time socially necessary to produce a unit of flax (its labour value) is $\lambda_F = 4l$, and the labour value of linen is $\lambda_L = 2l + [4l] = 6l$, where $[4l]$ is the labour time necessary to produce a unit of flax. Therefore, in general we have:

$$\begin{aligned} \lambda_F &= l_F \\ \lambda_L &= [\lambda_F] + l_L \end{aligned}$$

where $[\lambda_F]$ is the present labour value of flax and l_F and l_L represent the labour time necessary to produce a unit of flax or linen. The labour value of the gross product, λX , is the sum of the labour values of the flax and the linen produced in the period, λ_F and λ_L :

$$\lambda X = 4 + 6 = 4 + [4] + 2 = 10l$$

In other words,

$$\lambda X = \lambda_F + \lambda_L = \lambda_F + [\lambda_F] + l_L$$

This example shows that, given the definition of value adopted by the New Approach, the labour expended in the production of the means of production is counted twice in the value of the gross output; first in the value of the means of production used up and, second, in the value of the final commodities produced with those means of production.¹³ For this reason, the New Approach argues that only the value of the net product should be the subject of the transformation, otherwise (given the definition of value of the means of production) double counting naturally follows. This is because the value of the means of production used up does not correspond to labour actually performed either in the period or ever; on the contrary, it is merely a reflection of labour carried out and value created elsewhere.

The emphasis on the net product is relevant because it allows the New Approach to focus on the relationship between the performance of labour and the creation of value, in isolation from the transmission of value through the productive consumption of the elements of constant capital. The fact that labour alone creates value is of course central in Marx's theory of value, but this is not at the forefront of conventional approaches to the transformation. Therefore, even

though the emphasis on the net product has been criticized because it eliminates the industries producing the consumed means of production from the analysis, it allows the New Approach to point out that, for Marx's theory of value, price is nothing but a form taken by social labour in circulation.

1.5 THE VALUE OF MONEY AND COMMODITY PRICES

If the value of the inputs is counted twice in the value of the gross output, it follows that the value of money should be defined on the basis of the net, and not gross product. However, the concept of value of money is problematic and should be used with care (see Ramos and Rodríguez's contribution in this volume). It tells us how many hours of abstract labour are necessary to add £1 to the money value of the output, but only at the aggregate level; the same number of hours of labour may add a different quantity of money value in any individual sector (this may happen not only because of the distinct skills of the workers but, more generally, because of the different organic compositions of the advanced capitals).

Another limitation of this concept is that the value of money is merely an *ex post* reflex of the relation between labour performed and money value added in the period. Therefore, it becomes known only *after* commodities are produced and priced and the socially average level of technology is determined. In this respect, it has a different scope than the Marxian concept of value of the money commodity, which is determined prior to circulation and the sale of the commodities produced (see Arnon 1984, and de Brunhoff 1976). However, the notion of the value of money is legitimate regardless of equilibrium or the existence of a money commodity, which makes it useful for the analysis of contemporary capitalism. In this respect, it favourably contrasts with the concept of money used in equilibrium analyses such as the neo-Ricardian.

In equilibrium systems monetary analysis is generally fruitless because all commodities are, by definition, sold. Consequently all labours, and not only those producing the money commodity, are immediately social (in other words, labour directly produces money and not only commodities). Because of this, the choice of which commodity fulfils the role of numéraire is a matter of fancy, which surely cannot be the case with money.¹⁴ In analyses where equilibrium is the organizing principle the study of non-equilibrium situations, uneven accumulation, crises and inflation is impossible unless arbitrary assumptions are introduced, because the circuit of capital is collapsed into unity and there is no instance in which money can play an autonomous role. The real-monetary dichotomy premised in these analyses is in sharp contrast with Marx's painstaking effort to derive money from commodities and commodity exchange in *Capital I*, which he considered one of the most important achievements of the book. In sum, money, as it exists in general equilibrium approaches, is a

non-money in Marx's sense, because it is unable to account for the socialization of commodity-producing labours and to express values in circulation as prices. These tasks, which in reality are carried out by money, are fulfilled in these models by the assumption of simple reproduction. Therefore, this assumption occupies in these schemes the role of money in Marx's.

The concept of value of money to which the New Approach adheres implies that money is essentially command over the newly performed abstract labour. This notion is generalised for prices, which are conceived as commodity owners' claims over the abstract labour performed by society. In other words, prices are money values concretely reallocated between commodities, in accordance with rules determined by capitalist behaviour. There is no reason why prices should be identical to money values, and the former are determined irrespective of the ratio between the labour value of commodities and the labour value of the money commodity. The absence of explicit reference to the money commodity in the analysis allows for unequal exchanges (between commodities produced by distinct quantities of abstract labour) from the start. This is, once again, in contrast with Marx, for whom such exchanges become systematic only after the transformation.¹⁵

This conception of price is methodologically questionable. Its main drawback is that this is simply a circulation-based view of price. It is correct as far as it goes, but it fails to give analytical priority to conceptually more fundamental processes such as the performance of labour in production, *vis-à-vis* more superficial phenomena such as the relations between supply and demand for each commodity or monopoly power. The internal structure of the New Approach leads it to address the appearances from the start (in the analysis of unequal exchanges or the systematic disproportion between labour value and price, the absence of the money commodity, and so on), but this apparent advantage exacts a heavy toll: it becomes very difficult to develop the theory further without making use of arbitrariness in the choice of phenomena to be explained, the judgement of their importance and their relation with other features of reality.

This difficulty is ultimately caused by the manifold (but not haphazard) connections between the various features of reality. Because of this, the recognition that Marx's two equalities hold is, not surprisingly, in itself insufficient to grant validity to the New Approach. The diverse solutions to the transformation problem in which these equalities hold show that the way it is obtained is at least as important as reaching the right result. Unless a sound methodological procedure is followed from the start, the equalities may become an object in their own right with no further analytical significance; as a result, the analysis as a whole becomes prone to faults or unable to explain important aspects of reality, and there is increasing risk that it will be led astray.

1.6 THE VALUE OF LABOUR POWER

Whilst the neo-Ricardians define the value of labour power as the value of an $n \times 1$ vector b of commodities whose consumption is necessary to reproduce a unit of labour power, the New Approach defines it as the share of the net product which the workers can claim with their wages, or the wage rate times the value of money (see section 2; Glick and Ehrbar 1987, argue differently). Labour power is considered a distinct commodity because, in contrast to others, it is not created by a capitalist production process subject to the equalisation of profit rates. On the contrary, the reproduction of labour power depends on the physical and social existence of the working class. Its value is determined by class struggle (see Foley 1986:41; Lipietz 1982:75).

The 'new' definition of the value of labour power successfully avoids the difficulty, inherent in the neo-Ricardian approach, that once a fixed consumption bundle b is defined it follows that the general rate of profit depends only on the industries which (directly or indirectly) produce the goods in b . Much has been made of this result, which contradicts Marx's conclusion that the production of all commodities affects the general rate of profit.

In more general terms, the difference between the neo-Ricardian and the 'new' definition of the value of labour power owes much to the distinct methodological perspective of these approaches. The neo-Ricardian conception reflects a very abstract understanding of the value of labour power. It derives from Marx's definition in *Capital* I, which he finds useful to demonstrate how exploitation is compatible with equal exchange under capitalism. In this context, it is legitimate to represent the value of labour power by the value of a bundle of goods, however it may be determined. Nevertheless, this image has very strict limits. Two of these limits are particularly relevant here; first, the use of this conception of value of labour power and the wage in the transformation problem implies that labour power is the only commodity to be purchased at its value *after* the transformation, which is unjustifiable.

Second, this conception ultimately denies the monetary character of the wage. The adherence to a conception of value of labour power which denies the workers the power to spend their wage with some (albeit restricted) freedom is costly, because the neo-Ricardians become unable to distinguish the workers from the goods they consume. This is a serious analytical error, which has led some to the conclusion that it is arbitrary to suppose that workers are exploited, because this model leads to identical results if corn, iron or energy are 'exploited'. Marx may or may not have been aware of this difficulty, but he went to great lengths to emphasize that it is simply wrong to presume that in capitalism the wage could, in general, be paid in kind. See, for example, *Capital* Volume II (Marx 1978) pp197, 245, 285 and 290-97.

Although the wage is a sum of money, the workers' possession of a given amount of the general equivalent is insufficient to grant them the right to

purchase, as a class, any commodity that they might want. It would be naive to imagine otherwise, because this would ignore the social role of the wage as the sum of money with which the working class reproduces itself. This implies that the wages cannot be so low that workers would starve to death, nor so high that they could buy means of production or avoid work over long periods. Whilst not incompatible with these limits, the 'new' definition of value of labour power is unable to highlight them. This is due to the fact that this is a circulation-based conception of the wage, that captures its (quantitative) limits, but cannot reflect its (qualitative) determinants. They may be incorporated into the analysis at another stage, but cannot be derived from the conception of the value of labour power which gives rise to this view of the wage.¹⁶

The (relatively more abstract) relation between the value of labour power and the value of a bundle of goods, and the (relatively more concrete) existence of the wage as a sum of money which may be spent with some freedom set limits to the conceptualization of value of labour power and the wage. These limits are (as was the case with competition, discussed in section 3) influential at distinct analytical levels, which makes a direct confrontation between the neo-Ricardian and the 'new' conceptions of value of labour power logically inadequate. The issue is not which of them is 'right' and which is 'wrong' in the abstract, but what contribution can each of them make to value analysis, at which level of analysis they play a meaningful role, and how they should be connected to each other. This is what Marx seems to be looking for in *Capital*, even though his analysis of wage labour was left incomplete (see Lebowitz 1992).

The 'new' definition of the value of labour power is, therefore, incomplete at best. But it can be criticized from another angle as well. Because of its focus upon circulation and the purchasing power of the wages, this definition of value of labour power is hardly connected with the process of creation of surplus value, the value produced in excess of that necessary to reproduce labour power. In other words, it cannot grasp the distinction between necessary and surplus labour within production or go beyond one of the effects of exploitation, namely the inability of the workers to purchase all the net product.¹⁷ This was the same aspect of exploitation which the 'Ricardian socialist' economists emphasized in the early nineteenth century (see Saad-Filho 1993), and this is also the only one which neo-Ricardian analysts discuss.

This is not wrong but it is trivial, because it does not emphasize the difference between exploitation in general and the specifically capitalist form of exploitation. In addition, the 'new' notion of value of labour power can be misleading, if it dilutes the ability of theory to conceptualize the primary form of class conflict in capitalism (which takes place in production) and, instead, induces the conclusion that exploitation is due to the unfair distribution of income.¹⁸ There may also be difficulty with the concept of relative surplus value, which tends to be blurred because the notion of workers' consumption goods is not clearly defined. This notion of value of labour power may also lead to error if

it directs the analyst towards some version of the well known classical dichotomy between ordinary commodity values, determined by labour embodied, and value of labour power, given by supply and demand. Moreover, it may also reinforce the belief that the net product is somehow 'shared' between workers and capitalists at the end of each period of production. The nature of most of these difficulties is clear enough, but the same is not true of the last of them. Let us see why it is wrong and what the implications are.

If all capitals have a uniform turnover period, at the beginning of period t , say, capitalists purchase MP produced in period $t - 1$ and hire workers to transform the former into new output. These workers may spend their wages on commodities produced in $t - 1$ as well as t , depending on when they are paid and how their expenditures are distributed.¹⁹ There is no analytical justification for imposing restrictions upon the timing of payment or expenditure of the wage, but it is different with surplus value.

The surplus value produced in period t is only realized at the end of t , when the output of the period is sold. Hence, capitalists use their income of a period to purchase means of consumption produced in this period, while the workers may buy commodities produced in this as well in as a previous period. Therefore, it is incorrect to argue that, at the end of period t , there is a mass of products to be shared between capitalists and their employees. More generally, it is not true that part of the value added in each period is given to the workers as wage, because they are paid, and the wages may be spent, prior to the sale of the output. This analysis shows that aggregate profits and wages are not simultaneously determined as the result of a struggle for shares over the net product, however important distributional conflict in capitalism may be. The relation between profits and wages is, therefore, fundamentally distinct from that between industrial profit, interest and rent, which are conflicting claims over the (previously given) mass of surplus value extracted from the workers. This shows that the 'new' notion of the value of labour power cannot be the sole basis for the development of a theory of class conflict around income distribution, although it may seem to be sufficient at first sight (see Gleicher 1989).

1.7 CONCLUDING REMARKS

The contribution of the proponents of the New Approach to the long lasting polemic which surrounds the transformation problem can be seen from two distinct angles; first, they argue that the net product is the appropriate context for the transformation, dispose of arbitrary normalization conditions through the conceptualization of the value of money, and adopt a more complex and concrete concept of the value of labour power. In doing this, they reject the equilibrium framework in which the transformation was generally discussed in the past, and raise several other important issues for value analysis. These innovations are part of a wider reconsideration of Marx's theory of value, and should be considered in

their own right. In sections 4 to 6 of this chapter, we have seen that they have a lot to offer to a non-equilibrium reconstruction of value analysis. In spite of this, their present form is open to criticism on several grounds.

In general terms, I have shown that the claim that the New Approach is a development of Marx's own concepts and method is fragile at best. This approach emphasizes the sphere of circulation, and neglects the sphere of production, which Marx himself considers the determinant in capitalism. The building of the links between the innovations introduced by the New Approach and Marx's own effort to reconstruct the main categories of the capitalist economy is an extremely difficult task. Its complexity cannot be minimised, and the possibility of success cannot be taken for granted.

The second angle from which the New Solution can be evaluated has to do with the reduction of the transformation problem into triviality. This is a consequence of the changed definition of the variables (and, ultimately, the redefinition of the problem as a whole) that follows from the view of Marx's theory of value from which the New Approach springs. The transformation becomes trivial because, in this context, Marx's two aggregate equalities become identities. This innovative result is very important, because it has shifted the grounds of the transformation debate. As a result, the validation of the aggregate equalities is no longer an issue, because they always hold.

The simultaneous verification of the two equalities in the New Approach is not simply the result of a play with definitions. On the contrary, it is the outcome of a careful development of that view of Marx's theory of value which derives from Rubin and Aglietta. This view surely represents the concepts and method of Marx's theory of value more faithfully than the neo-Ricardian (or equilibrium approaches in general), and it has shown its power by displacing some of the trivialities which have long bogged down theoretical advance. Unfortunately, however, the New Approach cannot account for the complexity of the relationship between values and prices. This is because it lacks an internal structure grounded upon Marx's method. The absence of this structure is the reason why the proponents of the New Approach fail to recognize the conceptual importance of the transformation of values into prices of production, and agree with the Sraffians that the fundamental 'error' in Marx's procedure is the non-transformation of input values (see, for example, Duménil 1980:8, and Lipietz 1982:64-65; this claim is refuted elsewhere in this book).

The peculiarities of its internal structure create severe problems for the further development of the New Approach. The most important is that, because the New Approach posits an identity between content (for example value) and form of expression (price), the content itself may lose its own distinctive stature and become redundant with the further development of the inquiry (see, for example, the analysis in de Vroey 1985, especially p47). This would be a sad outcome. In addition, the structure of the New Approach makes it vulnerable to the charges of tautology (because of the way in which it validates Marx's equalities) and

empiricism (because it does not highlight the structures whose development underlies value analysis).

The best way to avoid these problems is to recognize the logical context in which Marx develops his theory of value and put to the forefront the logical issues involved in the transformation. If this is done, the aggregate relations between value and price, and surplus value and profit, which the New Approach obtains, could no longer be attributed to the redefinition of the variables. They would, instead, hold because they are a reflex of the transformation of the variables themselves, whose meaning should shift according to the level of abstraction of the analysis. In accordance with this, their forms of appearance should become increasingly complex as the reconstruction in thought of the main categories of the capitalist mode of production progresses.

For this reason, it is not strictly correct to say that total profit is ‘equal’ to total surplus value, that total value is ‘equal’ to total price, or even that the labour value of the net product divided by the value of money is ‘identical’ to the price of the net product. For Marx, commodity prices are simply the form of appearance of the abstract labour performed in the period, and profits (inclusive of interest and rent) are nothing but the form of appearance of surplus value. Values and prices (or surplus value and profits) cannot be quantitatively compared with one another because the form of appearance of something cannot be put into quantitative relation with its own essence. The link that exists between them is purely qualitative.²⁰

The New Approach has done much service to the development of Marx’s theory of value. The greatest of them is a decisive contribution to the sublation of the previous debates, and their recasting under a new light. This will help restore the transformation to its rightful place within *Capital*. It will no longer be seen as a self-contained exercise aimed at the calculation of equilibrium prices, and its connection with the theory of wages, accumulation and technical change, as well as the law of the tendency of the rate of profit to fall and the study of crises, will finally be recognized.

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NOTES

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- ¹ The analysis below assumes that all labours are productive, that the production period is uniform and that wages and profits are the only forms of income.
 - ² The wage rate is paid per unit of simple, unskilled labour power. Two other simplifying assumptions are involved; first, that the workers are identical to one another and, second, that they produce equal

quantities of value per hour of labour power sold. The latter is discussed in Lipietz (1982); the former in Saad-Filho (1994), Chapter 2.

- ³ Matrix a is assumed indecomposable and productive in Hawkins-Simon terms; there are no joint products and no fixed capital. For a more general analysis, see Duménil and Lévy (1984, 1987, 1989, 1991), Ehrbar (1989) and Lipietz (1979).
- ⁴ This is a development of the 'flax and linen' example in Glick and Ehrbar (1987).
- ⁵ If $\lambda = l(I - a)^{-1}$, then $\lambda Y = l(I - a)^{-1} (I - a)X = lX$.
- ⁶ In accordance with the terminology of the New Approach, 'labour value' is the quantity of labour socially necessary to produce a commodity. 'Money value' is the ratio between the labour value of a commodity and the labour value of the money commodity, and 'price' is the sum of money for which a commodity may be exchanged on the market.
- ⁷ 'The advantage of interpreting the value of money as the ratio of aggregate labour time to aggregate money value added is that the sum of the value gained and lost by all producers in exchange will be zero. In other words, this interpretation of the value of money corresponds to the idea that value is created in production but conserved in exchange' (Foley 1982:41). The importance of dividing the value created by the value of money becomes clear if a country changes its currency from pounds sterling, say, to Ecus. This will change the sum of prices, even though the labour performed and the total value produced remain the same. The modified value of money is a reflex of the change of the currency, and it shows that an hour of labour now adds a different quantity of money value to the commodities.
- ⁸ 'If we assume that one hour of labour power sold yields one hour of labour time in production, the value of labour power will be a fraction between 0 and 1 and expresses the fraction of expended labour time the workers work "for themselves", or the fraction of labour expended which is "paid labour". The value of labour power is also, under the assumption that an hour of labour power yields an hour of labour time, equal to the wage share of value added' (Foley 1982:40; see also Duménil 1980:74-75).
- ⁹ 'What competition within the same sphere of production brings about, is the determination of the value of the commodity in a given sphere by the average labour-time required in it, i.e., the creation of the market-value. What competition between the different spheres of production brings about is the creation of the same general rate of profit in the different spheres through the levelling out of the different market-values into ... [prices of production] that are different from the actual market-values. Competition in this second instance by no means tends to assimilate the prices of the commodities to their values, but on the contrary, to reduce their values to [prices of production] that differ from these values' (Marx 1969b:208, emphasis omitted; see also pp206-07).
- ¹⁰ The relationship between competition among capitals of the same branch, technical progress, and conflict between workers and capitalists is discussed in Cleaver (1990) and Lebowitz (1992).
- ¹¹ Sraffa (1960:3) defines prices as 'a unique set of exchange-values which if adopted by the market restores the original distribution of the products and makes it possible for the process to be repeated; such values spring directly from the methods of production'.
- ¹² 'What is redistributed in the economy is the value created during each period, i.e. the value of the net product of the period. In the aggregate, productive workers expend in a given period of time a certain amount of labour which defines the added *value* during the period. This value is embodied in the net product of the period. The redistribution of value (the separation between its appropriation and realisation) must be interpreted on this basis, and not on that of the gross product of the period which leads to double-countings for inputs produced and consumed productively during the period or inherited from previous periods' (Duménil and Lévy 1991:363; see also Duménil 1980:26-30, 38, 55, 62-64, 79-82, 94-95; 1983:441, 448-49; and 1984:341-42, Duménil and Lévy 1984, 1987; Ehrbar 1989; Foley 1982:41, 45; 1986:22, Glick and Ehrbar 1987; Lipietz 1982:63, 76-78; 1983:34, 56-59, 85; and Mohun 1993:14).
- ¹³ This becomes even clearer if the technology of production of flax is allowed to change. If, in a subsequent period, we have technical progress in flax production, such that $2l \rightarrow 1F$ and $2l + 1F \rightarrow 1L$, the value of flax falls to $\lambda_F = 2l$. In this case the new value of linen is $\lambda_L = 2l + [2l] = 4l$. It follows that the labour value of the gross product is now $6l$ – a reduction of four hours, twice as much as the fall in the value of flax.
- ¹⁴ Hodgson (1981:83), for example, recognizes that '[a]lthough the Sraffa system is conceptually different from a general equilibrium system of the Walrasian type, or even the von Neumann model,

these all have one thing in common: they do not include money. Clower has shown that money can never be introduced into a stationary-state, general equilibrium model’.

- ¹⁵ ‘Any particular commodity can be seen as embodying a certain fraction of the total abstract social labour expended in producing commodities; it also exchanges for a certain amount of money (its price), which represents a possibly different fraction of the aggregate abstract social labour expended’ (Foley 1982:37). In this context, the unit of money is a ‘claim to a certain amount of the abstract social labour expended in the economy’ (Foley 1982:37; see also Foley 1983, Lagueux 1985, and Mohun 1993).
- ¹⁶ For Marx (1972:94) ‘He [the worker] actually receives a share of the value of the product. But the share he receives is determined by the value of labour [power], not conversely, the value of labour [power] by his share of the product’. Marx adds below: ‘It does not happen the other way round, that his share of the product is determined first, and as a result, the amount or value of his wages’. (See also Marx 1969b:418 and 1976a:1066).
- ¹⁷ See Foley (1982:42-43; 1986:15). The absence of a clear concept of necessary labour time makes the New Approach unable to show that ‘[i]ncrease or diminution in surplus-value is always the consequence, and never the cause, of the corresponding diminution or increase in the value of labour-power’ (Marx 1976a:658).
- ¹⁸ In analytical terms, class struggle in production is more fundamental than class struggle in distribution, because the (qualitative) development of concepts of surplus value and exploitation, on whose basis the real existence of capital and wage labour depends, is prior to the (quantitative) dispute over their magnitude.
- ¹⁹ For Marx, constant and variable capital are conceptually advanced at the beginning of the production period, but this does not imply that credit cannot exist or that the wages must be advanced. By the same token, the payment of the wages does not depend upon the sale of the output produced by these workers, otherwise those employed in construction or agriculture would probably starve to death before they were paid.
- ²⁰ The most conspicuous case of quantitative comparison between prices and values is probably the use of ‘price-value multipliers’ in Bortkiewicz (1984) and Seton (1957), but value and price rates of profit are often compared (see Flaschel 1984, Lipietz 1984, Morishima 1973, and Steedman 1977). This procedure is criticized by Fine (1986a), Kliman and McGlone (1988), Pilling (1980), Smith (1990) and de Vroey (1982).

Approaches to Value. Participants in the real estate market commonly think of value in three ways: • The current cost of reproducing or replacing, a building, minus an estimate for depreciation, plus the value of the land (and entrepreneurial incentive, if applicable). • The value indicated by recent sales of comparable properties in the market. • The value that the property's net earning power will support. 6. Although characteristics of properties differ widely, all appraisal problems can be solved through the systematic application of the valuation process. In the valuation process the problem is identified, the work necessary to solve the problem is planned and relevant data is collected, verified and analyzed to form an opinion of value. Investment appraisal is one of the eight core topics within Paper F9, Financial Management and it is a topic which has been well represented in the F9 exam. The methods of investment appraisal are payback, accounting rate of return and the discounted cash flow methods of net present value (NPV) and internal rate of return (IRR). For each of these methods students must ensure that they can define it, make the necessary calculations and discuss both the advantages and disadvantages. The most important of these methods, both in the real world and in the exam, is NPV. The value of labour-power thus determines the value of labour, or, expressed in money, its necessary price. If, on the other hand, the price of labour-power differs from its value, in like manner the price of labour differs from its so-called value. As the value of labour is only an irrational expression for the value of labour-power, it follows, of course, that the value of labour must always be less than the value it produces, for the capitalist always makes labour-power work longer than is necessary for the reproduction of its own value. In the above example, the value of the labour-power t