CONTROVERSIES IN THE THEORY OF SURPLUS VALUE: OLD AND NEW*

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THE MODERN CRITIQUE OF THE LOGICAL FOUNDATIONS of the neoclassical theory of value and distribution has its origin in two different intellectual traditions. When Joan Robinson attempted to work out the long-period implications of the arguments of Keynes' *General Theory*, she found that the incompatibility of the neoclassical theory of value with the Keynesian theory of effective demand implied, in the long-run setting, an attack on the internal logic of neoclassical theory.[1] But the Keynesian tradition provides no alternative framework for construction of a theory of value. The alternative is to be found in the second critique of neoclassical theory, the basis of which was developed by Piero Sraffa upon classical and Marxian foundations.[2]

Although the critical role of Sraffa's work has been widely acknowledged, the constructive possibilities of the theoretical framework which he has provided, particularly for the development of Marxian theory, have been almost completely ignored. Much of the work done in this field has adopted the view that Sraffa's analysis is, in some ill-defined sense, "antagonistic" to the Marxian theory of surplus value.[3] For example, Suzanne de Brunhoff has argued

* Many readers will recognize the great debt I owe to Piero Garegnani's *Il Capitale nelle Teorie della Distribuzione* (Milan, 1960). All errors of interpretation, omission and commission are my own.

1 See J. Robinson, "The Production Function and the Theory of Capital, *Review of Economic Studies,* 1953, and *Economic Heresies* (London, 1971). A brief account of her ideas is given by Joan Robinson in the Foreword to J. Kregel, *The Reconstruction of Political Economy* (London, 1973).

2 P. Sraffa, *Production of Commodities by Means of Commodities* (Cambridge, 1960).

3 See, for example, S. de Brunhoff, "Marx as an A-Ricardian," *Economy and Society,* 1973; A. Medio, "Profits and Surplus Value," in E. K. Hunt and J. G. Schwartz, eds., *A Critique of Economic Theory* (London, 1972); and R. Rowthorn, "Marxism and the Capital Theory Controversy," *Bulletin of the Conference of Socialist Economists,* 1972.

that the "juxtaposition of Marx's and Sraffa's concepts and theories is not successful,"[4] and has lamented that "Sraffa's theory . . . seduces so many economists, who are otherwise sympathetic to Marxism."[5] But instead of providing a critique of *Production of Commodities by Means of Commodities,* she declares that "It is therefore necessary to return to Marx's *criticism* of Ricardo,"[6] but does not provide any evidence for this total identification of Ricardo with Sraffa. Perhaps the only sense that can be made of this confusion is: Sraffa has solved a particular set of problems in the theory of surplus value; these were first posed precisely in Chapter 1 of Ricardo's *Principles of Political Economy;* therefore Sraffa's analysis is relevant only to Ricardo, and his analysis may be dismissed as neo-Ricardian.

This is a very odd argument. Marx acknowledged that his own theory of surplus value was developed as a critique of Ricardo's ideas—a critique in the fullest sense of the word: criticism, modification and transcendence.[7] To argue for an antagonism between Sraffa and Marx, it must be demonstrated that the theoretical problems which Ricardo faced in his theory of distribution were not carried over into Marx's theory of surplus value. In other words, it must be shown exactly how Marx eliminated the Ricardian problems, and what the implications of such an elimination may be for the consistency of Marx's system, and for its usefulness as an analysis of capitalistic production.

No arguments of this kind have, to my knowledge, ever been advanced; nor, were they to be, would they be tenable. For, as we shall see, the difficulties in the development of his theory, which Ricardo attributed to the lack of a suitable standard of value, were inherited by Marx in the form of the problem of the link between "values" and "price of production."[8] The determination of the nature of this link, the so-called transformation problem, is crucial to Marx's argument that "surplus-value and rate of surplus-value

4 S. de Brunhoff, *op. cit.,* p. 423.

5 Ibid., p. 422.

6 Ibid., p. 423.

7 See the prefaces to the first and second German editions of K. Marx, *Capital, Vol. I* (London, 1957), and K. Marx, *Theories of Surplus Value, Part Two* (London, 1969).

8 P. Garegnani, *op. cit.,* pp. vii-viii.

are, relatively, the invisible and unknown essence that wants investigating, while rate of profit and therefore the appearance of surplus-value in the form of profit are revealed on the surface of the phenomena."[9] Marx did not manage to work out a completely coherent solution to this problem, but he provided the necessary starting point for a satisfactory solution.

I will examine the relationship between Sraffa's analysis and Marx's theory of surplus value in four stages:

1. A brief outline of the role of a theory of value in analyses of the origin of surplus.
2. An examination of the manner in which Ricardo confronted the problem of the standard of value.
3. Marx's critique of Ricardo's analysis of value, and the distinctive features of Marx's theory.
4. Sraffa's contribution in the light of Marx's critique of Ricardo.

1. *The role of the theory of value*

The theory of the production and distribution of the social product is the foundation upon which classical and Marxian theories of accumulation, of the laws of motion of capitalism, are built. This is because of a fundamental conception of the economic roles of social classes. Workers work, and all their earnings are devoted to the needs of consumption and survival; capitalists accumulate, and landlords' extravagant consumption is a deduction from the fund available for accumulation. The distribution of product between these classes is, therefore, the causal antecedent to the evolution of the economy.

The whole annual produce of the land and labour of every country, or what comes to the same thing, the whole price of that annual produce, naturally divides itself . . . into three parts: the rent of land, the wages of labour, and the profits of stock; and constitutes a revenue to three different orders of people

. . . according to the different proportions in which [the whole annual produce] is annually divided between those . . . different orders of

9 K. Marx, *Capital, Vol. III* (New York, 1967).

people, its ordinary or average value must either annually increase, or diminish or continue the same from one year to another.[10]

Neither Smith nor Ricardo provide any analysis of the forms of economic behavior of particular social classes; they are regarded as "natural" or obvious. Marx, however, traces their origin in terms of two dialectical relationships. First, in the relationship between the development of the *means* of production and the development of the social organization of production. Thus, the growth of the factory system, of social classes, such as the proletariat, with particular characteristics, and of the technology on which industrial capitalism is to be founded, are interrelated parts of the process of the development of capitalism out of precapitalist economic forms. Secondly, in the relationship between the *mode* of production and the necessary behavior of social classes. For example, within the capitalist mode of production the power of the capitalist derives from financial wealth. Money is no longer simply a medium which facilitates the exchange of commodities. The accumulation of financial wealth becomes an end in itself. Furthermore, the competitive nature of capitalism is such that each capitalist must continually increase his financial power if he is not to be overtaken and eventually eliminated by his rivals.

The essential characteristic of capitalistic production is both that it is commodity production (goods are produced for exchange) *and* that labor-power has itself become a commodity. Thus, the social relations of production are organized by means of exchange. Despite the apparent freedom of the worker to sell or not to sell his labor as he chooses,

> Capitalist production . . . incessantly forces him to sell his labour-power in order to live, and enables the capitalist to purchase labour-power in order to enrich himself. . . . His economical bondage is both brought about and concealed by the periodic sale of himself. . . .[11]

This implies, in turn, that the values of commodities (as yet I avoid a precise definition of value) must be a reflection of the relations of production and distribution. The exchange of wage-goods for labor-

10 A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (London, 1961), Book I, Ch. XI, p. 276, and Ch. VI, p. 61.

11 K. Marx, *Capital, Vol. I,* p. 591.

power and the capitalists' acquisition of command over resources in the expropriation of surplus value are the basic characteristics of the capitalist mode of production.[12]

The theory of value is thus inseparable from the analysis of production, and its primary concern is with what Ricardo called *produced* commodities, as distinct from *scarce* commodities:

> Possessing utility, commodities derive their exchangeable value from two sources: from their scarcity, and from the quantity of labour required to obtain them.
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> There are some commodities the value of which is determined by their scarcity alone. No labour can increase the quantity of such goods, and therefore their value cannot be lowered by an increased supply. Some rare statues and pictures, scarce books and coins, wines of a peculiar quality, which can be made only from grapes grown on a particular soil, of which there is a limited quantity, are all of this description. Their value is wholly independent of the quantity of labour originally necessary to produce them, and varies with the varying wealth and inclinations of those who are desirous to possess them.
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> These commodities, however, form a very small part of the mass of commodities daily exchanged in the market. By far the greatest part of those goods which are the objects of desire, are procured by labour; and they may be multiplied not in one country alone, but in many, almost without any assignable limit, if we are disposed to bestow the labour necessary to obtain them.[13]

By their very nature scarce commodities are not related in any consistent way to social activity; their characteristics, and their values in exchange, are of the nature of accidents. The category of scarce commodities does not include non-produced means of production, such as land; for the value of these, though related to the fixity of their supply, is also dependent upon the technology of production and the distribution of output.[14]

12 ". . . the exchange of activities and abilities which takes place within production itself belongs directly to production and essentially constitutes it." K. Marx, *Grundrisse* (London, 1973), p. 99.

13 D. Ricardo, *Works and Correspondence of David Ricardo* (Cambridge, 1951–1973), Vol. I (*Principles*), p. 12.

14 The role of land rent as part of surplus is extremely complex and is not considered in this paper at all; see K. Marx, *Theories of Surplus Value, Part Two,* Ch. VIII-XIV, and P. Sraffa, *op. cit.,* Ch. XI.

It may be noted in passing that it is this limited class of scarce commodities which neoclassical economists have elevated to the center of consideration by defining all economic problems as problems of scarcity, in terms either of simple exchange without production, or of derived demands for scarce factors of production. It is when neoclassical economists attempt to generalize their analysis from the framework of exchange to a discussion of capitalistic production—which necessarily involves produced means of production—that the severe analytical limitations of their theory are exposed.[15]

In classical and Marxian theory surplus is defined simply as social product less that share of product which must be paid to the laborers. The size of the social product and the share of it which goes to the laborers are independent variables in the sense that they may be taken as data in their size and variation—the social surplus is then the only unknown.[16] The essential idea on which this procedure rests is the possibility of taking the real wage per unit of labor as *given*, even if the produce obtained with labor varies:

> Therefore the foundation of modern political economy, whose business is the analysis of capitalist production, is the conception of the *value of labour-power* as something fixed, as a given magnitude—as indeed it is in practice in each particular case.[17]

The basic magnitudes in our equation—surplus, social produce and the real wage—consist of heterogeneous bundles of commodities, and yet the clarity of the concept of surplus requires that these magnitudes should bear a simple systematic relation to one another. This is *a fortiori* so when surplus is related to the rate of profit, since the latter must be a *ratio* of homogeneous magnitudes. There is, therefore, a need for a standard of measurement of social produce and the real wage such that

(a) the changes occurring in each of those aggregates of commodities can be given an unambiguous quantitative meaning, whatever the changes which may occur in the kind of commodities constituting them;

15 For a full discussion of the inconsistencies in the neoclassical theory of profit, see P. Garegnani, *op. cit.*, Part Two.

16 Ibid., p. 3–5.

17 K. Marx, *Theories of Surplus Value, Part One* (London, 1969), p. 45.

(b) the resulting magnitudes can be added to, and subtracted from, one another.[18]

Thus there is need for a standard of *value*. In reality commodities are reduced to a common standard, since they are exchanged for one another, and the resultant exchange ratios can form the basis of measurement in terms of any one commodity. As was argued above, the determination of rates of exchange between commodities is an essential part of any investigation of the origin of surplus. But an analysis of relative values cannot be the end of the story, for those relative values must not be predicated on a prior knowledge of the relationship between real wages, surplus and the rate of profit, which is the basic object of the inquiry.[19] In so far as the relative values of commodities are dependent on the latter relationship the entire theory appears to be in danger of circularity. The development of a correct theory of value therefore plays a central role in the development of the theory of surplus value.

The proposition that social product and the real wage may be taken as independent variables implies that, at the first level of the analysis, the structure of inputs and outputs (the technology of the economy) may be considered as a datum, the outcome of the historical evolution of the economy. If it is further supposed that there is a tendency for the rate of profit to be equalized in all sectors of the economy, then, once the real wage is known and in consequence the social surplus and the rate of profit are known, the prices of individual commodities, given the technology, are immediately determined.[20] The assumption that the rate of profit is equalized is not a restrictive assumption, but on the contrary, places the analysis at the greatest level of generality. If it is supposed that the rate is not equalized then it is necessary to say precisely why, and by how much, the rate of profit in a particular sector deviates from the social average. Such deviations may, for example, arise owing to short-term variations in demand or supply, or owing to

18 P. Garegnani, *A Problem in the Theory of Distribution from Ricardo to Wicksell* (unpublished Ph. D. dissertation, Cambridge, 1959).

19 P. Garegnani, *Il Capitale nelle Teorie della Distribuzione*, pp. 7–8 and Part One, Ch. II.

20 See J. Robinson and J. Eatwell, *An Introduction to Modern Economics* (London, 1973), Book Two, Ch. 6, paragraph 3(d) and appendix.

the monopolization of particular commodities, and may be regarded as "arbitrary," being either not directly susceptible to economic analysis, or reserved for specific examination, and thus excluded for the purpose of a general analysis.

Although deviations of actual prices around their "natural" or "average" levels may be influenced by restrictions of supply or increases of demand, those levels are not themselves determined by the "forces" of supply and demand. Since the determination of the real wage is related to social and historical phenomena, and has nothing to do with the relation of supply with demand, and the structure of production may be taken as a datum, then the "forces" of supply and demand have no role to play in the general analysis of value. Thus, although classical and Marxian analysis of surplus value, which assume a uniform real wage rate and a uniform rate of profits, may look like the neoclassical idea of "competitive equilibrium," they are, in fact, based on a quite different conception of the relation between production, distribution and prices.

2. *The development of the theory of surplus value: Smith and Ricardo*

The first formulation of a coherent theory of surplus is to be found in the Physiocratic analysis of production. But no theory of value was necessary in the Physiocrats' model, since all outputs and all inputs in the only sector of the economy presumed to yield a surplus, agriculture, may be considered homogeneous. Thus, the three magnitudes in the statement: Social Surplus = Social Product *minus* Necessary Consumption, may be related to agriculture alone and measured in physical units of "agricultural output."[21] The "sterile" sector of the economy may, for these purposes, be disregarded.

The need for a theory of value arises when, with Smith, a surplus may originate in all branches of production, not only in agriculture.

To develop his theory of value Smith first discusses an "early and rude state of society which precedes both the accumulation of stock and the appropriation of land," in which, nonetheless, the

21 P. Garegnani, *Il Capitale nelle Teorie della Distribuzione*, p. 5.

values of commodities are determined by the laws of commodity production (and exchange). In this case

the proportion between the quantities of labour necessary for acquiring different objects seems to be the only circumstance which can afford any rule for exchanging them for one another . . . the quantity of labour commonly employed in acquiring or producing any commodity, is the only circumstance which can regulate the quantity of labour which it ought commonly to purchase, command, or exchange for.[22]

Smith begins with a labor theory of value. But

as soon as stock has accumulated in the hands of particular persons, some of them will naturally employ it in setting to work industrious people, whom they will supply with materials and subsistence, in order to make a profit by the sale of their work, or by what their labour adds to the value of the material.[23]

The influence of the accumulation of capital on the prices of commodities will, argued Smith, take the form of an *addition* of profits and rents to wages. Even though he at times refers to the worker being forced to "share" the value he has created and which, in the "early and rude state of society" he would have retained (thus implying that the value of a commodity is determined by the labor embodied in it), Smith, following the logic of his adding-up theory, claims that the real measure of value is the quantity of labor a commodity will *command*. This quantity is the wages plus profits plus rents expended in the production of a commodity, divided by the wage per man. But the labor commanded by a commodity is, therefore, not independent of the relation between wages and surplus, and if Smith uses this standard of value in his analysis of surplus he opens himself to the danger of circular reasoning. In fact Smith tended to oscillate between a labor commanded and a labor embodied theory of value, but he generally held to the view that values were obtained by adding up wages and profits and rents, wages and profits being independently determined by the rate of accumulation, and rents being dependent upon the level of prices.[24]

22 A. Smith, *op. cit.,* Book I, Ch. VI, pp. 53–54.

23 Ibid., p. 54.

24 In arguing that rent *depended* on the price of commodities Smith was being inconsistent, since he elsewhere argued that prices are determined by adding wages,

The "adding-up" theory inhibited the development of the theory of surplus value, and was the focus of Ricardo's critique of Smith. Ricardo attacked Smith on two points:

(i) for his proposition that the value of a commodity is equal to wages *plus* profits *plus* rent, which led to Smith's proposition that "the money-price of corn regulates that of all other home-made commodities"—this because the rise in the price of corn would imply a rise in wages, which would, in turn, raise the price of all commodities.[25]

(ii) for the idea that wages and profits are determined independently of one another. This idea is really a corollary of (i), since if prices are to be determined by "adding up" costs, then the components of cost must be susceptible to independent determination.

This second proposition occupied Ricardo's attention in his *Essay on Profits*. In this essay the agriculture sector is defined as being the only sector of the economy in which all inputs (including wages) and all outputs consist of the same commodity, which enters (in the form of the wage good) into the production of all other commodities. This procedure elevated the distributional relations of the corn sector to the position of a physical analogue of the relations of production and distribution in the economy as a whole.

Ricardo first used Malthus' theory of rent to determine which share of total surplus was appropriated by the landlords, and argued that "profits depend on the quantity of labour requisite to provide necessaries for the labourers, on that land or with that capital which yields no rent."[26] Thus

Profits = Social Product (net of rent) *minus* Wages.

The higher wages are, the lower will be profits, the two categories being directly interdependent. Furthermore, this interdependence takes the form of deduction, the deduction of wages from social product (net of rent). While it was Ricardo's aim to demonstrate

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profits *and* rent. See K. Marx, *Theories of Surplus Value, Part Two,* p. 321, and M. H. Dobb, *Theories of Value and Distribution Since Adam Smith* (Cambridge, 1973), p. 53.

25 See M. H. Dobb, *op. cit.,* p. 47 *et seq.*

26 D. Ricardo, *op. cit.,* Vol. I, p. 126.

that the interests of the landlords were opposed to the interests of the community (since high rents would lower profits and, in consequence, lower the rate of accumulation), he also revealed the true relationship between wages and profits, which is the origin of surplus.

A simple relationship is also displayed between wages and the rate of profit, since

$$\text{rate of profit} = \frac{\text{product (net of rent) } \textit{minus} \text{ wages}^{27}}{\text{social capital}}$$

In the corn sector all three magnitudes on the right hand side of this equation may be expressed in corn. The resultant rate of profit must, by assumption, be equal to the general rate of profit, and the relation between wages (everywhere paid in corn) and rate of profit must be the same throughout the economy.

But, as Malthus pointed out, not only may surplus originate in all branches of production, but all sectors require direct or indirect inputs of many commodities. There is no sector in which all inputs and outputs consist of a single commodity, which in turn enters into the production of all other commodities. Ricardo was forced to abandon his device of a physical analogue, and resorted to a search for a suitable standard of value with which to measure the magnitudes of social product, wages and social capital. The requirements for a standard of value were that[28]

I. the values of the commodities as measured in terms of the standard should bear to each other the proportions at which they exchange; for otherwise, the expression for the rate of profit, assumed equal between sectors, would be meaningless, and

II. the standard should be such that the variations in the value of the aggregates comprising output, wages and social capital, should be defined prior to knowledge of variation in the rate of profit.

27 P. Garegnani, *Il Capitale nelle Teorie della Distribuzione,* p. 18. Ricardo usually regarded "social capital" as consisting only of wages advanced, and was criticized by Marx for his failure to distinguish between constant and variable capital, which, in turn, limited his analysis of the formation of the general rate of profit. See K. Marx, *Theories of Surplus Value, Part Two,* pp. 174–181.

28 The requirements were first analyzed by P. Garegnani, *Il Capitalle nelle Teorie della Distribuzione,* pp. 11–13.

Otherwise the argument would be in danger of circularity. Thus began Ricardo's search for an invariable standard of value.

Ricardo's main proposition on value was that "the value of a commodity, or the quantity of any other commodity for which it will exchange, depends on the relative quantity of labour which is necessary for its production."[29] If this proposition were correct then the problem of the standard of value would be solved, for labor values, being derived from the technology used in production, are independent of the rate of profit and so fulfill II; and, by assumption, I is also fulfilled. But Ricardo realized that his proposition must be modified to the extent that the amount of capital used in production (the amount is related by Ricardo to the durability of produced means of production) varies as between commodities:

> exchangeable value varies . . . owing only to two causes: one the more or less quantity of labour required, the other the greater or less durability of capital: . . . the former is never superseded by the latter, but is only modified by it.[30]

Taking, in the first edition of the *Principles,* a commodity produced by unassisted labor as his standard of value, this modification led to an attack on Smith's adding-up theory of value (labeled (i) above). For if, with a rise in the real wage, the rate of profit falls, then the price of all commodities for the production of which capital is required must *fall* relative to the standard of value which requires no capital—refuting "Adam Smith, and all the writers who have followed him, [who] have maintained that a rise in the price of labour would be uniformly followed by a rise in the price of all commodities."[31]

But this triumph has been purchased at the cost of losing the clarity of the analysis of surplus afforded by labor as an invariable standard of value. Since if commodities do exchange at their labor values then, by definition, relative prices do not change at all as distribution varies.

In the third edition of the *Principles* Ricardo attempted to tackle

29 D. Ricardo, *op. cit.,* Vol. I, p. 11.

30 D. Ricardo, letter to Mill, December 28, 1818, *op. cit.,* Vol. VII, p. 377.

31 D. Ricardo, *op. cit.,* Vol. I, p. 46.

this problem by using an "average commodity," called gold, as his standard of value:

> May not gold be considered as a commodity produced with such proportions of the two kinds of capital [fixed and circulating] as approach nearest to the average quantity employed in the production of most commodities? May not these proportions be so nearly equally distant from the two extremes, the one where little fixed capital is used, the other where little labour is employed, as to form a just mean between them?[32]

Measured by such a standard the average price of all commodities taken together and their aggregate value, would remain unaffected by a rise or fall in wages, even though some commodities would fall and others rise in terms of this standard. But the clear deductive relationship between surplus and wages would be preserved only if output, wages and social capital were all commodity bundles of average composition, which clearly they are not.

The search for a suitable standard of value by which to analyze the problem of surplus occupied Ricardo to the end of his life. He never achieved a solution.

3. *Marx's critique of Ricardo*

Ricardo's analysis of production and distribution represents the highest level of the development of political economy before Marx, and is the starting point for Marx's analysis of the origins of surplus value and the nature of the capitalist mode of production.

> Ricardo . . . consciously makes the antagonism of class-interests, of wages and profits, of profits and rent, the starting point of his investigations, naively taking this antagonism for a social law of nature. But by this start the science of bourgeois economy had reached the limits beyond which it could not pass.[33]

When Marx began his study of classical political economy, he had already a clear conception of the fundamental nature of capitalism.

32 Ibid., pp. 45–46.

33 K. Marx, *Capital, Vol. I,* p. xxii.

The key causal factor toward which Marx began by orienting himself was the socio-economic production relation between the class of capital-owners and the class of wage-earners. This relation, he believed, gave birth to the main contemporary forms of unearned income and to the possibility of the large-scale accumulation of capital; and this accumulation led in turn to rapid technological progress, which interacted with the capital-labour relation to determine the main features of the structure of capitalism and the main lines of the development of the system as a whole.[34]

As is clear from the *Economic and Philosophical Manuscripts of 1844* Marx had, from historical studies, identified the main characteristics of the dynamics of the capitalist system—a mass of unearned income, the progressive decline in the rate of profit, the subordination of previously independent workers, increasing economic instability, the growth of mechanization, the emergence of various forms of monopoly, and the existence and growth of the reserve army of labor—prior to his critical development of classical political economy. It was as a result of his study of the classical economists, and in particular of Ricardo, that Marx developed his labor theory of value and his theory of the economic basis of society.[35]

Marx levelled three major criticisms at Ricardo's analysis.

1. Ricardo takes the existence of surplus value, and indeed of the capitalist mode of production, as something "natural" or "eternal." Because of this failure to perceive "wage labour and capital . . . as a historically specific social form for the creation of wealth as use value,"[36] Ricardo fails to present an adequate analysis of the process by which surplus is expropriated. This objection should not be taken to mean either that Marx criticized Ricardo for being "unhistorical"—Marx admired Ricardo's analytical method—or that Marxism is simply "Ricardo plus history."

The *existence* of surplus labor in a society characterized by "free exchange of equivalents," derives from the development of the capitalist mode of production, and indeed, is the distinguishing characteristic of that social form.

34 R. L. Meek, *Economics and Ideology and Other Essays* (London, 1967), p. 95.

35 For a fuller analysis of this stage in the development of Marx's thought, see E. Mandel, *The Formation of Karl Marx's Economic Thought* (London, 1971), Ch. 3 and 4.

36 K. Marx, *Grundrisse*, p. 331; see also *Capital, Vol. I,* pp. 52–53.

> It is clear that though the existence of *surplus labour* presupposes that the productivity of labour has reached a certain level, the mere possibility of this surplus labour . . . does not in itself make it a *reality*. For this to occur, the labourer must be compelled to work in excess of the [necessary] time, and this compulsion is exerted by capital. This is missing in Ricardo's work and therefore also the whole struggle over the regulation of the normal working day.[37]

The demonstration of the origin of surplus that is found in Ricardo is insufficient for a complete understanding of the nature of capitalistic production.

2. A corollary of this criticism was Marx's argument that Ricardo failed to distinguish between *labor* and *labor-power;* that is, between the activity of labor, and labor the commodity exchanged between capitalist and worker.[38] "The question is just why *labour* and the *commodities against which it is exchanged* do not exchange according to the law of value, i.e., according to relative quantities of labour."[39] Marx argued that the answer to this question is found in the evolution, with the development of capitalism, of labor-power as a commodity, by means of which the producer is divorced from the means of production, i.e., proletarianization. All commodities, including labor-power, exchange at their values, but the purchase of labor-power entitles the capitalist to a quantity of labor in excess of the value of labor-power. The origin of surplus is to be found in this peculiar quality of labor-power.

3. The preceding criticisms are directed not at Ricardo's analysis of surplus and profit, but the manner in which he characterized the capitalist mode of production. But Marx also complained that Ricardo confused value (that is, labor value) and cost price, and surplus value (measured in labor values) and profits (that is, surplus measured at the going prices of production).

> One can see that though Ricardo is accused of being too abstract, one would be justified in accusing him of the opposite: lack of the power of abstraction, inability, when dealing with the values of commodities, to forget profits, a factor which confronts him as a result of competition.
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> Because Ricardo, instead of deriving the difference between cost-prices

37 K. Marx, *Theories of Surplus Value, Part Two,* p. 406.

38 Ibid., pp. 395–401.

39 Ibid., p. 398.

and values from the determination of value itself, admits that "values" themselves . . . are determined by influences that are independent of labour time and that the law of value is sporadically invalidated by these influences. . . .[40]

The source of Ricardo's confusion is clear. Since the two propositions of Smith's theory of value which he wished to attack are logically interconnected, then both should be encompassed in his critique. But while the deductive relationship between wages and surplus was precisely stated using the labor theory of value, the relation between changes in wages and changes in prices could only be revealed by the abandonment of that theory. The search for an invariable standard of value was an attempt to find a unified analysis.

Ricardo thus appeared to be confusing the determination of prices with the determination of surplus, a potential confusion of which he himself was well aware.

After all, the great questions of Rent, Wages and Profits must be explained by the proportions in which the whole produce is divided between landlords, capitalists, and labourers, and which are not essentially connected with the doctrine of value.[41]

Prices are the *outcome* of the relation between wages and surplus.

Marx separated the problem of the analysis of the origin of surplus into two parts. First, he assumed that commodities exchanged at their labor values. Since any commodity is then an invariable standard of value, fulfilling conditions I and II outlined above, the origin of surplus value, and its relation to the rate of profit, is quite unambiguous.

To explain the nature of profits, you must start from the theorem that, on an average, commodities are *sold at their real values,* and *that profits are derived from selling them at their values.* . . . If you cannot explain profit upon this supposition, you cannot explain it at all.[42]

Throughout Volume I of *Capital* it is "assumed that prices = values. We shall, however, see, in Book III, that even in the case of average prices the assumption cannot be made in this very simple manner."[43]

40 Ibid., p. 191; see also Ch. XV.
41 D. Ricardo, letter to McCulloch, June 13, 1820, *op. cit.,* Vol. VIII, p. 194.
42 K. Marx, *Value, Price and Profit* (London, 1898), pp. 53–54.
43 K. Marx, *Capital, Vol. I,* p. 203n.

Thus the next step in Marx's argument must be to relate the analysis of surplus which he made under the assumption that prices equal values, to the actual case of capitalist society, in which this equality does not hold, and in which the decisions of capitalists are based on the rate of profit earned by the sale of surplus at prices of production related to the cost of inputs, including labor-power, also calculated at prices of production. If it were not possible to show a systematic relationship between surplus value (in terms of labor values) and profits (in terms of prices) the usefulness of Marx's analysis of the origin of surplus in a capitalist economy could be questioned. In other words, the role of the labor theory of value as the unifying factor in Marx's portrayal of the evolution of the social relations of capitalistic production, of the means of production, and of the process whereby surplus value is extracted, would, if the *transformation problem* were insoluble, be in jeopardy.

The essential problem is then to relate the calculation of the surplus, when the aggregates, social product and wages, are measured in labor values, to the rate of profit, when social product, wages and social capital are measured in prices of production.

Suppose that there existed a commodity which possessed the characteristics of the invariable standard of value which Ricardo had sought. Then measured in terms of this commodity, the aggregates involved in the calculation of surplus and the rate of profit would be unambiguously related (as in the corn sector of the *Essay on Profits*) without the complexities engendered by the interrelations of prices and the rate of profit. The quantity of the invariable standard which is to be the numeraire of the price system may be defined such that the quantity of labor embodied in its production is equal to one, that is, its labor value is one. If the prices of all commodities, in terms of the invariable standard, do not change as distribution varies, then the price of each commodity must always be in the same ratio to the labor embodied in its production. Furthermore, the prices of all commodities must be related to labor embodied by the same proportion; for otherwise their prices would vary with respect to each other, contradicting the assumption that the numeraire is an invariable standard. But then the values of the aggregates measured either in terms of the invariable standard or in terms of labor would be exactly the same. In this sense, Ricardo's search for an invariable standard of value and the problem of the relation between labor values and prices of production, arises from the *same* difficulty encountered both by Ricardo and by Marx.

Marx's solution to the transformation problem employed a device strikingly similar to a suggestion by Ricardo in the third edition of the *Principles,* an "average" industry.

> In the case of capitals of average, or approximately average, composition, the price of production is thus the same or almost the same as the value, and the profit the same as the surplus-value produced by them. All other capitals, of whatever composition, tend toward this average under pressure of competition. But since the capitals 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 the average profit, rather than their own surplus-value in the price of their commodity, i.e. to realise the price of production.[44]

Thus, the rate of surplus value created in the production of the commodity of average composition of capital (the average ratio of constant capital to variable capital) would yield *the* rate of profit. But, just as in the calculation of the rate of profit, both inputs (produced means of production and wages) and surplus must be valued at prices of production,[45] so the definition of the average industry must also be in terms of the ratio of the total price of produced inputs to wages.

Since the price of the average commodity must always be "the same or almost the same as the value," the ratio of the price to the labor time embodied in the commodity must be unchanged at different wage-rate, profit-rate configurations. Thus the increase in profits per unit of average commodity consequent upon a rise in the profit-rate, must be matched by an equal and opposite fall in wages. This is the crucial sense in which the average commodity is *average.* It lies between those commodities for which a rise in profits will be less than compensated for by a fall in wages, the prices of which will rise relative to the labor time embodied in

44 K. Marx, *Capital, Vol..III,* p. 174.

45 A discussion of the problem of the correct specification of the rate of profit is provided by I. Steedman, "The Transformation Problem Again," *Bulletin of the Conference of Socialist Economists, 1973.*

them, and those which will be "overcompensated," the prices of which will tend to fall relative to the labor time embodied in them. Only in the "average" case will the ratio of price to labor value be unchanged.

But there is a further complication. In so far as the means of production of the average commodity are not themselves of average composition, their total price, on which profits are calculated, may rise or fall, leading to a rise, or fall, in the ratio of price to labor value.[46] Hence if the average commodity is to possess the characteristics which Marx desires, it must be the only input to its own production, both as a produced input and in the payment of wages.

This seems to involve a return to the corn sector in Ricardo's *Essay on Profits,* and to be a rather trivial result. For if a commodity is the only input to its own production it is obvious that the ratio of the labor value of inputs to the labor value of surplus, must be the same as that same ratio measured in prices of production—the ratio is a physical one, and remains the same whatever may be the method of valuation of its components. But Marx's average commodity provides a vital clue toward the satisfactory solution of the problem.

4. *Sraffa and Marx*

Marx defined the rate of exploitation, or rate of surplus value, as the ratio of surplus labor time to necessary labor time; surplus labor time being the difference between labor performed and the value of labor-power. In the first stage of his argument, in which he assumed that all commodities exchange at their labor values, including labor-power and the commodity money, necessary labor time could be defined in two ways:

(A) as the value of "the sum of money v expended upon labor-power,"[47] in effect as the *share* of wages in the value of output, and

(B) as "the value of (the) means of subsistence,"[48] that is, as the value of the commodities comprising the real wage.

46 For an analysis of the "adjustment" of prices as distribution changes, see P. Sraffa, *op. cit.,* Ch. III.

47 K. Marx, *Capital, Vol. I,* p. 194.

48 Ibid., p. 198.

Since "the values of variable capital [*v*] and of labor-power purchased by that capital are equal,"[49] no ambiguity is involved in the dual definition. But if prices are not equal to value, the commodity money will not exchange for the means of subsistence at values, and hence the two definitions no longer coincide.

These definitions correspond, in turn, to two approaches to the problem of the relationship between labor values and prices of production. Definition (B), which requires the characterization of the wage as a given bundle of commodities, the size and composition of the bundle being determined by social and historical forces, is the basis of what may be called the "simultaneous equation" solution, developed by Bortkiewicz, on the foundations laid by Dmitriev.[50] If different levels of the wage may be represented as proportionate changes in all components of the wage bundle, the relationship between the rate of exploitation and the rate of profit may be found by solution of a set of simultaneous equations encompassing the production of all commodities required directly and indirectly in the production of wage goods. Although an unambiguous solution is to be found, unfortunately the clarity of the concept of surplus as the outcome of a deduction of wages from output is somewhat lost in the simultaneity of the solution.[51]

Definition (A) is implicit in the aggregative approach pursued by Marx in the form of the "average industry," and it is this approach which Sraffa has followed.[52]

The fundamental problem of the concept of an average is that if it is to have the desired characteristics of "averageness," its

49 Ibid., p. 200.

50 See V. K. Dmitriev, *Economic Essays on Value, Competition and Utility* (Cambridge, 1974), Ch. I, and L. von Bortkiewicz, "Zur Berichtigung der Grundlegenden Theoretischen Konstruktion von Marx in Dritten Band des 'Kapitals,'" *Jahrbucher fur Nationalokonomie,* 1907.

51 The distinction between "simultaneous" and "aggregative" approaches to the transformation problem was introduced by Piero Garegnani in a paper presented to a symposium on the transformation problem held at the University of Siena in April 1972. Garegnani also demonstrated that an aggregative approach may be developed with the wage given as a bundle of commodities, on the basis of the wage-goods sector; and emphasized the clarity of the "image" of exploitation in an aggregative approach *vis-à-vis* a simultaneous equation approach.

52 The simultaneous equation approach is so well known that only a sketch of its methods is given here. For a full discussion see M. Morishma, *Marx's Economics* (Cambridge, 1973), Parts I, II and III.

product must be the only input in its own production. But while "it is not likely that an individual commodity could be found which possessed even approximately the necessary requisites, [a] mixture of commodities . . . or a 'composite' commodity would do equally well."[53] Since this composite is to "produce itself," the proportions of commodity inputs to its production must be the same as the proportionate composition of output (the wage is assumed to be expressed in units of the composite commodity). Sraffa reveals the manner in which a composite commodity of the desired type may be constructed. Taking all those commodities which enter directly and indirectly into the production of each other, the level of production in each sector must be adjusted until, for the system as a whole, the proportion of the input of each commodity to its output is the same for all commodities. The proportionate composition of output (and input) defines the composition of the composite commodity. (All produced inputs must be included, but a commodity that is only an output must be excluded from the calculation, since it cannot fulfill the condition of appearing, in appropriate proportion, as input and output.) The unit of the composite commodity comprising output is then "produced" by a quantity of itself, the requisite characteristic of the "average commodity."

Sraffa's *Production of Commodities by Means of Commodities* is devoted to the demonstration that not only does such a composite commodity always exist, but also that the relationship between the wage rate and the rate of profit in terms of the physical division of the composite commodity, a simple proportionate relation, is exactly the same as that obtained for the economy as a whole when the composite commodity, which Sraffa calls the *standard commodity,* is used as the standard of value, and hence the wage is expressed in units of this standard. There is also an equally simple relationship between the rate of surplus value, expressed as the ratio of surplus labor time to necessary labor time in the production of the standard commodity, and the rate of profit. In other words, as in all cases of a commodity which is the only input to its own production, there is a direct relationship between the rate of surplus value and the rate of profit in the

53 P. Sraffa, *op. cit.,* p. 18.

"production" of the standard commodity. When the standard commodity is used as the "money" of the general system, the relation between the wage rate and the profit rate is the same *as if* it were analyzed solely in terms of the "average"—the standard commodity.[54]

Sraffa's standard commodity therefore possesses all the characteristics which Marx sought in the "average commodity" which was to be the key to his solution of the transformation problem.

It should be noted that while the standard commodity solves the problem of the relation between surplus and the rate of profit for both Marx and Ricardo, it is not an "invariable" standard of value in the sense that the values of the aggregates of total social product and social capital do not vary with changes in distribution. Since the price of all commodities in terms of the standard commodity must vary as distribution changes, then, except in the odd case in which the whole economy is in the proportions of the composite standard commodity itself, the values of the aggregates must vary. But the relationship between these magnitudes, and thus the rate of profit, is known as a physical ratio, prior to knowledge of the rate of profit and prices.

It may seem that the standard commodity, a composite com-

54 A more detailed analysis of these properties is provided in J. Eatwell, *Mr. Sraffa's Standard Commodity and the Rate of Exploitation,* mimeo (Cambridge, 1973). Maurice Dobb has suggested to me that the relationship between Marx's average commodity and Sraffa's standard commodity may be clarified by posing the following question: "Is the Sraffa standard commodity an entirely new concept (capable accordingly of being either considered, and discussed, as being useful or possibly redundant) or simply another (more precise and refined) way of defining an *average* commodity, as used by Marx? The answer is that it is basically and essentially the latter. But since in the course of seeking a more precise definition Sraffa explores at the same time the implications and difficulties of defining 'average,' he *at the same time* develops a new concept. To give an example of such difficulties: when defined in price of production terms inputs can no longer be simply lumped together and summed up under the heading of 'value of constant capital' (as Marx, operating in *values,* did), but the *dating* of the various inputs, and of the inputs into these inputs, has to be taken into account for each separate item, because of the need to include the rate of profit to be attached to these differently dated constituents of inputs. Hence if one selects an average commodity in *value* terms, it can only serve as average in price terms, and hence as the link between value and price, if it is its own unique input—or else *all* its inputs (and the inputs into those inputs) are produced under identical conditions as itself. Thus is introduced a new problem not previously grappled with, or even fully appreciated."

modity in which wages are expressed, is rather an extreme abstraction. It is not, of course, assumed that the worker actually consumes the standard commodity, merely that the wage may be expressed in those terms. But although an abstraction, the standard commodity represents all the essential characteristics of the actual organization of production and has the advantage of the direct relation between the surplus originating in its production and the rate of profit.

A further advantage of the standard commodity is that it provides a solution which is a complement to the simultaneous equation solutions of the transformation problem, since it is not linked to any particular theory of wages. Even if the subsistence theory of wages (subsistence in the broad sense) is abandoned, the origin of profit in surplus value is still clearly revealed. This refutes the arguments of those who claim that the foundations of Marx's analysis have been undermined by the "prosperity" of workers under twentieth century capitalism.

The above arguments should be sufficient to demonstrate that the polemics directed against Sraffa's work by de Brunhoff, Rowthorn and others, are fundamentally misconceived. They appear to derive from a failure to appreciate both the role which a theory of value must play in the analysis of surplus value, and the fundamental importance of the establishment of a systematic relation between surplus value and the rate of profit. Sraffa's *Production of Commodities* faces the problems involved, and, by providing solutions, opens the way for yet further development of analysis based on the theory of surplus value.

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