Karl Marx on Quesnay

I

This essay should begin with an account of the source material used in preparing it. It is important to arrange this material in a chronological sequence in order to place it in the context of the evolution of Marx's positive thought as reflected in his critical review of Quesnay's *Tableau Economique*.

We find a fairly detailed interpretative analysis of Quesnay's *Tableau Economique* in Marx's *Theories of Surplus Value*, Vol. I now published as Volume IV of *Capital*. Paradoxically enough, this was the first in the chronological sequence of Marx's theoretical writings on the nature of capital and reproduction.* In Chapter II of this work entitled *The Physiocrats*, there is the general physiocratic background of Quesnay's *Tableau Economique* in Sections 1 and 2 followed by specific comments in Section 3 on Quesnay's treatment of "Three Classes in Society". Marx's perceptive thesis that the physiocrats were "partisans of large-scale capitalist agriculture", is contained in Section 6 of this chapter. This line of thought is most relevant to Marx's interpretation of Quesnay, apart from its significance for Marx's view of the development of capitalism in French agriculture. Chapter VI of this book, entitled Quesnay's *Tableau Economique* (Digression), presents a fairly meticulous analysis of Quesnay's Table, if one ignores a digression within the "Digression". Indeed, what Marx described as 'Digression' in his review of the theories of surplus value turns out to be a basic text for the purposes of my essay. There is also an addendum to the chapter on the physiocrats (addendum No. 8) which contains a "Supplementary Note on the *Tableau Economique*. *Quesnay's False Assumptions*". What Marx says in this Note is most significant from the point of a view of a correct understanding of Quesnay. As I shall explain, it ties up with Marx's subsequent interpretations of Quesnay in other contexts to be indicated below.

As the editor of the Moscow edition of the *Theories of Surplus Value* points out, the text of this work was compiled between January, 1862

*I have referred to the English edition entitled *Karl Marx*, *Theories of Surplus Value*, *Part I*. Foreign Languages Publishing House, Moscow.

and July 1863. It is part of a more comprehensive text entitled *A Contribution to the Critique of Political Economy*. This text contained a plan of Karl Marx's *Capital*. Under the heading of "Capital in general", Marx proposed to study "(1) the production process of capital; (2) the circulation process of capital; (3) the unity of the two or capital and profit". In fact, all the theoretical problems of the political economy of capitalism came to be gradually fitted into this frame of reference or conceptual model. Marx tried to understand Quesnay in an identical frame of reference. He admired Quesnay, precisely because Quesnay's Table made sense to Marx only in such a strikingly significant frame of reference. It is, therefore, not unreasonable to presume that by 1863, even before the publication of Volume I of *Capital* in 1867, Marx had completed his analysis of the essence of Quesnay's Table and incorporated it into his own positive thinking. The first fruit of this process of assimilation appeared in July, 1863 in a letter Marx wrote to Engels from London (on the 6th July, 1863), in which Marx presented his own Table as a substitute for Quesnay's. I prefer to call this the Marxian model as distinguished from Quesnay's model.*

Between 1863 and 1878 Marx reverted to Quesnay's Table to explain, clarify or amplify what he had discovered earlier and finally to present Quesnay in the second volume of *Capital* in a more finished and sophisticated form not only in the perspective of the development of economic thought, but also in the context of Marx's exposition of his own theory of capital in relation to both reproduction and circulation, in accordance with his original plan of constructing a general theory of capital.

It is interesting to note the chronological sequence of this effort.** According to Engels' preface to Volume 2 of *Capital*, this volume came out of four folio manuscripts marked I to IV by Marx. "Manuscript I (150 pages) written in 1865 or 1867, is the first separate, but more or less fragmentary, elaboration of Book II as now arranged" (Book II, Volume 2 of *Capital*). Engels adds that "Manuscript II is the only somewhat complete elaboration of Book II and dates from the year 1870". The first phase of Volume 2 of *Capital* thus covers a period of five years—1865 to 1870. After this there was a gap of seven years

*The letter appears as letter No. 64 in *Karl Marx and Frederick Engels Selected Correspondence*. Progress Publishers. Moscow. Second edition 1965.

**Quotations from Engels' preface (pp. 3-4) to Volume 2 of *Capital*, which follow in the text are from the English edition published in Moscow by Foreign Languages Publishing House in 1957.

mainly due to Marx's ill-health. Work on Volume 2 of *Capital* seems to have been resumed in 1877. As Engels says, "dating back to the end of March 1877, there are references and notes from the above-named four manuscripts intended as the basis of a *new elaboration* of Book II" (Volume 2 of *Capital*, italics mine). Engels adds that "its beginning is represented by Manuscript V which comprises the *first four chapters. . . . The material is the last complete presentation of this, the most important Section of Part I. . . . The most difficult bit of Part I had been worked over* in *Manuscript V*" (italics mine). It is this part of Marx's theoretical formulation which contains references to how Quesnay's model can be assimilated into Marx's general theory.

The last link in the chronological chain is the tenth chapter of Engels' *Anti-Dühring*, the first edition of which appeared in 1878. This chapter contains a defence of Quesnay and an exposition characterised by scintillating simplicity and interesting side-lights that illumine some of the dark corners of Quesnay's Table. Engels' preface to the second edition of this book (dated September 23, 1885) contains the following passage: "the tenth chapter of the part on economics ('From the *Critical History*') was written by Marx, but had to be shortened somewhat by me for purely external reasons".*

II

Marx used three diagrams for the purposes of his exposition of Quesnay's *Tableau Economique*. They show certain interesting variations which, as I shall explain, help us to gain an insight into Marx's analysis. These diagrams are set out below in a chronological sequence.

The second and the third diagrams are practically identical if we ignore the distinction between 'owners' and 'landlords' and treat them as the same class. In all the three diagrams, if we take the gross product of agriculture the total is 5 milliards including the annual advances of 2 milliards for the replacement of working-capital. In the first diagram, the annual advances are mentioned at the *head of the first column* as "(*a'*) 2000 millions" and are obviously in kind. The resulting output is 3 millions—2 millions in food and 1 million in raw materials—which is available for consumption by the landlords and the sterile class. The

*Frederick (Engels): *Anti-Dühring*. Third Edition. Foreign Languages Publishing House. Moscow, 1962. P. 14 of *Prefaces to the Three Editions*.

distinction between these two components of gross output ('advances', on the one hand, and food and raw materials, on the other) is evident

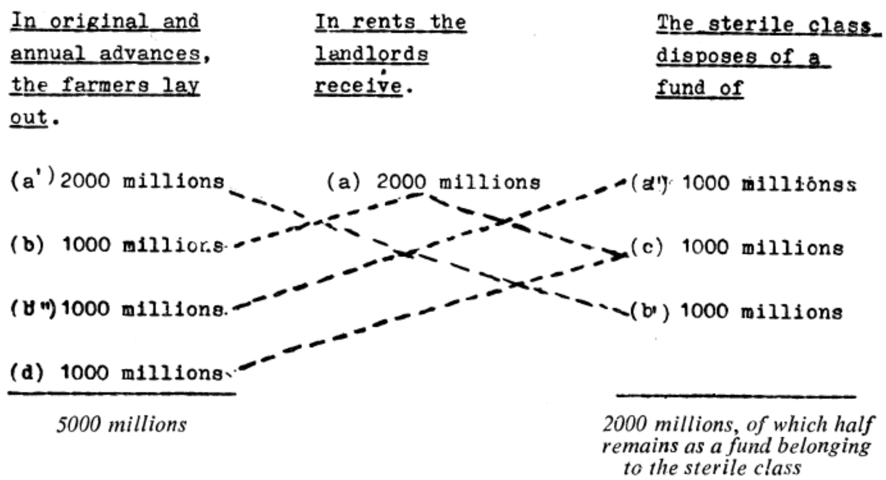


Diagram 1—(Diagram in *Theories of Surplus Value*, Chapter 6).

when 'advances' are mentioned separately at the *bottom of the first column'* in Diagrams (2) and (3), rather than at the top, as in Diagram (1), making it appear as if it is the heading of column 1.

All the three diagrams present a conundrum in respect of the magnitude of the gross output of manufactures. While in the case of agriculture, 'advances' are specifically mentioned, it would appear as if manufactures do not need 'advances' and that, while three separate amounts of 1 milliard each are set out in column 3 as links in the chain of circulation and should add up to a total of 3 milliards, the total is stated to be only 2 milliards in all the diagrams. We get a clue only in Diagram (1) in which Marx adds a clarification at the bottom of the third column that one-half of 2 milliards, i.e. one milliard "remains as a *fund* belonging to the sterile class" (italics mine), which presumably serves as a source of "advances". Indeed, Marx's exposition, as I shall explain, contains a review of the magnitude of "advances" as well as the "gross product" taken as a whole and embracing both branches of production.

It will be noticed that Diagram (1) is distinctive in the sense that, while in Diagram (2) the amounts in the first, second and third columns are indicated by the *consecutive serial numbers* (*a*), (*b*), (*c*), (*d*) etc., in Diagram (1) they are indicated by notations such as *a'*, *b*, *b'''*, *d*, etc. *a*, *a'*,

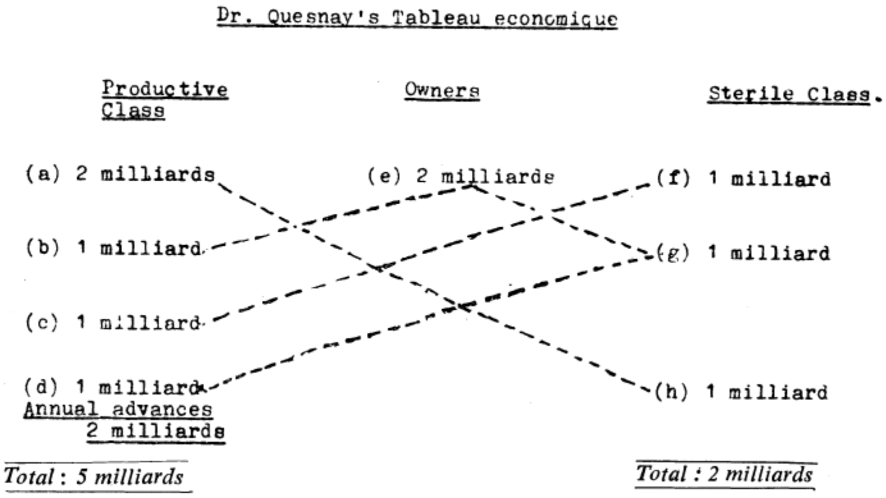


Diagram 2—Diagram attached to Marx's letter to Engles (1863)*.

*In his letter Marx wrote : "I have appended Quesnay's Table, which I shall explain in a few words in my next letter" (the letter mentioned has not been found).

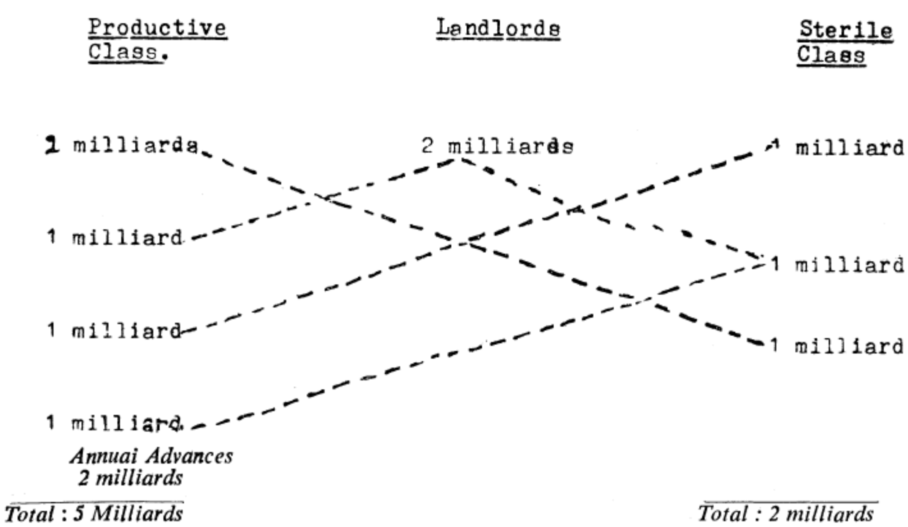


Diagram 3—Diagram in Addendum (8) to "*Theories of Surplus Value*".

a''' are what Marx calls the starting-points of the circulation, whereas b, c, d, b', and b''' are links in the chain of circulation. We are thus introduced to Marx's sophisticated interpretation of Quesnay's Table as a circulation model. This is presented below in some detail in Section V of this essay.

III

In *Anti-Dühring*, Marx characterised Quesnay's *Tableau* as "both simple and, for the time, brilliant depiction of the annual process of reproduction through the medium of circulation". Simply stated in the words of Marx, the *Tableau* sums up the entire process of reproduction through circulation as follows: "There enter into circulation: from the farmers, two milliards in money for the payment of rent, and three milliards in products, of which two-thirds are means of subsistence and one-third raw materials; from the sterile class, two milliards in manufactured goods. Of the means of subsistence amounting to two milliards, one-half is consumed by the landlords and their retainers, the other half by the sterile class in payment of its labour. The raw materials to the value of one milliard replace the working capital of this latter class. Of the manufactured goods in circulation, amounting to two milliards, one-half goes to the landlords and the other to the farmers, for whom it is only a converted form of interest which accrues at first hand from agricultural reproduction, on their invested capital. The money thrown into circulation by the farmer in payment of rent flows back to him, however, through the sale of his products, and thus the same process can take place again in the next economic year".*

According to Marx, Dühring was confused by the question as to what happens to the *net product* (surplus as rent) in the course of "*national-economic circulation*". The answer is furnished by Quesnay's Table, provided that we interpret this Table in accordance with the physiocratic distinction between perfect and imperfect circulation. Circulation is imperfect when circulation is between only two of the three classes. It is perfect when all the three classes are drawn into the network of circulation. There is imperfect circulation as between the farmers and the rentiers—one-way transfer of rent in cash of 2 milliards. One-half of this buys food and comes back. It is through perfect circulation that the other half returns to the farmers and the mystery of the *net product* is solved. It returns indirectly *via* circulation involving the sterile class. Rentiers buy with this sum (one milliard) manufactured consumables of

Anti-Dühring. Ch. X, pp. 342-43.

an equivalent value. The sterile class who obtain the money use it to finance the purchase of means of subsistence (food) for labour. The equivalent money thus goes back to the productive class. What the sterile class produces also goes to the productive class through exchange or circulation to the extent to which the former supplies manufactures mostly in the form of means of production for agriculture and receives in exchange raw materials for industry, which are the replacement of working capital for the next period of reproduction. Thus as the result of perfect circulation, there is matching of 'output' and 'consumption' (in the broad sense) through the process of circulation of commodities (and reverse circulation of money) which takes care of the replacement of working capital.

Marx prefers to regard the gross product of both agriculture and industry as Gross National Product. At page 359 of Chapter 19 of Volume 2 of *Capital* Marx characterises Quesnay's model as showing "in a few broad outlines how *the annual result of the national production representing a definite value is distributed by means of the circulation in such a way that, other things being equal, simple reproduction, i.e. reproduction on the same scale, can take place*". (italics mine).

Like any other economic model, the Quesnay model rests upon certain assumptions. Since Marx would not be interested in model-building on the basis of unrealistic assumptions, one should do well to note the assumptions as Marx views them, because, according to him, they rest on economic reality as determined by the institutional background of mid-eighteenth century France. Before I deal with the latter aspect it is necessary first to identify and set out the assumptions* themselves on the lines of Marx as follows:

(1) The assumption of "constant prices and simple reproduction on a given scale". (*Anti-Dühring*, p. 337). In Volume 2 of *Capital* the formulation partly quoted in a preceding paragraph does not mention "constant prices".

(2) The assumption of a rural economy in which domestic industry supplements agriculture. As Marx says (*Anti-Dühring*, p. 336), "in Quesnay's time in France, as was more or less the case throughout

*These assumptions have been gleaned from Chapter 9 of the second volume of *Capital* and Chapter 10 of *Anti-Dühring*. The latter is most illuminating from the point of view of Marx's understanding of Quesnay's implicit assumptions.

Europe, the *home industry* of the peasant families satisfied *by far the greater portion* of their needs other than food, and is, therefore, taken for granted here as supplementary to agriculture". (italics mine).

(3) Circulation *within* the agricultural sector or *within* the industrial sector is ignored so that only "circulation between class and class is taken into account".

(4) "All purchases and sales taking place between class and class in the course of the industrial year are combined in a single total sum". (*Anti-Dühring*, p. 336).

(5) There is self-consumption of industrial products. (Since the entire industrial output is thrown into circulation and passes into other sectors, how is self-consumption accounted for ? Marx's answer is explained later.)

(6) "Agriculture is the only sphere of investment of human labour producing surplus-value, hence the only really productive one from the capitalist point of view". (*Capital*. Vol. 2. p. 359).

(7) "Agriculture is carried on capitalistically, that is to say, it is the enterprise of the capitalist farmer on a large scale" (*Capital*. Vol. 2. p. 360.)

(8) "The starting-point of the period of production is properly the preceding year's harvest" (*Capital*, Vol. 2, p. 359).

(9) Part of the surplus in agriculture is "interest on the total invested capital of the farmers, that is ten percent on ten milliards" (Anti-Dühring. p. 342), which means 1 milliard. This sum is not received from circulation, but "it exists *in natura*" in the hands of the farmers.

(10) The Quesnay model implicitly assumes a model of distribution. As already stated, *Marx regards it as a distribution model only in the sense that the national product is so distributed that simple reproduction, i.e. reproduction on the same scale at constant prices, is ensured.* Adam Smith, on the other hand, emphasizes another aspect of Quesnay's presentation as follows: "he (Quesnay) supposes this distribution takes place in a state of perfect liberty and, therefore, of highest prosperity—in a state where the annual produce is such as to afford the greatest possible net produce, and where each class enjoys its proper share of the whole annual produce". In other words, according to Adam Smith, Quesnay assumes that any "violation of that natural distribution" would

cause a decrease in "the value and sum-total of the annual produce".*

IV

It is instructive to note that the assumptions underlying Quesnay's model are not abstract assumptions one is permitted to contrive and use for the sake of model-building, but that they have an institutional background of concrete economic reality relating to France in the middle of the 18th century. One can build up a concrete picture on the basis of the internal evidence of facts stated in Marx's *Theories of Surplus Value*, in Chapter 10 of *Anti-Dühring* and in Chapter 19 of Volume 2 of *Capital*. There is corroborative evidence in Adam Smith's account of the economic conditions in France which he passes in review in several contexts including his critique of the physiocratic system in his *Wealth of Nations* (1776). Smith was a contemporary of Quesnay's.** He had met him and his group during his sojourn in France (1764-1766) and studied their system as reflected in Quesnay's *Tableau económique* published in 1758 as an addition to his main work *Maximes générales du gouvernment economique d'un royaume agricole*.

Let me begin with the divergent views of Marx and Smith about the nature of the assumption regarding 'distribution' implicit in Quesnay's model to which I referred in a previous paragraph. Smith emphasizes the physiocratic assumption of 'natural distribution' which optimizes the production of wealth under a system of natural liberty. Marx thinks that Quesnay's great merit lies in his "*analysis of the various material components in which capital exists and into which it resolves itself*". (italics mine). According to him, Quesnay as well as the physiocrats as a whole properly understood the nature of the "bourgeois forms of production". Nevertheless, "for them the bourgeois forms of production necessarily appeared as natural forms". They discovered the "material laws" characteristic of these forms. But they "saw capital in isolation from the social conditions in which they appear in capitalist production . . . Their error is only that the material law of a definite historical stage is conceived as an abstract law governing equally all forms of society".†

* *Wealth of Nations*. Book IV, Ch. 9. Home University Library, 1934, Vol. 2, p. 167.

**Quesany was born in 1694 and died in 1774.

†*Theories of Surplus Value*. p. 44. According to Marx, this is the universal failing of classical political economy.

Does the institutional background of Quesnay's *Tableau economique* approximates to a "bourgeois form of production" characteristic of a "definite historical stage"?

Marx said (*Capital*, Vol. 2, p. 360) that "the system of the physiocrats is the first systematic conception of capitalist production. *The representative of industrial capital—the class of tenants—directs the entire economic movement*. Agriculture is carried on capitalistically, that is to say, it is the enterprise of a capitalist farmer on a large scale; the direct cultivator of the soil is the wage-labourer". (Italics mine).

According to Marx, the physiocrats were ideologically "partisans of large-scale capitalist agriculture". In a section dealing with this theme (*Theories of Surplus Value*, p. 64), he quotes the following passage from Quesnay's *Maximes generales du gouvernment economique d'un royaume agricole* published in 1758, to which the *Tableau economique* was appended: "The pieces of land which are employed in growing grain should as far as possible be joined together in large-scale farms which can be managed by rich farmers" (i.e. capitalists), "since the expenses for the maintenance and repair of the buildings are smaller, and, therefore, the costs are correspondingly much lower and the net product much greater in the case of large agricultural undertakings than in the case of small".*

Leaving ideology aside, as a matter of fact the agrarian system supporting a form of capitalistic agriculture in France was the system known as *Metayage*. We may follow the succinct description of this system given by Quesnay's contemporary, Adam Smith, in Book III, Ch. 2 of his *Wealth of Nations*: "To the slave cultivators of ancient times gradually succeeded a species of farmers known at present in France by the name of Metayers . . . The proprietor furnished them with the seed, cattle and instruments of husbandry, the whole stock, in short, necessary for cultivating the farm. The produce was divided equally between the proprietor and the farmer, after setting aside what was judged necessary for keeping up the stock which was restored to the proprietor when the farmer either quitted, or was turned out of the farm . . . Such tenants, being freemen, are capable of acquiring property and having a certain proportion of the produce of the land, they have a plain interest that the whole produce

*The reader may refer to the *General Maxims for the Economic Government of an Agricultural Kingdom* in Ronald L. Meek's *The Economics of Physiocracy* (Allen and Unwin, 1962, pp. 231-262).

should be as great as possible, in order that their own proportion may be so . . . The time and manner in which *so important a revolution* was brought about, is one of the most obscure points in modern history . . . A villain enfranchised, and, at the same time, allowed to continue in possession of the land, *having no stock of his own*, could cultivate it only bý means of what the landlord advanced to him and must, therefore, have been what the French call a metayer". (Italics mine).

Adam Smith draws our attention to the subsequent evolution of agrarian relations. There could be no incentive for agricultural enterprise, for the tenant farmer ploughing back his savings to farm investment, if the landlord obtained one-half of gross produce without contributing any capital and if a tenth of the produce was also extracted as tithe. Improvident husbandary fostered by these agrarian relations was replaced by a system under which there emerged, "*though by very slow degrees, farmers properly so-called, who cultivated the land with their own stock, paying a rent certain to the landlord.*" It was this species of farmers that was assumed to be the central figure in Quesnay's model. Their capitalistic enterprise was hampered in contemporary France by agricultural taxation—the *taille*, a tax on the supposed profits of agriculture assessed on the basis of the farmer's capital investment,—by the high incidence of rent and by the leases being not long enough to ensure adequate amortization before the expiry of the lease. As Adam Smith testifies (*Wealth of Nations*, Book IV, Ch. 9), it was through the efforts of the physiocrats that "the term during which such a lease can be granted, as will be valid against every future purchaser or proprietor of the land, has been prolonged from nine to twenty-seven years", thus fostering the development of capitalistic agriculture in France.

Let me set out briefly what both Marx and Adam Smith had to say about the mutual production relations of the three classes—(1) landlords, (2) farmers and (3) "manufacturers", "artificers", traders—the sterile class in the Quesnay model.

First, take the class of landlords. Marx says (*Anti-Dühring*, pp. 338-39, subsequent page references relate to this work): "The class of landlords drawing rent first appears, as is the case even today, in the role of receivers of payments". In Quesnay's model they receive 2 milliards of rent. Marx points out that "On Quesnay's assupmption, the landlords proper receive only four-sevenths of the two milliards of rent: two-sevenths go to the government, and one-seventh to the receivers of tithes. In Quesnay's days the Church was the biggest landlord in France and in addition received the tithes on all other landed property" (p. 339). Marx draws our attention to the fact that the landlord makes a contribution, on Quesnay's assumption, in the form of capital expenditure, in Quesnay's words, "for the maintenance and improvement of their lands and the raising of their standard of cultivation", because, "by natural law", the landlord's economic function is "provision for the good management and expenditure for the maintenance of their patrimony in good repair" (p. 341). Quesnay describes such capital expenditure as *avances fancieres*, outlays for the preparation of the soil and provision of all equipment needed by the farms. Marx, however, thinks that such expenditure accounts for a small portion of rent so that "the great bulk of rent is unfruitful expenditure" (p. 341).

Let us turn next to the class of farmers. According to Marx, "the first premise of the *Tableau* was that the farming system and with it large-scale agriculture, in the sense in which this term was understood in Quesnay's time, had been generally introduced, in Normandy, Picardy, Ile de France and a few other French provinces serving as prototypes. The farmer, therefore, appears as the real leader in agriculture, as he represents in the *Tableau* the whole productive (agricultural) class and pays the landlord a rent in money" (*Anti-Dühring*, p. 336).

According to the *Tableau*, the magnitude of what Marx calls the farmers' 'working capital' to be replaced annually is 2 milliards. Marx says (*Anti-Dühring*, p. 336): "An invested capital or inventory of ten milliard *livres* is assigned to the farmers as a whole; of this sum one-fifth or 2 milliards, is the working capital which has to be replaced every year—this figure too was estimated on the basis of the best-managed farms in the provinces mentioned" (Normandy, Picardy, Ile de France, etc.).

A working capital of 2 milliards is functionally related to the volume of gross output. Like the figure of working capital of 2 milliards, the figure of the value of gross product, viz. 5 milliards, in the Quesnay model is also a realistic figure. As Marx says (*Anti-Dühring*, p. 337), "the magnitude of value of this gross product is estimated on the basis of the average prices of agricultural products among the trading nations . . . The sum roughly expresses the money value of the gross agricultural production of France on such statistical estimates as were then possible".

Allowance is made in the *Tableau* for a return on the farmers' *invested capital*. This is 1 milliard, i.e. 10 per cent on 10 milliards, which is "only a converted form of the interest, which accrues at first hand from agricultural reproduction, on their invested capital".* (*Anti-Dühring*, p. 343).

Let us now analyse Adam Smith's understanding of the capital structure in agriculture. He says (*Wealth of Nations*, Book IV, Ch. 9): "The cultivators or farmers contribute to the annual produce by what are in this system" (physiocracy) "called the original and annual expenses (*depenses primitives et depenses annuelles*) which they lay out upon the cultivation of the land". The 'original expenses' are those that are incurred before the returns come in and must be counted as capital investment to be replaced in the long run. These have to be distinguished from the 'annual advances'. What is left to the farmer after payment of rent must compensate him for both "advances"—the one over the period of the lease and the other annually. Adam Smith seems to have derived and generalised the distinction between 'fixed' and 'circulating' capital on the basis of the physiocratic notion of 'original' and 'annual' advances.

Digram 1 above contains in the heading of column 1 the phrase "original and annual advances". In the later diagrams, however, we find only the phrase "annual advances" of 2 milliards. Marx did not attach much significance to Smith's generalised distinction and preferred his own distinction between 'constant'and 'variable' capital, in terms of which one has to understand Marx's appreciation of Quesnay's *Tableau*. Marx notices (*Capital*, Vol. 2, Ch. 10, pp. 211-12) that the physiocrats correctly include the part of capital advanced as wages in 'annual advances'. The physiocrats are also on the right track when they think, not in terms of money, but in terms of the physical constituents of productive capital. But they regard subsistence as the physical constituent of capital in the case of labour, so that "the value-part added to the product of labour is . . . equal only to the value of the means of subsistenc paid to the labourers and necessarily consumed for the maintenance of their ability to function as labour-power". For Marx, it is the labour-power itself which is the constituent of productive capital. However, he understands that the physiocratic approach is consistent with the specific physiocratic doctrine. According to this doctrine, labour-power yields surplus-value only in agriculture, not because of labour, but because of nature's contribution to productivity. There is a surplus or *net product* in agriculture alone, and, therefore, labour is productive only in this branch of production. If one starts with the premise, as Marx does, that it is labour-power

*Marx has chosen to interpret the sum 1 milliard as interest on "original advances", although alternative interpretations have been given with regard to this amount.

that produces surplus-value *in addition to reproducing its own price*, it should do so in industry as well as in agriculture. From this angle, the Marxian distinction between constant and variable capital becomes significant. Thus, as Marx says, "their (the physiocrats') very doctrine stands in the way of their discovering the distinction between constant and variable capital".

Nevertheless, Marx does understand Quesnay's conception of "annual advances" in its positive or constructive aspect. We find an evidence of this at pages 189-190 of Chapter 10 of the second volume of *Capital*. Marx argues that the 'original' and 'annual' advances relate to physical productive capital. "They stand opposed to money as well as the commodities existing in the market" (they do not enter into 'circulation' as conceived in the Quesnay model). This is how Marx explains the position with regard to the annual advances in *Anti-Dühring*: "The agricultural products—foodstuffs, raw materials, etc.—which are required for the replacement of the working capital, including therefore the maintenance of all persons directly engaged in agriculture, are taken *in natura* from the total harvest and expended for the purpose of new agricultural production. Since constant prices and simple reproduction on a given scale are assured, the money value of the portion which is thus taken from the gross product is equal to two milliard *livres*. This portion, therefore, does not enter into general circulation. For, as we have noted, circulation which takes place only *within* a particular class, and not between one class and another, is excluded from the *Tableau*". (*Anti-Dühring*, p. 337).

According to the Quesnay model, the 'sterile class' consists of "artificers and manufacturers", in the words of Adam Smith. What is the character of this class in the "definite historical stage" to which they are supposed to belong by Marx? How is it characterised for the purposes of the Quesnay model? Let us turn to the first question. It will be recalled that, according to Marx, the manufactured goods received by the farmers from the 'sterile class' consist *mostly* of means of production for agriculture. The implication of this is that the non-food consumption requirements in the agricultural sector are met mostly by the home industry supplementary to agriculture. I quoted earlier a passage from *Anti-Dühring* in which Marx says that in Quesnay's time in France, the home industry of the peasant families met the *bulk* of the demand of the rural population dependent on agriculture. The production of manufactured consumer goods was, therefore, mainly geared to the consumption requirements of landlords and their retainers. To demonstrate the truth of the physiocrats' position thal the output of the sterile class did not leave a surplus above the value of 'subsistence', Adam Smith refers to the production of ruffles, an item of the luxury consumption of the rich, and says: "the extreme poverty of the greater part of the persons employed in this expensive, though trifling, manufacure may satisfy us that the price of their work does not in ordinary cases exceed the value of their subsistence. It is otherwise with the work of farmers and country labourers". (*Wealth of Nations*, Book IV, Ch. 9, p. 161). If the vast bulk of industries consisted of sweated industries, the physiocrats' assumption of labour being unproductive in industry was not an unrealistic one.

Turning to the second question, for the purposes of his model, Quesnay treats the sterile class as an "*integral class*", as Marx puts it, although it is divided into capitalists and workers both of whom jointly transform raw materials into manufactured goods at a wage cost equal to the value of the subsistence, the raw materials and food being derived from the productive class. In the Quesnay model, the means of production imported, or obtained through circulation as *between* classes, are the raw materials, apart from food. Production of tools and machinery is *within* the industrial sector itself. The *Tableau* does not concern itself with the role of capital goods within the industrial sector and how they are related to the intra-sectoral circulation of money and commodities—a problem that has engrossed the attention of Marx. Marx has taken exception to the fact that the *Tableau* does not make allowance for the capital base or invested capital of the industrial sector. Thus he says: "the original advances (fixed capital) made by the productive class are assumed to be five times the size of the annual advances. In the case of the sterile class, this item is not mentioned at all—which does not prevent it from existing". (*Theories of Surplus Value*, Vol. 1, p. 368)

V

Marx regards the *Tableau* as a circulation model. It is, indeed, a general synoptic view of a 'system'—a 'system' showing the inter-relation of (1) circulation of money; (2) circulation of capital in the form of means of production; (3) circulation of consumption goods; (4) circulation between producers and consumers; (5) circulation between raw material production and manufacture.

The *Tableau* becomes puzzling, instead of being enlightening, unless, as

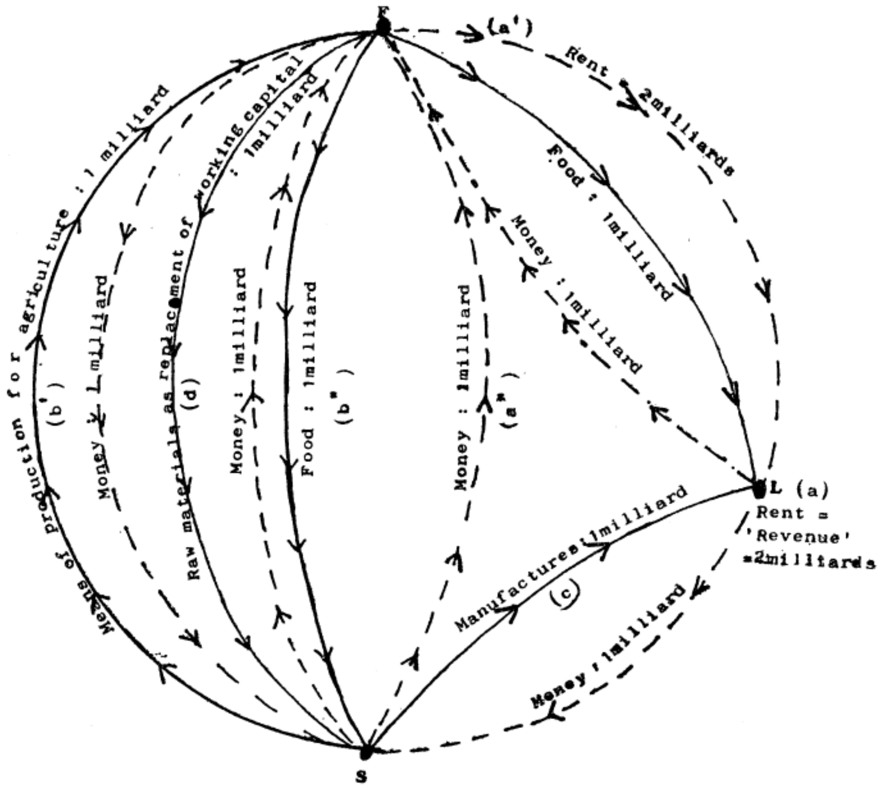
Marx rightly explains, one takes into account *successive* production periods in agriculture and industry respectively. In agriculture, the starting-point is the end of the harvest which marks the close of the previous 'economic year' and the beginning of the new 'economic year'. There is intially a gross product of 5 milliards *plus* a cash of 2 milliards (a 'hoard', as Marx puts it), which is nothing but the return of cash of 2 milliards paid out as rent in the previous year. From the gross product of 5 milliards there is a deduction of 2 milliards on account of replacement of working capital. This leaves a surplus of 3 milliards. This surplus is disposed of functionally as 2 milliards of rent for the new 'economic year' +1 milliard of interest accruing to the productive class or rather, as Marx puts it, the "converted form" of interest, which accrues at first hand from agricultural reproduction, on the invested capital of the farmers. The *commodity form* of the surplus is 2 milliards of food + 1 milliard of raw materials flowing out of the agricultural sector.

In the case of the industrial sector, (sterile class) as Marx explains (*Anti-Dühring*, p. 339), "at the beginning of the movement set out in the *Tableau*, the annual commodity production of the sterile class is *entirely in its hands, and consequently its whole working capital*, consisting of raw materials to the value of one milliard, has been converted into goods" (in the new economic year) "to the value of 2 milliards, one-half of which represents the price of the means of subsistence consumed during this transformation". There is thus an advance of working capital (2 milliards) for reproduction in the new "economic year".

When we include this advance in our computation in the perspective of successive production periods, the total product that comes into circulation is not 5 milliards, but 7 milliards, including 2 milliards of manufactures, one-half of which is converted into food and the other half into raw materials. Marx, therefore, says (*Theories of Surplus Value*, Vol. 1, p. 322), "Quesnay forgets that, in addition to the 5 milliards of gross product, a further 2 milliards exist in manufactured commodities produced *before the new harvest*. 5 milliards represent only the total annual production—the total crop—not the gross product of manufacture, the reproductive elements of which have to be replaced by *this year's harvest*". (Italics mine).

The diagrams used by Marx to illustrate the *Tableau economique* do not adequately bring out the phenomenon of circular flow which is the essence of a circulation model and on which he lays so much emphasis. A reconstructed diagram (Diagram 4) given below serves this purpose better.

Diagram 4 clearly shows a pattern characteristic of a triangular network of capital movement, inter-sectoral exchange and balance of payments. (It bears resemblance to a diagram portraying a network of



Gross product of manufactures : 2 milliards.

Diagram 4—Gross product of agriculture : 5 milliards + cash ('hoard') : 2 milliards.

F=Farmers ; L=Landlords ; S=Sterile Class.

trade and payments including capital transfers). The *Tableau* sets out the movement of the economic surplus (rent *plus* interest) in the form of commodities which represent exportable surpluses in the sense that they are not consumed within either sector *F* or Sector *S*. The circulation process, therefore, takes on the character of inter-sectoral trade akin to inter-regional or international trade. Secondly, commodity flow and money flow implicit in the *Tableau* are assumed to form a network of successive transactions. (When the transactions are assumed to be *simultaneous* interesting problems arise, according to Marx, as we shall see.) As Marx says (*Anti-Dühring*, p. 338), "during the course of *this new year* the portion of the gross product destined to enter into circulation is distributed among the other two classes through the medium of a number of individual payments, purchases and sales. These movements, separated, *following each other in succession and stretching over a whole year*, are, however—as was bound to happen in any case in the *Tableau* —combined into a few characteristic transactions, each of which embraces a whole year's operations at once" (italics mine). In this respect also the analogy with international trade transactions is quite clear.

Marx thinks that, in order to understand the nature of the circulation model in the *Tableau*, one must draw the distinction between money as "means of payment" and money as "means of purchase". Payment of rent is a "unilateral transfer of funds", to use modern terminology. It gives title to part of the gross product. As Marx says, the landlord "reconverts the money into use-value", commodities thus entering into final consumption. Marx regards it as a leakage from the commodity circulation: it results in 'consumption' which is "unproductive consumption". From the point of view of the farmer, when the money as the equivalent of rent eventually returns to him as payment for food purchased by the landlord, the landlord "pays the farmer *without any equivalent*" (emphasis mine). Payment of rent in money is like "unrequited export", to use modern terminology: it is "unilateral transfer of funds".

The phenomenon is also analogous to a credit operation creating a title to part of the gross product—a "draft on gross product", as Marx puts it. It is like the flow of loan capital from one economic sector to another, or the flow of foreign capital from one country to another taking the form of an export surplus equivalent to the unilateral transfer of funds. From this angle, one may say that inter-sectoral and inter-regional trade, settlement of payment balances, and activisation of economic activity, as the result of 'circulation', are interrelated in a network so ingeniously portrayed by Quesnay.

If we refer to the reconstructed Diagram 4 we notice that the flow from F to L and the return flow from L to F, according to Marx, are an instance of "exchange of *revenue* for capital". Marx argues that this is not determined by 'reproduction', i.e. $M \rightarrow C^{L}_{MP} \rightarrow C \rightarrow M^{*}$ — a process

**Cf.* Marx, *Capital*, Volume 2, Part I, Chapter 1.

in which C (finished goods) re-enters the process of circulation, is reconverted into M and the return flow of M expresses the "continuous reproduction of the commodity".

At page 302 (paragraph three) of *Theories of Surplus Value, Vol. I*, Marx offers a generalised view of unilateral transfer of funds. F paying L in money is like the debtor F paying the creditor L, the *real* counterpart being an export surplus in the form of food. Marx generalises this phenomenon by explaining that, when the productive class pays taxes to the state (creditor), the state buys commodities directly or indirectly from this class, because the latter makes a *real* transfer (distinguished from *monetary* transfer) and receives back the money after a time-lag. (One can think, in this connection, of the outflow of money from the countryside to the towns and the return flow with a time-lag, characteristic of the Indian economy with its 'busy season' and 'slack season', collection of revenue, irrigation dues, debt charges, etc. having partly its counterpart in the return flow of money to buy agricultural produce.) We must also recognise that Marx actually speaks of "capital transfer" in the context of the process of circulation (*Theories of Surplus Value, Vol. 1*, p. 326).

In the Quesnay model, we can locate F as an "activating centre" of trade and payments. This would, in fact, follow from the physiocratic system of thought. Marx does not treat this as necessarily the essential part of his exposition. Rather, he refers to certain alternative "*starting points of circulation*" in one of his diagrams (Diagram 1 above. These points are indicated in Diagram 4 also). Each starting-point, as Marx shows, is like an activating centre as well as a terminal point in the transfer routes in a model of triangular (or multilateral) balancing of trade and payments. Nevertheless, Marx interprets Quesnay to say that F is a *capitalist*, L a *rentier* and S a wage-earner. If F paid L and S directly in commodities, F would not part with his 'hoard' (money-capital). If he paid in money, it would return to him eventually. "This is the formal return circuit of money to the industrial capitalist who as a buyer *opens* the whole business and brings it to an *end*" (*Theories of Surplus Value*, Vol. 1, p. 323. Italics mine).

Marx links up the circulation phenomenon with his capital theory and theory of reproduction. Return of money, when it is reconversion of capital into money, marks the end of "one cycle" and the "beginning of new production". The capitalist's role as the seller is indicated by the familiar Marxian symbol C—M. When he is the buyer it is the chain

$M-C$ which indicates his role. C representing the reproductive elements, $M-C$ signifies the transformation of money-capital into industrial capital. Marx draws a distinction between 'consumption by L' and 'consumption by S'. In the case of L retransformation of money into means of subsistence (food) or manufactured goods means "mere consumption" (Marx). There is a change of form—form of money is converted into commodity form. In the case of S, it means "industrial consumption"—reproduction. In so far as capital is wage-fund and wages are means of subsistence of labour, in the reproduction process when capital is "consumed" as wage goods there is metamorphosis of capital in the *real* sense, according to Marx. Marx says that L has partially replaced the capital of S by "spending his revenue", because when L buys S's goods (in inventory) S converts his capital into money which buys food for labour required in the period of reproduction of goods which S will exchange for one-half of rent to be received by L next year.

One can translate the circulation model into terms of the following:—(1) movement of money showing the relationship $M-C$; (2) conversion of rent and interest (surplus) into commodities ($C^1-C^L_{MP}$ in the Marxian model of reproduction), like food, raw materials and manufactures; (3) physical capital formation for reproduction ('productive consumption'); and (4) 'unproductive consumption'.

F converts 2 milliards of food and 1 milliard of raw materials into 2 milliards of advances for the next year's production *plus* one milliard as "converted form of interest" in manufactured commodities mostly meant for replacing F's working capital for purposes of reproduction. 'Consumption' involved in the use of 2 milliards of advances *plus* 1 milliard is productive 'consumption'.

S has 2 milliards of manufactures to begin with. One-half is converted into money and back into food bought from F, $C'-M'$ representing the transformation of the commodity-capital from its commodity-form into money-form. The other half is converted into raw materials through the process of circulation. The whole process is signified by Marx's well-known symbolic expression $C' \rightarrow C^L_{MP} \rightarrow P$ (ignoring the final step $P \rightarrow M'$).

In the case of L, 2 milliards in money (rent) are converted into food and manufactures ($M-C$) destined for final consumption. This is a link in the reproductive process as well as in the circulation process (as

Marx says, L has partially replaced the capital of S by "spending his revenue". Similar aid is furnished to F). But this is "unproductive consumption" or expenditure of *revenue* or current income which does not figure in the process $- C' \rightarrow C^{L}_{MP} \rightarrow P \rightarrow M'$.

While Marx has tried to understand Quesnay in terms of his basic concepts bearing on the process of reproduction, he realises that the main obstacle in the way of this exercise, as has been stated above, is the fact that the requirements of the physiocratic doctrine regarding the nature of economic surplus rule out the Marxian distinction between constant and variable capital as being germane to the process of reproduction. In the course of his exposition of Quesnay's theoretical ideas on which his *Tableau* rests, Marx has always used the phrase "working capital". For the purposes of his own model (expl ained below), 'constant capital' includes raw material and machinery, whereas 'variable capital' is the part of capital exchanged for labour—'wage-'fund', if one thinks of the 'money-capital', and 'wage-goods' if one thinks of the 'industrial capital'. In the Quesnay model, 'working capital' is only raw material where industry is concerned. The reasons are not far to seek. Tools and machinery are the products of the sterile class itself and are not obtained from other classes. Since the circulation of money and commodities and the reproduction process in respect of machinery and tools are *within* this class, they are irrelevant to the model, because the Quesnay model deals with the circulation *between* classes and not *within* any class. According to Marx, this is assuming away the problem of surplus value in industry by assuming away the capital base of industry.

In spite of this serious reservation which has to be allowed for, how does the *Tableau* look in terms of Marx's model of reproduction? According to Marx, $P = C + V + S$. In agriculture P (gross product) being 5 milliards, and "working capital" (corresponding to $C+V$) being 2 milliards, $S = 3$ milliards which is split up into *rent* (2 milliards) + interest (1 milliard). Marx uses the generalised expression *profit* for the surplus that emerges or as industrial profit + interest + rent, as in his model discussed below. In the Quesnay model what leaps to the eye is the *net product*—a part of Marxian surplus—of 2 milliards, i.e. *rent* or *revenue*, which equals the total value of consumption. According to this model, this is also the value of replacement of working capital for reproduction, which occurs as the result of circulation.

In industry gross product being 2 milliards, C (in the form of only raw material) being 1 milliard, and V being 1 milliard (in the form of subsistence), S is equal zero. Thus industry yields no surplus above subsistence, so that value added is equal to subsistence received from the productive class through the realisation of net product in agriculture.

There is an enigma which has not been discussed so far in this essay and which has to be resolved in the present context of the process of reproduction. It is assumed that in agriculture the non-food requirements of the farmers are mostly met by domestic industry. Obviously, the demand for manufactures in the S sector must be met by internal production. How does Quesnay provide for self-consumption in respect of industrial products if the whole output of 2 milliards passes through circulation to F and L respectively, without which the process of reproduction is bound to be frustrated? Marx furnishes an ingenious answer (*Anti-Dühring*, p. 340) as follows: "This is the answer we are given: the sterile class not only itself consumes a portion of its own commodities, but, in addition, it strives to retain as much of the rest as possible. It, therefore, sells the commodities thrown by it into circulation *above their real value*, and must do this, as we have evaluated these commodities at the total value of their production. This, however, does not affect the figures in the *Tableau*, for the two other classes receive manufactured goods only to the value of their total production."

VI

The constructive as well as the critical elements of Marx's *Critique* of Quesnay's *Tableau* are incorporated in Marx's alternative model of circulation and reproduction—his own *Table* which he wished to substitute for Quesnay's *Tabelau*. In his letter to Engels dated July 6, 1863, he asked Engels to "look with some care at the enclosed *Economic Table* which I substitute for Quesnay's *Table* . . . It embraces the whole process of reproduction". This Table, which is reproduced below (Diagram 5), bears the unmistakable image of Marx's plan of the *Critique of Political Economy* projected in 1858-62, according to which his general theory of capital, as already mentioned above, was to rest on the following conceptual model:— (1) The production process of capital; (2) the circulation process of capital; (3) the unity of the two or capital and profit.

Comments on Marx's *Table* may be preceded by the following explanatory notes:—

(1) The numerical figures in the *Table* are "immaterial" (Marx).
(2) "Means of subsistence" stand for the "annual consumption fund" with no "accumulation". ('Accumulation' is also excluded from the quantities involved in the Quesnay model.)

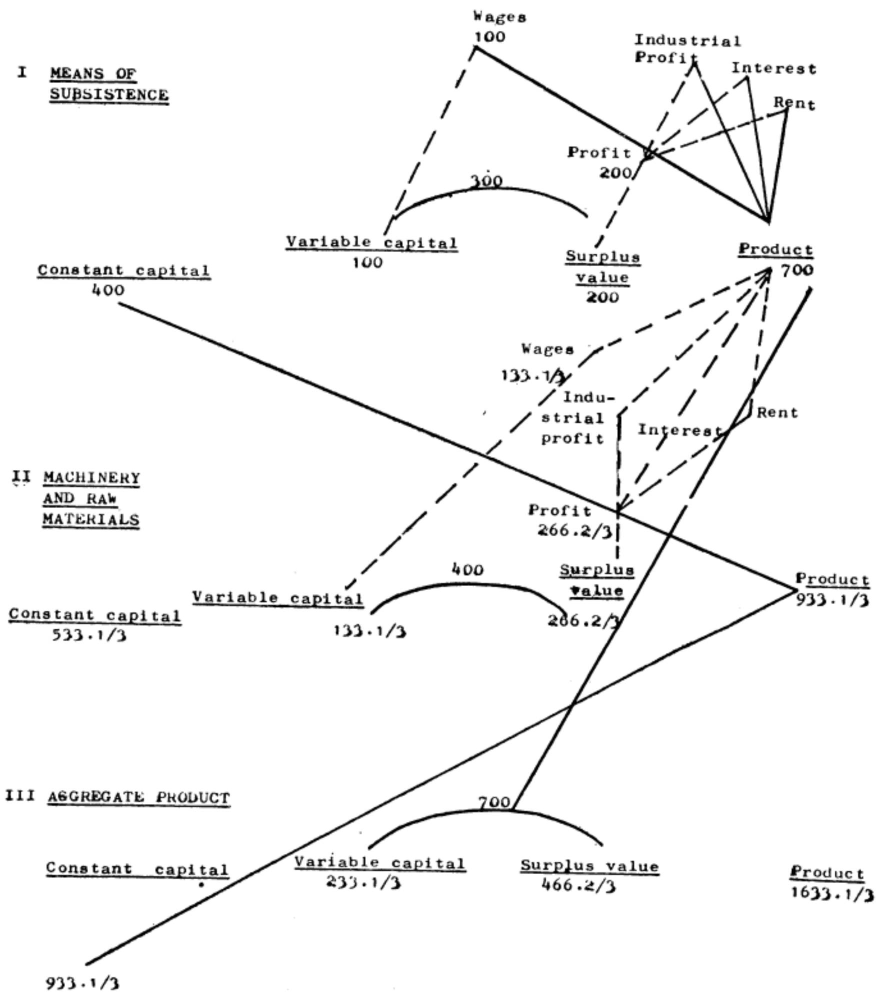


Diagram 5—Marx's Table.

(3) In Class I the entire output (700) = "means of subsistence". It does not enter into constant capital (raw material, machinery, buildings, etc.), but allowance is made for depreciation.

(4) Dotted lines are ascending lines. They represent money payments representing claims to the product (700). The relationship $M-C$ holds: money is converted into commodities. There is the return flow of money (indicated by the thick lines on the diagram) to the capitalists in Class I and Class II in the Marxian model (corresponding to the return flow of money to the capitalists F and S in the Quesnay model).

(5) Marx prefers the generalised form of "profit" into which the entire surplus value is converted, but he also shows it as having been split up into industrial profit, interest and rent as the conventional shares paid by the capitalists just as wages are paid to the workers. These shares—wages, industrial profit, interest and rent—are spent and the money flows back to the capitalists of Class I.

(6) The position in Class I is as follows:

(*a*) Total product (in means of subsistence)	= 700
(*b*) Consumption of "workers, entrepreneurs, monied men" and landlords	= 300
(*c*) Surplus in means of subsistence left	= 400
(*d*) Deficit in constant capital	= 400

(7) The Marxian model is a two-sector model. Unlike the Quesnay model it takes into account the circulation of money and commodities *within* each sector as well as *between* sectors.

(8) The output of Class II consists of machinery and raw materials. It replaces constant capital—constant capital in Class I as well as in Class II. It does so, in the case of the former, to the extent to which the equivalent of wages and the surplus value generated in Class II has to be converted into means of subsistence required to be imported from Class I by means of intersectoral exchange—requirements which are matched by the need of Class I to replace its constant capital.

(9) The reciprocal exchange (bilateral trade) relationship and balance of payments are indicated below:

(*a*) Class I has	
Surplus (in means of subsistence)	+ 400
Deficit (in constant capital)	− 400

(*b*) *Class I imports of*
machinery and raw materials to replace
constant capital = + 400

(*c*) *Class I exports*
of subsistence goods = − 400

(*d*) *Class II imports of subsistence goods*
= the amount representing
wages + surplus value
= 'Revenue' in the Marxian sense = + 400

(*e*) *Class II exports*
= Capital goods exports
= constant capital deficit of Class I = − 400

(10) Marx's *Table* shows the flow of money corresponding to the reverse flow of commodities as follows:—

(*a*) Workers of Class II receive $133\frac{1}{3}$ and rentiers $226\frac{2}{3}$ in money, in the first instance.

(*b*) Money is converted into means of subsistence. 400 in money flows out from Class II to Class I and this is accompanied by the reverse movement of commodities (400) from Class I to Class II. The money received by Class I capitalists (400) is spent in buying capital goods to replace constant capital (400). Money flows back to the capitalists of Class II.

(*c*) At the end of the transactions Class II capitalists have (*i*) $(933\frac{1}{3}-400) = 533\frac{1}{3}$ in capital goods *plus* (*ii*) 400 in cash (physical capital+'advances') to start reproduction in the next production period.

(*d*) As regards capitalists in Class I, they come to have at the end of the transactions (*i*) a replacement of constant capital of 400 + (*ii*) 300 in cash received from wage-earners, rentiers, entrepreneurs, etc. who pay for subsistence goods through intrasectoral circulation. (This is the initial return flow of money.) The two together form the basis (physical capital+'advances') for reproduction in the next production period.

(11) The third sector of the Table represents the entire process of

reproduction, taking Class I and Class II together. The total product is equal to the constant capital of the society ($933\frac{1}{3}$) + output of Class I (700). The output of Class I replaces the society's wage fund ($233\frac{1}{3}$) and also accounts for the *revenue* of the classes who share the surplus value of the society ($466\frac{1}{3}$).

The Marxian model has a number of implications which may be identified as follows:—

(1) Marx does not deal with three classes characterised by Quesnay as farmers, landlords, and the sterile class. He holds that the significant functional classification is that between the producers of means of subsistence and the producers of means of production.

(2) 'Means of subsistence' are defined not as 'food' (as in the Quesnay model), but as the *annual consumption fund*, i.e. the *annual disposable national income* in the form of commodities, no allowance being made for "accumulation". Presumably, the category of 'annual consumption fund' includes not merely food, but also conventional necessaries and luxuries for the rentiers and entrepreneurs.

(3) Marx does not recognise any real distinction between the farmers and the sterile class, because 'surplus value' emerges in both agriculture and industry.* While the capitalist base of agriculture emerges clearly in the case of agriculture in the Quesnay model, it is unwarrantably assumed away in the case of industry, so that this model becomes unrealistic even when one is dealing with a comparatively backward stage of industrial capitalism. Marx, therefore, puts agriculture and industry on the same footing, from the point of view of their common capitalistic base.

(4) It is evident that, consistently with Marx's approach, his model is based on a distinction that cuts through the distinction between the production of food and raw material (agriculture), on the

*According to Quesnay, "if rent is the only surplus-value. accomulation takes place only from rent" (Marx). "What the capitalists accumulate, apart from rent", Marx says, "they pinch from their wages, their revenue destined for their consumption—since this is how profit is defined." (*Theories of Surplus Value*, Vol. 1, p. 59). In other words, Marx holds that surplus-value is not the gift of nature, as the physiocrats imagined. He however, appreciated the significance of the physiocrats' thinking in general, and of Quesnay, in particular, because, as the Quesnay model demonstrated, only in a predominantly agricultural country it could be shown how "surplus value is found independently of circulation" in a certain branch of production.

one hand, and the production of manufactures (industry), on the other hand. His Class I includes food, whereas raw materials pertain to production in Class II. Marx thus prefers the basic distinction between a consumer goods sector and a capital goods sector.

(5) From what has been said above, it follows, that, unlike Quesnay's *Tableau*, which, in Marx's words, presents a model of the "circulation between the two great divisions of *productive labour*—raw material production and manufacture—as phases of the reproductive process", (*Theories of Surplus Value*, Vol. I, p. 334, emphasis mine), Marx's *Table* deals with the circulation between composite economic sectors across the boundary between agriculture and industry. (It should be noted that in the Marxian model each sector is integrated, i.e. the raw materials for a sector are produced within it.)

Marx and Quesnay may now be compared further in the light of their different characterizations of the economic processes involved in their Tables.

In the Quesnay model, the agricultural sector is almost self-contained with regard to the supply of industrial consumer goods. The industrial goods that it imports are mostly capital goods for agriculture. As far as the industrial sector is concerned, there is self-consumption in the sense that it consumes its own industrial consumer goods and producer's goods. But it has substantial exports of both types of goods. Its import requirements are for food and raw materials obtained from the agricultural sector. There is the third class, (landlords), in the case of which there is only exchange of capital for revenue. As Marx explains, (*Theories of Surplus Value*, Vol. I, pp. 302-303), in this case there is "the peculiar flowing back of money that is not determined by reproduction . . . What makes the money flow back in such cases is not reproduction but consumption. The revenue is paid in money, but it can only be consumed in commodities."

In Marx's model, there is no assumption of the self-sufficient character of an economic sector. Indeed, by way of explaining Quesnay's *Tableau* (according to Marx's own interpretation) Marx brings out, as we have seen, cases where there is generalised exchange and a developed system of credit.

What impresses Marx most in Quesnay's *Tableau* is the distinction between subsistence goods and the means of production and the character of circulation—involving both types of goods—leading to reproduction. *Both the sectors, F* and *S*, in Quesnay's *Tableau* export and import *both types of goods*, whereas *Marx* wishes to separate the roles of these two types of goods in the reproductive process. Moreover, the phenomena of capitalistic production are, in Marx's view, disguised by the assumption that production and circulation *within* the sectors *F* and *S* are not relevant to the *Tableau* but that only intersectoral production and circulation are. Therefore, Marx has to take the following steps. He has to separate the production of the 'means of subsistence' (taking them, as explained above, in a much broader sense of their being identical with the disposable national income) from the production of the 'means of production' (although this step would be appropriate to a model of cumulative growth of production which a Quesnay-type model is *not* designed to be). Secondly, Marx has to view production and circulation as the *intra-sectoral* as well as *inter-sectoral* processes. Thus he has to derive a scheme of capitalistic reproduction and circulation in which its capitalistic character is overwhelmingly apparent without its being disguised—a process of generation of surplus values as the result of social reproduction. Thus Marx's *Table* illustrates the movement of money and commodities as a process of replacement of constant and variable capital, partly intra-sectorally and partly inter-sectorally. In Volume 2 of *Capital* (p. 359), Marx gives us an impression that he can trace the notion of constant capital in Quesnay's *Tableau*. Thus he says: "a portion of the total product—being like every other portion of it a use-object— . . . does not circulate, but remains in the hands of its producers, the class of farmers, in order to resume there its service as capital. In *this portion of the year's product, the constant capital,* Quesnay includes impertinent elements, but he strikes upon the main thing", viz. that it is the outcome of surplus-value. (Italics mine). But elsewhere Marx makes it clear that the distinction between constant capital and variable capital is foreign to the physiocratic doctrine.

Marx's Table is supposed to be a substitute for Quesnay's *Tableau*. He assumes, for the purposes of his model of simple reproduction, that there is no accumulation of capital, or, in other words, there is simple reproduction, assuming that the entire surplus value is spent as revenue. The essence of Marxian economics lies, however, not only in the fact of accumulation, but in the inherent instability of the structure of reproduction due to accumulation by capitalists in search of multiplication of surplus value. But this context is excluded from the simple analysis that his Table presents.

VII

Is it possible to set the Quesnay model in the perspective of Marx's capital theory as expounded in the second volume of *Capital.* Marx's *Critique* of Quesnay's *Tableau* and the method of construction of his own *Table* contain insights which reveal the processes of Marx's own positive thought on the nature of capital from the micro-economic as well as the macro-economic angle. We find a sophisticated structuring of his thought in the second volume of his *Capital*.

Without going too far afield, for the purposes of this essay it would be sufficient if we concentrate our attention on Marx's alternative general formulae for the "circuit of capital", capital being conceived respectively as (1) money-capital, (2) productive capital and (3) commodity capital.* The idea of a 'circuit' or a circular flow implicit in Quesnay's *Tableau* must have gripped Marx's imagination. In the second volume of *Capital* Marx has evidently set Quesnay and himself in the context of the alternative concepts of 'capital circuit', as he visualized them. This part of Marx's analysis brings out the positive ideas of both in their broad affiliation or concordance.

Marx's concept of a circuit of capital means that its various phases pass into one another without interruption. According to him, there are three forms of this circuit.

The general formula of form I of the circuit of capital is $M \rightarrow C \rightarrow P \rightarrow C' \rightarrow M'$. M *(Money) is advanced as capital.* It is transformed into C (elements of production). C is converted into the commodity-product (P). In $C' \rightarrow M'$ capital value is realised as well as surplus value. M' can then resume the function of *money-capital now augmented.* The whole *circuit is the circuit of money-capital* because industrial capital in its money-form is the starting-point as well as the terminal-point of the circuit. Marx says: "$M \ldots M'$, the initial and terminal points of which are real money, expresses most graphically the compelling motive of capitalist production—money-making" (p. 56). In his view, the mercantile system is based on this general formula (p. 58). Marx reminds us that "C' is expressly designed for consumption by others than the producer" (p. 58). In other words, consumption is "productive con-

*The reader may refer to Chs. 1, 2, and 3 of Part I of the second volume of *Capital*.

sumption" based on what Max Weber called the protestant ethic and what Marx described earlier as "ascetic expostulations of the fathers of Church". (p. 58).

The general formula of Form *II* of the circuit of capital—the second alternative form—is as follows: $P \ldots C' - M' - C - P$.* As Marx explains (pp. 91-92), "the entire circulation process . . . takes place in the opposite order from that of Form *I*". *P* is the productive process, the prerequisite of the circulation process. *P* at the terminal point is, however, "not the productive process; it is only the renewed existence of the industrial capital in its form of *productive capital*". According to Marx, Form *II* is, therefore, the *circuit of productive capital*—a general form of reproduction. It differs from Form *I* in that it "does not indicate the self-expansion of value as the object of the process" (p. 92). He thinks that such a formulation mirrors the system of thought underlying classical political economy which ignores the definite capitalistic form of production and only presumes that "as much as possible must be produced and as cheaply as possible and that the product must be exchanged for the greater variety of other products, partly for the renewal of production, partly for consumption" (p. 92). In such a perspective, however, "accumulation is seen in the same light as production" and money is only "a transient" medium of circulation.

Marx prefers the third alternative formulation which shows the unity of production and circulation and also exhibits such "peculiarities of money" as are ignored in the Form *II* presentation. The concept that holds the key, according to him, is that of *commodity-capital*.

The formula for the circuit of commodity-capital is as follows: $C' - M' - C \ldots P \ldots C'$ (simple reproduction). This circuit closes, not with *P* (renewed existence of productive capital), but with C' which is the "*result* of the process of production" and is also the "renewed existence of commodity-capital". How the circuit opens is, however, significant. C', the starting-point, is, according to Marx, a "*capital relation*" (p. 93). As such, it has a determining influence on the whole circuit, because it includes the circuit of capital-value as well as the circuit of surplus value emerging in the *previous* period of production, the surplus value passing *generally* into circulation as "revenue" and partly "performing the function of an *element* of capital accumulation". (Italics mine).

*Cf. Marx's *Capital*, Vol. 2, Part I, Ch. 1.

In presenting this formulation, Marx finds himself in the company of Quesnay. He pays a tribute to him in the following words: "$C' \ldots C'$ is the groundwork for Quesnay's *Tableau Economique* and it shows great and true discretion on his part that, in contrast to $M \ldots M'$ (the isolatedly and rigidly retained form of the mercantile system), he selected this form and not $P \ldots P'$" (*Capital*, Volume 2, p. 99).

What merits can Marx claim for this distinctive formulation? First, it lays stress on "consumption"—the consumption of the entire commodity-product, which determines the course of the capital circuit itself. Consumption is individual as well as productive. It includes consumption of surplus value in general (Marx) or of rent as surplus (Quesnay). Total consumption thus constituted enters into the circuit of C' as a condition of it. Both Marx and Quesnay take the commodity-product as the starting-point, and since this is nothing but commodity-capital we witness the process of movement of commodity-capital. There has to be thereafter an intervening process of transformation into money, without which there cannot be any branching out of the movement into separate movements of capital and of revenue respectively. In the Quesnay model, for example, the movement of one-half of rent as cash and the conversion of manufactures (as inventory from the previous period) into money, enable S to procure commodity-capital in the form of food. In fact, all transactions involve the chain $C - M - C$, no matter whether they relate to productive consumption or consumption of revenue.

The second merit of this formulation is that it reveals the movement of capital not only as *social* capital, but also as an *aggregate of the individual capitals* as constituents of C, C being equal to $L + MP$ and MP comprising a diverse range of industrial capital. $C' \ldots C'$ becomes a form of a movement of social capital in the broad sense, if GNP ("the aggregate of commodities annually produced", as Marx puts it) is set out in a social accounting frame and we analyze the movement by which one part of GNP is replacement of productive capital, while another part enters into individual consumption. In this connection, Marx suggests, we discover the contrast between Form *I* and Form *II*, on the one hand, and Form *III*, on the other hand.

Form *III*—the formation of Quesnay and Marx—presupposes that "every article produced by capitalist methods is commodity-capital, no matter whether its use-form destines it for productive or for individual consumption, or for both". (*Capital*, Vol. 2, pp. 97-98). Individual capitals are 'metamorphosed'. Their metamorphoses are inter-related not only with one another, but also with that part of the total product which is destined for individual consumption. It is necessary to elucidate this process with reference to the links in the general circulation of commodities. On the other hand, "*M . . . M′* (Form *I*) indicates only the value-side, the self-expansion of the advanced capital-value, as the purpose of the entire process"—the power of the compound interest, so to speak. Form *II*, i.e. *P . . . P* (*P′*) merely indicates "the process of production of capital as a process of reproduction with a productive capital of the same or of increasing magnitude (accumulation)".

Marx brings out these fundamental differences with particular reference to Quesnay's *Tableau*. Taking the agricultural sector, "in Formula *II* the sowing is the starting-point, in Formula *III* the harvest, or, to speak with the physiocrats, Formula *II* starts with *avances*, and Formula *III* with *reprises*. The movement of capital value appears in *III* from the outset only as a part of the movement of the general mass of products, while in *I* and *II* the movement of C′ constitutes only a phase of the movement of some isolated capital" (*Capital*, Vol. 2, p. 98).

The third merit of the *Quesnay* model, as Marx perceives it, is that it shows how, on the assumptions of (1) absence of foreign trade, (2) unchanged productivity and (3) simple reproduction, one year's production contains the promise of next year's reproduction when the part of the surplus (rent) to be capitalized already contains the material elements of the additional productive capital, because it is produced in a form that enables it to perform the function of additional capital.

The concept of 'distribution' as an operational concept is as basic to Quesnay's *Tableau* and Marx's Table as the operational concept of 'consumption'. In fact, the two are interrelated concepts. The entire circuit *C′ . . . C′* presupposes a concept of the distribution of total expenditure as amongst the sectors according to a pattern that ensures reproduction by ensuring the certainty and stability of the circular flow.

In the Quesnay's *Tableau*, 'distribution' is understood to be "a distribution of three kinds of expenditure" (Quesnay)—the expenditures incurred by the farmers, the landlords and the manufacturers, respectively. These are resolved into two broad categories of expenditure: (1) productive expenditures (from rent and taxes) and (2) sterile expenditure. The classes accounting for these two kinds of expenditure are (1) the productive class and (2) the sterile class. These categories of expenditure are not traced to the conventional distributive shares—rent, wages and profits. Nor does distribution in this context carry any social implications as regards the *proportions* of the total income shared by the functional classes in the economic society—a perspective which developed much later in economic thought. The physiocrats were, no doubt, interested in the effects of the variations in expenditure. But these effects were considered good or bad, not from the point of view of social justice or the ethics of distribution, as Marx understood it, but according as expenditure was *withdrawn from* the productive class or *came back* to it through the process of circulation. Thus to Quesnay, the expenditure of the rich is "distributive transmission of expenditure" in the sense that there is return flow of money to the productive classes. In the same way, advances by entrepreneurs made possible by the realisation of interest and profit represent expenditure transmitted to the productive workers.

There is evidence to show that Marx takes cognizance of Quesnay's concept of "distributive transmission of expenditure" in the economy. Marx is impressed by the fact that the circuit of capital includes "the *distribution* of the total social product as well as the *special distribution* for each individual commodity-capital, into an individual *consumption-fund*, on the one hand, and into a *reproduction-fund*, on the other". (*Capital*, Vol. 2, p. 93). 'Distribution', in this context, is allocation of expenditure between current consumption and investment. Moreover, Marx follows Quesnay in viewing capital in terms of the 'elements of production' and looking at what he called the 'movement of capital' as a movement over time, as part of the process of reproduction of commodity-capital through the process of circulation. From this angle, Marx speaks of the "*distribution of the elements of production*". Thus he says: "What lies back of $M-C_{MP}$ is *distribution*; not distribution in the ordinary meaning of a distribution of articles of consumption, but the distribution of the elements of production itself. the material factors of which are concentrated, on one side, and labour-power, isolated, on the other". (*Capital*, Vol. 2, p. 31).

Conversion of money-capital into commodity-capital through the process of circulation is a social act with social consequences. This is how the ethics of distribution, depending upon the proportionate share of productive labour (in the Marxian sense) in the total product—the modern dimension of the problem of distribution—becomes enmeshed with the process of reproduction-cum-circulation as a social process. Indeed, in the passage quoted above, Marx projects this dimension of distribution--labour-power isolated from the means of production which lie '*concentrated*' on one side. Other statements may be quoted which are more specific on this point. For example, Marx says that the money-relation, i.e. purchase and sale involved in *M-L* (*L-M* on the part of the worker), "arises from the fact that the conditions required for the realisation of labour-power, viz. means of subsistence and means of production, are separated from the owner of labour-power, being the property of another" (*Capital*, Vol. 2, p. 29). Quesnay's *Tableau* vividly brings out the fundamental unity of production and circulation and its characteristics. Marx goes behind the circulation of commodities and of money to look for the underlying social situation. Thus he says: "the money-function premises social conditions, such as are indicated by the act *M-L* which do not at all exist in the mere circulation of commodities and the corresponding circulation of money". (*Capital*, Vol. 2, p. 90). These do not "exist" in the Quesnay model, at any rate in a direct and overt form. Separation of the agricultural worker from land, the means of production, is a social fact which underlies Quesnay's *Tableau*. What is involved in the *Tableau* is capitalistic production. As Marx explains (*Capital*, Vol. 2, p. 31), "in order that capital may be able to arise and take control of production, a definite stage in the development of trade is assumed. This applies, therefore, also to the *circulation* of commodities; and hence to the *production* of commodities".

It is, however, interesting to try to form an idea of the social situation as reflected in the physiocratic doctrine, from the point of view of income distribution and the possible pattern of unemployment that may be consistent with it. Some aspects of this question were considered in an earlier section of this essay. What follows is supplementary to what has gone before.

Cantillon's *Essai Sur la nature du Commerce eu général* (1755, London) —the first systematic text-book of political economy, as Jevons characterised it — contains an interesting model with a pattern of distribution implicit in it, which is of great interest in the context of Quesnay's Tableau*.

Cantillon builds on a certain proportion of the national income being accounted for by rent so that the remainder is available for distribution to the farmers as '*undertakers*' (agricultural entrepreneurs or capitalists under the share-cropping metayage system in France), to persons directly

**Cf.* English translation by Henry Higgs, reissued for the Royal Economic Society, London, 1959, pp. xii, 43-44.

or indirectly dependent on agriculture, and indirectly to the urban classes including the 'artificers' who produce manufactured goods for sale in the countryside. Cantillon holds that one-third of the agricultural output goes to the landlords as rent and two-thirds, in the first instance, go to the farmers. Both these primary shares determine what goes to the other classes—agricultural and industrial, urban and rural—, thus setting the pattern of distribution of employment.

That rent forms one-third of the total agricultural output rests upon contemporary estimates such as they were in the 13th century. For British incomes, the estimates varied—one-third (Gregory King); one-fourth of the produce of corn land (Davenant); one-fourth of the total income (Petty). Conditions in France where crop-sharing prevailed and feudal dues still persisted, were different. Cantillon's estimate was one-third. Arthur Young who studied French rural conditions during 1787-1789 —50 years after Cantillon wrote—had found that crop-sharing was the general practice, land being obtained on lease by middle-men for cash and sublet to small farmers on a crop-sharing basis. Cantillon's estimate was, on the whole, not unrealistic.

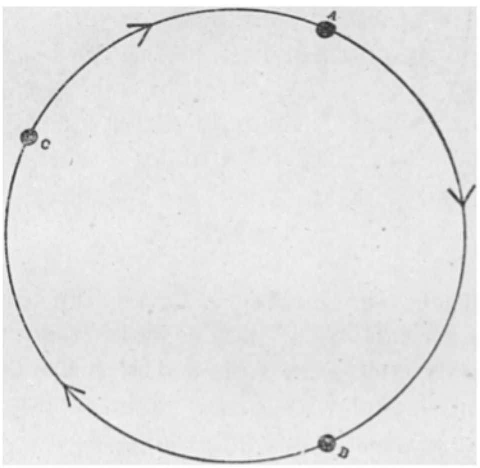
Cantillon in his *Essay* (Chapter XV) shows that the pattern of consumption determines the employment generated. Adam Smith was also concerned with this question. Thus in his *Wealth of Nations* (Book IV, Ch. 9, pp. 175-176) he says: "Manufactures require a much more extensive market than the most important parts of the rude produce of the land. . . The most numerous class of artificers will seldom, in a large country, make more than 1 in 50 or 1 in 100 of the whole number of families". This conclusion rests upon Adam Smith's famous dictum of division of labour being limited by the extent of the market. Thus he argues: "A single shoemaker will make more than 300 pairs of shoes in the year; and his own family will not perhaps wear out six pairs. Unless, therefore, he has the custom of at least 50 such families as his own, he cannot dispose of the whole produce of his own labour." Adam Smith makes a reference to the prevailing estimates of the proportion of the total population employed in agriculture, Thus he says: "In such large countries as France and England, the number of people employed in agriculture has, by some authors, been computed at a half, by others at a third, and by no author that I know of, at least less than a fifth of the whole inhabitants of the country". Besides showing the wide variations in the estimates, Smith draws our attention to the fact that, according to these estimates, one person employed in agriculture would require no more than the custom of "one, two or at most of four such families as his own in order to dispose of the whole produce of his own labour". In other words, Cantillon's model which assumes a ratio of 1 : 1 is based on the further assumption that agriculture depends largely on the home market—an assumption that Adam Smith does make with regard to France and England. No such ratio should hold good for urban industry. If one urban family with industrial employment has to seek the custom of 50 or 100 other families, the employment-potential of industry would be very limited, unless one assumes that the value added by manufacture in industry is not zero, that it is also capable of generating complementary or ancillary economic activity and employment in the urban areas and that there is foreign trade.

VIII

While one reflects on Quesnay's *Tableau* in the context of Marx's capital theory and his theory of circulation as expounded in Volume 2 of *Capital*, one is reminded, (as explained in this essay) at many points in the analysis, of triangular trade or exchange and the phenomena connected with it, particularly the monetary aspects of the circulation process. Indeed, one can treat triangular or multilateral trade or exchange as a species of a wider genus, viz. the process of circulation. A model of multilateral trade as used in the international trade theory does not presume a stationary state of the economies concerned. The Quesnay model or Marx's substitute model of simple reproduction implies a state of stationariness. In the Quesnay model there is a uniquely 'activating centre of trade'—agriculture which alone yields a surplus, the surplus activating economic activity in other sectors. But one does find an analogy between the phenomena of triangular or even multilateral trade and those of intersectoral exchange and circulation implicit in the Quesnay model and Marx's model of simple reproduction which he substitutes for it.

We can, indeed, attempt the exercise of converting the Quesnay model into a sectoral trade and payments model to which Marxian analysis may be said to contain a significant pointer.

Diagram 6 represents a triangular international trade model. *A* has an export-surplus (including services) in relation to *B* and entitled to net payment from *B*. *B* has to find means of payment so as to avoid an outlay of gold to the extent of its import surplus. If *B* has an export surplus of an equivalent value in relation to C, it can acquire C's currency of that value. If, at the same time, C has an export surplus in relation to A of an equivalent value, C's currency paid by B to A may be used by A to pay for A's import surplus in relation to C. Thus there is a return flow of C's currency used by B to pay for B's net indebtedness in relation to A.

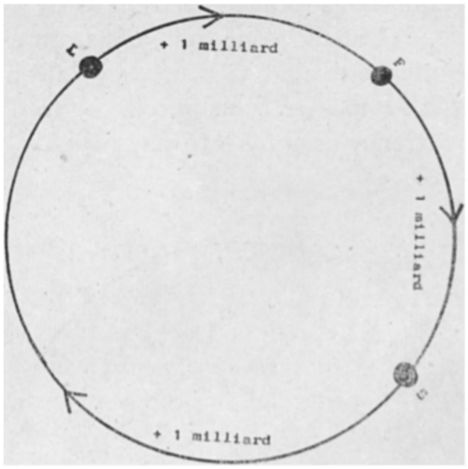


Clockwise movement—Export surplus. *Anti-Clockwise movement*—Import surplus.

Diagram 6—Triangular network of trade and payments.

One can without difficulty convert the *Tableau* into a triangular pattern of intersectoral trade within a country as shown in Diagram 7 below. F (Productive class) is the *activating centre* of trade where the initial movement is generated. It is also the terminal point on the transfer routes.

Taking the circuit $F \rightarrow S$ on the diagram, according to the *Tableau*, F has an export surplus (in commodities) of 1 milliard in relation to S. In the circuit $S \rightarrow L$, S exports commodities of the value of 1 milliard. Since there is a unilateral transfer of 1 milliard of money (initially received by L from F) in payment, the latter transaction may be treated as if S had an export surplus of 1 milliard in reation to L. Let us take the final circuit $L \rightarrow F$. L's import surplus of 1 milliard from S can be liquidated if it can be offset against an equivalent export surplus which L may have with F.



Clockwise movement—Export surplus
Anti-clockwise movement—Import surplus

At each point an export surplus in one direction is balanced by an import surplus in the reverse direction,

Diagram 7—Intersectoral trade and triangular settlement of payments.

Does this materialise? It does, according to the *Tableau*. *L* receives initially a rent payment of 2 milliards, which is like capital import for purposes of unproductive consumption, so that it does not generate commodity exports. Out of this 1 milliard pays for *L*'s food imports from *F*, leaving 1 milliard which can be offset against *L*'s import surplus of 1 milliard with *S*. *L*'s 2 milliards (rent) are, in the words of Marx, "a circulation draft on gross product". It is as if *L* had a commodity export surplus of 2 milliards, and if we deduct from this *L*'s commodity import (1 milliard in food) there is an export surplus of 1 milliard, which closes the circuit at the terminal point on the transfer routes, viz. *F*.

Let us note the nature of final settlement at the terminal point. Transfer of 1 milliard to *F*, with which the circuit is closed has a *real* content in the form of commodities—means of production for agriculture and other manufactured goods in circulation—the "converted form" of interest on 10 milliards of capital invested in agriculture at the rate of 10 per cent.

The method of analysis employed above helps us to understand better certain types of circulation distinguished by Marx in his *Theories of*

Surplus Value, Vol. I, in order to throw light on the monetary aspects of the circulation process implicit in the Quesnay model.

Marx considers four cases—all concerning exchange between S and F. In all the four cases, S and F have each 1 milliard of money as the initial position.

Cases 1 and 2 are similar insofar as S is the starting-point of the circulation process. They are different insofar as in case 1 money is a *means of circulation* and in case 2 it is a *means of payment*.

Case 3 and case 4 are similar insofar as S and F have each 1 milliard in money as the initial position. They are different insofar as the starting-point of the circulation process is F in case 3 and S in case 4.

The reader may refer to Diagram 4 for the purpose of following Marx's exposition as interpreted here.

Case 1

S receives 1 milliard in money in payment for manufactured goods sold (but produced in the previous production period and held as inventory). The money-flow is in the direction indicated by the dotted line on Diagram 4. At the end of all the transactions 1 milliard in money returns to F and remains there. The assumption is that S buys food and raw materials in *successive* transactions and not by spending 2 milliards together in *simultaneous* transactions.

Case 2

In this case there are *simultaneous* transactions involving 2 milliards. The position regarding trade and payments would be as follows.

S		F	
(1) S's imports	= 2 milliards	(1) F's exports	= 2 milliards
(2) S's exports	= 1 milliard	(2) F's imports	= 2 milliards
(3) S's import surplus	= 1 milliard	(3) F's export surplus	= 1 milliard
(4) *Money outflow in settlement*	= 1 milliard	(4) *Money inflow in settlement*	= 1 milliard

At the last stage there is what Marx calls "capital transfer" of 1 milliard—an advance made by *S*. How is it derived? Through the sale of manufactures to *L*. These manufactures were produced in the previous production period and held as inventory, but the payment for them is out of the gross product of the present harvest. *S* has thrown this into circulation.

Case 3

F is the starting-point of the circulation process. *F* gets back 1 milliard in money through the sale of food to *L*. This is spent on buying mainly the means of production from *S*. To this extent there is 'dishoarding' on the part of *F*. So far as S is concerned, it has now this sum *plus* 1 milliard in money received from *L*. These two milliards are spent on commodities of equal value. These two milliards in money return to serve as advances for the next production period in agriculture. Of this 1 milliard settles *F*'s favourable balance of 1 milliard.

Case 4

S is the starting-point of the circulation process. *S* has 1 milliard in money received from *L* (by converting commodity into money + 1 milliard in his own till (inventory of money, not commodity) as Marx assumes. This *entire* amount is spent in buying from *F* commodities of equivalent value. *F* buys from *S* 1 milliard worth of commodities (mostly means of production). Thus one milliard in money returns to *S*. The balance of one milliard is settled by *F* retaining the balance of 1 milliard in money.

Apart from the four cases, to exhaust all the theoretical possibilities Marx considers the fifth case where *L* is the starting-point of the circulation process and "the money-circulation starts from the spending class, the landlords who have no commodities to sell, who buy without selling" (a case analogous to the process started by public expenditure, on the basis of 'created money' in a depression, which activates demand and generates eeonomic activity).

In the four cases mentioned above the operating conditions make a difference to (*a*) the total volume of circulation and (*b*) the velocity of circulation. In cases 1 and 2 the total volume of circulation is 1 milliard, the velocity of circulation being three times in case 1, and only once in case 2, on the assumption of a developed credit system, as Marx points out. In cases 3 and 4, the total volume of circulation is 2 milliards. Two milliards in commodities circulate by a single act—there is outright payment, not a net payment after a balance has been struck as under a developed credit system.

There is an aspect of distribution which emerges from the analysis presented above and which links up with what was said in Section VII. Broadly speaking, as I have argued elsewhere, the familiar phenomena of international trade are evident when exchange is amongst non-competing groups.* These non-competing groups may be the social classes like farmers, landlords and the sterile class—the classes as the physiocrats apprehended them, not the ones that Marx recognised. Even when we have in mind the 'parties to distribution', in whichever way we categorise them, they would be non-competing groups and exchange between them would approximate to what is implied by an international trade model.** The trading partners in the Quesnay model—farmers and industrialists—have their distinctive socio-economic relations in an economy passing through an early stage of the development of capitalistic production. Marx's Table, also illustrates the same phenomena of international trade as Quesnay's *Tableau*, but they are those of bilateral trade as between the producers of the means of subsistence and the producers of the means of production, between the consumption goods sector and the capital goods sector. A model of intersectoral trade acquires considerable significance when a capitalist economy is at a more advanced stage of development—Marx does not assume the same degree of economic self-sufficiency of a sector as Quesnay does—and particularly when the stability of trade relations between Marx's two sectors is disturbed. This problem of disequilibrium, however, is not germane to Marx's model of simple reproduction in which equilibrium from one period of reproduction to another is presumed as a first approximation and which is a jumping-off point for his analysis of extended reproduction.

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**This was pointed out hy Edgeworth.