OF THE LOGICAL CHARACTER OF THE MONETARY ECONOMY

THE METHOD OF "SOCIAL ACCOUNTING" AND THE CONCEPT OF "BALANCE" OR "ASSETS AND LIABILITIES" AS A METHOD OF ANALYSIS OF THE MONETARY ECONOMY

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I. Problem of "Physiology" and "Anatomy" of Economy

The Social Framework—An Introduction to Economics (Oxford, 1942), by J. R. Hicks (the American edition is titled as The Social Framework of the American Economy, New York, 1945 by J. R. Hicks and A. G. Hart), though it is an introduction to economics as indicated by its subtitle, presents an interesting problem of method to grasp economic phenomena, or the structure and system of economic theory. So far as the problem of this new structure of economic theory is concerned, his work, as described in its preface, adopted a method of proceeding from the concept of national income which should give a pictorial representation of the scale of national economy, and which would enable beginners to comprehend with ease the science of economy, instead of the method of former theories which proceed from the concept of marginal analysis or the theory of value so hard for beginners to comprehend. Besides, as stated at the finis of this book, characterizing the former economic theory founded on the theory of value as "physiology" of economy, and the so-called macroscopic analysis of national income as "anatomy" of economy, he attempted thereby to give a solution to the problem of the structure and system of economic theory which has remained unsettled with conflicting or parallel tendencies between the so-called "microscopic analysis" and "macroscopic analysis" since Keynes' General Theory (London, 1936) appeared. For, instead of the distinction between these two analysis which is, so to speak, methodological, any attempt to characterize the former economics of value theory as "economic physiology" and the new economics of national income theory as "economic anatomy" should shed light on the meaning of their respective methods and accordingly the relationship between these two, whereby a clue toward the construction of
new system of economic theory would be suggested. In the same sense, P. A. Samuelson's *Economics, An Introductory Analysis* (New York, 1948), which proceeded from an analysis of national income and closed with the theory of price, can be said to have not less importance in realizing a method of description and a new structure of the economic theory, as above mentioned.

There is another important problem to discussed in reference to this new structure and system of economics. In order to understand the method adopted in the "economic anatomy", also the reason why the so-called "macroscopic analysis" may be considered as "economic anatomy", and in order to thus find out a means by which the "economic anatomy" as an anatomy of monetary economy can be further connected with the economic physiology, it ought to be made clear that the method of "Social Accounting" there adopted only to the analysis of the anatomy of the goods economy, when viewed by the standpoint of monetary economy, will yet leave an important problem to be solved. The chief purpose of this paper is rather to deal with the latter problem about which I took a hint from the concept of "assets and liabilities" of individual enterprises and households, on which was based the method of "Social Accounting", in spite of its important methodological concept, as used for the purpose of calculating the net total of the economy of a country from the point of anatomical analysis. This is the reason why we shall, in the following, begin our discussion with a recognition of the meaning of the concept of "Social Accounting", especially as a foundation of "economic anatomy".

II. "Economic Anatomy" by the Concept of "Social Accounting"

In the aforesaid book, Hicks endeavours to grasp the scale of an economic community or national economy as a whole and its flows chiefly with the concept of national income or national output. In this sense his method is none other than the so-called macroscopic analysis. There is, however, a keypoint in the fact that the method of "Social Accounting" is taken as a means of grasping the scale of national economy as a whole, and this method, according to his expression, is "economic anatomy".

Hicks begins with attempting to grasp the scale of national economy as a whole and its flows in terms of national capital which consists of real goods used in the productive process, and for the purpose of calculating the national capital, he adopts the method to cancel out the assets and liabilities of enterprises and households, by drawing up a combined balance sheet of individual economic subjects constituting the economic community. The net total, accordingly real capital, i.e. national capital as real capital would thus be computed. In other words, he defines this cancelled-out
capital as national capital to be regarded as the net total, the following table being given as an example (see above p. 97):

<table>
<thead>
<tr>
<th>Liabilities</th>
<th>£</th>
<th>Assets</th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company: a) Shares and bonds</td>
<td>150,000</td>
<td>Capital goods</td>
<td>150,000</td>
</tr>
<tr>
<td>Shareholders:</td>
<td>⋯</td>
<td>Capital goods</td>
<td>20,000</td>
</tr>
<tr>
<td></td>
<td>⋯</td>
<td>a) Shares and bonds</td>
<td>150,000</td>
</tr>
<tr>
<td>Company and shareholders together:</td>
<td>⋯</td>
<td>Capital goods</td>
<td>170,000</td>
</tr>
</tbody>
</table>

The above table shows shares and bonds, as the company's liabilities (marked a) and the capital of the share- and bondholders (marked ⋯) is balanced in the sense of social total, and in consequence, that it comprises the total value of capital goods possessed by individuals and companies that can be reckoned as capital in the sense of the national economy, that is, as net capital. This is a self-evident fact, and the procedure from which this fact is derived is called "Social Accounting". However, when this "Social Accounting" is taken as the base of "economic anatomy", the following two important points should be noted. One is the meaning and the use of the word "Social", which is, however, quite different from those of "Society" or "Social" as used in the former value-theory economics, but constitutes the theory of an economic society. The other is the more essential problem, whereby we can make obvious the reason why the method of total grasping or macroscopic analysis is not physiological, but anatomical.

The object of the former economic theory such as the theory of value or the theory of marginal analysis which Hicks calls economic physiology, was "an economic society", composed of individual economic subjects or goods and was counted as the relationship between these units. That which we hitherto usually understood and expressed by the word "society" was really, we can say, the "society" in the sense of relationship between the constituent parts or the homogeneous units, but not in the aggregate sense. At the same time it is a matter of importance that the constituent parts of the society are grasped, as it were, as living and active individuals, and we shall be able to ascertain the appearance of this fact, i. e. their action in their "assets and liabilities". However, the whole grasped here as "Social Accounting" is a total of the national economy. Therefore, "Social Accounting" may be called, in this sense, only an accounting of the national economy. It was also from the same point of view that Hicks defined output as social (or national) output. Therefore, the important matter is neither the way of expression nor the terminology, but the methodological meaning and the effect of this method.

This is, as above described, that by the process the whole is reduced to a single figure of the aggregate—also when analyzed from another angle—the respective corresponding items on both sides of "assets and
liabilities” cancel out each other. This means that prior to the cancelling-out, individual economic subjects exist and are treated as living and active units, which work and act, having their own respective accounts of “assets and liabilities”, and that they lose such character through the cancelling-out process, in other words, that they are dealt with from a different viewpoint than if they continued to retain their character.

The so-called “marginal analysis” is a concept based on the principle of human action itself, i.e. action of individual economic subjects, and “value” or “price” is what reflects itself on phenomena which individual commodities cause on the market. Accordingly, it can be said that such analysis describes the way the economy is working which is equivalent to “economic physiology”. This is also the meaning of what Hicks calls “marginal analysis” or the “theory of value” named “economic physiology”. On the contrary, the whole scale of the economic community or national economy computed by the above method and an analysis of its flows as a whole is not concerned with physiology, the working of the economic organism, but with the structure of the economy as a whole. This is the reason why Hicks calls this method “anatomy”. (He used both descriptions of the economic organism and the explanation of its various constituent organs included in the economic anatomy on which he dwelled in the first part of this book. The same description—in contents and arrangements—is also contained in Samuelson’s book.) The various attempts at interpretation of the macroscopic analysis, of the procedure of “Social Accounting” and the meaning of a series of analyses based on phenomena not concerned with physiology, but with anatomy, should give an important suggestion for the understanding of general character of the so-called macroscopic analysis.

III. The “Balance” Theory of Monetary Economy

After having explained the concept of macroscopic anatomy as a method of analysis of the national economy as a whole, Hicks proceeds to the analysis of social output or social income. In this analysis, we can see two noteworthy features.

First, he assumes the flow of economy as a phenomenon of the relationship between social capital and social output or social income; second, he analyses social output or social income as separated by “earning side” and “spending side”. In regard to the latter, he presents a formula summed up in the following equations.

Earning Side:

\[
Social Output = Wages = Social Income + Profits
\]
Spending Side:

\[
\text{Social Income} = \text{Consumption} + \text{Social Output} + \text{Saving} + \text{New Investment}
\]

In discussion not the former, but rather the latter, as being concerned with the analysis of social income separated by earning side and spending side, we come upon a new idea in grasping output or income in a serial process of transformation and in assuming these two processes in series and on an equality with each other. However, this view cannot be said to be essentially different from the "principle of equality among three stages" of national income. Also it is social output or social income that for the analysis of its flow process is dealt with separately on both sides of earning and spending, the respective corresponding items of which are regarded to be synonymous or equivalent with each other. This point, which is also made out by Hicks reveals that the so-called macroscopic analysis of the national income leans toward grasping the aggregate scale of economy one-sidedly. For, by ignoring that our actual economy is "monetary economy", this analysis results in envisaging the scale and structure of the economy merely in the aggregate or macroscopically of the economic anatomy, as mere anatomy, not to be linked with physiology.

Thus we now feel a need to trace the problem of a method to grasp the monetary economy at its source, in order to understand economic phenomena more actually, and also to reconsider the "equation of exchange" which I. Fisher presented as such a method as could grasp the monetary economy in the aggregate or macroscopically. Though this "equation of exchange" \( MV=PT \) gives rise as already often pointed out to many problems and has some defects—for instance, in indicating the aggregate of transactions in a fixed period, but neither the substantial (or real) scale, nor the structure and the flow of the economy—which are of great importance, however, it shows some way for a link to the physiological analysis of the monetary economy which is grasped in the relation of counter-balance between the goods side \( PT \) and the money side \( MV \), and also contains in this relation the facts of the determination of the price level.

By reviewing this point, we can observe that the "equation of exchange" has a feature like a "balance sheet" of the monetary economy in the aggregate. The notion of "Social Accounting" by which Hicks attempted to grasp the economic community as a whole rested on a method that real capital only is reckoned as assets of the whole national economy, all debtor and creditor accounts among individual enterprises and persons being balanced, namely both sides of goods and money in the relation between assets and liabilities cancelling out each other. Accordingly, while the "equation of exchange" has a very important significance in expressing its above character of money economy, i.e. that the goods
side and the money side are in the relation between assets and liabilities, it appears very unsatisfactory in that, from such viewpoint and expectation, this equation does add nothing more than to divide total transactions in a fixed period into goods and money, and in consequence consider these in the relation of balance and equation, but without explaining the raison d'etre and the meaning of this relation, in other words the character of the monetary economy and the significance of its flow. The problem of why the equation between goods and money exists, is fundamentally the problem for what reason money is issued or introduced in the economic circulation, and the explanation of this problem should make clear the meaning of balance and counterbalance between goods and money, and the ground on which goods and money in the monetary economy stand in relation of debtors and creditors or of assets and liabilities which constitute the balance sheet of the monetary economy.

In this sense, it was the "ticket theory of money" (Anweisungstheorie) by German nominalists (such as F. Bendixen, K. Elster etc.) which explained the grounds on which money is issued or introduced in the economic circulation and constructs the balance relation with goods and moreover whatever principle on which money is created. This theory states that money is delivered by the community (Gemeinschaft) due to or in proof of supply (Leistung) of goods and services by individual persons and enterprises, and accordingly, that money is in a balance relation with products (goods and services) existing in the community and represents rights of demand (Anrecht der Gegenleistung) or rights of participation (Beteiligungsmitte) to the social product. In this sense, it gives a view of money, more exactly a view of the monetary economy, which explains at the same time the meaning of the flow of the monetary economy, though this explanation is nothing but a plain figure.

However, whilst, as regards the goods side, in terms of social product (Sozialprodukt) or consumable goods (Konsumtionsfond) the idea of "national produce" or "national output" is taken into account, on the money side the rights of demand represented by money are only terminologically expressed without being developed to the concept of "national income". Viewed from this point, J. Schumpeter's "fundamental equation of monetary economy" (Grundgleichung der Geldtheorie) —— $E = M \times U = p_1 q_1 + p_2 q_2 + p_3 q_3 + \cdots + p_n q_n$ —— can be said to be epochal in explaining that income on the money side stands in a balance relation with consumable goods and services on the goods side, this view being based on the "ticket theory of money". Besides E. Wagemann's "balance theory of prices" (Die Bilanztheorie der Preise) which was developed in his work, Allgemeine Geldlehre (Berlin, 1923), should be especially noted in the sense that he attempted to grasp the goods and money side in a relation of debtor (Aktiva) and creditor (Passiva) account
E. Wagemann, who is well known as the author of *Konjunkturlehre* (Berlin, 1928), *Struktur und Rhythmus der Weltwirtschaft* (Berlin, 1931) tried to draw various diagrams on the flow of economy and also developed the idea of the "ticket theory of money" in his later work, *Wo kommt das viele Geld her?* (Düsseldorf, 1940) This being so, the diagramatic representation of national product and national income stated in the above mentioned *Allgemeine Geldlehre*, his earliest work is full of suggestion in which he tried to understand the monetary economy in a balance relation by expressing national product and national income respectively in a relation of debtors or assets and creditors or liabilities, and to establish a theory of prices based on it. This is shown in the following chart.

![Diagram of National Capital and Assets](image)

The above diagram of E. Wagemann is similar to that of Hicks in attempting to grasp national product and national income at the source of the formation of national capital and national property, but it is, we can say, in contrast to the earlier "equation of exchange" in which he took national product and national income as representing the real scale of the economy and then formulated the so-called "income theory of money", and at the same time made both clear in the balance relation of debtors and creditors.

**IV. Fundamental Equation of Keynes**

As above stated, Wagemann's diagram implies the idea of the monetary economy in the form of "equation of exchange", with goods as assets and money as liabilities, but his further intention was to grasp the flow of national economy as a continuous series of equation on each side and at
each stage as follows:

1. \( Price \times Utility \ Income \ Produced \)
2. \( = Cost \ of \ Production \ (incl. \ Business \ Profit) = Income \)
3. \( = Consumers' \ Expenditure + Savings \)
4. \( = Utility \ Income \ Consumed \ and \ Utility \ Income \ Capitalized \times Price \)

The above analysis of the flow of economy, the first stage indicates the value of products expressed by money, the second stage the expenses of production and accordingly the income thereof, the third stage the distribution of income, and the fourth stage the distribution of the consumption of goods produced respectively, and it may be said just the same way as Keynes later intended to represent them in his “fundamental equation”, because, according to the diagramatic version attempted by Dr Hayek, they are presented as follows:

\[
\begin{align*}
\text{Production of Consumers' Goods} & \quad \text{Total Output} & \quad \text{Production of New Investment Goods} \\
\text{R} & \quad \text{O} & \quad \text{C} \\
\text{E-I'} & \quad \text{Cost of Production} & \quad \text{I'} \\
\text{E} & \quad \text{Income} \\
\text{E-S} & \quad \text{Saving} \\
\text{Sale Proceeds} & \quad \text{Investment} \\
\text{E+I-S} & \\
\end{align*}
\]

The above should give us a clue to reconsider the meaning of Keynes' "fundamental equation". His view of money, which was developed in *Treatise on Money* (London, 1930), is just like the ticket theory of money, and was embodied in the structure of "fundamental equation". This fact can be observed in the balance relation between output and income, which is indicated as a method of grasping national output and income in relation of creditors and debtors constituting the monetary economy. By assuming that income equals the sum of "cost of production of consumers' goods"
(E−I') and "cost of production of new investment goods" (P), the "fundamental equation" would indicate the ground or source from which income is formed at the starting of the flow, and also by assuming that "sale proceeds" (E+I−S) consist of the sum of "consumers' expenditures" (E−S) and "investment" (I), and in taking "the price level of the total output" as \( \pi = \frac{E}{O} + \frac{I−S}{O} \), "the price level of consumers' goods" as \( P = \frac{E}{O} + \frac{I−I'}{R} \),

though not set out by Keynes himself, this would indicate the counter-balance relation between goods and money in the destination of the flow, even if the "fundamental equation", in so far as it is confined within the scope of the observation of national net product and national income, would yet leave a big question.

This "fundamental equation", which is based on the concept of the balance relation constituting the monetary economy, would suggest a way toward a link with the physiology of the monetary economy, introduced as a question in the previous chapter, as it is an equation of the price level and is composed of two terms denoting cost of production and windfall profits respectively. Because the aforesaid three price levels consist of their respective counterbalance relations between output and purchasing power, namely \( \pi = \frac{E+I−S}{O} \), \( P = \frac{E−S}{R} \), \( P' = \frac{I}{C} \), and the last two of these equations are constructed as follows: \( P = \frac{E−I'}{R} + \frac{I−I'}{R} \), \( P' = \frac{I'}{C} + \frac{I−I'}{C} \), of which the denominator of the first term should denote the respective output, and the numerator denote income from the respective output or cost of production, identical to the first equation.

Let us compound Hicks' view of observing the flow of economy as mentioned previously, and another view of taking output and income or money as the balance relation of debtors and creditors, then we shall have an illustration set out on the next page.

In short, in order to link the macroscopic or anatomical analysis of economy to the economic physiology, it is necessary to grasp the monetary economy through the method of analysis based on the balance theory of creditors and debtors. This means that the value of product (cost expressed by money) and the income thereof are equivalent to each other, in other words, these two stand on the common basis of cost of production. This fact that the macroscopic anatomical analysis must be based on the concept of cost of production, should suggest a link with the physiological analysis of economy. Moreover, this should indicate the relationship between money as a logical concept and money as purchasing power. The concept
of money as the logical basis of the economic world or as a possible condition of general equilibrium has been much discussed, but the recent monetary theory, as above stated, has made it clear that money is the form of expression of value or cost of products, and is also the means to realize income, in other words, the form of income in the monetary economy. Thus I think that it should indeed suggest a logic by which the physiological character of monetary economy which really works by means of money circulation could be connected with its anatomical character.