THE ECONOMIC APPROACH TO ACCOUNTING

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1. *Introduction*

1.1. Within the framework of the subject „Accounting and the world economy", it seems advisable to give special attention to the question of how the problems relating to accounting principles should be approached.

It is clear that the flow of capital and the growth of international trade required for a thriving world economy can optimally be attained only if certain conditions are fulfilled. These conditions undoubtedly include „economic stability" of the countries concerned and „the opportunity for profit", as the Congress theme impresses upon us. It is the latter condition - the opportunity for profit - that should be our primary concern here. Insofar as the possibility of making a profit is of decisive importance to the flow of capital and international trade, it will be necessary to study and - as far as possible - unify the methods of measuring and recording the results of all kinds of economic activity, no matter where in the world it takes place. For effective international intercourse, people must „understand" each other; this is only possible when what the other person says can be „translated" into one's own language or - and this is to be preferred - when all those concerned are willing and able to speak „the same language".

1.2. We must realize that accounting, in a way, is a „language"; that is to say, it is a medium for making something (data or information) known to others.

Sometimes it is difficult enough for people using the same language to communicate without misunderstanding each other; how much more difficult is it, then, for people of different tongues. Consequently, our joint effort should be aimed at making accounting a universal language. The goal we have in view is a formulation of the purposes of accounting and of the postulates and/or objectives underlying the accounting principles in such a manner that they will not be misunderstood in international intercourse and - what is still more important - that they will be accepted as the basis of the practice of accounting. Not until this goal has been reached will there be reasonable certainty that the results of economic activity in the various countries of the free world are being measured and recorded by comparable and - in particular - correct methods.

Then, decisions on economic matters can be taken on a sound basis; there will be no grounds left for apprehension that the standards applied might differ appreciably from one country to another.

It is therefore of utmost importance that international unanimity be reached on what is a correct concept of profit and on the notions of value and cost underlying that concept. It is felt that this is one of the most significant connections between accounting and the world economy.

1.3. The goal before us will only be attained if there is a general readiness to break away, if necessary, from what has evolved in the past and from what we have become accustomed to. Practice has proved to be too much a captive of „general acceptance" and of the rules laid down in tax and other governmental laws or regulations. We fully endorse the plea made for a scientific approach

to accounting by Mr. R. J. Chambers in his article „Conditions of Research in Accounting" published in the December 1960 issue of the Journal of Accountancy. The writer is correct in differentiating between factual and normative problems. The first is: what *is* the present state of accounting and by what process has it reached that state? The second problem is: what form *should* accounting take? In our judgement it is not questionable that the second problem is the determining one. We fully agree with the following two quotations from Mr. Chambers' article, the first being: „To become more practical it is necessary to become more theoretical", the second: „Wherever there is an economic problem, there is an accounting problem".

In this connection, we should also like to refer to a recent accounting research study entitled „The basic postulates of accounting" by Mr. Maurice Moonitz, issued by the American Institute of Certified Public Accountants in September 1961. On page 6, the author writes:

„We are driven to the conclusion, then, that relatively heavy reliance must be placed on deductive reasoning in the development of accounting postulates and principles. We must first recognize and define the problems to be solved, then move to their solution by careful attention to what „ought" to be the case, not what „is" the case".

1.4. In The Netherlands, the problems of accounting have been approached scientifically for decades in close conjunction with and on the basis of the development of a normative - i.e. directive - theory of business economics. This approach may well have partly been stimulated by the fact that there are practically no legal regulations on this subject (except tax legislation, of course, and that was no barrier; in fact this legislation adopted many of the results of the scientific study). The purpose of this paper is to provide a contribution, with a Dutch slant, to the exchange of views on the principles of accounting; a contribution that will have a strong economic flavour. According to Dutch ideas, the approach to accounting through the achievements of the science of business economics is the only true one; this approach logically meets the purposes of accounting, as will be elaborated later. This contribution will not deal exhaustively with the subject-matter; such a treatment would require much more space than is available. It must therefore be confined to an indication of some of the aspects of the problem in hand.

2. *Definition of accounting*

2.1. Any answer to the question: „What are the purposes of accounting?" should be preceded by an examination of what is implied in the concept „accounting". The need for this may be evidenced by a quotation taken from the Accounting Terminology Bulletin, No 1, published in 1953 by the committee on terminology of the American Institute of Certified Public Accountants. On page 8, section 7, we read: „No words are employed more commonly than these (viz. accounting and accountancy), either in the practice or in the teaching of the subject; yet many differences arising in accounting writings have their roots in different conceptions of the basic terms. A careful consideration of these words will therefore add to understanding, not only among accountants themselves, but also among those outside the profession who have to do with accounting".

2.2. There is no doubt that in the course of the years a great many different definitions of „accounting" have been formulated. Apart from the fact that it is impossible to know all these definitions in a great number of languages, there can hardly be much point in quoting and discussing many of them. As far as this study is concerned, we shall dwell upon two definitions only: the more or less official American definition, as it appears in the Accounting Terminology Bulletin mentioned above, and the most recent definition of Dutch origin, taken from the explanatory notes to the program of studies in Administrative Organization forming part of the course of study and examinations of the Netherlands Institute of Accountants. Here is the American definition:

> „Accounting is the art of recording, classifying, and summarizing in a significant manner and in terms of money, transactions and events, which are, in part at least, of a financial character, and in interpreting the results thereof".

And this is the Dutch one:

> „Accounting is the systematic recording, processing and supplying of information for the management and operation of an entity and for the reports that have to be submitted thereon."

There is considerable divergence in the wording of the two definitions. What is important, however, is not so much the extent to which the choice of words in each tallies or varies as the extent to which the fundamental points of departure coincide or differ.

2.3. Both definitions describe the *nature* of the activity of accounting („recording, classifying and summarizing" ... „the systematic recording, processing and supplying"); the differences evident in these descriptions undoubtedly go deeper than a mere divergence in wording, but we shall not discuss them further.

2.4. The *subject* of accounting, too, is touched upon in both definitions („transactions and events ... of a financial character" ... „information"). We believe the word „information" is preferable to „transactions and events". The term „information" seems broader to us; it comprises not only „transactions and events", but it can refer also to persons, objects, plans, conditions, expectations, etc. And all of these can be subjects of accounting. It is felt that the expressions „in terms of money" and „of a financial character" in the American definition are too restrictive.

Accounting need not be restricted to sums of money, though it is admitted that the information recorded and supplied is very often expressed in terms of money. This, however, should not blind us to the cases where this is not so.

2.5. The Dutch definition, however, differs from the American chiefly in that it states the *purposes* of accounting explicitly. It is true that the words „in a significant manner" and „interpreting the results thereof" could be read as an implicit reference to those purposes, but a clear statement of the matter is lacking in the American definition. According to the Dutch definition, accounting - i.e. the information to be supplied - is aimed at „the management and operation of an entity" and „the reports that have to be submitted thereon".

2.6. Although we appreciate the American definition quoted, we think the Dutch

one is to be preferred; it includes *all* elements of accounting - in its widest possible sense - and it indicates explicitly the purpose for which accounting activities are intended. Meanwhile, the discussion of the two definitions has elaborated the conception of the term „accounting" so far that there can be no misunderstanding as to what is meant by it.

3. *The purposes of accounting*

3.1. It goes without saying that the description of the purposes of accounting, given in a few words in the Dutch definition, cannot dispose of the problem. Some expansion is necessary.

One of the major characteristics of the definition is that it stresses the fact that the purposes of accounting must not be deemed to be limited to recording, processing and supplying information on the administration of assets and liabilities, on the resulting financial position at a given data and on the results of operations for the period then ended.

This retrospective purpose of accounting, which is still given too much exclusive stress, is preceded in the latter definition - but also, in fact, in a well-run business - by an anticipatory objective. It is certainly not exclusively nor yet chiefly the task of accounting to record the history of the activities of a business. At least as important is the availability of information that can support the preparation and determination of the policy to be followed and the decisions to be made. It is therefore natural that - to a considerable degree - there is interaction between the data that serve to prepare and determine management, and those that verify it. Thus, an organic structure results, in which accounting has developed into an instrument at the disposal of management for conducting and supervising business activities.

3.2. To give a better idea of the significance of the above, the following short summary is given of the more detailed purposes of accounting:

a. providing analysed and summarized information on business activities and conditions, which can be used both for determining and for controlling the conduct of affairs (e.g. data on cost prices, turnover, results, financing, liquidity, efficiency, profitability, budgets, etc.);
b. providing detailed information on persons, objects, agreements etc. as a basis for decision-making (e.g. staff documentation, purchasing documentation, data on the available capacity of plant and machinery, etc.);
c. recording the work to be performed (orders, planning, etc.) and the communication needed to ensure a proper performance (e.g. written instructions, work preparation, co-ordination, progress reporting, payroll, invoicing, etc.);
d. recording and summarizing information for the rendering of reports on the activities and for exercising control (e.g. internal statements for judging management, reporting by the management to owners and third parties, reporting by executives to the management at various levels of responsibility, departmental statements of results, reporting by and checking on custodians, discharge for transfer of values, etc., etc.);
e. complying with legal, statutory and contractual obligations with respect to the filing or publication of information.

3.3 We shall resist the temptation to pursue further the bearing and implications of the above-mentioned purposes, because that is far beyond the scope of this paper. The foregoing brief summary may suffice to stress the point that accounting - in the outlined broad interpretation of the term - is a much embracing art that is rightly qualified to be generally indicated as „a tool of management". We must recognize, however, that a mere application of a number of techniques does not attain the objectives outlined above.

The prerequisites for this are the building-up of an effective internal organization in the business and a thorough analysis of the principles to be applied in accounting. It is some of these principles that will concern us next.

4. *Postulates of accounting: the economic approach*

4.1. The exploratory material adduced above was a necessary preliminary to the discussion of the question: „What are the postulates of accounting?" On „postulates", the Accounting Terminology Bulletin, No. 1, which has been quoted earlier, says the following on page 11:

> „Initially, accounting postulates are derived from experience and reason; after postulates so derived have proved useful, they become accepted as principles of accounting."

This quotation indicates that the principles that should be applied in accounting are derived from accounting postulates, if and when they have proved useful. We shall not go into the question of how it is determined - and who shall determine - whether certain postulates are useful.

4.2. According to the quotation, postulates appear to be derivable from two sources: experience and reason. Although experience provides an important source of knowledge, it is wise to handle that knowledge with care and to guard against overestimating experience as the basis of future rules of conduct. Designations such as „usefulness", „consistency" and „conservatism" are to be regarded as typical products of such an overestimation; the derivation of accounting principles from experience-oriented postulates tends to halt or even freeze the development of thoughts. After what has been said on the matter in paragraph 1 above, it will not be surprising that we prefer to derive the postulates primarily from reason; as a source of knowledge we feel that more weight should be assigned to reason than to experience. Only deductive reasoning on a scientific basis - naturally after a thorough checking of its outcome against experience - opens the way for the answer to the question: „What form *should* accounting take?" It is this approach only, that can lead to normative conclusions.

4.3. In the foregoing it has been explained that accounting must provide the necessary information for the management and operation of an entity and for the reports to be submitted thereon. To arrive at the postulates on which accounting must be based, we should search for the objectives pursued by the entity. These, surely, determine the management's outline of policy and the way in which the entity should operate, while they also serve as the touchstone used by interested parties in judging the conduct of affairs.

When discussing entities in general, we should be well aware that their ob-

jectives can be most varied (medical, defense, social, economic and other objectives). We shall not deal with the question to what extent all these different objectives can be attained and judged with the aid of accounting. This does not mean that this question must be answered in the negative, but that we deem it appropriate to confine ourselves to business entities, which are links in a chain connecting basic resources and ultimate consumption. The objectives of these business entities are economic in nature; each business operates between markets, obtaining goods and services from the buying market (including the labor market) and disposing of goods and services on the selling market. It normally does this with a view to making a profit, but non-profit entities also have an economic purpose - even if it is only that of covering costs (whereby it is irrelevant whether its costs are covered by the proceeds of the services rendered or by government or private contributions).

Within this economic framework, the management of every business entity must make a choice between alternative possibilities; its principal task is to ascertain and weigh the alternatives and then to make a decision. From case to case the guide in choosing should be the difference between the proceeds to be obtained and the sacrifices to be made. Thus, it is a matter of economic decisions, for which information with an economic content - both quantitative and qualitative - must be available. Consequently, it is economic science - and in particular the theory of business economics - that must provide the foundation on which accounting must be built in order to obtain the information that is indispensable for making rational economic decisions and controlling the activities. In other words, the postulates of accounting must, in the first place, be based on the achievements of the science of business economics. Since these achievements are the result of deductive reasoning and have been set proof of practice, they will not only be „useful" but above all „normative". Thus, they provide a more effective foundation for their acceptance as principles of accounting than is now mostly the case. From this basis such a unity of conception can result that no scope will be left for starting-points varying with the separate spheres of accounting that at present can still often be distinguished, such as management accounting and ownership accounting. Since all parties interested in the business are primarily concerned with its economic objectives, there is no sound reason for a difference in postulates and/or principles; both management and owners require information of a similar qualitative content; their requirements only differ in detail and frequency.

4.4. In the literature on the subject, and in personal contacts, one repeatedly encounters the opinion that in a number of business problems there is a contrast between the economist's and the accountant's view. It is not denied that this opinion seems to be justified by what can be observed in practice; this idea springs only from the fact that the (business) economist and the accountant are not well enough acquainted with each other's subject: the accountant, in particular, fails to recognize that he cannot achieve his object without a thorough knowledge of the theory of business economics and its practical applications.

Accounting is no more than a means - though a very important one - of pursuing and attaining the economic ends of the business. Consequently, there ought to be no question of a contrast between economics and accounting.

Obviously, it is impossible to deal now at length with the economic approach to the postulates of accounting. That would require a discourse on the whole field covered by the theory of business economics. In the following paragraphs a consideration will be given of some of the aspects arising from economic continuity as a generally valid force in social production; we will deal with the effects of this force in respect of value, cost and income. Though the profit-oriented business entity will be our starting point, the conclusions reached will be largely applicable to the non-profit entity as well.

5. *Economic continuity*

5.1. The development of the world economy and of the separate national economies manifests itself as a continuous effort to bring wealth on a higher plane. It is self-evident that this striving is only effective if it is beyond question that a certain level of prosperity can be maintained once it is attained. The maintenance of wealth is the backbone of and a prerequisite for an increase of wealth.

Wealth reflects itself in the availability of a continuous flow of goods and services, which - governed by the laws of the division of labor - is produced by a very large number of economic units (business entities). The wealth of national economies can only be maintained if the activities of the individual entities are directed towards this objective, which can be designated as maintaining economic continuity.

5.2. Economic continuity should be interpreted as the situation in which the business entity is (and remains) in a position to make a profit or income for itself and/or for its owners. This situation is not a static one; on the contrary, it requires all kinds of adaptation to technical development and changing market conditions. But the purpose of these adaptations is no other than the maintenance of the business entity as a permanent source of income. Nowadays it is often assumed that the purpose of the business entity can no longer be identified with profit-making, but that its social function prevails. Although it must be admitted that management now has to reckon far more than formerly with social aspects in its conduct of affairs, participation in production can only be called rational if in the long run the enterprise - accepting the social aspects as facts - can realize a profit.

5.3. Economic continuity, which manifests itself through maintaining a flow of income, is the basic idea of our following analysis. The question now arises: When can economic continuity be deemed to be maintained? Any answer to this question requires an accurate yardstick for determining and measuring income. Income, then, is that part of the increase in the net assets of the business entity - expressed in money - that could be distributed to those participating in the profits without impairing the source of income. „The fruit may be picked, but the tree may not be felled". This tenet seems simple, clear and incapable of contradiction; it will later become evident, however, that it can only be applied correctly if the concepts of „value" and „cost" are clearly defined on the basis of a closer analysis. Only then it will be possible to formulate some postulates of according.

6. *Value, cost and transaction results*

6.1. All economic acts are founded on assessments of value. The economic motive requires that the value to be obtained must always be weighed against the value to be sacrificed. For the producer in our exchange-society - who indeed is not subjectively concerned in the goods or services produced by him - the value to be obtained is simply determined by the price he can secure for the goods produced or the services rendered at the time of exchange. This exchange, and the production needed to effectuate it is, normally, only economically rational if the value to be obtained proves to be greater than the value to be sacrificed, i.e. if there will be a favourable difference between proceeds and cost. To ascertain the proceeds is - as we have said - no great problem; they are the price to be bargained for on the selling market. But the value to be sacrificed (cost), which must be set off against these proceeds, is more difficult to determine.

6.2. In paragraph 5.3. it has been stated that the activities of a business entity (i.e. the producer) are directed by a force striving for „economic continuity", i.e. for obtaining and maintaining a flow of income. This implies that every production act must be followed up by a new production act, at least as long as the relation between the value obtained (i.e. proceeds) and the value sacrificed (i.e. cost) supports the effort to obtain and maintain a flow of income. Thus, the producer is induced continually to compare the proceeds to be expected from the exchange with the cost of the services and goods sacrificed, calculated on the basis of the replacement value at the moment of exchange.

In our opinion, this train of thought is strictly logical and unavoidable. When the producer of a good parts with that good, he must appreciate that the goods and services consumed in producing it must be replaced in order to maintain the continuity of production. Thus, his economic sacrifice at the moment of exchange equals the sum he would have to spend at that same moment on the buying market in effecting the replacement of the goods and services consumed in producing the good sold. Here replacement in the *economic* sense is meant, not replacement by productionfactors that are *technically identical* but have meanwhile been superseded by better ones. In establishing the value of economically identical goods and services on the buying market, the producer obtains the necessary information about one of the two components determining his actual transaction results. The other component is the price of his product on the selling market at the time of concluding the selling contract.

6.3. Acceptance of this economic analysis implies that the still usual point of departure - that of historical cost - is abandoned. All other systems of valuation base themselves on one or more of the prices from the past. For decisions to be made *now*, however, these prices have no fundamental significance; they have no function in an economically rational process of determining and weighing values. A consistent elaboration of the reasoning outlined above, in respect of the values of the goods and services sacrificed, leads to the conclusion that the past offers no yardstick for the quantities involved either. The quantities of goods and services consumed in the past may include all kinds of elements that should not be taken into account in determining the value sacrificed. Only those quantities

are relevant that are involved in an economically efficient production; all avoidable inefficiency and wastage must be eliminated.

It follows from the above that - in our opinion - „*cost*" should be defined as *the replacement value of the goods and services that are causally required for an economically efficient production.*

6.4. To prevent any misunderstanding, let it be expressly stated that the concept of „cost" described above, refers not only to the raw materials used in production and to direct labor, but also to the capacity of property, plant and equipment consumed - expressed in terms of depreciation - and to the share in all other performances, irrespective of whether they come into the categories of administrative, selling or general expenses. Within the framework of continuity, only such an *integral* conception of cost, calculated on the basis of replacement value, can be an effective guide to managements' decisions.

Only in exceptional cases - and, in particular, when continuity is threatened - can a calculation based on direct cost be acceptable. Even then, it is exclusively the proceeds values and the replacement values that play a part in weighing the various alternatives; historical cost is of no significance here, either.

In many cases, it is hardly possible to handle effectively the conception of cost thus constructed without making use of methods such as budgeting and standard costs; a discussion of these methods, however, is beyond the scope of this paper, which is confined to the aspect of value.

6.5. Now, what is the significance of the above for our subject: accounting? It seems justified to make the requirement that information for an accurate determination of cost on the basis of replacement value is continually available. This means that the price movements of all goods and services, for which regular contact is maintained with the buying market, must be regularly followed and recorded. In respect of goods, for which there is no such regular contact (such as, in many cases, buildings and several kinds of equipment), it will be sufficient to trace and record the applicable index numbers. Depending on the scale of the business entity and the size and number of its activities, a decision will have to be made whether the effect of price-fluctuations on the value of the assets must be recorded if and when a price movement occurs, or whether it will suffice to determine the cost on the basis of replacement value only at such times as an exchange (i.e. a sale) is to be concluded. In both cases the main purpose is achieved, i.e. the factual economic profit of each transaction is ascertained in the only correct way. If all the relevant price changes are continually worked up in the records, all the goods are stated at their current replacement values; all differences between amounts paid in the past (historical cost) and replacement values are recorded and collected in a value-differences account. At the moment of contracting the sale, information about the eventual proceeds and the replacement cost is available and the difference between these data determines the result on the transaction. If there is no continual registration of values, the replacement cost must be calculated before it can be entered against the proceeds of the sale each time a transaction takes place. Then, the total value difference for the period must be determined at the end of each accounting period. This is done by es-

tablishing the difference between outgoing goods plus closing stock at replacement values and opening stock plus incoming goods at historical cost.

6.6. It may be clear that the method of recording values continually is to be preferred and is even essential in large firms with multifarious activities. The latter situation calls for a continual availability of the requisite information about the replacement values of all goods produced - and, moreover, about the replacement values of all other assets of the business entity. Reference is made to the article: „An application of replacement value theory", written by Prof. A. Goudeket, and published in the July 1960 issue of the Journal of Accountancy. It explains how the system of continual value recording is applied in such a large and complex concern as the Philips Company of The Netherlands. The application described led Mr. Anson Herrick (in „Inflation in Accounting" in the September issue of the JofA) to sigh: „The procedures seem to be of such complexity as to support the contention of „total impracticability" in any except a limited number of companies which are sufficiently large to absorb the attendant cost".

Experience shows, however, that this allegation is open to contradiction. In smaller and less complex companies the procedures are less extensive too; if necessary, the object can even closely be attained without a continual recording of changes in value, as has been briefly indicated above.

6.7. We are dealing with a matter of principle! Proceeding on the proposition of maintaining the continuity of the business entity, we should be prepared to accept the following postulates of accounting:

P.1. the cost (value sacrificed) of a good or service is determined by its current replacement value;

P.2. the transaction result is formed by the difference between the net proceeds of the goods sold or services rendered and their cost on the basis of replacement value;

P.3. the difference between the amounts paid in the past for the various cost components (historical cost) and the successive replacement values used in determining the transaction results must be set aside as „value differences" and thus do not form part of the transaction results.

Once these postulates are accepted, it could not be a problem for experts in accounting to lay down procedures that are feasible in the case on hand. It may also be noted that it is better to base oneself on correct postulates and principles and then to apply them as closely as possible than to persist in a quasi-exact application of erroneous valuation rules.

7. *Value and income*

7.1. In the preceding paragraph an explanation was given why the results of consecutive transactions are identical with the differences between their proceeds and their cost on the basis of remplacement value. This, however, does not completely solve the problem of determining the business entity's income assigned

to a specifiable period of time. The income for a period is not just identical with the algebraic sum of the transaction results in that period.

7.2. To explain this, reference is first of all made to the definition of „cost" given in paragraph 6.3. From this it can be deduced that all goods and services consumed in a period that do *not* prove to have been causally required for an economically efficient production should *not* be included in the cost of products sold in the period. The implication is that this wastage - which may consist in an inefficient use of raw materials and labor, but also in an inefficient use or an idleness of the capacity of machines, space, etc. - must appear as a separate loss item in the computation of income for the period.

The question may arise: why separate? The answer is that this improves the control of the business' activities. Only by using this economically correct cost concept as a yardstick for determining income, is it possible to differentiate between transaction results and wastages. Policy will then be directed towards preventing inefficiency and idleness in the future, and that is of notable importance.

7.3. We must next dwell upon the „differences in value" between the amounts paid in the past for the goods and services consumed in production, on the one hand, and their replacement values used in determining the transaction results, on the other hand. The third postulate given in 6.7. states that these differences must be set aside and do not form part of the transaction results. Neither do these differences form part of the income for the period. If it is assumed that the prices of the production factors show a tendency to climb, then the value differences set aside express no more than the amount that, at the time of the exchange, is required in excess of historical cost to replace the goods sold. This excess amount does not form part of the profit, because it cannot be distributed to those sharing in the profits without affecting the continuity of the business entity (in the sense of an unimpaired source of profit). The value differences are fully tied to the entity's economic obligation to replace at higher prices.

7.4. The argument used in the last paragraph applies not only to the goods and services sold in the period, but also to those still on hand. Both the goods and the units of performance actually on hand are valued - or, in the case of permanent value recording, have already been valued - at their replacement value at the closing date, and the resulting difference in value should not be included in the profit for the period but should be retained as a „revaluation surplus". If this is done, the entire financial statement of the period is based on the same valuation standards. Then, the stocks of goods and the performance units on hand are entered at their replacement values, the income for the period is determined by the sum of the transaction results on the basis of replacement cost, corrected by wastages, and the value differences are accumulated in a special capital-surplus account to enable replacement at actual prices.

7.5. It will be clear that the foregoing is applicable not only to inventories of products and materials, but also to machinery and equipment. These form, in fact, nothing but technically bound stocks of productive capacity, units of which are

regularly used in production (or wasted by not being used). It follows that these work units must be included in the cost of products at their replacement value; consequently, the depreciation charged to a specifiable period must be calculated on the basis of the replacement value of the work units consumed through technical or economic wear. At the end of the period the remaining work units, locked up in the fixed assets, must be valued at their replacement values, and the resulting increases in valuation must be credited to the capital-surplus account mentioned above.

7.6. It is self-evident that this exposition can offer no more than a few fundamental ideas on the theory of replacement value and a rough outline of its general characteristics. Still, one more feature should be dealt with.

The fact that the replacement value at the time of concluding the sale determines the profit, does not imply that each exchange is actually followed by a replacement. Factual replacement is tied to its own rules, fixed by economic and/or technical criteria. For raw materials and such like, the rational sizes of orders and the delivery times play their part; with the work units tied to machinery and equipment, it is often technical factors that necessitate replacement at great intervals. A consequence of these features is that, when the periodic income is being determined, account must be taken of price increases in goods and services (including work units) consumed, the replacement of which has been postponed on rational grounds. In practice this is done by determining a „normal volume of stock" for each of the various production factors. If and when there is an increase in the price of such a production factor, not only should the stock actually on hand be revalued, but also the difference between the quantity of the „normal stock" and that of the actual (lower) stock - the „shortage" - should be multiplied with the difference between the price underlying its replacement value at that time and the price at which the shortage was last entered in the books (i.e. the price paid at the time of the last replenishment of the stock up to the level of the normal stock during the period concerned, or - if the replenishment took place before the last closing-date - the price used in evaluating the stock at that date). The difference in value of the „shortage" thus calculated should then be debited to the income of the period and credited to „revaluation surplus".

Another simpler method of calculation (which is also applicable when there is no continual value recording) is the following: the difference between the replacement value of the normal stock at the end of the period and the lower replacement value of that same normal stock at the end of the previous period is determined; it represents the amount that should have been credited to the revaluation surplus during the period. In the extent to which this appears not to be the case, the revaluation surplus should be adjusted to the debit of the income for the period. Let it be noted that this calculation is not made for each individual component of the stock and for each machine; the „diversity" in the moments at which the various production factors are replaced, causes that the maximum stock of one component will coincide with the minimum stock of an other component. This is clearly demonstrated when we compare (a) an entity in which all machines have been acquired at the same time and are thus likely to be replaced at the same time, and (b) another entity in which a large number of machines were installed in the course of time, in which case replacement tends to be a

continual process. Then, the total stock of machines is characterized by - almost - „perfect diversity". In case (a), when the income for the year is determined, the depreciation accounted for in the past (i.e. the work units consumed, replacement of which has been postponed) should be raised to the current replacement value of such units. Only by doing so each year, can one ensure that the revaluation surplus suffices to enable their eventual replacement at the then current prices. In case (b) however, things stand quite differently: here, actual replacement is so spread in time, that each year a practically equal part of the machines is replaced, with the result that - if the size of the business remains the same - the amount of annual acquisitions at replacement prices and the amount of annual depreciation at replacement values tend to be equal. In other words: „perfect diversity" enables continual replacement out of the annual depreciation at replacement values; correction of previous year's depreciation charges is then unnecessary. In case (a) the normal stock volume reaches a periodically recurring high maximum, which gives rise to frequent high shortages; in case (b), on the other hand, the normal stock volume - thanks to perfect diversity - is practically equal to the actual stock of work units permanently available.

7.7. Although the effect of application of the theory of replacement value is mostly demonstrated with examples that assume a continual general increase of the price level due to inflation, we must realize that the theory has universal validity. It is also valid when the value of money is stable; even then, technical developments and changing market conditions cause specific price fluctuations, which must also be dealt with in the manner indicated. If there is a general or specific price drop, the principles set out are no less applicable; generally, negative value differences do not affect the results for the period; only if nominal maintenance of the originally paid-up share capital is aimed at, must the negative value differences - after all surplus accounts have been used up - be treated as losses for the period.

7.8. So far, no attention has been given to the bearing of the above views on the amount of tax due on the profit. In many countries, the application of the theory of replacement value for the computation of taxable income is rejected; in some others, it is partly accepted - and then by application of rough techniques only. It would not be sensible to reject a correct method of calculating income only because it has not (yet) been accepted by the tax authorities.

The only way to ensure that the tax authorities, too, will eventually revise their standpoint is to apply the methods developed by business economics.

Until then, it should be borne in mind that part of the revaluation surplus will immediately be subjected to taxation and the rest in the future; so, when calculating income, attention should be given to the discrepancies between the tax actually due and the tax amounts that would be due if the method applied were accepted by the authorities. The economic correct income before tax must be reduced by the tax amount that is now or will eventually be payable. Future tax liabilities are then to be included as such in the balance sheet at their estimated discounted values.

7.9. On the basis of the above, we shall now try to formulate a few more postulates of accounting:

P.4. The income of a business entity during a specifiable period is made up of:
   a. the total of the transaction results in that period, computed on the basis of replacement value (see 6.7. under P.2.);
   b. less the replacement values of the production factors consumed in that period, that appear not to have been causally required for an efficient production;
   c. less the positive value differences on the shortages (i.e. normal minus actual stocks of goods and/or work units locked up in the fixed assets), arrived at by comparing their replacement values at the end of the period and the price at which they were last entered in the books;
   d. less the negative value differences ascertained during and at the end of the period, if and when the surplus accounts have been used up;
   e. less or plus the items of extra-ordinary income and charges not mentioned under a. through d.;
   f. less an amount for income tax calculated as if the taxable income were equal to the balance of a. through e.

P.5. All physical production factors that in the economic sense are owned by the business entity at the end of the period are included in the balance sheet at their replacement values.

P.6. The positive value differences set aside in accordance with P.3. and P.4.c. appear as a capital surplus; negative value differences are debited to this surplus account till it is exhausted; any further negative value differences are then charged to other surplus accounts and - after they have been exhausted - to the income of the period if nominal maintenance of the originally paid-up share capital is aimed at.

P.7. Future tax liabilities arising from differences between the rules derived from the theory of replacement value and those laid down in tax regulations, are included as such in the balance sheet (at their estimated discounted values).

Conclusion

Our treatment of the difficult and extensive problem of the economic approach to the postulates of accounting is open to the comment that it is only a summary, and too fragmentary. Nevertheless, we hope that we have succeeded in stressing the point that the basis of the postulates of accounting rests on the achievements of the (business) economic theory, if normative conclusions are desired.

In particular the principle of the maintenance of economic continuity and the concepts of value, cost and income, based on the theory of replacement value, point the way to a universal method of determining the results of business activities, which - as we said in our introduction - is a prerequisite for a further development of the world economy.

The postulates formulated not only guarantee a determination of income that ensures that the business entity is not impaired by withdrawing amounts destined for future replacements, but they also solve a number of problems for which, so far, methods elaborated on a pragmatic basis only have been recommended.

The postulates under C 1 through 5, formulated by Maurice Moonitz on page

53 of his Accounting Research Study mentioned in paragraph 1.3., deal successively with Continuity, Objectivity, Consistency, Stable Unit and Disclosure. It is felt that the line of reasoning we have pursued solves all these problems in principle; it is based entirely on (economic) continuity; the replacement values can be measured in objective terms; they are followed consistently from period to period; the financial statements no longer reflect totals of figures originating from periods with different price levels, but they are based on a uniform measuring unit; preparing the balance sheet and the statement of income on the basis of replacement values results in the best conceivable disclosure.

The application of the theory of replacement value is gaining more and more ground in our country. In ending this paper we express the hope that professional accountants of many countries will join in promoting its general application.