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FINANCIAL ACCOUNTING WITHIN A SYSTEM OF NATIONAL ACCOUNTS

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I. INTRODUCTION

THE interest in statistics on money and credit has increased sharply in recent years. There are several reasons why this is so. Monetary and credit policy has assumed new importance in many countries, and governments feel a great need for current statistical information relating to monetary matters. The same is true of financial institutions, such as banks and insurance companies. In modern economic theory there is a strong tendency to treat financial and real economic relationships within one and the same model. This has created a need for statistics on money and credit which are comparable and consistent with data on the real economic sphere.

The traditional system of national accounts now gives a fairly systematic description of the real economy. However, no room has yet been found for financial variables within this system; nor have statistics on money and credit as a rule been designed within the framework of a consistent logical accounting system. In most countries these statistics take the form of incidental series spread over a number of different publications. Since they are based on different definitions, it is difficult to compare these series. Nor do the statistics cover all the fields which it is desirable to include. This is probably due to the fact that the basic data are collected for purposes of legal control, rather than with a view to throwing light on aspects of monetary conditions of interest to the national economy.

If statistics on money and credit are to meet present requirements, they must be based on a comprehensive system of accounting. This is essential in order to provide complete and comparable data giving an overall view and in order to be able to check whether the figures are correct. The traditional real economic accounts should be adapted as far as possible to this comprehensive system so that the real economic as well as the financial trend and position of the individual sectors are brought out. Secondly, the basic statistics must be extended and co-

ordinated within this system, uniform definitions and standards of classification must be adopted, and the data must be extended to areas not covered at present.

The purpose of this paper is to consider the first of these two problems, namely, the construction of an accounting system for statistics on money and credit. The emphasis will be mainly on capital-balance accounts, i.e. accounts showing claims and debts and net changes in these items over the accounting period. In order to place these accounts in a broader accounting framework some problems relating to matters of principle will be discussed in connection with the gross accounts which show gross changes in claims and debts, i.e. the individual transactions. Problems of co-ordinating financial accounts with the traditional national accounts are also considered in this connection.

These problems are treated from a general point of view in Part II. First, the ideas underlying the accounting framework and relationships are considered, then the concrete drawing up of accounts, sector classification, classification of claims and debts, and the choice of evaluation principles are briefly discussed. Finally, some problems of reconciliation of accounts are considered. Part III endeavours to give a concrete illustration of the system outlined in Part II. Here a system of Norwegian financial accounts is considered in detail.

II. THE FINANCIAL ACCOUNTS

(1) *General analysis*

A systematic classification of statistics on money and credit may take the following form: (a) data on holdings of financial objects, i.e. financial assets and liabilities, presented in the form of balance sheets for groups of institutions; (b) data showing the flows into and out of such holdings which result from specific types of transactions; (c) data relating to quotations and interest rates. The financial accounts should endeavour to provide an accounting framework for the first two mentioned types of statistics.

If such an accounting system is to be meaningful it must be based on sector accounts showing the structure of claims and debts for the most important economic groups and the main inter-sector transactions. The structure of claims and debts is best described by drawing up financial balances for the sector

system chosen. Such financial balances would distinguish the different types of financial objects, and should, furthermore, give details on the distribution by debtor and creditor of each sector's claims and debts respectively. This is necessary in order to make possible the consolidation of accounts.

Net changes in claims and debts will be brought out by a comparison of the balance-sheet items at the end and the beginning of the accounting period. This is sufficient for a number of analytical purposes, but in some cases it may be desirable to know the gross changes, i.e. the individual transactions underlying the decline and increase in the claims and debts of the different groups. Such a system of gross accounts would have to record all transactions involving financial means of payment or credit.

A system of gross financial accounts shows financial transactions between sectors, while the traditional national accounts consider the real aspects of these transactions. For practical as well as for theoretical purposes it is important that a way should be found of integrating these two systems. A solution which readily presents itself is to draw up an overall accounting system which is sufficiently detailed to permit, with suitable regrouping and supplementing of data, the construction of special series meeting different requirements. If such an overall system is to take the form of the traditional national accounts, tabulations such as, for instance, input–output relationships and the gross financial accounts could be incorporated by way of special accounts.

The drawing up of a system of gross financial accounts on the basis of the traditional national accounts would require regrouping of some of the data, the inclusion of supplementary statistics, and the introduction of certain correctives and estimates of statistical error needed in consolidating statements. The traditional national accounts are based on a functional sector classification, whereas the financial accounts are based on sectors classified according to their institutional characteristics. The data would therefore have to be regrouped to obtain consistency with the sector classification used in the financial accounts. Some items, which properly belong in the financial accounts, are not included in the traditional national accounts. This is true, for instance, of the purely financial transaction, i.e. transactions involving the exchange of financial objects. It

would, therefore, be necessary to include data of this type. On the other hand, the traditional national accounts include imputed transactions which are of little relevance to a system of financial accounts. This complication is, however, of minor importance for many analytical purposes. These transactions are recorded both on the debit and the credit side of the income account and will not affect the balance of the statement. For the purpose of reconciling the capital account with the balance sheet, it is necessary to introduce estimates of statistical error and certain correctives, the most important of which would correct for actual or imputed profits and losses resulting from revaluation.

(2) *The accounting structure and accounting relationships*

A simplified accounting structure for a complete system of gross financial accounts drawn up along the lines considered above may consist of: (a) an income account; (b) a real capital account; and (c) a financial capital account.

(a) The income account records transactions relating to production and consumption as well as unilateral transfers, such as taxes, subsidies, gifts, and donations. All these transactions (other than depreciation) are assumed to have a counterpart in the financial capital account. It would then have to be imagined that transactions which involve an exchange of real objects, unilateral transfers of real objects, and imputed transactions involve financial counterpayments. The balance on the income account would correspond to the sector's savings, which is derived as the difference between income and expenditure during the period excluding expenditure on capital (the income method).

The income relationship of an arbitrary sector i may be expressed as follows:

$$(1) \qquad \Sigma^a \Sigma^j T_a^{ij} - \Sigma^a \Sigma^j T_a^{ji} - D^i = S^i$$

where T denotes the transactions on income account, the first top lettering the sector rendering real objects or receiving financial objects, and the second top lettering the sector receiving real objects or rendering financial objects. The foot lettering indicates the type of transaction. D^i and S^i designate depreciation and savings in sector i.

(b) The real capital accounts record all transactions bringing

about changes in the sector's stock of real capital. Also these transactions, with the exception of depreciation, are assumed to have a counterpart in the financial accounts. The balance on the real capital account corresponds to the net real investment of the sector. The real capital relationships of sector i may be expressed as follows:

$$\Sigma^j J^{ji} - \Sigma^j J^{ij} - D^i = I^i \tag{2}$$

where J denotes gross real investment and I net real investment. $\Sigma^j J^{ji}$ indicates real investment at cost prices, and the sale of capital equipment at balance-sheet value (evaluated in accordance with the principles used in traditional national accounting) are shown by $\Sigma^j J^{ij}$. Net real investment is shown here net of any profit arising in the sale of capital equipment at prices exceeding the balance-sheet value.

(c) The financial capital accounts record the financial counterparts of all transactions carried over the income account and the real capital account (depreciation excepted) as well as the purely financial transactions. The balance on this account corresponds to the net financial investment of the sector. The financial capital relationships of sector i may be expressed as follows:

$$(\Sigma^a \Sigma^j T_a^{ij} - \Sigma^a \Sigma^j T_a^{ji}) - [\Sigma^j J^{ji} - (\Sigma^j J^{ij} + \Sigma^j A^{ij})] + (\Sigma^b \Sigma^j P_b^{ij} - \Sigma^b \Sigma^j P_b^{ji}) = G^i \tag{3}$$

where $\Sigma^j A^{ij}$ denotes profit arising from sale of capital equipment at prices exceeding the balance-sheet value. This magnitude must be included in the financial capital account in addition to the balance-sheet value $\Sigma^j J^{ij}$. The purely financial transactions are denoted by P. The foot lettering indicates the type of object. The expression $\Sigma^b \Sigma^j P_b^{ij}$ denotes ingoing financial objects at cost price and $\Sigma^b \Sigma^j P_b^{ji}$ outgoing financial objects at the balance-sheet value. The difference between these two items equals the profits arising from sale of financial objects at prices exceeding the balance-sheet value ($\Sigma^j \overset{*}{A}{}^{ij}$). G^i is net financial investment which, *inter alia*, includes all realized profits arising from revaluation.

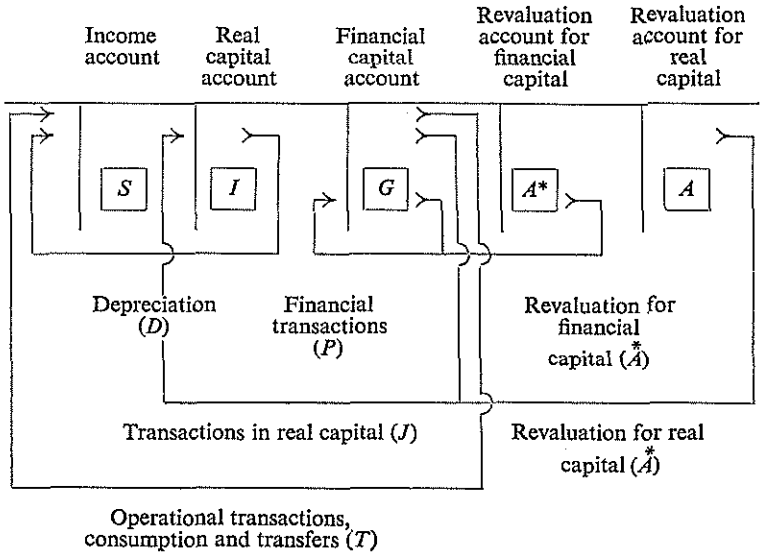
If we insert $\Sigma^j A^{ij} = A^i$ and $\Sigma^j \overset{*}{A}{}^{ij} = \overset{*}{A}{}^i$ into (3) we derive the following equation from (1), (2), and (3):

$$S^i = I^i + G^i - (A^i + \overset{*}{A}{}^i) = I^i + \overset{*}{I}{}^i \tag{4}$$

where $\overset{*}{I}{}^i = G^i - (A^i + \overset{*}{A}{}^i)$.

A schematic illustration of the sector accounts is given in diagram 1.

DIAGRAM 1. Sector Accounts



The financial capital account here gives a gross account for those changes in the claims and debts of the sectors which result from transactions. If, on the other hand, one wants a net statement of accounts showing changes in the holdings of financial objects, one may proceed by way of the balance sheet.

DIAGRAM 2. Sector Balances

Assets	Liabilities
Claims ($\Sigma^c\Sigma^j F_c^{ij}$) Real capital ($R^i$)	Debts ($\Sigma^c\Sigma^j F_c^{ji}$) Balance = Equity capital (E^i)

The balance sheet for sector i defines:

$$F^i + R^i = E^i \tag{5}$$

where $F^i = \Sigma^c \Sigma^j F_c^{ij} - \Sigma^c \Sigma^j F_c^{ji}$

and where F denotes financial objects, the first top lettering the creditor sector and the second top lettering the debtor sector. The foot lettering indicates the type of object. R^i and E^i denote real capital and equity capital (net worth) of sector i.

As regards changes in the balance items we get the following relationship:

$$\Delta E^i = \Delta R^i + \Delta F^i \tag{6}$$

The changes in the balance items in the course of an accounting period are due to several factors: The different transactions lead to inflows and outflows of means of payment and other financial objects. If these transactions involve sale of a sector's real capital or financial objects, the amount transacted may deviate from the value at which the object is entered in the balance sheet. Secondly, the valuation of the object at the beginning and end of the accounting period may differ, or purchased real capital and financial objects may be entered in the books at a value differing from the amount actually paid. Finally, extraordinary events like fire or a natural disaster may destroy the objects. The net changes in the balance items would comprise all these components.

In order to establish a relation between (4) and (6), i.e. between savings derived by the income method and savings derived by the balance-sheet method some corrections have to be taken into account. If differences resulting both from revaluation (non-realized profit) and profit due to extraordinary events are denoted by O and $\overset{*}{O}$ for real capital and financial capital respectively, we get:

$$\Delta R^i - O^i = I^i \tag{7}$$

$$\Delta F^i - \overset{*}{O}{}^i = G^i \tag{8}$$

$$S^i = \Delta E^i - (A^i + \overset{*}{A}{}^i) - (O^i + \overset{*}{O}{}^i) \tag{9}$$

Here we get three different definitions of net financial investments corresponding to three different definitions of sector savings as the sum total of net real investment and net financial investment. If net financial investment is defined exclusive of realized and non-realized revaluation profit ($\overset{*}{I}$), the saving will correspond to the balance on the income account, i.e.:

$$S_{\mathrm{I}}{}^i = I^i + \overset{*}{I}{}^i = I^i + [G^i - (A^i + \overset{*}{A}{}^i)] = \Delta E^i - (A^i + \overset{*}{A}{}^i) - (O^i + \overset{*}{O}{}^i) \tag{10}$$

If we include realized profit in net financial investment (G), savings, too, will comprise these profit components, i.e.:

$$S_2^i = I^i + G^i = \Delta E^i - (O^i + \overset{*}{O}{}^i) \tag{11}$$

If, in addition, we include non-realized profits due to revaluation and extraordinary events in net financial investment (ΔF) and in net real investment (ΔR), savings will correspond to the net increase in equity capital as derived by the balance method, i.e.:

$$S_3^i = I^i + [G^i + (O^i + \overset{*}{O}{}^i)] = \Delta E^i \tag{12}$$

(3) *The drawing up of accounts*

A large part of the statistics on money and credit now available throw light on the financial holdings of groups of institutions. It is therefore natural that the financial accounts show mainly the financial balances and the net changes in them. In the case of some financial objects both gross and net recording may be of interest. This applies in particular to long-term loans with different dates of maturity and age distribution. The gross changes in such balance items should therefore be shown to the extent that available statistics permit. At the outset it will hardly be practical to aim at drawing up a complete gross accounting system for all financial transactions. The gross accounts for the other transactions are here assumed to be incorporated in the traditional national accounts as indicated under II above.

The accounts relating to the financial balance items must be organized within a clearly delimited system of economic sectors. Furthermore, the balances must be arranged in a standardized form so as to make comparisons and aggregation of the figures possible. The balances must give details by debtor and creditor sectors and by types of claims and debts. It will then be possible to consolidate sector balances where this is desired for purposes of analysis. Moreover, it will be possible to study the financial structure of the sectors.

Organized in this manner, the financial accounts will show the sector's financial capital, i.e.:

$$\underset{\mathbf{F}}{F^i} = \Sigma^c \Sigma^j F_c^{ij} - \Sigma^c \Sigma^j F_c^{ji} \tag{13}$$

as well as the sector's financial investment (including realized and non-realized profits due to revaluation and extraordinary events), i.e.:

$$\Delta F^i = \Sigma^c \Sigma^j {}^{\Delta}F_c^{ij} - \Sigma^c \Sigma^j {}^{\Delta}F_c^{ji} \tag{14}$$

(4) *Sector classification*

Since the financial accounts, *inter alia*, are to illustrate the structure of claims and debts, the sectors must be based on reporting units with independent accounts. Such units will normally be independent legal–economic units, such as enterprises, different kinds of institutions and individuals, such as wage and salary earners, pensioners, etc. Accounting units of this type (for instance, productive enterprises) may be composed of several functional units (for example, establishments defined in accordance with the International Standard Industrial Classification in the production sector) so that they may lend themselves to several economic functions. Thus, the combination production–consumption characterizes all unincorporated and non-co-operative enterprises. Since the sector classification must largely depend on existing institutional conditions, we shall consider only some general principles here which concern the problem. The discussion will otherwise be closely related to institutional conditions in Norway.

Since the financial accounts are intended, *inter alia*, to facilitate monetary and financial policy, it is natural that public administrative agencies are singled out in a special main sector. This is necessary if the monetary effects of public transactions on the rest of the economy are to be brought out. The sector Public Administration includes the central and local governments, and closely related agencies and administrative institutions. Public enterprises may, for some analytical purposes, usefully be included in the producing sectors. Another sector which is important from the point of view of monetary policy is financial institutions. These should be grouped in one main separate sector. The sector described as Financial Institutions should be restricted to institutions whose main function consists of granting credit or otherwise making liquid funds available to other sectors of the economy. A third main group includes units whose main function is the production of goods and services. This sector, which we call productive enterprises,

should include enterprises owned by the State and the municipalities as well as private enterprises. Private individuals who are not self-employed form a fourth main sector, namely wage and salary earners, pensioners, etc. Finally, non-profit making organizations and institutions constitute a fifth main group. In order to bring out the economic relations of the home sectors with abroad, a sixth main sector – the rest of the world – should be introduced.

In splitting up the sectors it is particularly within the enterprise sector that problems involving matters of principle arise. Here it may be of interest to have several types of subdivision and possibly also cross-divisions. The enterprises may be distinguished according to ownership, i.e. state-owned, municipality-owned, and privately owned enterprises. Secondly, the private enterprises should be split up according to their form of organization into enterprises with limited liability (corporations and co-operatives) and other private enterprises. The entire enterprise sector ought, furthermore, to be split up according to industry. Since the statistical unit is the enterprise and not the establishment, the classification will be made according to the main activity of the enterprise. To facilitate international comparisons, the sector classification should follow as far as possible the ISIC.[1]

The following sector classification is an example of a possible solution along the lines discussed above:

I. Public administration
II. Financial institutions
III. Productive enterprises

1. State-owned enterprises

(i) agriculture and forestry
(ii) fisheries, etc.
etc.

2. Municipal enterprises

(i) agriculture and forestry
(ii) fisheries, etc.
etc.

[1] International Standard Industrial Classification of all Economic Activities.

3. Private enterprises
   (a) Corporations and co-operatives
      (i) agriculture and forestry
      (ii) fisheries
      etc.
   (b) Non-corporate enterprises (excluding co-operatives)
      (i) agriculture and forestry
      (ii) fisheries
      etc.

IV. Wage and salary earners, pensioners, etc.
V. Non-profit-making organizations and institutions
VI. The rest of the world.

(5) *Classification of financial objects*

The term 'financial object' is here meant to include all financial items which constitute assets in one sector and liabilities in another. There are many different types of financial objects. In spite of their differences, however, they have certain common features which enable us to bring them into a relatively small number of object groups which are uniform with regard to certain properties. It is particularly in the case of cross classifications according to debtor and creditor sectors that it is necessary, for practical reasons, to have a small number of object groups. On the other hand, the marginal classifications (i.e. classification of claims by creditor sectors or debts by debtor sectors) permit a more varied selection of financial objects.

In economic analyses it is important to know the degree of liquidity of financial objects, and each group of objects should be so established that they are as uniform as possible with regard to their degree of liquidity. Liquidity is usually related to the marketability of the financial object, which in turn normally has some connection with the legal form of the object. There is no perfect conformity between the degree of liquidity of the financial object and its legal form, but the latter may serve as a practical criterion in the classification of the objects. Since the nature of the financial objects depends very much on the institutional conditions in the various countries, our discussion of the classification will be based on the special conditions prevailing in Norway. The most liquid financial objects are the

generally recognized means of payment, such as bank-notes and cheques. Since in Norway ordinary time deposits may easily be transferred to cheque accounts, there is reason to treat all bank deposits as one group. Another group of liquid financial objects comprises those which may be exchanged for cash at a given rate of discount. Here the degree of liquidity is somewhat reduced in as much as the rate of discount may rise during the life of the bill. Treasury bills belong to this group. For many objects there exists in most countries a well-organized market. This is true particularly of bearer bonds and shares. In such a market there is always a certain risk of fluctuations in quotations, and this may considerably reduce the liquidity of the objects concerned. Moreover, within these groups of financial objects the degree of liquidity may vary a great deal between the different kinds of securities. As regards claims which are not intended for negotiation, there exist a number of types. The degree of liquidity of these objects is determined largely by their life. Here it may be useful to segregate credits and loans in a separate group. It may also be of interest to show separately insurance claims on insurance companies and pension funds. Claims which are not interesting enough to deserve separate classification may be brought together in a residual group. Since the choice of object classification will depend on institutional conditions in individual countries, we shall not go into these problems of definition in further detail.

In cross-classifying the balance-sheet items along the basis discussed above, the following types of objects could be distinguished:

I. Means of payment
II. Discountable objects
III. Marketable objects
IV. Non-negotiable objects
V. Other financial objects

The groups IV and V should be so defined that the former includes the objects which are most relevant for analytical purposes.

In tables giving marginal distributions it may be useful for many analytical purposes to give details by type of financial object. This will provide a more detailed picture of different features of the financial structure, such as the period of maturity of claims, their degree of security (mortgages, state guaranteed,

etc.) or the manner in which the claims have arisen (trading credit, advance payment, etc.).

The financial objects must be distinguished from real capital and from equity capital. In the distinction from real capital it must be decided whether real means of payment, gold and coins, should be considered as financial or real objects. The distinction from equity capital, on the other hand, raises the question of whether an item which is regarded as a financial object by the debtor but not by the creditor (or vice versa) is to be regarded as a financial object or not.

In distinguishing financial objects from real capital, the following points of view may be relevant: Coins and gold are by their nature real objects. If, however, gold as a raw material in production is disregarded, both these objects are means of payment which perform the same function as bank-notes and other means of payment. For analytical purposes it is therefore natural to treat coins and gold as financial objects. If gold is regarded as a real object, an inflow of gold will increase the stock of real capital and consequently become a component of real capital investment. In the case of countries which do not produce gold, this is not a very suitable solution. If gold and coins are regarded as financial objects, the rest of the world must be considered debtor with respect to the gold and the central bank debtor with respect to the coins.

The way in which the problem of distinguishing financial objects from equity capital is solved will affect the determination of net financial investments and thereby also savings of the different sectors. It is impossible to give any objective criterion for this distinction. Each separate case must be decided on its merits, and the decision made must be adhered to consistently from one period to another. In the last instance analytical considerations, such as the allocation of savings to the different sectors, will be the decisive factor. Savings in the form of life insurance may be taken as an example. If it is desired, for analytical reasons, to include such savings in the sector of insurance-policy holders, then allocations to insurance reserves in life-insurance companies must be regarded as a financial object, i.e. as a debt to the policy-holders. If, on the other hand, allocations to reserves in the companies are regarded as capital reserves or equity capital, savings in the form of life-insurance policies must be allocated to the insurance sector.

(6) *Choice of evaluation principles*

As a rule, financial objects have a specific face value indicating the amount which the debtor declares to owe the creditor. This *nominal price* is usually the amount at which the object is redeemed at maturity. Financial objects are frequently traded on the market and then get a *market price*, which is not necessarily identical with their nominal price. By *self cost* is meant the sum of money which has actually been paid for the financial object when it was purchased. This is the amount which as a rule, after possible adjustment for revaluation, is entered in the accounts of the creditor as the balance-sheet value.

For a number of financial objects, and in particular for means of payment, all these principles of evaluation will produce the same result. For others, for instance, bonds and shares, on the other hand, different principles of evaluation may give rather different results. Estimates of net financial investment according to the balance-sheet method will therefore depend on the choice of evaluation principles.

The principles which can be used for the evaluation of financial objects, the most important of which have been mentioned above, fall into two main groups, i.e. principles giving identical evaluation for debtor and creditor, and principles giving different evaluations for these two parties. If the first group of evaluation principles is used, total net financial investment in a closed system of sectors will be nil. The same will also be true of the sum total of profit components. When the second group of evaluation principles is used, total net financial investment, as well as the sum total of profit components, will in general be different from nil.

The principles of evaluation may differ, depending on the purpose of analysis. For most analyses the main interest is probably in determining as exactly as possible the liquidation value of the financial objects. The meaning of the term 'liquidation value' depends on whether a short- or long-term point of view is adopted. From a short-term point of view the liquidation value equals the market value, i.e. the amount of money which can be obtained for the financial object if it is immediately sold on the market. Generally speaking, the principle of market evaluation can in practice be used only by the creditor. From a short-term point of view it therefore seems desirable that creditors should

evaluate their financial objects at the market price. For debtors, on the other hand, it would be reasonable to use the nominal price. If a long-term view of the problem is taken, the liquidation value will equal the settlement value, which is usually the same as the nominal value. If the liquidation value is to be decisive, therefore, the nominal price must, according to a long-term view, be chosen as evaluation principle for the creditor as well as for the debtor.

Statistically, the nominal price is a simple and practical evaluation principle. Moreover, this principle gives identical results for debtor and creditor, and provides good opportunities for arriving at statistical consistency. If the nominal price is known, it is possible by appropriate methods of estimation to derive approximate figures for the market price. In a balance sheet based on nominal values, differences between market values and nominal values can be included as supplementary information for the objects in respect of which such differences may occur. In tabular form, the financial balance will take the following form:

DIAGRAM 3. Financial Sector Balance

Assets	Liabilities
1. Claims (nominal value) ($\Sigma^c \Sigma^j F_c^{ij}$)	4. Debts (nominal value) ($\Sigma^c \Sigma^j F_c^{ji}$)
2. Deviation from market quotation ($\Sigma^c \Sigma^j K_c^{ij}$)	5. = 1 − 4 Net financial capital (nominal value) (F_1^i)
3. = 1 + 2 Claims (market value)	6. = 3 − 4 Net financial capital (market value) (F^{2i})

Similarly, the balance of changes in the balance-sheet items will give net financial investment, excluding or including, as the case may be, non-realized profit due to revaluation. On the other hand, realized profit will always be included in net financial investment according to the balance-sheet method. These profits can only be specified on the basis of 'agio account' (profits and loss account) in the gross accounts (see Diagram 1 above).

If F_c indicates financial objects evaluated at nominal price, and K_c the difference between market value and nominal value, the financial balance may be expressed as follows:

$$\Sigma^c \Sigma^j F_c^{ij} - \Sigma^c \Sigma^j F_c^{ji} = F_1^i \tag{15}$$

and

$$\Sigma^c \Sigma^j (F_c^{ij} + K_c^{ij}) - \Sigma^c \Sigma^j F_c^{ji} = F_2^i \tag{16}$$

Similarly, the net financial investments may be expressed as follows:

$$(17) \qquad \Sigma^c \Sigma^j \Delta F_c^{ij} - \Sigma^c \Sigma^j \Delta F_c^{ji} = \Delta F_1^i = G^i$$

and

$$(18) \qquad \Sigma^c \Sigma^j (\Delta F_c^{ij} + \Delta K_c^{ij}) - \Sigma^c \Sigma^j \Delta F_c^{ji} = \Delta F_2^i$$

where $\Sigma^c \Sigma^j \Delta K_c^{ij} = \overset{*}{O}^i$

(7) *Problems of reconciling the accounts*

Even if a uniform system of classification is used and evaluation principles giving identical results for debtor and creditor are chosen, there will be discrepancies between the accounts of the various sectors. This is due partly to the lack of conformity in respect of the timing of entries (float) and partly to statistical errors. Only in exceptional cases therefore will debtors' returns agree with the corresponding statements of creditors. In order to obtain a clear statement of accounts these returns must be reconciled. A reconciliation is necessary if the balance is to be shown in matrix form. The reconciliation should be made on the basis of statements assumed to have small statistical errors. The difference between the reconciled figures and sectors' own figures may, if so desired, be specified in a corrective item which will consist partly of a statistical discrepancy and partly of a difference due to different dates of entry for creditor and debtor.

III. EXAMPLES ILLUSTRATING NORWEGIAN FINANCIAL ACCOUNTING

In Norway the Central Bureau of Statistics has been working for some time on the drawing up of a system of financial accounts.[1] It may also be mentioned in this connection that problems relating to the organization of statistics on money and credit into an accounting system have been dealt with by a special inter-Scandinavian committee. The Norwegian work started with the computation of financial sector balances. It is hoped that the work will be concluded by integrating this system of sector balances with the traditional national accounts within a general system of accounts based on the principles outlined in Sections (1) and (2) of Part II above. For the time being the

[1] The first results are published in *Kredittmarkedsstatistikk 1955* (Credit Market Statistics 1955), which appeared in January 1958 in the series 'NOS'.

theoretical diagram for the gross accounts is used only as an auxiliary instrument in solving the problems of principle which have arisen in connection with the work on the balance-sheet accounts. This section gives a short survey of the general principles underlying the approach.

(1) *Sector classification*

The classification of sectors is on the whole in accordance with the principles outlined in Part II, Section (3) above. The following classification has been adopted:

I. Public administration
   1. The Treasury
   2. Public funds
   3. Social insurance funds
   4. Municipalities

II. Financial institutions
   1. Bank of Norway
   2. Postal checking and savings accounts
   3. State banks
   4. Commercial and savings banks
   5. Credit associations, etc.
   6. Insurance

III. Other domestic sectors
   1. State enterprises
   2. Municipal enterprises
   3. Other Norwegian sectors

IV. Rest of the world

Since the basic statistics are still inadequate, it has not been possible to single out private companies, other private enterprises, wage and salary earners, pensioners, etc., and non-profit-making institutions. Sector III is broken down into industrial activities.

The classification of sectors has given rise to considerable practical problems. The definitions have to be so clear-cut that the reporting units will have no difficulty in classifying their financial objects. Moreover, the definitions must be adapted according to the possibilities of procuring returns. Finally, one

must pay due consideration to the type of information needed for analytical purposes. The delimitation of sectors adopted in Norway is briefly outlined as follows: The Treasury is delimited in accordance with the capital balance account of the State in the state budget. Public funds comprise funds which are closely connected with the Government, but which submit independent accounts, such as different types of funds for lending money, other funds established to serve particular purposes, price-regulation funds, etc. Social insurance funds comprise the public insurance and pension schemes which operate as independent legal entities. Municipalities comprise local, rural, and urban governments and county governments. The different groups of financial institutions are delimited in accordance with the statutory laws underlying the activities of these institutions. The insurance sector comprises life-insurance companies, non-life-insurance companies, and private pension schemes and funds. State enterprises include state enterprises which are not separate legal subjects, but which submit special accounts; other enterprises entirely owned by the Government and joint-stock companies in which the Government or government enterprises own 50 per cent or more of the share capital, or for other reasons appoint the majority of board members. Municipal enterprises comprise enterprises which enter the accounts of the municipalities but which also submit special accounts, municipal companies, and enterprises owned jointly by several municipalities. The group 'Other Norwegian sectors' is found as a residual.

(2) *Classification of financial objects*

The following main groups of financial objects have been adopted:

I. Gold
II. Bank-notes
III. Bank deposits
IV. Treasury bills
V. Bearer bonds
VI. Shares
VII. Loans and advances
VIII. Capital participation
IX. Insurance claims
X. Other financial objects

Gold gives the Bank of Norway's holding of gold cover for bank-notes as well as temporary investment in gold. Bank deposits are delimited in accordance with the provisions given in banking legislation. Bearer bonds include debenture bonds issued to the holder. The group described as 'shares' also includes documents of participation in co-operative societies. Loans and advances include all kinds of loans, advances, and credits which do not concern bearer bonds. This group also includes commercial bills of exchange. By 'Capital participation' is meant long-term financial investment, e.g. state capital participation in dependent state enterprises, contributions to the International Bank for Reconstruction and Development and the International Monetary Fund. Insurance claims concern life-insurance companies and private pension schemes, and are classified with the insurance reserves of these institutions. The technical reserves of the non-life-insurance companies, on the other hand, are not considered to be financial objects.

(3) *Choice of evaluation principles*

The nominal price has been used in all the main figures. No attempt has been made at estimating the market value of shares and bearer bonds; wherever possible the balance-sheet value has been used as an approximation. This has been done by introducing in some tables corrective items giving the difference between balance-sheet value and nominal value.

(4) *The accounting structure and the available statistics* [1]

The financial balances of the sectors have been drawn up in such a manner that for each group of financial objects claims are specified according to debtor sectors and debts according to creditor sectors. By giving cross-classifications for the entire system of sectors and all financial objects, a very concentrated picture of the financial structure is obtained. By reading the table vertically a general picture of the claims of the various sectors is obtained, while when read horizontally, the table brings out the distribution of debts over the same sectors. The bottom part of the balance summarizes all the claims and all debts.

A similar table showing movements in the balance items is obtained by taking the differences between figures for the end

[1] The tables described in this section are published in *Credit Market Statistics 1955*, Nos. X1281. Oslo 1955. Tables 89 and 90.

and the beginning of the period. This shows financial investment by sectors, according to financial objects. Financial investment in this table includes the realized profit on the sale of securities, but not non-realized profit. An indication of this latter magnitude is, however, obtained by considering the changes in the corrective items which show the difference between balance-sheet and nominal value.

In many cases it may be desirable to observe the balance figures or the movement figures for a certain sector over a longer period of time. The table must then be set up in the form of a time series, and it shows the financial balance of the sector 'Commercial and savings banks' at the end of each half-year period in 1952–55. Here it is necessary to have two tables, one for claims and one for debts.

The data relating to Sectors I, II, and III (Sub-sectors 1 and 2) have been obtained by direct returns from the individual units comprised by these sectors. These balances have been aggregated, and thus also show the position with regard to internal claims and debts. The balance for Sector III, Sub-sector 3, 'Other Norwegian sectors', has, on the other hand (except for bearer bonds), been consolidated and shows only claims and debts versus the specified sectors. The data, apart from claims and debts abroad, which are obtained from the annual financial census, have been taken from the other sector balances.

Sector III 'Other domestic sectors' is subdivided into industries. It has not been possible to establish complete balances for each individual industry, but a few important groups of financial objects, such as loans of financial institutions, bearer bonds, and share issues, have been included in these balances. The work on obtaining statistics of bank deposits by industry is under way.