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A SYSTEM OF NATIONAL BOOK-KEEPING

Illustrated by the experience of the
Netherlands economy

by

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CAMBRIDGE
AT THE UNIVERSITY PRESS

1946

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PREFACE

This paper has been prepared during a stay at the National Institute of Economic and Social Research in September 1945. It contains in a summarised form the results of investigations that have been carried out recently at the Central Bureau of Statistics in The Hague, Netherlands, and that until now have not been made available to English-speaking readers. The author wishes to express his sincere thanks to the Executive Committee for the invitation extended to him, which has enabled him to bring this work before a wider audience. He feels especially indebted to Mr J. R. N. Stone, who kindly read the manuscript and made many valuable comments. Sincere thanks are also due to Mrs F. S. Stone, Secretary, for assistance in preparing the MS. for the press.

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National Institute of Economic and Social Research,
Westminster.

September 20th, 1945.

A SYSTEM OF NATIONAL BOOK-KEEPING ILLUSTRATED BY THE EXPERIENCE OF THE NETHERLANDS ECONOMY

1. Introduction

The depression of the nineteen-thirties has led everywhere to an increased demand for statistical information. The more governments interfered with the national economies the more statistical research was stimulated. Statistical bureaux and economic research agencies tackled almost every branch of economic activity, attempting to measure all relevant money flows, the volume of the streams of goods and services, and the price levels on the markets of goods and services and of the factors of production.. They tried also to establish a quantitative picture of the structure of the national economy on both current and capital account. Statistical investigations were initiated in several directions and it need hardly be said that these inquiries were often dissimilar with respect to the basic definitions, the methods employed and the field which they covered. As long as economic policies were mainly concerned with separate sections of the national economy these inconsistencies and dissimilarities were not felt to offer serious hindrances. Gradually it became clear, however, that economic policy ought to look at the national economy as a whole. Otherwise it would be almost inevitable that measures taken with respect to some part of the economy of the country would clash with measures taken in other sections. This point of view brought a new task to statisticians and the students of applied economics, namely the construction of a system of tables or graphs which together give a clear picture of all streams of values and quantities, showing their relative magnitudes and the channels through which they are interrelated. Research into national income was greatly stimulated. Much attention was being given to the breakdown of national income by branches of industry, its allocation by the shares of the factors of production and the expenditure of national income on consumers' goods and services and on net capital formation. It cannot be denied, however, that these investigations do not cover the whole field. A complete insight into the main money flows of the national economy requires much more than can be given by means of research into national income alone. What is needed is an interrelated system of recording which has sometimes been called a *tableau économique* and is called by German authors *volkswirtschaftliche Bilanzen*. As regards the presentation of the facts the statistician may still choose between different methods. The author prefers a system which has been called the *national book-keeping system*, because it bears in many respects a close resemblance to the methods used in ordinary book-keeping, sharing the advantage of the latter.¹ The following sections are devoted to an exposition

¹ The term was first used by Ed. van Cleeff in an article which appeared in *De Economist*, 1941. He also initiated a system of tables still partly based on fictitious figures.

of this method, its merits and its limitations. The method is illustrated by tables referring to the Netherlands economy. They contain the chief results of the recent research that has been going on in that country and about which little has been published before. The Central Bureau of Statistics at The Hague, where these researches are being carried out, has not yet been able to reach final results. Therefore it is to be understood that the present paper is mainly devoted to an exposition of the methods involved. The figures used sometimes represent crude estimates and much research still remains to be done before they can be replaced by more accurate data.

In order to make the description complete separate sections will be devoted to the research on national income and national wealth that has been carried out in the Netherlands. The figures for the war period, which in themselves may be of interest to some readers, are dealt with in a separate section. Careful attention has been given to technical explanations which, it is hoped, will enable the reader to form for himself an independent opinion as regards the methods of computation employed and the accuracy of the estimates attained.

The system developed so far is now being used at The Hague in the preparation of tables in connection with the reconstruction programme of the country. Forecasts are being made of developments in the near future. These figures may refer to periods of a year or less ahead. After the end of the period covered it will be possible to check up the forecasts with the actual figures. This procedure, it is hoped, may lead to a deeper insight into the methods used in making these forecasts and together with the continuous extension of the research underlying the national book-keeping system may finally prove a helpful tool in framing future economic policy. There can be no doubt that much work remains to be done before it can be said that the national book-keeping system meets the demands that may reasonably be made upon it.

2. National Book-keeping: a Survey with Tables for the Netherlands Economy for 1938

Tables 1-6 give the national book-keeping for the Netherlands for the year 1938. It is easily seen that these tables bear a rather close resemblance to the accounts of expenditures and receipts in ordinary book-keeping. Before going into detail a few words may be said about the method in general. It is quite clear, of course, that the figures could just as well be represented in a different form, but the present method is thought to have the following advantages. The book-keeping system represents in itself a logical unity and compels the investigator to trace very accurately all money streams. The book-keeping method guarantees that no essential interrelations in the intricate system of the national economy are being overlooked. It provides a general check-up which in some cases has proved quite helpful in detecting errors and omissions in the original set-up when the book-keeping system was

not yet in use. The book-keeping system can be understood by those who are not statisticians themselves but have a general understanding of the structure of the national economy and who are familiar with the methods of presentation used in accountancy. Experience shows that in many cases statistical tables as they appear in Government publications are not always readily understood by people who are unaccustomed to statistics. Reluctance to read tables is evidently less if, where possible, figures are arranged as in ordinary book-keeping.

Another advantage of the method is that it makes it possible to state very clearly where statistical information is still incomplete and further inquiries are needed. In this way the national book-keeping system also enables one to summarise in a concise form a programme for future research by indicating the places where statistical information is still lacking or unsatisfactory. It is important to state briefly which figures are most urgently needed and to which subjects therefore statistical research should first be directed. Experience has shown that the method of presentation aids in stimulating further research. Research agencies and students of applied economics whose co-operation is needed can see why further work is wanted and where the results of their studies will finally appear.

The figures required for the national book-keeping system are taken from various statistical sources and from statistical investigations carried out by different agencies. Quite a different procedure has been advocated by some authors on national book-keeping. They suggest that all business transactions should be noted on forms especially designed for the purposes of the national book-keeping, e.g. by introducing extra copies of all bills, which have to be sent to special book-keeping centres whose task it is to collate these forms and to forward the results to the central national book-keeping office. Because of the enormous amount of work involved this procedure cannot readily be realised. Impracticable though it may seem, yet a few words may be said about this method. If modified in such a way that the regional book-keeping centres limit themselves to the current compilation of data for *samples* of enterprises and consumers' households, the method is practicable and indeed is used in agriculture for the compilation of information on the costs of production, and the accounts of profits and losses of individual farms. There exist in the Netherlands regional book-keeping centres compiling accounts for a sample of some ten thousand agricultural enterprises. Their results, together with the statistics of the Annual Census of Agriculture, are used to estimate income derived from agriculture. It has been suggested that similar regional book-keeping centres should be built up to gather data for samples of enterprises in retail trade. At present, however, apart from a few special cases where sampling methods can be applied, the national book-keeping should not be based on returns filled out by the enterprises themselves but rather on the data which can be derived from statistical sources. There is indeed no reason why use should not be made of the information furnished by the statistics of imports and exports, census of production, balance of payments, retail sales statistics, fiscal statistics, etc.

National book-keeping may be considered as a general scheme covering all statistics of the various divisions of the economy and bringing them together under one unifying principle. National book-keeping can do much to promote the unification and the comparability of various economic statistics. It should, however, be kept in mind that there are limitations to the degree of unity that should be aimed at. It cannot be denied that statistical data are being compiled for extremely divergent purposes and that, consequently, divergence of definitions and methods is to a certain extent unavoidable. The usefulness of many statistical sources would be far too much restricted if they were all brought under one rigid system of definitions and classifications. Yet experts will agree that progress as regards the mutual comparability of economic statistics seems desirable. There are tendencies in this direction both nationally and internationally, which may perhaps find some support in the national book-keeping system and the requirements for its fulfilment.

National book-keeping being largely based on available statistical sources, the problems connected therewith may now be given more detailed reconsideration. As has been indicated, quite a few problems result from the divergence of definitions and methods of various statistical sources. Income statistics as compiled by the fiscal authorities cover only assessed income and assessable profits. They do not include, therefore, reductions authorised by law and they may include amounts which from an economic point of view do not constitute income, e.g. gains from capital transactions. The national book-keeping system demands data on true income and on actual profits. Additional evaluations must be carried out in order to derive from the official statistics the data actually needed. These estimates may include such difficult items as the evaluation of total income below the exemption limit of the income tax and the total evasion from income tax.

Incomparability of statistical sources gives rise to a number of problems. The classification of products in the Census of Production may differ widely from classifications used in the trade statistics and they may be expressed in quite different units (e.g. leather is measured either in weight or in square measure, timber may be in weight or in volume, etc.). Another group of problems arises from the divergent purposes for which goods may be used. Only in very exceptional cases do statistics make possible a classification of goods by the various uses to which they are put. In most cases evaluations are necessary. Estimates have to be made, e.g. about the share of consumers' households in total coal consumption, and this must be distinguished from the amount used in transport, manufacturing industry, and so on. Similar sub-divisions are needed for the consumption of gas and electricity. Likewise it may be difficult to ascertain which part of railway passenger traffic is paid by consumers' households and which part constitutes travelling costs of firms. These few examples may be sufficient to illustrate the kind of problems considered here.

Another group of problems, in principle quite difficult to overcome, results from the lack of uniformity in accountancy practice. Such items as depreciation allowances, reserves for replacement, valuation of stocks of raw materials

and finished products, the book value of existing plant and equipment, may be based on highly divergent principles and may greatly vitiate the compilation of adequate statistics. On the Continent certain steps have been taken recently towards a greater uniformity of accountancy practice. These regulations were initiated in the interest of rigid price controls and may now be made to serve statistical requirements. In the near future we shall learn how far these new regulations will really prove useful for statistical purposes.

Theoretical problems involved in the definition of national income and its evaluation quite naturally arise in the national book-keeping system also. They will be dealt with in a separate section on national income and connected subjects. Definitions of saving and capital formation equally deserve careful consideration in view of the problems of their accurate statistical measurement. The rather formal system of national book-keeping may perhaps lead to an over-simplification of the problems involved in the definition of national income. Much emphasis should be laid therefore upon a careful statement of definitions and their impact upon the figures to be put into the national book-keeping system. The system is capable of showing e.g. the extent to which different definitions of national income will affect the figures actually reached. It may also help in clearing up problems which some students experience with respect to Government expenditure in relation to national income. In this connection a graph has been added to this paper, which may prove helpful for illustrative purposes.

The national book-keeping system requires a careful classification of all sectors of the economy and of the money streams we wish to distinguish. In this example the sectors are classified as follows:

(1) Enterprises, which may be classified by branches of economic activity; agriculture, manufacturing industry, transport and communication, banking, service trades, including personal services, and so on. Government-owned enterprises are classified under the group to which they belong.

(2) Government, including State and local governments, public schools and institutions, the service of the national debt.

(3) Consumers' households, including families, and people living alone or in institutions. Servants living in private families are included in those families.

(4) So-called collective income recipients; life insurance companies, pension funds, social insurance funds, charitable institutions and other cultural or humanitarian institutions owning funds from which income is derived.

(5) All foreign economies in so far as they maintain relations with the national economy through trade in goods and services and international capital movements.

Money flows, between sectors belonging either to the same group or to different groups, are classified as follows:

(1) *Income payments*, including wages and salaries, interest and dividends,

rents, entrepreneurial incomes, constitute money flows from enterprises and the Government to consumers' households.

(2) *Expenditures of income* on consumers' outlay and capital formation, flowing from consumers into enterprises or into Government.

(3) *Saving* effected by consumers, by the Government, by enterprises or the collective income receivers. In the latter case saving arises if income derived from investments is not used for allowances to beneficiaries but is again invested. Saving flows from consumers to entrepreneurs or to the Government.

(4) *Capital formation* consists of additions to the national wealth through purchases of capital goods, including increases of stocks, either on the home market or abroad. These streams flow from the entrepreneurs who purchase capital goods to enterprises at home or abroad from which capital goods are obtained.

(5) *All other payments*, including payments from one group of enterprises to others for semi-finished goods and services rendered. The category also includes payments with regard to imports and exports of goods and services. More detailed comments will be given later together with explanatory notes on the meaning of the statistics used and the methods by which they have been arrived at. The system of national book-keeping, if fully developed, will consist of:

- (1) Accounts of receipts and expenditures, profits or losses for each separate sector of the economy;
- (2) Accounts of changes in capital stock for each sector of the economy separately, together with figures showing how these additions have been financed;
- (3) Balance sheets for each sector of the economy and for the national economy as a whole, showing on one side the capital goods which constitute total wealth in each branch of industry and on the other side how this wealth has been financed.

The system of national book-keeping developed in the following pages is at present quite concise. The statistical material available does not yet permit more detailed tables. It is, therefore, unavoidable that all changes in national wealth have to be summarised in one capital account for the national economy. Later on it will be indicated which tables are most urgently in need of more detailed investigation and require to be replaced by more elaborate surveys as soon as statistical information will permit.

Uniform schemes must underlie all the tables. Therefore one classification of receipts and expenditures will have to be used for all groups of enterprises. Expenditure will be grouped according to:

- (1) Purchases of raw materials and semi-finished products, classified by groups of industries from which they emerge;

- (2) Wages and salaries paid, including premiums paid for social insurance and pension funds;
- (3) Interest and rents, allocated by groups of beneficiaries: consumers' households, enterprises, Government and the so-called collective income recipients;
- (4) Entrepreneurial incomes including profits of firms and of people trading on their own account, or engaged in the liberal professions;
- (5) Undistributed profits of corporations, after tax on corporation profits;
- (6) Taxes paid to the Government, including all indirect taxes and the tax on corporate profits;
- (7) Depreciation allowances.

Receipts include:

- (1) Receipts from the sales of goods and services, classified by sales to foreign countries, to other enterprises, to the Government and to consumers' households;
- (2) Dividends, interest and profits from other enterprises or from the Government;
- (3) Subsidies received.

It will be clear that all classifications of money flows have to correspond to the five classes of money streams indicated above and that classifications by origin or destination have to correspond to the classification of sectors mentioned above. Figures for a group of industries can be reached simply by adding figures for sub-groups.

The sub-classification of industries depends to some extent upon the classifications used in the Census of Production. Uniformity of classification is very important if comparisons have to be made between figures taken from the Census of Production or Distribution, tax statistics, and statistics on exports and imports, as will frequently be necessary. From a national point of view there are still many unfulfilled wishes, not to speak of greater uniformity internationally which is also highly desirable.

The balance sheets of separate groups of enterprises may be added up to form the national balance sheet.

In Tables 1-6 all items are numbered. Each amount appears twice, as expenditure and as receipt. The reference number has been given also, indicating where the other end of the money stream is located.

MONEY FLOWS IN THE DUTCH ECONOMY IN 1938
TABLE I. Combined Account of Expenditures and Receipts of all Enterprises (1938)

No.	Ref. to other Tables	EXPENDITURES	Millions of Guilders	No.	Ref. to other Tables	RECEIPTS	Millions of Guilders
		Payments to foreign countries:				Receipts from sales to foreign countries:	
		(a) For imports of goods:				(a) For goods exported:	
1		Raw materials for industry	739	27		Manufactured products	794
2		Raw materials for agriculture	136	28		Agricultural products	173
3		Finished consumption goods	262	29		All other products	119
4		Agricultural products	129	30	5-1		— 1,086
5		Capital goods	200				
6	5-3		— 1,466			(b) For services exported:	
		(b) For imports of services:				Shipping services, harbour dues, etc.	234
7		Short-term interest, bankers' services, etc.	57	31		Short-term interest, bankers' services	57
8		Dividends and long-term interest	111	32		Long-term interest, profits and dividends	259
9		Entrepreneurial incomes	24	33		Undistributed profits, costs of directors' head offices	133
10	5-4		— 192	34			— 683
		Payments to factors of production:				Sales of goods and services to consumers' house- holds:	
11	3-9	Wages and salaries	1,871	35	5-2		
12	4-3	Premiums for pension funds and social insurance	89			Food	1,600
13	3-10	Rents on houses	490	36	3-1	Clothing and footwear	400
14	3-10	Rents on land	102	37	3-2	Household equipment and rents	1,200
15	3-10	Interest	84	38	3-3	Education, medical care, transport, entertain- ment, etc.	800
16	3-10	Dividends	358	39	3-4		— 4,000
17	3-10	Entrepreneurial incomes	1,137	40			212
18			— 4,131	41	2-10	Sales of goods and services to the Government	p.m.
19	6-5	Undistributed profits of corporations	240	42		Profits and interest received from other enterprises	p.m.
20	2-15	Profits of Government-owned enterprises	56	43		Sales of goods and services to other enterprises	
21	2-13	Interest and redemptions paid to the Government	96			Sales of capital goods:	
22	2-14	All other payments to the Government	155	44		Replacements	500
23		Profits and interest distributed to other enterprises	p.m.	45		Net capital formation	640
24		Goods and services bought from other enterprises	p.m.	46	6-1		— 1,140
25	2-12	Indirect taxes and tax on dividends	475	47	6-2		
26	6-8	Payments to depreciation funds	372		2-9	Subsidies received from the Government	62
			— 7,183				— 7,183

TABLE 2. Government

No.	Ref. to other Tables	EXPENDITURE	Millions of Guilders	No.	Ref. to other Tables	RECEIPTS	Millions of Guilders
		Payments to factors of production:		11	3-5	Total receipts from direct taxes	450
1	3-9	Wages and salaries	304	12	1-25	Total receipts from indirect taxes and tax on dividends	475
2	3-10	Interest paid to individuals	85	13	1-21	Interest and redemptions received from Government-owned enterprises	96
3	4-5	Interest paid to collective income recipients	115	14	1-22	Other receipts	155
4	4-3	Premiums to pension funds and social insurance	60	15	1-20	Profits of Government-owned enterprises	56
5			—				
6	4-4	Annuities paid to the State Pension Fund and the Social Insurance Fund	564				
7	3-12	Unemployed and poor relief	36				
8	6-8	Redemptions of loans of State, provinces and municipalities	230				
9	1-47	Subsidies to private enterprise	128				
10	1-41	Goods and services purchased from enterprises	62				
			212				
			—				
			1,232				1,232

TABLE 3. Consumers' Households

No.	Ref. to other Tables	EXPENDITURE	Millions of Guilders	No.	Ref. to other Tables	RECEIPTS	Millions of Guilders
1	1-36	Food	1,600	9	1-11	Wages and salaries	2,175
2	1-37	Clothing and footwear	400		2-1		
3	1-38	Household equipment and rents	1,200	10	1-13	Interest, dividends, rents, entrepreneurial incomes	2,256
4	1-39	Education, medical care, transport, amusements, etc.	800		to 17		
5	2-11	Direct taxes	450		2-2		
6	5-5	Tourism (in foreign countries)	50	11	4-1	Pensions, annuities, benefits from social insurance	227
7	4-6	Premiums paid to life insurance companies	100	12	2-7	Unemployed and poor relief	230
8	6-6	Saving	288				
			—				
			4,888				4,888

TABLE 4. Collective Income Recipients (Life Insurance Companies; Pension Funds and Social Insurance Funds)

No.	Ref. to other Tables	EXPENDITURE	Millions of Guilders	No.	Ref. to other Tables	RECEIPTS	Millions of Guilders
1	3-11	Benefits from social insurances, life annuities, pensions	227	3	1-12	Payments by Government, employers and employees to social insurances and pension funds	149
2	6-7	Net additions to reserves	173	4	2-6	Annuities received by State Pension Fund and Social Insurance Fund	36
			<u>400</u>	5	2-3	Interest on investments	115
				6	3-8	Premiums received by life insurance companies	100
			<u>400</u>				<u>400</u>

TABLE 5. Foreign Economies¹

No.	Ref. to other Tables	EXPENDITURE	Millions of Guilders	No.	Ref. to other Tables	RECEIPTS	Millions of Guilders
1	1-30	Goods imported from the Netherlands	1,086	3	1-6	Goods exported to the Netherlands	1,466
2	1-35	Services imported from the Netherlands	683	4	1-10	Services exported to the Netherlands	192
				5	3-6	Expenditure of Dutch tourists abroad	50
				6	6-3	Investments in the Dutch East Indies	40
				7	6-4	Other capital export from the Netherlands	21
			<u>1,769</u>				<u>1,769</u>

¹ Table 5 summarises all money flows between foreign countries, including overseas possessions, and the Netherlands.

TABLE 6. Combined Capital Account

No.	Ref. to other Tables	EXPENDITURE	Millions of Guilders	No.	Ref. to other Tables	RECEIPTS	Millions of Guilders
1	1-46	Purchases of capital goods manufactured in the Netherlands and additions to stocks of raw materials and finished products	940	5	1-19	Internal financing of corporations Saving:	240
2	1-46	Purchases of capital goods imported from abroad	200	6	3-7	(a) By consumers' households	288
3	5-6	Investments in the Dutch East Indies	40	7	4-2	(b) By collective income recipients	173
4	5-7	Other capital export from the Netherlands	21	8	1-26	Financed from depreciation funds	500
			<u>1,201</u>				<u>1,201</u>

EXPLANATORY NOTES

Table 1. *Combined Account of Expenditures and Receipts of all Enterprises (1938).*

- 1-5. Based on statistics of imports.
- 7-9. Based on balance of payments statistics. Dividends and interest include returns on foreign investments in the Netherlands or in Dutch companies operating in the Netherlands East Indies, which have their headquarters in Holland. Figures from the balance of payments are based on returns filled out by banks and large companies, shipowners, etc., and are considered reasonably accurate. The data on international capital movements are probably incomplete.
- 11-17. The method of computation is explained in Section 4. Items 11-16 are reasonably accurate. Entrepreneurial income (17) has been evaluated indirectly by subtracting all other items from national income, which is arrived at through the so-called subjective method based mainly on income-tax statistics, which do not provide any breakdown by type of income payment, and on supplementary statistics.
19. Estimate based on the accounts of profits and losses of a sample of 500 corporations. Prior to the war only dividends were taxed and therefore fiscal statistics did not contain information on the amount of undistributed profits.
20. Covers profits from public utilities which are nearly all Government-owned in the Netherlands.
21. Covers amounts paid by Government-owned enterprises.
22. It is not known which kinds of payments are covered by this item. In fact, the national book-keeping revealed an existing shortcoming of the statistics on Government finance (finance of local governments in this case) which had not been detected before.
- Government net borrowing on current account ought to be inserted here. In fact, net borrowing by the Government on current account was nil in 1938.
- 23 24. These items, which find their counterparts in 42 and 43 have not yet been established. If Table 1 is to be split up into separate tables referring to agriculture, manufacturing, mining, etc., it would be necessary to obtain estimates. The abbreviation 'p.m.,' often used in Holland, means *pro memore*, indicating that the item should not be overlooked though figures cannot be given.
25. Includes all indirect taxes and the yield of the tax on dividends which was replaced later by a tax on corporate profits.
26. Depreciation allowances are based on scattered data from various sources, and from accounts for samples of enterprises. The Dutch Census of Production does not contain information on depreciation allowances.

- 27-29. Based on statistics of exports.
- 31-34. Based on balance of payments statistics. Item 32 includes only interest on short term loans which, it is assumed, accrues to banks only. Item 33 includes all interest on long term loans to foreign countries and to the Netherlands East Indies. Item 34 covers undistributed profits of corporations operating in the Indies and the costs of the head offices of these companies in the Netherlands. Items 31 and 34 might be somewhat underestimated owing to technical difficulties involved in the compilation of the basic material. A second tendency works into the opposite direction. It is not certain that all dividends received from abroad accrue to residents of the Netherlands, as foreigners sometimes keep accounts with banks in the Netherlands, cashing dividends and interest received on shares in international and colonial enterprises located in Holland.
- 36-39. Data on consumers' outlay are incomplete and had to be supplemented by rather crude estimates. Available figures relate to the main foodstuffs, clothing and footwear and rents, and possess a reasonable accuracy. All other items are based on averages computed from family budgets, which had to be reweighted because of biases in the distribution by size of family and by income. Because of the limited number of families covered by these budget statistics (about 600 families) the results cannot claim high accuracy.
41. Based on statistics and other data on Government expenditures.
44. It is estimated roughly that annual replacement of capital goods, including houses, but excluding all other durable consumers' goods, amounts to about 500 millions of guilders.
45. Production of capital goods including building activity, investments in stocks and imports of capital goods from abroad amounts to about 1,200 millions of guilders a year. Net capital formation is found by subtracting replacements calculated under 44 from gross capital formation.
47. Includes subsidies to agriculture, to shipping and to the railways.

Table 2. Government

1. Based on statistics of personnel in Government service, partly supplemented by estimates for the smaller local governments for which data are incomplete.
- 2-3. Based on estimates of the total amount of Government bonds held by the public and by institutions. Except for a few perpetual loans, a registration of Government bonds is not available in Holland and the figures given had to be based on estimates. Figures for institutions are based on their annual reports and were subtracted from total debt outstanding, leaving the amount held by the public.
4. Premium payments accrue to the benefit of Government personnel.

6. The annuity paid to the social insurance fund refers to old age pensions and is not restricted to Government personnel.

Table 3. Consumers' Households

6. Crude estimate, also used in the annual balance of payments.
7. Based on official statistics on life insurance. For the purposes of Table 4 we need to know net premiums, that is total premiums less compensation for administrative costs. This detail has been neglected, however, in the following, as for other reasons the figure on total premiums paid could not be accurate.
8. Crude estimate. Total expenditure on consumers' goods and services and direct taxes were subtracted from total income payments to individuals, which are found as a sub-total in the evaluation of national income. The figure was roughly checked by a computation based on an extrapolation of family budget data, which also contain information on saving in each income bracket.

Table 4. Collective Income Recipients (life insurance companies, pension funds and social insurance funds)

The figures given in this table are incomplete as they do not cover a number of small pension funds in private business. All figures given in Table 4 are in principle net, i.e. they do not cover the costs of administration. The offices of these institutions with the expenditures and receipts incurred by their administrative functions are included in Table 1.

Table 5. Foreign Economies

Based on balance of payments statistics. Items 6 and 7 are extremely crude. Capital exports (7) have presumably been higher than indicated in the table. Investments in the Dutch East Indies are roughly estimated.

Table 6. Combined Capital Account

1. Total production of capital goods, including houses and public works. Increases in stocks have been estimated very roughly.
2. Calculated from statistics on imports.
8. Depreciation allowances of enterprises were given in Table 1 (Item 26). Depreciation of Government-owned property, not including Government-owned enterprises, had to be estimated roughly. It has been assumed that for the year 1938 total redemptions of Government loans, excluding loans invested in enterprises, roughly equal depreciation allowances on this property. This could be verified if the administration maintained annual balance sheets of Government-owned property. This is not done in the Netherlands nor in most other countries. So far as the author knows Denmark is the only country where the Government actually prepares annual balance sheets of all Government-owned property.

The diagram at the end of this paper illustrates Tables 1-6 and will need no further explanation.

The national book-keeping system will need extension in several respects:

Table 1. It is very necessary that this table be split up into a number of tables for different branches of industry, agriculture, manufacturing, mining, transport and transportation, banking, insurance, etc. Of course the global figures could not have been given if there had not existed a certain amount of information on these sub-groups, which was simply added up. The problem is, however, that to make the detailed picture complete it is necessary to know exactly the money streams that flow from one industry to the other. These problems involve very elaborate investigations. To mention one: we should need to know exactly which receipts accrued to transport and communications from each separate branch of industry and from consumers' households. It would be equally important to know how streams of goods divide themselves over various branches of industry or trade by which they are absorbed.¹

Most needed of all is a separate table for the banking system, now included in Table 1, which would show clearly the impact of the monetary and credit system upon the national economy.

Table 2. Item 14 requires further research as to the origin of these amounts. The figure given is fairly accurate.

Table 3. The most important requirement is to have closer estimates on the outlay on consumers' goods and services. These investigations are now being carried out at the Central Bureau of Statistics at The Hague and will cover the years 1921-1938.

The estimates on saving (Item 8) also very urgently need improvement. It is hoped that special inquiries covering people in the higher income ranges will provide the basic materials essential for future estimates on saving.

Table 4. As indicated above, supplementary estimates are needed for private pensions funds for which data are incomplete.

Table 5. The balance of international payments is now subject to a close investigation aimed at an improvement of certain figures on the international exchange of services which might still be incomplete. Likewise the figures on international capital movements need further examination.

Table 6. This table is still very concise and further research is needed most urgently. Capital accounts ought to be given separately for each branch of the national economy, showing more clearly the

¹ Cf. W. W. Leontief, *The Structure of American Economy*, 1919-1929, Cambridge, Mass., 1941.

inter-relationships of the financial structure. It is not expected that this programme will soon be realised. An important step forward would be made if capital formation and its financing could be given separately for the Government-owned section of the national economy and for the private sector. Moreover, it will be necessary to replace the account of receipts by a more detailed statement, showing through which channels saving reaches the capital market. It may be advisable to replace Table 6 by a group of tables corresponding to the scheme developed in the well-known report of the League of Nations on capital formation and saving.¹

The precision of the estimates used in Tables 1-6 varies widely and they had to be adjusted to make the totals of expenditures and receipts balance. Because of the many interrelations hardly any figure could be modified without affecting other tables. This process of adjustment had to be carried out carefully in order to reduce modifications of statistics, believed reasonably accurate, to the utmost minimum.²

3. The National Balance Sheet

The national balance sheet is illustrated by Table 7 representing the situation for September 1st, 1939. The left side summarises all capital goods, stocks of raw materials and products and consumers' goods in the hands of the public, where the right side shows the financial claims, e.g. the financial structure of the economy. The table may be considered as the joint balance sheet of all enterprises and the Government taken together, the left side representing the assets, the right side the liabilities. Assets include investments in the colonies and in foreign countries, liabilities include foreign investments in Dutch enterprises and in other property in the Netherlands. All debts and claims between enterprises cancel. Therefore the right side represents claims by the public and by such institutions as pension funds, life insurance companies and by foreign countries. It will be clear that, consequently, the item 'cash' (11) includes cash in the hands of the public and of the institutions mentioned, but excludes cash owned by corporations. It is, perhaps, not at once clear why the totals of real assets and of financial claims should balance. The assumption has been made that the total (replacement) value of all real assets equals the sum total of all financial claims, including e.g. securities which have been valued at prevailing stock market prices. It might be, of course, that stock market prices are higher or remain below the replacement value of existing evaluation of real assets. Deviations between stock prices and the value of real assets may occur because of

¹ Statistics relating to capital formation, Geneva, 1938.

² For a discussion of similar problems involved in this kind of work, cf. R. Stone, J. E. Meade and D. G. Champernowne, 'The Precision of National Income Estimates', *The Review of Economic Studies*, Vol. IX, No. 2 (1942), pp. 111-125.

imperfect foresight of buyers and sellers on the stock market. In order to allow for this bias a separate item called 'discrepancy between value of real assets and stock market prices' might be inserted in the national balance sheet. This has not been found necessary for the year 1939.

It need not be emphasised that Table 7 represents rather crude estimates. Yet it has been found helpful, e.g. in illustrating the changes in financial claims which have taken place during the war, and to which reference will be made in Section 5.

EXPLANATORY NOTES TO TABLE 7

Real Assets

1-4. Agriculture, manufacturing industry and mining, trade, banking and insurance, transport and communication. Estimates are based on several sources: sample survey of capital equipment in agriculture, total capital in industry according to statistics on tax on dividends, official surveys of stocks at the outbreak of the war, statistics on total tonnage of merchant marine and on building costs of ships, rolling stock of railways, street railways, number of automobiles and other vehicles combined with estimates of average value of each type of vehicle, and with the distribution by age of all vehicles of each type, etc. Government-owned enterprises (public utilities, coal mines, etc.) are included among Items 1-4.

5 (a) Government property, excluding enterprises. The assumption has been made that total Government property equalled total Government debt outstanding, as is explained in more detail in Section 4. Prior to the last war this assumption is about valid, as at that time there was no war loan in the Netherlands, the country having remained neutral in 1914-1918. Item 5 (a) has been evaluated as follows (September 1st, 1939):

	Milliards of Guilders
Total debts of State and local authorities	6
Correction for double counting owing to debts of local authorities to the State	0.6
Advances to building societies	0.6
Investments in Government-owned enterprises	1.8
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/> 3
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/> 3
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>

The assumption has been made that the remaining amount of 3 milliards of guilders is about equal to the total value of all Government property excluding Government interests in enterprises.

5 (b-d) Crude figures, probably underestimated. Item 5 (b) refers to the equipment of the Dutch Army prior to 1940.

- 6 (a) The total number of houses amounted to about 2 million at an average replacement value of 2,500 guilders.
- (b) Estimate based on a sample of 300 families taken in 1940 in Rotterdam in order to provide a basis for allowances for war damage.
- 8 Crude estimates mainly based on averages of capital per unit of area in various plantations, capital invested in mining, railways, etc., and including Government debt of Netherlands East Indies held by residents in the Netherlands.
- 9 Crude estimate including direct investments of Dutch companies operating abroad and portfolio investments. Probably underestimated.
- 10 As explained under 5 (a), it has been assumed that prior to the last war Holland practically did not have uncovered national debt.

Financial Claims

As stated above, Items 11-19 relate to financial claims by the public, by such institutions as life insurance companies, pension funds and social insurance funds and by foreign countries. In many instances a difficult statistical problem had to be solved; namely, which part of total claims outstanding is held by the public and the other groups indicated and which part was with corporations and therefore had to be left out of consideration.

- 11 Total banknotes outstanding amounted to 1,150 millions of guilders. It was estimated that an amount of about 500 million guilders was held by the public and the institutions mentioned; that 25 per cent of total balances with the postal check system were held by the public, etc.; and that of total bank deposits only 200 to 300 million guilders belonged to the public, etc.
- 12 Balances of savings banks. It has been assumed that all balances with savings banks belong solely to the public, etc.
- 13 Government loans (State and local bodies). The item has been calculated as follows:

	Milliards of Guilders
Total debts of State and local authorities	6
Correction for double counting because of debts of local authorities to the State	0.6
Held abroad	0.2
Held by savings banks, postal check system, etc.	1.0
	<hr style="width: 100px; margin-left: auto; margin-right: 0;"/> 1.8
Remains	<hr style="width: 100px; margin-left: auto; margin-right: 0;"/> <u>4.2</u>

It has been estimated that of the amount of 4.2 milliards of guilders about 2.5 to 3 milliards of guilders belonged to life insurance companies, pension funds and social insurance funds,

and that the remaining 1 to 1.5 milliards of guilders was in the hands of the public.

- 14 Estimates based on total amount outstanding and stock market prices. Deduction has been made for double counting because of industrial and commercial bonds and shares held by other corporations. Bonds and shares held abroad only roughly known have been subtracted.
- 15 Total mortgages on immovable property (buildings and land) amount to 4.5 milliards of guilders. Of this total an amount of 0.9 milliards of guilders is held by mortgage banks, whose bonds outstanding appear under 15 (a). Mortgages held by the public, etc., appear under Item 15 (b).
- 16 Items 16 (a) and 16 (b) include all property against which no financial claims are held. Item 16 (a) has been found indirectly, by subtracting the total of all other financial claims from the sum total of all real assets. Item 16 (b) is identically the same as Item 6 (b).
- 17 (a) The figure given only covers the amount of this debt of the East Indies held in the Netherlands, mostly by pension funds and life insurance companies.
- (b) Estimate, based on stock market prices, corrected for double counting because of stocks held by other corporations and shares held abroad subtracted.
- 18 The figure given is lower than the corresponding Item 9, as direct investments abroad of Dutch corporations are included among Item 14 (b).
- 19 Estimate based on dividends and interest paid to foreign countries and including crude estimate of short capital temporarily in Holland.

TABLE 7. The National Balance Sheet for the Netherlands (September 1st, 1939)

CLASSIFICATION BY REAL ASSETS		Milliards of Guilders	CLASSIFICATION BY FINANCIAL CLAIMS		Milliards of Guilders
1. Agriculture:			11. Cash (notes, bank deposits, etc.)		0.8
Buildings and land		2.5	12. Balances with saving banks		1.3
Machines and farm implements		0.5	13. Government loans (State and local governments)		4.2
Livestock		0.5	14. (a) Industrial and commercial bonds		0.4
		3.5	(b) Industrial and commercial shares		3.5
2. Manufacturing industry and mining:			(a) Bonds of mortgage banks		0.9
Buildings and land		1.0	(b) Mortgage outstanding		3.6
Machines, tools and implements		3.0	16. (a) Private property (houses, farms, small enterprises), unencumbered		7.8
Stocks of raw materials and finished products		1.0	(b) Durable consumers' goods		5.0
		5.0	(a) Government bonds (Netherlands East Indies)		1.0
3. (a) Trade:			(b) Shares of Dutch enterprises operating in the Netherlands		
Shops, offices, stores		1.0	East Indies		2.5
Stocks of merchandise		1.5	18. Investments in foreign countries		2.0
		2.5			33.0
(b) Banking and insurance:			National wealth, including durable consumers' goods ¹		
4. Transport and communications:			Foreign investments in Dutch and Colonial enterprises and in other property in the Netherlands		2.0
(a) Railways		0.4			
(b) Merchant marine, inland vessels, fishing vessels		0.8			
(c) Street railways, buses, trucks, etc.		0.3			
		1.5			
5. (a) Government property, excluding enterprises		3.0			
(b) Equipment of the Dutch army		0.2			
(c) Theatres, cinemas, churches, private hospitals, other private institutions		0.5			
(d) Liberal professions (inventories)		0.95			
6. (a) Houses		5.0			
(b) Furniture and other durable consumers' goods		5.0			
7. (a) Gold and bullion		1.1			
(b) Short-term balances abroad		0.4			
8. Investments in the Netherlands East Indies		4.0			
9. Other investments abroad		3.0			
10. Uncovered national debt		—			
		35.0			
			TOTAL		35.0

¹ National wealth, excluding durable consumers' goods 28.0

4. The National Income of the Netherlands:

Definition and Method of Evaluation

The definition adopted in the Netherlands is similar to the definition now adhered to by most of the investigators in this field. National income is defined as the sum total of the *net* value of all goods and services produced in the country during a year, including net income from abroad. By net value is meant that the goods and services bought from other industries and the capital equipment consumed in the process of production have to be deducted. Only those goods and services are included which generally are exchanged for money. National income may therefore also be defined as the sum total of all payments to factors of production, including profits of entrepreneurs. The following details require further specification:

1. The services rendered by housewives have been excluded.
2. The net rental value of houses has been imputed including owner-occupied houses.
3. Services rendered by all other durable consumers' goods have been left out.
4. The assumption has been made that the net value of the contribution of the Government to the national income equals total Government expenditure less the value of the goods and services purchased from private enterprises and the capital equipment used up. The net contribution of Government therefore covers wages and salaries of Government personnel, including premiums paid to the State Pension Fund and for social insurance plus the interest on the national debt and the debts of the local governments. Part of the Government debt is invested in Government-owned enterprises. In evaluating the national income by the so-called objective method, i.e. by evaluating the contribution of each branch of industry or trade to national income, care should be taken to avoid double counting arising from the fact that the Government receives interest from investments in enterprises owned by the State or by local authorities.

Depreciation allowances on Government property outside enterprises owned by the Government have never been evaluated. They cannot be deducted therefore from total Government expenditure in order to arrive at the net contribution to national income. Instead we have deducted total redemptions on loans of State and local bodies. The procedure may be interpreted as assuming that redemptions on Government loans must equal depreciation allowances on Government property. This is justified only if we may assume that total Government debts outstanding equal total Government property and if the average expectancy of life of these capital goods equals the average duration of the loans. The first assumption is probably about right, as prior to the last war Holland did not have war loans.

5. Unemployment assistance has been considered as transferred income, but this is not the case with the wages paid to people on public works schemes.

As premiums paid to pension funds and social insurance funds and interest received on the investments of these funds are included in national income, the pensions and benefits paid had to be considered as transferred income.

6. Subsidies and other forms of Government assistance to industries have not been included among transferred income, but are regarded as payments made because prevailing prices are considered as not representing a reasonable reward for services rendered.
7. Undistributed profits of Dutch companies operating in foreign countries or in the overseas territories have been included in national income. As a rule these undistributed profits are re-invested in the enterprises abroad.
8. Interest received by banks as a rule exceeds interest paid to depositors, holders of savings banks deposits, and so on. Only interest paid has been included in national income. The margin between interest received and interest paid has been considered as payment for services rendered by the banks to businesses or to the Government.
9. Tax on corporate profits has been considered as payment for services rendered by the Government to enterprises. The rapid increase in the yield of the tax on corporate profits during the war, mainly due to a rise in the rate of tax, has therefore *not* resulted in a corresponding increase of the national income.
10. Family allowances received from people in the Netherlands East Indies or in foreign countries are included in the national income of the Netherlands.

In principle national income of the Netherlands has been approached by two methods: the personal or subjective method and the real or objective method.

The subjective method is mainly based on the income-tax statistics with additional estimates for items not covered. A summary of the computation is given in Table 8.

EXPLANATORY NOTES TO TABLE 8¹

1. Incomes assessed in the fiscal year 1930-1931 have been earned in 1929. This lag in income-tax statistics has been taken into account.
2. These additions originate in deductions granted by the Revenue Act. A few minor deductions on which quantitative information does not exist have been left out of consideration.

¹ For more detailed explanations in English, readers may be referred to Ph. J. Idenburg and J. B. D. Derksen, 'Methods of Evaluation of the National Income of the Netherlands, 1921-1938', *Revue de l'Institut International de Statistique*, 1940, 1-2, pp. 13-31.

- Item 2 (c) is included in Item 6 as it is not always possible to state accurately how much of total premiums paid is to be considered as paid by employees and how much is contributed by employers.
3. Evasion from income tax has been estimated at 10 per cent of total assessed income. There are indications that in times of booms evasion has actually been higher, whereas in the depression the evasion probably remained under 10 per cent.
 4. Estimates based on the census of population (distribution of families by size) and other data.
 5. Estimates based on the census of occupations and other data.
 6. Includes all contributions and premiums paid by employers and employees and the Government to pension funds and social insurance funds. Data for private pension funds are incomplete.
 7. Crude estimates based on various sources. The figures given have been reduced to allow for the fact that a considerable part of this income is being transferred for poor relief, etc., and does not appear under Items 11 or 12.
 8. Data for private pension funds are incomplete.
 9. Undistributed profits. Estimate based on a sample of about 500 corporations. Corporate income tax has been deducted.
 10. Including the distributive share of the State in the profits of the Netherlands Bank (prior to the war a private corporation).
 11. Unemployment benefits and dismissal compensations to Government employees only. Other transferred incomes have been accounted for before (cf. Item 7).
 12. Data for private pension funds are incomplete.
 14. Dividends appear in personal income-tax statistics when paid out, whereas according to the definition of national income dividends should be imputed when produced in the corporations. Now as a rule dividends are paid out the year after that in which they are earned by the corporations. Therefore dividends had to be shifted one year backwards. The correction has not been applied to dividends received from abroad.

The subjective method could be applied for the years from 1900 onwards. For the years prior to 1915 the method of evaluation differs from the method used for Table 8, as the tax system prevailing until 1915 was in many respects different from the tax system in use from 1915 onwards. It would be going too far to explain in detail the method of computation used for the years 1900-1915. The complete set of estimates of the national income of the Netherlands for the years 1900-1938 is given in Table 9. The same definition of national income has been used throughout the period considered in Table 9.

An allocation of national income by industries can also be made. The method used, which is based on the Census of Production and analogous sources, aims at giving for each industry the contribution to total national income. The method of estimation varies widely from industry to industry. Many of the problems that had to be overcome are connected with the characteristics and peculiarities of Dutch statistics, and therefore it seems of little interest to go into details.

The estimates by this so-called objective method are always lower than figures given in Table 8. This is probably due to the fact that for some branches of industry available sources of information are incomplete. Though the estimates arrived at by the objective method fall short of the results of the subjective method, both series move closely parallel for the period considered.

The figures in Tables 8 and 9 are at the present time the most reliable estimates available on the national income of the Netherlands.

TABLE 8. National Income of the Netherlands (subjective method)

(in millions of guilders)

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
1. Total income assessed.	4,367	4,206	3,657	3,157	3,042	2,828	2,666	2,738	2,934	3,010
2. Corrections for deductions granted by the Revenue Act:										
(a) Contributions to Trade Unions	11	12	13	13	13	12	11	10	11	11
(b) Premiums for life insurance	96	104	108	108	107	107	105	106	109	116
(c) Premiums to pension funds and social insurance funds, paid by employers (included in 6)	437	421	366	316	304	283	267	274	293	301
3. Evasion from income tax	157	161	157	157	181	185	194	203	210	221
4. Exemptions for families with children										
5. Incomes below tax exemption limit:										
(a) of people gainfully employed, including un-employed on relief	652	692	835	970	1,016	1,095	1,158	1,166	1,154	1,149
(b) old age pensions, etc.	71	68	70	82	83	81	82	80	80	80
I. TOTAL INCOME OF INDIVIDUALS (1-5)	5,791	5,664	5,206	4,803	4,746	4,591	4,483	4,577	4,791	4,888
6. Premiums and other contributions by Government and employers to social insurance and pension funds	140	171	177	164	156	150	143	140	146	149
7. Incomes of charities, foundations, etc.	75	70	65	60	60	60	60	60	60	60
8. Net return on investments of life insurance companies, pension funds, etc.	91	90	103	109	115	123	123	114	117	115
9. Undistributed profits of corporations	300	90	0	-75	-80	20	85	120	260	240
10. Surplus profits of Government enterprises	55	48	45	49	45	56	49	53	55	56
II. TOTAL (6-10)	661	469	390	307	296	409	460	487	638	620
11. Dismissal compensations and unemployment assistance	12	15	54	105	119	108	122	133	119	121
12. Benefits and annuities of social insurance, pensions, life annuities	161	181	192	190	191	199	204	209	219	227
III. TOTAL TRANSFERRED INCOME (11-12)	173	196	246	295	310	307	326	342	338	348
13. Total (I plus II minus III)	6,279	5,937	5,350	4,815	4,732	4,093	4,017	4,722	5,091	5,100
14. Correction for lag in dividend payments	-4	-5	-88	-69	-7	-33	16	91	0	-7
NATIONAL INCOME	6,275	5,932	5,262	4,746	4,725	4,660	4,633	4,813	5,091	5,153

TABLE 9. National Income of the Netherlands, 1900-1938

(in millions of guilders)			
1900	1,699	1920	6,006
1901	1,761	1921	5,598
1902	1,797	1922	5,323
1903	1,845	1923	5,391
1904	1,884	1924	5,577
1905	1,948	1925	5,622
1906	2,041	1926	5,686
1907	2,080	1927	5,843
1908	2,140	1928	6,220
1909	2,202	1929	6,275
1910	2,283	1930	5,932
1911	2,384	1931	5,262
1912	2,556	1932	4,746
1913	2,670	1933	4,725
1914	2,595	1934	4,660
1915	3,093	1935	4,633
1916	3,550	1936	4,813
1917	3,593	1937	5,091
1918	4,121	1938	5,153
1919	5,453		

5. National Book-keeping for the war period

The national book-keeping system has been used to show the impact of the war and the German occupation upon the economy of the Netherlands. For various reasons the statistical information for the war years is very incomplete. Because of lack of personnel and machines many statistics got far behind, as happened in the case of the annual statistics of industrial production. Other statistics were discontinued by order of the German occupation authorities. It also happened often that questionnaires were badly filled up by the enterprises and agencies concerned and therefore could not be used very well for statistical purposes. Statistics on Government finance got far behind, as during the war many new taxes were introduced closely resembling the German tax system. As a consequence fiscal authorities were overburdened with work and the compilation of the basic material underlying the tax statistics could not be carried out in time. Where in other cases compilation was still possible, as e.g. statistics of imports and exports, available figures are very inaccurate, as transactions ordered by the German military often escaped statistical observation.

Because of the deterioration of statistics during the war years it is not possible to give a series of sufficiently accurate annual figures. The statistician has to limit himself to a summary of the five war years taken together, using estimates which in many cases are very crude. Though, consequently, these figures cannot be used for a detailed analysis they show roughly which part of the national output of goods and services had to be put at the disposal of the authorities of occupation and which part was left to the Dutch people, and how production and Government expenditure were financed. Tables 10 (a-f) contain the figures of the national book-keeping system for the war years.

EXPLANATORY NOTES

Tables 10 (*a-f*) cover the period from May 10th, 1940, when Holland was invaded by Germany, until May 8th, 1945, when the country was liberated following the unconditional surrender of the enemy.

Compared with Tables 1-6, the Tables 10 (*a-f*) are much more concise. The latter show the national income, the part of the total net output that had to be put at the disposal of Germany or of German authorities in Holland, the changes that took place in the financial structure of the country and the financing of Government expenditure, and of the expenditure of the German authorities.

Some figures constitute very crude estimates and therefore have been rounded off in milliards of guilders. Other figures, believed to be more accurate, are expressed in milliards of guilders using one decimal place. The crudeness of the estimates explains why sometimes both sides of the tables do not balance very accurately. Transactions on current account and on capital account are given jointly, as it is sometimes difficult to give them separately.

Table 10 (a) Productive incomes include income in kind of farmers and other groups.

Transferred incomes include interest on Government loans issued during the war. Redemptions include redemptions on Government debts, on other loans, and on mortgages. However, redemptions paid by farmers to other private people, estimated at about 0.6 milliards of guilders, are not included in Table 10 (*a*).

Sales of securities include securities sold to Germany (estimated at 2.3 milliards of guilders, including redemptions received by Dutch holders of German and other Central European bonds), paintings and other valuables sold to Germany (0.1 milliards of guilders).

The large amount of gross savings hoarded illustrates the enormous increase in banknotes and deposits held by the public.

War losses are expressed in the price level of May 1940.

Table 10 (b). Sales to German authorities in Holland include costs of defence works built during the war years. Sales to Germany (balance of exports) include estimates of sales and requisitioning which do not appear in the official statistics of exports.

The rapid depletion of stocks of raw materials and finished products during the war (estimated at 3 milliards of guilders) and the arrears in the maintenance and repair of capital goods reflect themselves in large amounts of redemptions and gross saving.

Table 10 (c) The figures given represent crude estimates, as available statistics cover only the Central Bank and the five largest banks of the country. The gold stock of the Central Bank had been sent to America before the outbreak of the war except for an amount of about 300 millions of guilders, which was requisitioned by Germany as a 'contribution to the war on the Eastern Front'.

Table 10 (c) also includes the mortgage banks. Redemptions and interest amounting to 0.2 milliards of guilders refer to loans issued by mortgage banks.

Advances to Germany represent a claim of the Central Bank because of the balance of exports of German purchases of securities, etc., redemptions received from abroad and various services.

Table 10 (d) Total tax receipts include direct taxes paid by consumers' households (3.2 milliards of guilders), indirect taxes and corporate income tax (5.4 milliards of guilders). Compensations for war losses have been paid out to a small amount, mainly to enable the people concerned to buy the first necessities of life. All other compensations consist of inscriptions in the ledger of the national debt to be paid out later when reconstruction is possible. The greater part of the war losses still awaits settlement by the authorities. Therefore an item has been inserted for loans to be issued later for damages due.

Subsidies (0.4 milliards of guilders) mainly refer to agriculture; new capital formation (0.5 milliards of guilders) consists of Government participation in a few manufacturing industries (e.g. the rayon industry) because of war conditions.

Costs of the German occupation include payments of 2.4 milliards of guilders to the German treasury in reduction of the Dutch export surplus.

Table 10 (e). Collective income recipients here include savings banks, life insurance companies, pension funds, social insurance funds, mortgage institutions, etc. New investments during the war mainly consist of purchases of Government bonds and treasury bills.

Table 10 (f). The huge export surplus of goods and services, securities and other valuables has been financed by the Central Bank (De Nederlandsche Bank), resulting in an enormous increase in total money circulation. Of this export surplus an amount of 2.4 milliards of guilders was cancelled by Germany as payments for 'external costs of occupation' and a contribution

to the war on the Eastern Front. These payments resulted in a corresponding increase of the Dutch national debt.

Payments in Reichsmark notes refer to a great variety of goods and services bought or requisitioned by the German military and civil authorities or ordered by civilians from Germany.

Dutch holdings of German and Central European bonds were to a large extent redeemed and Dutch investments in German industrial enterprises were sold when stock prices went up. The Dutch investments in German securities dated back from years prior to 1930. During the war German investors also bought shares in Dutch industrial enterprises and Germany participated directly in a number of industries in Holland.

TABLE 10. National Book-keeping for the War Period
(May 10th, 1940—May 8th, 1945)

(in milliards of guilders)

(a) CONSUMERS' HOUSEHOLDS			
Productive incomes	32	Consumers' expenditure	27.0
Transferred incomes	4.2	Direct taxes	3.2
Redemptions received	0.5	Saving (gross), invested	3.4
Sales of securities, etc.	3.0	Saving (gross), hoarded	6.5
Compensation for war losses	0.1		
	<hr/>		<hr/>
	40	War losses	40
	0.2		0.3
(b) ENTERPRISES (excluding banks)			
Sales to Dutch consumers	27	Income payments	29
Sales to Dutch public authorities	1.8	Premiums to social insurance and pension funds	1.0
Sales to German authorities in Holland	8	Taxes and other payments to the Government	5.4
Sales to Germany (balance of exports)	1.5	Saving (gross), invested and hoarded	1.8
	<hr/>	Redemptions and interest	1.8
Total sales of goods and services	38		<hr/>
Government subsidies and Government capital formation	0.9	War losses	39
Sales of securities to foreign countries	0.1		2.6
	<hr/>		
	39		
	2.6		
(c) BANKS (including postal check system)			
Increase of notes outstanding	3.0	Treasury bills bought	3.5
Increase of deposits	4.6	Government bonds bought	0.3
Redemptions received and interest	1.0	Redemptions and interest	0.2
Gold sent to Germany	0.3	Advances to the Government	0.6
	<hr/>	Advances to Germany	4.3
	8.9		<hr/>
			8.9
(d) GOVERNMENT			
Revenue from taxes	8.6	Salaries and wages	2.8
Government loans issued	3.2	Unemployed and poor relief	1.8
Treasury bills sold	5.4	Material expenses	1.8
Advances	0.6	Interest and redemptions	2.4
	<hr/>	Subsides and new capital formation	0.9
	17.8	Costs of the German occupation	8.0
Loans to be issued because of war damages due	3.1	War damages paid	0.1
			<hr/>
			17.8
		War losses on public property	0.3
		War damages due	2.8
(e) COLLECTIVE INCOME RECIPIENTS			
Premiums received	3.8	Benefits, pensions and other payments	2.4
Interest and redemptions	2.0	New investments	3.4
	<hr/>		<hr/>
	5.8		5.8
(f) FOREIGN COUNTRIES			
Advances to Germany	4.3	Exports surplus from Holland	1.1
Payments to the German Treasury	2.4	Purchases paid in Reichsmark notes	2.3
	<hr/>	Wages, interest and other services	0.6
	6.7	Redemptions and securities bought	2.4
		Gold	0.3
			<hr/>
			6.7

Impact of the War upon the National Wealth of the Netherlands

The war years have resulted in heavy losses on the national wealth of the Netherlands. New capital formation during the German occupation was practically nil. The losses inflicted by the war, either directly or indirectly, can be classified under four headings (all amounts are expressed in prices per September 1st, 1939):

	Milliards of Guilders
(a) Damages due to war acts, evacuations, demolitions, inundations, defence works erected by the German military, losses of mercantile marine	2.2
(b) Requisitioning of stocks of raw materials and finished products, machine tools and implements, railroad equipment, tramways, automobiles and other vehicles, live stock, army equipment, furniture and other durable consumers' goods, gold and bullion	1.6
(c) Repairs and maintenance which could not be made good	1.0
(d) Other capital depletion (depletion of stocks of raw materials and finished products, of live stock, durable consumers' goods, etc.)	3.2
Total decrease of national wealth	<u>8.0</u>

The losses on the investments in the Netherlands East Indies are not included. Excluding disinvestments in the overseas possession and in foreign countries the total loss inflicted by the war and the German occupation amounts to about 30 per cent of the pre-war national wealth of the Netherlands.¹

A classification of capital depletion during the war period by types of industry is given in Table 11.

TABLE 11. Total Losses in National Wealth of the Netherlands from September 1st, 1939, to May 7th, 1945, classified by Industries

(Expressed in prices of September 1st, 1939)

	Millions of Guilders
Agriculture	700
Manufacturing industry and mining	1,950
Trade	1,700
Banking and industry	15
Transport and communication	840
Government property, excluding enterprises	690
Theatres, churches, liberal professions, etc.	60
Houses	570
Durable consumers' goods	1,175
Gold	300
	<u>8,000</u>

¹ Professor F. Baudhuin has estimated that for Belgium the losses suffered amount to about 15 per cent of its pre-war national wealth. Estimates on a comparable basis for other occupied countries were not known to the author at the time this paper was written.

6. Concluding Remarks

In recent years the study of the so-called 'social accounts' has been particularly stressed by economic statisticians, and various methods of presentation are used. In this paper a framework has been developed which will help to give a complete picture of all money flows in an economy. This method, to which the name has been given of a national book-keeping system, has been illustrated by an example worked out for the Netherlands economy. The figures given nearly all represent estimates in the present state of our knowledge. They may be replaced later by more accurate figures when statistical research advances. It is believed that the use of a method well known in accountancy also offers advantages for the presentation of figures concerning the economy as a whole.

The number of tables used in this example is still limited. It is, however, easily possible to extend this number by giving separate tables for all branches of industry, and by distinguishing more money streams. For a detailed analysis of the structure of the economy, and in view of the applications to be made in the study of problems of economic policy, an extension of the number of tables and money streams is a necessity. Much statistical work remains to be done before it can be said that the national book-keeping system constitutes a valuable tool in economic analysis.

The method of the national book-keeping system also has the advantage that it offers in a concise form a programme of research. By studying the tables and figures it is easy to see where statistical information is still unsatisfactory and further research is needed. It is possible to organise a detailed research programme, using the national book-keeping system as a general guide.

The national book-keeping system may also help in stimulating statistical inquiries where they are really needed. It has been found a useful tool when co-operation between different statistical agencies had to be organised, as it helps to make clear why a research project is initiated.

APPENDIX II

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