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THE 1987 REVISION OF THE NETHERLANDS' NATIONAL ACCOUNTS*)

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Abstract

The Dutch national accounts give a quantitative description of the economic processes which take place in our country in a certain period of time. The data to compile the national accounts are derived from a great many sources, which vary in composition and quality over time. This is of influence on our insights in the process levels and trends, expressed by the account figures. As the demand for information from users also evolves, sometimes definitions, classifications and methods need to be adapted, leading to a revision.

The revision that was completed in 1992 has improved the Dutch national accounts in three ways. First, new and other data sources have been used, like Production statistics of service industries, the Budget Survey and Statistics on fixed capital formation. Secondly, the integration process has been improved by the use of detailed make- and use-tables instead of more aggregate input-outputtables. Thirdly, several changes in bookkeeping conventions have been introduced, like a net instead of a gross registration of processing to order.

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1. Introduction

The Dutch national accounts give a quantitative description of the economic process which has taken place in our country in a certain period of time. The information collected to compile the national accounts comes from a wide variety of sources, whose composition and quality change in time, leading to new insights in the level and development of units. As users' demand for information also changes, sometimes definitions, classifications and methods need to be adapted, leading to a revision

Incorporating changes in the national accounts is not that simple. A relevant description of the economic process should fulfill two conditions: viz. it must be up to date, i.e. the most accurate possible description of the economic process for a certain period, and it must be continuous, i.e. comparable with descriptions for previous periods. It is not always possible to fulfill these conditions simultaneously. To solve this dilemma an approach is chosen in which the figures are always comparable with those for a fixed base year.

To this end the changes between periods are estimated as accurately as possible. With the aid of these changes levels are calculated which are comparable with the level in the base year. This satisfies the continuity demand.

To meet the up-to-dateness condition, the national accounts figures must be revised every so often. In such a revision the levels of the figures are adjusted according to recent insights, and definitions, classifications etc. can be reconsidered. Also a detailed analysis of the available statistical material is carried out for the base year. With insights thus obtained the figures for preceding years are adjusted.

The CBS has just completed a revision for base year 1987, which was necessary for nearly all above-mentioned reasons. The previous revision

referred to base year 1977. In recent years new sources have become available, while existing sources are used more intensively. In addition the method of compiling the national accounts has been further developed. The classification of the figures has been more aligned with those of the CBS system of economic statistics.

In *National Accounts 1992* the revised figures are given for the years 1985-1992. In the coming years the figures for 1984 and preceding years will be revised. These will be published as soon as they have been calculated. The figures in the publication *The production structure of the Netherlands economy* will be brought into line with the revised figures; and the quarterly accounts and the regional accounts will also be adapted, and will be published in the series *Quarterly national accounts* and *Economic figures by region*.

2. Backgrounds of the revision with base year 1987

In the period 1977-1987 important new statistics became available and existing sources were used more intensively. Analysis of this information led to the conclusion that it was time for a revision of national accounts data. It was also clear that after the revision a more institutional approach could be used for the national accounts. As a consequence, changes were required in the method of integration of data and in the registration of transactions.

2.1 National accounts and basic statistics

Most of the statistical information used for the national accounts is taken from CBS statistics. The CBS system of economic statistics has expanded considerably in recent years, mainly in the following areas:

- production statistics for trade;
- production statistics for some groups in business services;
- production statistics for petroleum refineries;
- production statistics for the manufacture of optical and other instruments;
- costs and finance statistics for social work, culture, sport and recreation;
- statistics of the financing of enterprises;
- statistics of municipal accounts;

The system of economic statistics is built up mainly of institutional statistics, i.e. statistics describing economic activities (transactions) by groups of actors (units).

The CBS production statistics, for example, describe the output of establishments. Establishments are enterprises - or parts of enterprises - which take more or less independent decisions about their production process. The description of the output refers to the sum of the

principal activity (e.g. output of foodstuffs) and - if present - secondary activities (e.g. the output of trade and transport services). In addition there are functional statistics, to describe certain phenomena, such as imports and exports of goods or the total output of transport services.

The processes of distribution/redistribution of income, use of income and financing are mainly described for groups of institutional units in the system of economic statistics. In this context these units consist of households and enterprises which can take independent decisions about the distribution/redistribution of income and capital and the way of financing. Often the institutional unit coincides with the establishment. In some situations (mainly in large enterprises) the institutional unit encompasses several establishments.

Before revision, the description of the production process and the processes of distribution/redistribution of income, use of income and capital transactions was of a functional nature in some respects. It focused on a description of processes. In a situation where only limited data were available this description was the only possible one. It meant that linking the national accounts data to the available information in the underlying statistics was at times difficult. This in turn meant that detailed data in, for example, the production statistics could only to a limited extent be considered in relation to national accounts data.

As mentioned, the system of basic statistics has been developed further in recent years. This has made it possible to switch to a more institutional description of the economic process for this revision (base year 1987). So as far as the classification of economic activities and sectors, and the registration of transactions is concerned, the national accounts will connect up better with the available information in the basic statistics.

The national accounts will thus gain in quality and flexibility: the grouping of the transactions and the grouping of actors afford more possibilities for further specification and alternative delimitations.

An institutional description, for example, encompasses the basic material needed for a functional description. However, an institutional description cannot be derived from functionally structured basic material.

The improvement in quality of the estimates is mainly achieved by a better utilization of the available basic material. The more institutional orientation of the national accounts also means a better link-up with international guidelines on national accounts laid down by the United Nations and the European Communities.

- This more institutional description also meant it was necessary to:
- bring the description of the economic process (production, generation of income, distribution/redistribution of income, use of income and financing) more into line with the rules used in the basic system of economic statistics;
 - adjust the method of incorporating the figures in a coherent description of the economic process to the available statistical information;
 - connect the registration of transactions more with the actual transactions of actors (units).

For the description of the production process this means that the classification of economic activities relates more to establishments, or groups of establishments, than in the past. This is mainly noticeable in the area of trade. The data for the industry class *trade* now refer to establishments which are classified by principal activity in this class. Before this revision trade was described functionally, i.e. data on trade referred to all trade activities (principal and secondary activities), regardless of in which class the principal activity of the unit concerned was classified. The institutional delimitation of the activity *trade*, therefore, has implications for data on many industry classes. Secondary trade activities are now included in the data on the economic activity in which the units performing them are classified by their principal activity.

The institutionalisation of the system also means that the contents of the sectors have changed. This is especially noticeable in the description of transactions in goods and services, the distribution of primary income and capital transactions. In the more functional description, all transactions concerning productive activities and the corresponding primary income transactions and capital transactions of enterprises without legal personality (including those concerning the operation of owner-occupied dwellings) were registered under the sector *non-financial enterprises*. In this institutional description these transactions are registered under the sector *households*. In the present paper only those changes are introduced which were necessary, given the availability of data and the estimation methods. This means that the usual sector classification is maintained nearly without changes. The reason for this is the wish to have post and pre revision tables which connect up as much as possible for the sake of comparability.

The past complete link between the sum of economic activities which now come under public administration and social security funds, defence, and state and subsidized education on the one hand, and general government (i.e. the sum of the sector central and local government and the sector social security funds) on the other, no longer exists. The more institutional description means that a number of economic activities in the sector central and local government have moved to activities such as agriculture, health services, cultural, sports and recreational services etc. due to the production-process orientated description.

2.2 Changes in the method of integration of data

Changes had to be made in the method of integrating data if the available data were to be utilized better, as desired. The main aspects of these changes are described below.

Before revision, supply and use data were confronted in input-output tables of the type economic activity x economic activity. Demand and supply were thus balanced at a relatively high level of aggregation. In this revision supply and use tables of the type product group x economic activity were introduced to describe the production process. The supply table contains the output per economic activity and the imports, both specified by product group; the use table contains the use per economic activity and per final expenditure category, also specified by product group, as well as primary inputs of the industry classes. Supply and use are balanced (per product group) on the basis of these tables.

The input-output tables (economic activity x economic activity) are subsequently derived from the supply and use tables. Thus on the one hand an important refinement of the statistical method is achieved, while on the other a better link up with the basic statistics is achieved via the supply and use table.

The more institutional delimitation of sectors and the availability of complete financial accounts makes it possible to use the income and financial data more intensively after revision. For example, there is a confrontation per sector of value added with the results of the sectoral description of income outlay, capital and financial transactions. In this respect, to some extent the financial accounts have a double function in the system of national accounts. First they describe the changes in the assets and liabilities of the sectors, a role in which they have an independent significance. They also round off the description of flows in the national accounts: the description of current transactions including capital transactions results in the net increase (+) or decrease (-) in financial assets for each sector. Ideally this difference equals the net change in financial assets and liabilities which is derived from information on changes in assets and liabilities in the financial accounts. In practice, however, there are discrepancies. The size of these discrepancies plays a part in the plausibility control of the results.

2.3 Changes in definitions and delimitation of transactions

In establishing the transactions, the registration of actual transactions between actors is aimed at more than it used to be. In this respect there are several changes compared with the pre-revision situation. The main ones are mentioned below.

In some cases there is the decision of whether to register transactions in *gross* or *net* terms. The institutional point of view often leads to gross registration. Groups which were registered net and which are registered gross since the revision are:

- homes for the elderly etc.;
- advertising agencies, design bureaus and consultancies;
- agencies for temporary employees;
- general government;

For agencies for temporary employees, for example, this means that the output after revision is defined as the total output (including the wages of the temporary employees). Before revision only the margin for the mediation activities was registered as output, and the wages of the temporary employees were booked as wages paid by the company where the employee worked.

For the improvement trade (i.e. contracting out part of the production process) there was a gross registration of the transactions before revision. After the revision (in accordance with the registration of the production statistics and the balance of payments of the Dutch Central Bank) most of these are recorded net.

For indirect taxes the registration has switched from cash based to (approximate) transaction based. This means that moment of registration of the taxes links up better with the moment of registration of transactions in goods and services.

Value added tax (VAT) too switched from cash based to approximate transaction based. Here there is a discrepancy between VAT paid to the state on cash or transaction basis on the one hand, and VAT paid by consumers (imputed VAT) on the other. The imputed VAT is calculated by multiplying the relevant transactions by the tariffs. The discrepancy is partly caused by a number of exceptions in legislation for VAT eligible entrepreneurs (e.g. a law for small businesses). Another part is due to uncollectability, exoneration and evasion of this tax.

In the context of the national accounts the value of transactions in goods and services, and thus also the gross value added, are initially calculated partly based on imputed VAT. Before revision the amount of the discrepancy was subtracted from the estimated value of the imputed VAT on final consumption expenditure of households. This meant that the VAT included in the calculation of the value of transactions in goods and services equalled paid VAT (cash based). Thus the level of value added at market prices and of final expenditure were underestimated. The underestimation of final consumption expenditure by households was compensated not in the volume, but in the price component, and therefore resulted in a deterioration of the estimation of the price change of final consumption. From this revision on the discrepancy will not be subtracted from imputed VAT. The imputed VAT is used for the calculation of the value of the transactions in goods and services and the value added. VAT received by the government (transaction based) is included in the system of national accounts as VAT paid. The discrepancy is part of other income in the sector non-financial enterprises; it is not allocated to separate economic activities. This will lead to a improvement of the calculation of the value of the transactions in goods and services.

The basic information available for the calculation of the interest flows between sectors has been further extended recently. Consequently we can now switch to a registration of the actual interest flows between the actors. This implies that the interest costs and effects resulting from entrepreneurial activities (including owner-occupied dwellings) are now registered as part of the interest costs and effects of the sector

households. Before revision these interest flows were allocated to the sector non-financial enterprises.

2.4 Some specific changes

In addition to the above-discussed new sources, changed estimation method, system and registration changes, there are a few specific changes significant for the interpretation of the results of the revision.

The revision includes a number of improvements in the estimation of imports and exports of services. For example, there are new estimations of incoming and outgoing border-crossing travel (holidays, short stays and business trips). It has also been proven possible to clarify and quantify a number of definition differences between registrations of the Dutch Central Bank and the CBS. For some transaction categories the difference between the cash registration of the Central Bank and the intended transaction-based registration by the CBS is quantified. Although this has led to an improved description of imports and exports of services, not all the problems in this respect have been solved.

The delimitation and registration of transactions by general government links up better with international guidelines. Consequently, among other things, taxes are defined more widely. Levies, for example, which used to be balanced with subsidies, are now registered as indirect taxes. Further obligatory payments to the government not connected with a service rendered by the government are now included under taxes, for example: refuse collection rates and sewage duties, which used to be registered as unrequited current transfers n.e.c. On the other hand payments by households of fees for schools, universities and examinations are no longer considered as unrequited current transfers n.e.c. to the government, but as payment for services rendered.

3. Summary of the main results

The revision of the results consists in an improved estimation of national accounts data, and mainly concerns the levels of the data. The main reasons for adjustment are:

- new estimates, for example by using new statistical information, the analysis of imports and exports of services and the effect of a more detailed method of integration;
- changes in registration, for example the switch to (approximate) transaction basis for indirect taxes, the switch to a more institutional delimitation of economic activities, the switch to gross registration for homes for the elderly and agencies for temporary employees, the generally used net registration for improvement trade (i.e. contracting out part of the production process).

3.1 How the revision affects the main economic figures

After revision the sum of gross value added of the industry branches is 8.0 thousand million guilders higher (see table 1). This is a rise of 2.1% on the value before revision. The changes in the value of the output and intermediate consumption are much larger, due to the more institutional description of the production process and the switches from net to gross introduced there.

The change in the registration of indirect taxes led to a 2.4 thousand million guilder rise of the gross domestic product (GDP) at market prices. This has largely to do with the VAT switch from registration on the basis of transfers to government to that on the basis of non-deductible payments by buyers: consumers and non-VAT eligible companies (see also section 2.3) The GDP (market prices) thus increases by another 10.4 thousand million guilders after revision: 2.4% higher than before revision.

TABLE 1
Output and outlay, 1987

	Code	before revision	after revision	difference
		mln Dfl		
1 Output (producers' prices excluding VAT)	1500 05-05	755890	802180	46290
2 Intermediate consumption (purchasers' prices excluding deductible VAT)	1100 05-05	366040	404330	38290
3 (1-2) Value added (gross, market prices excluding VAT etc.)		389850	397850	8000
4 Imputed VAT		34190	36420	2230
5 Levies on fixed capital goods		10	370	360
6 Indirect taxes on imports (excluding VAT)		7050	7010	-40
7 Subsidies on re-exports		930	1070	140
8 (3+4+5+6-7) Domestic product (gross, market prices)	6000 05-05	430170	440580	10410
9 Imports (cif)	1000 05-90	213310	207560	-5750
10 (8+9) Disposable for final expenditure (gross)		643480	648140	4660
11 Final consumption expenditure	1300 05-05	334520	337720	3200
12 Fixed capital formation (gross)	1410 05-05	87100	91580	4480
13 Increase in stocks	1420 05-05	-4790	-420	4370
14 (11+12+13) National final expenditure (gross)	6350 05-05	416830	428880	12050
15 Exports (fob)	1000 90-05	226650	219260	-7390
16 (14+15) Total final expenditure (gross)		643480	648140	4660

Imports and exports show a lower value after revision, due to among other things the net registration of many improvement transactions. In addition the estimates of both final consumption by non-residents in the Netherlands and final consumption expenditure by households in the rest of the world are now lower.

National final expenditure is 12.1 thousand million guilders higher. This is caused by a higher estimate of fixed capital formation (4.5 thousand million guilders), increase in stocks (4.4 thousand million guilders), and final consumption expenditure by households (4.0 thousand million guilders). Final consumption expenditure of general government is 0.8 thousand million guilders lower after revision.

The adjustments of net primary income from the rest of the world are relatively small. Therefore nearly all of the adjustment of GDP affects gross national income (GNI; see table 2). The increases in net unrequit-

ed current transfers from the rest of the world, on the other hand, are significant. Consequently gross disposable national income (GDNI) is on balance 12.4 thousand million guilders higher.

TABLE 2
Income, disbursements and capital transactions, 1987

	Code	before revision	after revision	difference
		mln Dfl		
1 Domestic product (gross, market prices)	6000 05-05	430170	440580	10410
2 Net primary income from the rest of the world	6720 05-05	-730	-1150	-420
3 (1+2) National income (gross, market prices)	6200 05-05	429440	439430	9990
4 Net unrequited current transfers from the rest of the world	6730 05-05	-4400	-1990	2410
5 (3+4) Disposable national income (gross)	6300 05-05	425040	437440	12400
6 Final consumption expenditure	1300 05-05	334520	337720	3200
7 (5-6) National saving (gross)	6400 05-05	90520	99720	9200
8 Fixed capital formation (gross)	1410 05-05	87100	91580	4480
9 Increase in stocks	1420 05-05	-4790	-420	4370
10 (7-8-9) National surplus on current transactions (= Surplus of the nation on current transactions) 1)	6460 05-05	8210	8560	350
11 Net capital transactions from the rest of the world	4200 05-05	-1370	-1090	280
12 (10+11) Net increase (+) or decrease (-) in financial assets 1)	6510 05-05	6840	7470	630
increase in official reserves		5860	5860	-
net investment in and net lending to the rest of the world 1)		980	1610	630

1) The figures before revision have been adjusted for the statistical discrepancy of the nation on current transactions.

The increase in GDNI together with the adjustment of final consumption expenditure results in an adjustment of saving by 9.2 thousand million guilders. Capital formation is 8.9 thousand million guilders up (nearly evenly split between fixed capital formation and change in stocks). On balance there is a slight increase in the surplus of the nation on current transactions (350 million guilders). There is also an increase in net unrequited capital transfers from the rest of the world (280 million guilders). The net increase or decrease in financial assets is therefore adjusted upwards by 630 million guilders.

3.2 How the revision affects output, income generation and expenditure

The estimates of value added for industry branches *trade, hotels, cafés, restaurants, repair of consumer goods and other services and n.e.c.* have increased (see table 3). For all other industry branches the figure for value added is lower than before revision.

TABLE 3
Output, intermediate consumption and value added by main economic activities, 1987

	Code	before revision	after revision	difference
		mln Dfl		
1 Output (producers' prices excluding VAT)		755890	802180	46290
Agriculture, hunting, forestry, fishing		34612	38875	4263
Mining and quarrying		18593	18623	30
Manufacturing		257420	257907	487
Public utilities		20122	20852	730
Construction		57912	59546	1634
Trade, hotels, cafés, restaurants, repair of consumer goods		95804	102830	7026
Transport, storage and communication		43823	46318	2495
Other services and n.e.c.		227605	257231	29626
2 Intermediate consumption (purchasers' prices excluding deductible VAT)		366040	404330	38290
Agriculture, hunting, forestry, fishing		16918	21397	4479
Mining and quarrying		2866	3112	246
Manufacturing		176013	178599	2586
Public utilities		11602	12895	1293
Construction		34886	37704	2818
Trade, hotels, cafés, restaurants, repair of consumer goods		34954	38570	3616
Transport, storage and communication		15453	18601	3148
Other services and n.e.c.		57040	76913	19873
Consumption of imputed bank services		16302	16544	242
3 (1-2) Value added (gross, market prices excluding VAT etc.)		389850	397850	8000
Agriculture, hunting, forestry, fishing		17694	17478	-216
Mining and quarrying		15727	15511	-216
Manufacturing		81407	79308	-2099
Public utilities		8520	7957	-563
Construction		23026	21842	-1184
Trade, hotels, cafés, restaurants, repair of consumer goods		60850	64260	3410
Transport, storage and communication		28370	27717	-653
Other services and n.e.c.		170565	180318	9753
Consumption of imputed bank services		-16302	-16544	-242
4 Imputed VAT		34190	36420	2230
5 Levies on fixed capital goods		10	370	360
6 Indirect taxes on imports (excluding VAT)		7050	7010	-40
7 Subsidies on re-exports		930	1070	140
8 (3+4+5+6-7) Domestic product (gross, market prices)	6000 05-05	430170	440580	10410

Among other things, this is because of the institutional description of agencies for temporary employees and the operation of real estate introduced with this revision. The effect on *other services and n.e.c.*, moreover, is caused to a considerable extent by the introduction of new sources. This is countered by a higher estimate for the consumption of services and a lower value added in other economic activities.

The increase in value added in *trade, hotels, cafés restaurants, repair of consumer goods* is mainly concentrated in economic activities *wholesale and retail trade and repair of consumer goods*.

In certain situations the government caps operating deficits. For some industry branches this payment was registered as subsidies, for example, subsidies to public transportation systems. Deficits of other public companies were balanced with the property income received from these companies.

With this revision the capping of the latter deficits is also registered as a subsidy. Furthermore some deficit financing, particularly in medical services and credit institutions is now considered as subsidy. This used to be registered as purchases by the government, or unrequited current transfers n.e.c to the rest of the world. The balance of indirect taxes paid by economic activities (excluding VAT etc.) and received subsidies is thus reduced by 1.9 thousand million guilders (see table 4).

Compensation of employees is estimated at 7.3 thousand million guilders higher (see table 4). This is mainly connected with the use of new sources. In addition there is a strong shift from various economic activities to economic activities *other services and n.e.c.* due to the gross registration of agencies for temporary employees.

For other income there is on balance an increase of 2.6 thousand million guilders. This adjustment differs per economic activity and is the consequence of the above-mentioned revisions.

TABLE 4
Indirect taxes less subsidies, compensation of employees and other income (gross) by main economic activities, 1987

	Code	before revision	after revision	difference
		mln Dfl		
1 Indirect taxes less subsidies (excluding VAT etc.)		270	-1590	-1860
Agriculture, hunting, forestry, fishing		660	642	-18
Mining and quarrying		46	70	24
Manufacturing		323	548	225
Public utilities		64	15	-49
Construction		80	63	-17
Trade, hotels, cafés, restaurants, repair of consumer goods		850	628	-222
Transport, storage and communication		-3038	-3013	25
Other services and n.e.c.		1290	-544	-1834
2 Compensation of employees		232060	239360	7300
Agriculture, hunting, forestry, fishing		3283	2833	-450
Mining and quarrying		859	872	13
Manufacturing		51213	52765	1552
Public utilities		2733	2874	141
Construction		16235	17063	828
Trade, hotels, cafés, restaurants, repair of consumer goods		34273	34055	-218
Transport, storage and communication		18729	18762	33
Other services and n.e.c.		104730	110138	5408
3 Other income (gross) excluding difference imputed VAT and VAT paid		157520	160080	2560
Agriculture, hunting, forestry, fishing		13751	14003	252
Mining and quarrying		14822	14569	-253
Manufacturing		29871	25995	-3876
Public utilities		5723	5068	-655
Construction		6711	4716	-1995
Trade, hotels, cafés, restaurants, repair of consumer goods		25727	29577	3850
Transport, storage and communication		12679	11968	-711
Other services and n.e.c.		64545	70724	6179
Consumption of imputed bank services		-16302	-16544	-242
4 (1+2+3) Value added (gross, market prices excluding VAT etc.)		389850	397850	8000
Agriculture, hunting, forestry, fishing		17694	17478	-216
Mining and quarrying		15727	15511	-216
Manufacturing		81407	79308	-2099
Public utilities		8520	7957	-563
Construction		23026	21842	-1184
Trade, hotels, cafés, restaurants, repair of consumer goods		60850	64260	3410
Transport, storage and communication		28370	27717	-653
Other services and n.e.c.		170565	180318	9753
Consumption of imputed bank services		-16302	-16544	-242
5 Imputed VAT		34190	36420	2230
6 Levies on fixed capital goods		10	370	360
7 Indirect taxes on imports (excluding VAT)		7050	7010	-40
8 Subsidies on re-exports		930	1070	140
9 (4+5+6+7-8) Domestic product (gross, market prices)	6000 05-05	430170	440580	10410

In relation with the revision of the compensation of employees, figures on paid employment have also been revised (see table 5). The changes here connect up with those of the compensation of employees. Paid employment is estimated 156,000 man-years higher. The labour volume of self-employed has not been changed. Total employment thus reaches 4.911 million man-years after revision.

TABLE 5
Paid employment by main economic activities and sectors, 1987

	Code	before revision	after revision	difference
1 000 man-years				
ECONOMIC ACTIVITIES				
Agriculture, hunting, forestry, fishing		75	70	-5
Mining and quarrying		10	10	-
Manufacturing		872	882	10
Public utilities		46	46	-
Construction		306	328	22
Trade, hotels, cafés, restaurants, repair of consumer goods		712	720	8
Transport, storage and communication		309	308	-1
Other services and n.e.c.		1813	1935	122
Paid employment		4143	4299	156
SECTORS				
enterprises		3397	3545	148
non-financial enterprises		3221	3374	153
credit institutions		117	112	-5
insurance companies and pension funds		59	59	-
general government		746	754	8
central and local government		709	717	8
social security funds		37	37	-

Consumption of fixed capital refers to past fixed capital formation. Changes in the estimate of capital formation thus lead to changes in the consumption of fixed capital. In addition, the extent of the consumption of fixed capital was adjusted because of a change in the method of calculating consumption of fixed capital by general government: from this revision on, the same method is used for general government as for the enterprises (the *perpetual inventory method*). The consumption of fixed capital shown in table 6 is still a provisional estimate. Only when the revision of investment figures is calculated retrospectively in detail can the consumption of fixed capital after revision be definitely

established. Then the terms in which capital goods are written off will be adjusted where necessary.

TABLE 6
Consumption of fixed capital by main economic activities and sectors, 1987

	Code	before revision	after revision	difference
mln Dfl				
ECONOMIC ACTIVITIES				
Agriculture, hunting, forestry, fishing		2730	2624	-106
Mining and quarrying		1450	1501	51
Manufacturing		11440	11137	-303
Public utilities		3150	3135	-15
Construction		1410	1389	-21
Trade, hotels, cafés, restaurants, repair of consumer goods		4570	5152	582
Transport, storage and communication		6710	6558	-152
Other services and n.e.c.		14023	17048	3025
Total consumption of fixed capital	1200 05-05	45480	48540	3060
SECTORS				
enterprises	1200 06-06	42450	45140	2690
non-financial enterprises	1200 10-10	42040	44160	2120
credit institutions	1200 40-40	210	840	630
insurance companies and pension funds	1200 50-50	200	140	-60
general government	1200 60-60	3030	3400	370
central and local government	1200 61-61	3030	3320	290
social security funds	1200 63-63	-	80	80

For the total economy the consumption of fixed capital is provisionally adjusted upwards by 3.1 thousand million guilders.

3.3 How the revision affects final consumption expenditure and fixed capital formation

Final consumption expenditure by households is estimated at 4.0 thousand million guilders higher on the basis of the new method. Final consumption expenditure by general government is 0.8 thousand million guilders down. Total final consumption expenditure would therefore be 3.2 thousand million guilders up (see table 7). Both final consumption expenditure by non-residents in the Netherlands (-1.2 thousand million

guilders) and final consumption by households in the rest of the world (-2.4 thousand million guilders) are now estimated lower.

TABLE 7
Final consumption expenditure, 1987

	Code	before revision	after revision	difference
		mln Dfl		
1 Final consumption expenditure of general government	1300 60-60	70590	69780	-810
Public administration and social security funds		35770	31550	-4220
Defence		12790	11920	-870
State and subsidized education		22030	22600	570
Other		-	3710	3710
2 Domestic private final consumption expenditure		257970	263250	5280
Food, beverages and tobacco		48480	42350	-6130
Clothing and footwear		18800	19660	860
Gross rent, fuel and power		47730	46640	-1090
Furniture, furnishings and household equipment and operation		20490	18540	-1950
Medical care and health expenses		32320	33320	1000
Transport and communication		29620	34070	4450
Recreation and personal development		24640	26790	2150
Miscellaneous goods and services		35890	41880	5990
3 Final consumption by non-residents in the Netherlands		6110	4940	-1170
4 Final consumption by households in the rest of the world		12070	9630	-2440
5 (2-3+4) Final consumption expenditure of households	1300 80-80	263930	267940	4010
6 (1+5) Final consumption expenditure	1300 05-05	334520	337720	3200

1,340 million guilders of the adjustment of final consumption expenditure by households can be attributed to the purchase of second-hand cars from enterprises. This item was not included before revision. In addition the estimation of final consumption of goods is lower and the final consumption of services higher. This is mainly caused by the switch to gross registration for a number of services industry classes, particularly social services, homes for the elderly and a number of subgroups in sports and recreation. In their intermediate consumption, these economic activities include goods which before revision were counted directly as final consumption expenditure, and they produce more services with, among other things, these goods as input. This leads to a

reduction in the final consumption of the goods concerned and an increase in the final consumption of services.

Fixed capital formation from production and imports is estimated at 5.8 thousand million guilders higher than before revision (see table 8). In particular the figures for dwellings, civil engineering works and machinery and other equipment are higher. For dwellings nearly half the increase is caused by the allocation of VAT on land cleared for building introduced in this revision.

TABLE 8
Fixed capital formation (gross) by type of capital good, 1987

Type	Code	before revision	after revision	difference
		mln Dfl		
1 Dwellings		21940	23160	1220
2 Non-residential buildings		14540	14170	-370
3 Civil engineering works		7530	9750	2220
4 External transport equipment		12480	10570	-1910
road transport (passenger cars)		5830	5540	-290
road transport (other vehicles)		4630	3000	-1630
railroad transport		190	280	90
water transport		1130	1040	-90
air transport		700	710	10
5 Increase in livestock		-550	-540	10
6 Machinery and other equipment		29560	34370	4810
7 Transfer costs		2580	2420	-160
8 (1 through 7) Fixed capital formation from production and imports		88080	93900	5820
9 Sales of used fixed capital goods		980	2320	1340
exports		980	980	-
final consumption expenditure		-	1340	1340
10 (8-9) Fixed capital formation (gross)	1410 05-05	87100	91580	4480

The significantly higher figure for civil engineering works is caused by a new estimate, for which new sources for the demand were especially important. The downward adjustment of road transport (other vehicles) is the resultant of a large number of small adjustments all in the same direction. The main ones are a lower share of parts (of/for means of transport) and a lower estimate of trade margins. For machinery and other equipment the higher estimates for furnishing etc. and higher

trade margins were the main components of the upward adjustment.

The allocation of fixed capital formation to industry classes and sectors of use, can be further specified than before the revision, due to the introduction of new sources. The available data make it possible to base this allocation on use (who uses the investment goods?) and ownership (who owns them?). In the present publication (see table 9) the allocation is presented according to ownership (*The production structure of the Netherlands economy* will include a classification by use). When

TABLE 9
Fixed capital formation (gross) by kind of economic activity and sector, 1987

	Code	before revision	after revision	difference
mln Dfl				
ECONOMIC ACTIVITIES				
Agriculture, hunting, forestry, fishing		4590	3915	-675
Mining and quarrying		1510	1418	-92
Manufacturing		18230	16511	-1719
Public utilities		4210	4030	-180
Construction		1610	1455	-155
Trade, hotels, cafés, restaurants, repair of consumer goods		5960	8566	2606
Transport, storage and communication		8940	8497	-443
Other services and n.e.c.		43030	49508	6478
Total fixed capital formation from production and imports		88080	93900	5820
Minus: Sales of used fixed capital goods		980	2320	1340
exports		980	980	-
final consumption expenditure		-	1340	1340
Total fixed capital formation (gross)	1410 05-05	87100	91580	4480
SECTORS				
enterprises	1410 06-06	76860	80100	3240
non-financial enterprises	1410 10-10	76300	79060	2760
credit institutions	1410 40-40	390	990	600
insurance companies and pension funds	1410 50-50	170	50	-120
general government	1410 60-60	10240	11480	1240
central and local government	1410 61-61	10240	11340	1100
social security funds	1410 63-63	-	140	140

comparing pre and post revision figures it should be taken into account that before the revision capital formation was allocated to industry

branches according to use. Fixed capital formation for repair of consumer goods was incorporated in the figures for manufacturing, and fixed capital formation for hotels, cafés, and restaurants was incorporated in the figures for other services and n.e.c. Fixed capital formation for other services and n.e.c. is especially much higher as a result of this.

3.4 How the revision affects figures for income distribution and redistribution, saving, unrequited capital transfers and the net increase or decrease in financial assets

The adjustment of GNI for 1987 is not evenly distributed across the sectors (see table 10). Primary income is higher in the sectors *non-financial enterprises* (7.0 thousand million guilders), *households* (2.0 thousand million guilders) and *general government* (the sum of the sectors central and local government and social security funds: 1.5 thousand million guilders). There is a slight decrease in the sectors *credit institutions* and *insurance companies and pension funds*. The adjustment of the GNI and its distribution across the sectors is caused by adjustments of figures directly related to the production process (value added, compensation of employees, indirect taxes and subsidies) and adjustments of figures relating to ownership (interest, dividends etc.)

The upwards adjustment of GDP at market prices (10.4 thousand million guilders) originates completely from the sector *non-financial enterprises* (see table 10). The compensation of employees too is adjusted upwards by 7.3 thousand million guilders. This adjustment is completely to the cost of *non-financial enterprises* and accrues to the sector *households*. The payment of the net balance of indirect taxes and subsidies to the government is lower after revision (1.2 thousand million guilders). This accrues nearly completely to the sectors *non-financial enterprises* and *credit institutions*. Due to the adjustment of

TABLE 10
Determining items of national income (gross, market prices) by sector, 1987

	Code	before revision	after revision	difference
		mln Dfl		
1 Domestic product (gross, market prices)	6000 05-05	430170	440580	10410
non-financial enterprises	6000 10-10	372360	383260	10900
consumption of imputed bank services	6000 20-20	-16300	-16540	-240
credit institutions	6000 40-40	15860	15350	-510
insurance companies and pension funds	6000 50-50	6230	5740	-490
central and local government	6000 61-61	49860	50390	530
social security funds	6000 63-63	2160	2380	220
2 Indirect taxes less subsidies		-	-	-
non-financial enterprises		-39120	-38500	620
credit institutions		-260	230	490
insurance companies and pension funds		-730	-690	40
central and local government		40110	38960	-1150
3 Compensation of employees		120	120	-
non-financial enterprises		-171880	-178950	-7070
credit institutions		-7520	-7480	40
insurance companies and pension funds		-4150	-4030	120
central and local government		-46350	-46600	-250
social security funds		-2160	-2300	-140
households		232180	239480	7300
4 Interest		3700	3530	-170
non-financial enterprises		-33100	-18950	14150
credit institutions		15990	16350	360
insurance companies and pension funds		30060	31310	1250
central and local government		-23080	-22490	590
social security funds		730	720	-10
households		13100	-3410	-16510
5 Property and entrepreneurial income (excl. interest)		-4550	-4800	-250
non-financial enterprises		-62780	-74430	-11650
credit institutions		-2220	-2500	-280
insurance companies and pension funds		4820	3690	-1130
central and local government		12400	14060	1660
social security funds		-	-	-
households		43230	54380	11150
6 Imputed interest on actuarial reserves		-	-	-
insurance companies and pension funds		-34010	-34050	-40
households		34010	34050	40
7 Correction imputed bank services		-	-	-
consumption of imputed bank services		16300	16540	240
credit institutions		-16300	-16540	-240
8 (1 through 7) National income (gross, market prices)	6200 05-05	429440	439430	9990
non-financial enterprises	6200 10-10	65480	72430	6950
credit institutions	6200 40-40	5550	5410	-140
insurance companies and pension funds	6200 50-50	2220	1970	-250
central and local government	6200 61-61	32940	34320	1380
social security funds	6200 63-63	730	800	70
households	6200 80-80	322520	324500	1980

transactions directly related to the production process, the income in the sector *non-financial enterprises* is estimated 4.5 thousand million guilders higher, and in the sector *credit institutions, insurance companies and pension funds* 0.6 thousand million guilders lower; for the sector *government*, too, it is lower (0.8 thousand million guilders) and for the sector *households* the income from these transactions is 7.3 thousand million guilders higher (see table 11).

TABLE 11
Effect on primary income of adjustments in transactions directly connected with the production process and in property and entrepreneurial income, 1987

	Non- financial enterprises	Banking, finance and insurance 1)	General government	House- holds	Total
	mln Dfl				
1 Adjustments of transactions directly connected with the production process	4450	-550	-790	7300	10
2 Adjustments of property and entrepreneurial income (incl. imputed interest on actuarial reserves)	2500	160	2240	-5320	-4
3 (1+2) Adjustment of primary income (gross)	6950	-390	1450	1980	99

1) Including consumption of imputed bank services.

Revision of the interest flows is considerable, especially in its sectoral distribution. The total balance of interest received and paid hardly changes (see table 10). The shifts in the distribution are mainly related to the effects of the change in the registration of interest mentioned in section 2.3. Before revision, the interest received and paid from entrepreneurial activities (including owner-occupied dwellings) were registered under non-financial enterprises. After revision the real interest flows are traced and are recorded under the sector households.

The effect of this on primary income is compensated by a counter booking under the transaction category *property and entrepreneurial income (excl. interest)* (see table 10). Before revision the balance of the mentioned interest received and paid was already accounted for in this category. After revision this transaction category is higher by the amount of this balance. Therefore the revision of the transaction

category *property and entrepreneurial income* as a total, i.e. including interest, is limited (see table 11).

There is an increase in property and entrepreneurial income in the sector *non-financial enterprises*. This is caused by a positive adjustment of the balance of interest in the non-financial enterprises (excluding the effect of the above-mentioned change in registration) combined with a downward adjustment in the estimate of other income from enterprises without legal personality paid to households. This has an effect on the sector *households*. In addition there is the effect of the conversion from net to gross of the dividend flows to and from the rest of the world: before revision these were recorded at net value (i.e. after deduction of dividend tax). Now they are registered at their gross value. The result is that on balance the sectors pay more dividend to the rest of the world and less to the sector *households*. This has a reducing effect on GNI (870 million guilders), but is completely compensated by a flow of direct taxes from the rest of the world, which is on balance the same size (see table 12, row 2 Direct taxes).

The above has no effect on dividend tax received by the government: countering the increase in received dividend taxes from the rest of the world, there is a reduction in receipts from households.

Direct taxes do increase, as a consequence of inclusion of, for example, the refuse collection rate, which before revision was included in unrequited current transfers n.e.c from households. On balance there is a limited upward revision of tax paid by households (350 million guilders) and a considerably larger adjustment (1,540 million guilders) for receipts by the government (see table 12).

Social contributions and social benefits (see table 12, rows 3 and 4) increase by the inclusion of military pension provisions; these used to come under pension and life insurance transactions. The unrequited current transfers n.e.c received on balance by the sector households are 4.0 thousand million guilders higher (see table 12). This is connected with among other things changed registration of refuse collection rates

and fees for schools, universities and examinations. These used to be recorded as paid to the government. From this revision on they will be recorded as direct taxes and purchases respectively (so final consumption expenditure by households is also higher). For the government these changes lead to a downward revision of received unrequited current transfers n.e.c. and final consumption expenditure.

TABLE 12
Determining items of the disposable national income (gross) by sector, 1987

	Code	before revision	after revision	difference
		mln Dfl		
1 National income (gross, market prices)	6200 05-05	429440	439430	9990
non-financial enterprises	6200 10-10	65480	72430	6950
credit institutions	6200 40-40	5550	5410	-140
insurance companies and pension funds	6200 50-50	2220	1970	-250
central and local government	6200 61-61	32940	34320	1380
social security funds	6200 63-63	730	800	70
households	6200 80-80	322520	324500	1980
2 Direct taxes		-	870	870
non-financial enterprises		-14740	-15000	-260
credit institutions		-800	-870	-70
insurance companies and pension funds		-490	-480	10
central and local government		60780	62320	1540
social security funds		-	-	-
households		-44750	-45100	-350
3 Social contributions		-	-	-
non-financial enterprises		700	1470	770
credit institutions		70	220	150
insurance companies and pension funds		20	80	60
central and local government		4120	5760	1640
social security funds		89170	90340	1170
households		-94080	-97870	-3790
4 Social benefits		-790	-790	-
non-financial enterprises		-700	-1470	-770
credit institutions		-70	-220	-150
insurance companies and pension funds		-160	-80	80
central and local government		-23330	-26270	-2940
social security funds		-86940	-87020	-80
households		110410	114270	3860
5 Unrequited current transfers n.e.c.		-3610	-2070	1540
non-financial enterprises		-	360	360
credit institutions		-	-	-
insurance companies and pension funds		140	-30	-170
central and local government		-13860	-15490	-1630
social security funds		1930	920	-1010
households		8180	12170	3990
6 (1 through 5) Disposable national income (gross)	6300 05-05	425040	437440	12400
non-financial enterprises	6300 10-10	50740	57790	7050
credit institutions	6300 40-40	4750	4540	-210
insurance companies and pension funds	6300 50-50	1730	1460	-270
central and local government	6300 61-61	60650	60640	-10
social security funds	6300 63-63	4890	5040	150
households	6300 80-80	302280	307970	5690

In addition, the unrequited current transfers n.e.c. from the government to the non-profit institutions under the sector *households* have increased. The increase resulting on balance in unrequited current transfers n.e.c. paid by the government is limited due to a lower estimate of transfers to the rest of the world. All in all the effects of the revision of the transactions in relation with the redistribution of income and final consumption expenditure on saving is limited (see table 13).

TABLE 13
Adjustments of primary income, disposable income, final consumption expenditure and saving by sector, 1987

	Non- financial enterprises	Banking, finance and insurance	General and government	House- holds	Total
	mln Dfl				
1 Adjustment of primary income (gross)	6950	-390	1450	1980	9990
2 Adjustment of unrequited current transfers n.e.c.	100	-90	-1310	3710	2410
3 (1+2) Adjustment of disposable income (gross)	7050	-480	140	5690	12400
4 Adjustment of final consumption expenditure	-	-	-810	4010	3200
5 (3-4) Adjustment of saving (gross)	7050	-480	950	1680	9200

The adjustment of primary income (see table 13, row 1, column total) by 10.0 thousand million guilders nearly equals that of saving (see row 5). This also applies for the individual sectors. There are only small shifts in the sectors *general government* and *households*.

The trajectory from saving to the net increase or decrease in financial assets contains several significant changes compared with the situation before revision (see table 14, rows 3 to 8). The estimate for capital formation (gross) is considerably higher. In addition, after revision net purchases of land are registered on the capital account. Before revision these amounts were taken together with the net increase or decrease in financial assets.

The registration of pension and life insurance transactions has also changed. Before revision the contributions and benefits were registered

on the capital account (capital transfers). After revision these transactions are booked as financial transactions on the financial account. Together the net increase or decrease in financial assets for the sector *households* increases by 33.8 thousand million guilders and there is an almost corresponding reduction in the balance for the insurance companies and pension funds (32.5 thousand million guilders).

Apart from changes by recording net purchases of land separately and the changed registration of pension and life insurance transactions, the revisions of the net increase or decrease in financial assets are limited (see table 15, row 5). The increase in saving in the sector *non-financial enterprises* is more than compensated by the adjustment of capital formation (including increase in stocks). The effect on the net increase or decrease in financial assets is limited to an increase of 40 million guilders. For the sector *households* there is an increase in the balance by 1.6 thousand million guilders (nearly equalling the change in saving). For the sum of the sectors *credit institutions* and *insurance companies and pension funds*, saving ends up somewhat lower and fixed capital formation is somewhat higher, resulting in a reduction of the net increase or decrease in financial assets. For general government the adjustments of the net increase or decrease in financial assets are limited in size.

TABLE 14
Use of the disposable national income (gross) by sector, 1987

	Code	before revision	after revision	difference
mln Dfl				
1 Disposable national income (gross)	6300 05-05	425040	437440	12400
non-financial enterprises	6300 10-10	50740	57790	7050
credit institutions	6300 40-40	4750	4540	-210
insurance companies and pension funds	6300 50-50	1730	1460	-270
central and local government	6300 61-61	60650	60640	-10
social security funds	6300 63-63	4890	5040	150
households	6300 80-80	302280	307970	5690
2 Final consumption expenditure	1300 05-05	334520	337720	3200
central and local government	1300 61-61	67220	66450	-770
social security funds	1300 63-63	3370	3330	-40
households	1300 80-80	263930	267940	4010
3 (1-2) Saving	6400 05-05	90520	99720	9200
non-financial enterprises	6400 10-10	50740	57790	7050
credit institutions	6400 40-40	4750	4540	-210
insurance companies and pension funds	6400 50-50	1730	1460	-270
central and local government	6400 61-61	-6570	-5810	760
social security funds	6400 63-63	1520	1710	190
households	6400 80-80	38350	40030	1680
4 Capital formation (gross)	1400 05-05	82310	91160	8850
non-financial enterprises	1400 10-10	71510	78640	7130
credit institutions	1400 40-40	390	990	600
insurance companies and pension funds	1400 50-50	170	50	-120
central and local government	1400 61-61	10240	11340	1100
social security funds	1400 63-63	-	140	140
5 Net purchases of land	4100 05-05		-	-
non-financial enterprises	4100 10-10		2320	2320
credit institutions	4100 40-40		40	40
insurance companies and pension funds	4100 50-50		10	10
central and local government	4100 61-61		-2370	-2370
social security funds	4100 63-63		-	-
6 Pension and life insurance transactions		-360		360
insurance companies and pension funds		31840		-31840
households		-32200		32200
7 Unrequited capital transfers 1)		-1010	-1090	-80
non-financial enterprises		12330	12450	120
credit institutions		150	390	240
insurance companies and pension funds		470	10	-460
central and local government		-13100	-12940	160
social security funds		70	50	-20
households		-930	-1050	-120
8 (3-4-5+6+7) Net increase (+) or decrease (-)				
in financial assets 2)	6510 05-05	6840	7470	630
non-financial enterprises	6510 10-10	-8440	-10720	-2280
credit institutions	6510 40-40	4510	3900	-610
insurance companies and pension funds	6510 50-50	33870	1410	-32460
central and local government	6510 61-61	-29910	-27720	2190
social security funds	6510 63-63	1590	1620	30
households	6510 80-80	5220	38980	33760

1) Including imputed capital transfers from actuarial reserves.

2) The figures before revision have been adjusted for the statistical discrepancy of the nation on current transactions.

TABLE 15
Adjustments of net increase(+) or decrease(-) in financial assets by sector, 1987

	Non- financial enterprises	Banking, finance and insurance	General government	House- holds	Total
	mln Dfl				
1 Adjustment of saving (gross)	7050	-480	950	1680	9200
2 Adjustment of capital formation (gross)	7130	480	1240	-	8850
3 (1-2) Adjustment of surplus on current transactions (cf. before revision)	-80	-960	-290	1680	350
4 Adjustment of unrequited capital transfers	120	-220	140	-120	-80
5 (3+4) Adjustment of net increase or decrease in financial assets (cf. before revision)	40	-1180	-150	1560	270
6 Change in registration of pension and life insurance contributions and benefits	-	-31840	-	32200	360
7 Introduction of net purchases of land	2320	50	-2370	-	0
8 (5+6-7) Adjustment of net increase or decrease in financial assets (cf. after revision)	-2280	-33070	2220	33760	600

Statistics Netherlands
National Accounts Occasional Papers

- NA/01 Flexibility in the system of National Accounts**, Van Eck, R., C.N. Gorter and H.K. van Tuinen (1983).
This paper sets out some of the main ideas of what gradually developed into the Dutch view on the fourth revision of the SNA. In particular it focuses on the validity and even desirability of the inclusion of a number of carefully chosen alternative definitions in the "Blue Book", and the organization of a flexible system starting from a core that is easier to understand than the 1968 SNA.
- NA/02 The unobserved economy and the National Accounts in the Netherlands, a sensitivity analysis**, Broesterhuizen, G.A.A.M. (1983).
This paper studies the influence of fraud on macro-economic statistics, especially GDP. The term "fraud" is used as meaning unreporting or underreporting income (e.g. to the tax authorities). The conclusion of the analysis of growth figures is that a bias in the growth of GDP of more than 0.5% is very unlikely.
- NA/03 Secondary activities and the National Accounts: Aspects of the Dutch measurement practice and its effects on the unofficial economy**, Van Eck, R. (1985).
In the process of estimating national product and other variables in the National Accounts a number of methods is used to obtain initial estimates for each economic activity. These methods are described and for each method various possibilities for distortion are considered.
- NA/04 Comparability of input-output tables in time**, Al, P.G. and G.A.A.M. Broesterhuizen (1985).
It is argued that the comparability in time of statistics, and input-output tables in particular, can be filled in in various ways. The way in which it is filled depends on the structure and object of the statistics concerned. In this respect it is important to differentiate between coordinated input-output tables, in which groups of units (industries) are divided into rows and columns, and analytical input-output tables, in which the rows and columns refer to homogeneous activities.
- NA/05 The use of chain indices for deflating the National Accounts**, Al, P.G., B.M. Balk, S. de Boer and G.P. den Bakker (1985).
This paper is devoted to the problem of deflating National Accounts and input-output tables. This problem is approached from the theoretical as well as from the practical side. Although the theoretical argument favors the use of chained Vartia-I indices, the current practice of compiling National Accounts restricts to using chained Paasche and Laspeyres indices. Various possible objections to the use of chained indices are discussed and rejected.
- NA/06 Revision of the system of National Accounts: the case for flexibility**, Van Bochove, C.A. and H.K. van Tuinen (1985).
It is argued that the structure of the SNA should be made more flexible. This can be achieved by means of a system of a general purpose core supplemented with special modules. This core is a fully fledged, detailed system of National Accounts with a greater institutional content than the present SNA and a more elaborate description of the economy at the meso-level. The modules are more analytic and reflect special purposes and specific theoretical views.
- NA/07 Integration of input-output tables and sector accounts; a possible solution**, Van den Bos, C. (1985).
The establishment-enterprise problem is tackled by taking the institutional sectors to which the establishments belong into account during the construction of input-output tables. The extra burden on the construction of input-output tables resulting from this approach is examined for the Dutch situation. An adapted sectoring of institutional units is proposed for the construction of input-output tables.
- NA/08 A note on Dutch National Accounting data 1900-1984**, Van Bochove, C.A. (1985).
This note provides a brief survey of Dutch national accounting data for 1900-1984, concentrating on national income. It indicates where these data can be found and what the major discontinuities are. The note concludes that estimates of the level of national income may contain inaccuracies; that its growth rate is measured accurately for the period since 1948; and that the real income growth rate series for 1900-1984 may contain a systematic bias.

- NA/09 The structure of the next SNA: review of the basic options**, Van Bochove, C.A. and A.M. Bloem (1985).
There are two basic issues with respect to the structure of the next version of the UN System of National Accounts. The first is its 'size': reviewing this issue, it can be concluded that the next SNA should contain an integrated meso-economic statistical system. It is essential that the next SNA contains an institutional system without the imputations and attributions that pollute the present SNA. This can be achieved by distinguishing, in the central system of the next SNA, a core (the institutional system), a standard module for non-market production and a standard module describing attributed income and consumption of the household sector.
- NA/10 Dual sectoring in National Accounts**, Al, P.G. (1985).
Following a conceptual explanation of dual sectoring, an outline is given of a statistical system with complete dual sectoring in which the linkages are also defined and worked out. It is shown that the SNA 1968 is incomplete and obscure with respect to the links between the two sub-processes.
- NA/11 Backward and forward linkages with an application to the Dutch agro-industrial complex**, Harthoorn, R. (1985).
Some industries induce production in other industries. An elegant method is developed for calculating forward and backward linkages avoiding double counting. For 1981 these methods have been applied to determine the influence of Dutch agriculture in the Dutch economy in terms of value added and labour force.
- NA/12 Production chains**, Harthoorn, R. (1986).
This paper introduces the notion of production chains as a measure of the hierarchy of industries in the production process. Production chains are sequences of transformation of products by successive industries. It is possible to calculate forward transformations as well as backward ones.
- NA/13 The simultaneous compilation of current price and deflated input-output tables**, De Boer, S. and G.A.A.M. Broesterhuizen (1986).
A few years ago the method of compiling input-output tables underwent in the Netherlands an essential revision. The most significant improvement is that during the entire statistical process, from the processing and analysis of the basic data up to and including the phase of balancing the tables, data in current prices and deflated data are obtained simultaneously and in consistency with each other.
- NA/14 A proposal for the synoptic structure of the next SNA**, Al, P.G. and C.A. van Bochove (1986).
- NA/15 Features of the hidden economy in the Netherlands**, Van Eck, R. and B. Kazemier (1986).
This paper presents survey results on the size and structure of the hidden labour market in the Netherlands.
- NA/16 Uncovering hidden income distributions: the Dutch approach**, Van Bochove, C.A. (1987).
- NA/17 Main national accounting series 1900-1986**, Van Bochove, C.A. and T.A. Huitker (1987).
The main national accounting series for the Netherlands, 1900-1986, are provided, along with a brief explanation.
- NA/18 The Dutch economy, 1921-1939 and 1969-1985. A comparison based on revised macro-economic data for the interwar period**, Den Bakker, G.P., T.A. Huitker and C.A. van Bochove (1987).
A set of macro-economic time series for the Netherlands 1921-1939 is presented. The new series differ considerably from the data that had been published before. They are also more comprehensive, more detailed, and conceptually consistent with the modern National Accounts. The macro-economic developments that are shown by the new series are discussed. It turns out that the traditional economic-historical view of the Dutch economy has to be reversed.
- NA/19 Constant wealth national income: accounting for war damage with an application to the Netherlands, 1940-1945**, Van Bochove, C.A. and W. van Sorge (1987).

- NA/20 The micro-meso-macro linkage for business in an SNA-compatible system of economic statistics**, Van Bochove, C.A. (1987).
- NA/21 Micro-macro link for government**, Bloem, A.M. (1987).
This paper describes the way the link between the statistics on government finance and national accounts is provided for in the Dutch government finance statistics.
- NA/22 Some extensions of the static open Leontief model**, Harthoorn, R.(1987).
The results of input-output analysis are invariant for a transformation of the system of units. Such transformation can be used to derive the Leontief price model, for forecasting input-output tables and for the calculation of cumulative factor costs. Finally the series expansion of the Leontief inverse is used to describe how certain economic processes are spread out over time.
- NA/23 Compilation of household sector accounts in the Netherlands National Accounts**, Van der Laan, P. (1987).
This paper provides a concise description of the way in which household sector accounts are compiled within the Netherlands National Accounts. Special attention is paid to differences with the recommendations in the United Nations System of National Accounts (SNA).
- NA/24 On the adjustment of tables with Lagrange multipliers**, Harthoorn, R. and J. van Dalen (1987).
An efficient variant of the Lagrange method is given, which uses no more computer time and central memory than the widely used RAS method. Also some special cases are discussed: the adjustment of row sums and column sums, additional restraints, mutual connections between tables and three dimensional tables.
- NA/25 The methodology of the Dutch system of quarterly accounts**, Janssen, R.J.A. and S.B. Algera (1988).
In this paper a description is given of the Dutch system of quarterly national accounts. The backbone of the method is the compilation of a quarterly input-output table by integrating short-term economic statistics.
- NA/26 Imputations and re-routeings in the National Accounts**, Gorter, Cor N. (1988).
Starting out from a definition of 'actual' transactions an inventory of all imputations and re-routeings in the SNA is made. It is discussed which of those should be retained in the core of a flexible system of National Accounts. Conceptual and practical questions of presentation are brought up. Numerical examples are given.
- NA/27 Registration of trade in services and market valuation of imports and exports in the National Accounts**, Bos, Frits (1988).
The registration of external trade transactions in the main tables of the National Accounts should be based on invoice value; this is not only conceptually very attractive, but also suitable for data collection purposes.
- NA/28 The institutional sector classification**, Van den Bos, C. (1988).
A background paper on the conceptual side of the grouping of financing units. A limited number of criteria are formulated.
- NA/29 The concept of (transactor-)units in the National Accounts and in the basic system of economic statistics**, Bloem, Adriaan M. (1989).
Units in legal-administrative reality are often not suitable as statistical units in describing economic processes. Some transformation of legal-administrative units into economic statistical units is needed. This paper examines this transformation and furnishes definitions of economic statistical units. Proper definitions are especially important because of the forthcoming revision of the SNA.
- NA/30 Regional income concepts**, Bloem, Adriaan M. and Bas De Vet (1989).
In this paper, the conceptual and statistical problems involved in the regionalization of national accounting variables are discussed. Examples are the regionalization of Gross Domestic Product, Gross National Income, Disposable National Income and Total Income of the Population.

- NA/31 The use of tendency surveys in extrapolating National Accounts**, Ouddeken, Frank and Gerrit Zijlmans (1989).
This paper discusses the feasibility of the use of tendency survey data in the compilation of very timely Quarterly Accounts. Some preliminary estimates of relations between tendency survey data and regular Quarterly Accounts-indicators are also presented.
- NA/32 An economic core system and the socio-economic accounts module for the Netherlands**, Gorter, Cor N. and Paul van der Laan (1989).
A discussion of the core and various types of modules in an overall system of economy related statistics. Special attention is paid to the Dutch Socio-economic Accounts. Tables and figures for the Netherlands are added.
- NA/33 A systems view on concepts of income in the National Accounts**, Bos, Frits (1989).
In this paper, concepts of income are explicitly linked to the purposes of use and to actual circumstances. Main choices in defining income are presented in a general system. The National Accounts is a multi-purpose framework. It should therefore contain several concepts of income, e.g. differing with respect to the production boundary. Furthermore, concepts of national income do not necessarily constitute an aggregation of income at a micro-level.
- NA/34 How to treat borrowing and leasing in the next SNA**, Keuning, Steven J. (1990).
The use of services related to borrowing money, leasing capital goods, and renting land should not be considered as intermediate inputs into specific production processes. It is argued that the way of recording the use of financial services in the present SNA should remain largely intact.
- NA/35 A summary description of sources and methods used in compiling the final estimates of Dutch National Income 1986**, Gorter, Cor N. and others (1990).
Translation of the inventory report submitted to the GNP Management Committee of the European Communities.
- NA/36 The registration of processing in supply and use tables and input-output tables**, Bloem, Adriaan M., Sake De Boer and Pieter Wind (1993).
The registration of processing is discussed primarily with regard to its effects on input-output-type tables and input-output quotes. Links between National Accounts and basic statistics, user demands and international guidelines are examined. Net recording is in general to be preferred. An exception has to be made when processing amounts to a complete production process, e.g. oil refineries in the Netherlands.
- NA/37 A proposal for a SAM which fits into the next System of National Accounts**, Keuning, Steven J. (1990).
This paper shows that all flow accounts which may become part of the next System of National Accounts can be embedded easily in a Social Accounting Matrix (SAM). In fact, for many purposes a SAM format may be preferred to the traditional T-accounts for the institutional sectors, since it allows for more flexibility in selecting relevant classifications and valuation principles.
- NA/38 Net versus gross National Income**, Bos, Frits (1990).
In practice, gross figures of Domestic Product, National Product and National Income are most often preferred to net figures. In this paper, this practice is challenged. Conceptual issues and the reliability of capital consumption estimates are discussed.
- NA/39 Concealed interest income of households in the Netherlands; 1977, 1979 and 1981**, Kazemier, Brugt (1990).
The major problem in estimating the size of hidden income is that total income, reported plus unreported, is unknown. However, this is not the case with total interest income of households in the Netherlands. This makes it possible to estimate at least the order of magnitude of this part of hidden income. In this paper it will be shown that in 1977, 1979 and 1981 almost 50% of total interest received by households was concealed.

- NA/40 Who came off worst: Structural change of Dutch value added and employment during the interwar period**, Den Bakker, Gert P. and Jan de Gijt (1990).
In this paper new data for the interwar period are presented. The distribution of value added over industries and a break-down of value added into components is given. Employment by industry is estimated as well. Moreover, structural changes during the interwar years and in the more recent past are juxtaposed.
- NA/41 The supply of hidden labour in the Netherlands: a model**, Kazemier, Brugt and Rob van Eck (1990).
This paper presents a model of the supply of hidden labour in the Netherlands. Model simulations show that the supply of hidden labour is not very sensitive to cyclical fluctuations. A tax exempt of 1500 guilders for second jobs and a higher probability of detection, however, may substantially decrease the magnitude of the hidden labour market.
- NA/42 Benefits from productivity growth and the distribution of income**, Keuning, Steven J. (1990).
This paper contains a discussion on the measurement of multifactor productivity and sketches a framework for analyzing the relation between productivity changes and changes in the average factor remuneration rate by industry. Subsequently, the effects on the average wage rate by labour category and the household primary income distribution are studied.
- NA/43 Valuation principles in supply and use tables and in the sectoral accounts**, Keuning, Steven J. (1991).
In many instances, the valuation of transactions in goods and services in the national accounts poses a problem. The main reason is that the price paid by the purchaser deviates from the price received by the producers. The paper discusses these problems and demonstrates that different valuations should be used in the supply and use tables and in the sectoral accounts.
- NA/44 The choice of index number formulae and weights in the National Accounts. A sensitivity analysis based on macro-economic data for the interwar period**, Bakker, Gert P. den (1991).
The sensitivity of growth estimates to variations in index number formulae and weighting procedures is discussed. The calculations concern the macro-economic variables for the interwar period in the Netherlands. It appears, that the use of different formulae and weights yields large differences in growth rates. Comparisons of Gross Domestic Product growth rates among countries are presently obscured by the use of different deflation methods. There exists an urgent need for standardization of deflation methods at the international level.
- NA/45 Volume measurement of government output in the Netherlands; some alternatives**, Kazemier, Brugt (1991).
This paper discusses three alternative methods for the measurement of the production volume of government. All methods yield almost similar results: the average annual increase in the last two decades of government labour productivity is about 0.7 percent per full-time worker equivalent. The implementation of either one of these methods would have led to circa 0.1 percentage points higher estimates of economic growth in the Netherlands.
- NA/46 An environmental module and the complete system of national accounts**, Boo, Abram J. De, Peter R. Bosch, Cor N. Gorter and Steven J. Keuning (1991).
A linkage between environmental data and the National Accounts is often limited to the production accounts. This paper argues that the consequences of economic actions on ecosystems and vice versa should be considered in terms of the complete System of National Accounts (SNA). One should begin with relating volume flows of environmental matter to the standard economic accounts. For this purpose, a so-called National Accounting Matrix including Environmental Accounts (NAMEA) is proposed. This is illustrated with an example.

- NA/47 Deregulation and economic statistics: Europe 1992**, Bos, Frits (1992).
The consequences of deregulation for economic statistics are discussed with a view to Europe 1992. In particular, the effects of the introduction of the Intrastat-system for statistics on international trade are investigated. It is argued that if the Statistical Offices of the EC-countries do not respond adequately, Europe 1992 will lead to a deterioration of economic statistics: they will become less reliable, less cost effective and less balanced.
- NA/48 The history of national accounting**, Bos, Frits (1992).
At present, the national accounts in most countries are compiled on the basis of concepts and classifications recommended in the 1968-United Nations guidelines. In this paper, we trace the historical roots of these guidelines (e.g. the work by King, Petty, Kuznets, Keynes, Leontief, Frisch, Tinbergen and Stone), compare the subsequent guidelines and discuss also alternative accounting systems like extended accounts and SAMs.
- NA/49 Quality assessment of macroeconomic figures: The Dutch Quarterly Flash**, Reininga, Ted, Gerrit Zijlmans and Ron Janssen (1992).
Since 1989-IV, the Dutch Central Bureau of Statistics has made preliminary estimates of quarterly macroeconomic figures at about 8 weeks after the end of the reference quarter. Since 1991-II, a preliminary or "Flash" estimate of GDP has been published. The decision to do so was based on a study comparing the Flash estimates and the regular Quarterly Accounts figures, which have a 17-week delay. This paper reports on a similar study with figures through 1991-III.
- NA/50 Quality improvement of the Dutch Quarterly Flash: A Time Series Analysis of some Service Industries**, Reininga, Ted and Gerrit Zijlmans (1992).
The Dutch Quarterly Flash (QF) is, just like the regular Quarterly Accounts (QA), a fully integrated statistic based on a quarterly updated input-output table. Not all short term statistics used to update the QA's IO-table are timely enough to be of use for the QF, so other sources have to be found or forecasts have to be made. In large parts of the service industry the latter is the only possibility. This paper reports on the use of econometric techniques (viz. series decomposition and ARIMA modelling) to improve the quality of the forecasts in five parts of the service industry.
- NA/51 A Research and Development Module supplementing the National Accounts**, Bos, Frits, Hugo Hollanders and Steven Keuning (1992).
This paper presents a national accounts framework fully tailored to a description of the role of Research and Development (R&D) in the national economy. The framework facilitates to draw macro-economic conclusions from all kinds of data on R&D (also micro-data and qualitative information). Figures presented in this way can serve as a data base for modelling the role of R&D in the national economy.
- NA/52 The allocation of time in the Netherlands in the context of the SNA; a module**, Kazemier, Brugt and Jeanet Exel (1992).
This paper presents a module on informal production, supplementing the National Accounts. Its purpose is to incorporate informal production into the concepts of the SNA. The relation between formal and informal production is shown in the framework of a Social Accounting Matrix (SAM). To avoid a controversial valuation of informal production, the module consists of two SAMs. One expressed in actual prices with informal labour valued zero, and one which expresses the embedded informal labour input measured in terms of hours worked.
- NA/53 National Accounts and the environment: the case for a system's approach**, Keuning, Steven J. (1992).
The present set of main economic indicators should be extended with one or a few indicators on the state of the environment. This paper lists various reasons why a so-called Green Domestic Product is not suitable for this purpose. Instead, a system's approach should be followed. A National Accounting Matrix including Environmental Accounts (NAMEA) is presented and the way to derive one or more separate indicators on the environment from this information system is outlined.

- NA/54 How to treat multi-regional units and the extra-territorial region in the Regional Accounts?**, De Vet, Bas (1992).
This paper discusses the regionalization of production and capital formation by multi-regional kind-of-activity units. It also examines the circumstances in which a unit may be said to have a local kind-of-activity unit in the extra-territorial region and what should be attributed to this "region".
- NA/55 A historical Social Accounting Matrix for the Netherlands (1938)**, Den Bakker, Gert P., Jan de Gijt and Steven J. Keuning (1992).
This paper presents a Social Accounting Matrix (SAM) for the Netherlands in 1938, including related, non-monetary tables on demographic characteristics, employment, etc. The distribution of income and expenditure among household subgroups in the 1938 SAM is compared with concomitant data for 1987.
- NA/56 Origin and development of the Dutch National Accounts**, Den Bakker, Gert P. (1992).
This paper describes the history of national accounting in the Netherlands. After two early estimates in the beginning of the nineteenth century, modern national accounting started in the 1930s on behalf of the Tinbergen model for the Dutch economy. The development spurred up after World War II to provide data to the government for economic planning purposes. In the 1980s, the development was towards a flexible and institutional approach.
- NA/57 Compiling Dutch Gross National Product (GNP); summary report on the final estimates after the revision in 1992**, Bos, Frits (1992).
This summary report describes the sources and methods used for compiling the final estimate of Dutch Gross National Product after the revision of the Dutch National Accounts in 1992. Attention is focused on the estimation procedures for 1988. A more extensive report is also available.
- NA/58 The 1987 revision of the Netherlands' National Accounts**, Van den Bos, C. and P.G. Al (1994).
The 1987 revision that was completed in 1992 has improved the Dutch National Accounts in three ways. First, new and other data sources have been used, like Production statistics of service industries, the Budget Survey and Statistics on fixed capital formation. Secondly, the integration process has been improved by the use of detailed make- and use-tables instead of more aggregate input-output tables. Thirdly, several changes in bookkeeping conventions have been introduced, like a net instead of a gross registration of processing to order.
- NA/59 A National Accounting Matrix for the Netherlands**, Keuning, Steven and Jan de Gijt (1992).
Currently, the national accounts typically use two formats for presentation: matrices for the Input-Output tables and T-accounts for the transactions of institutional sectors. This paper demonstrates that presently available national accounts can easily be transformed into a National Accounting Matrix (NAM). This may improve both the transparency and analytic usefulness of the complete set of accounts.
- NA/60 Integrated indicators in a National Accounting Matrix including environmental accounts (NAMEA); an application to the Netherlands**, De Haan, Mark, Steven Keuning and Peter Bosch (1993).
In this paper, environmental indicators are integrated into a National Accounting Matrix including Environmental Accounts (NAMEA) and are put on a par with the major aggregates in the national accounts, like National Income. The environmental indicators reflect the goals of the environmental policy of the Dutch government. Concrete figures are presented for 1989. The NAMEA is optimally suited as a data base for modelling the interaction between the national economy and the environment.

NA/61 Standard national accounting concepts, economic theory and data compilation issues; on constancy and change in the United Nations-Manuals on national accounting (1947, 1953, 1968 and 1993), Bos, Frits (1993).
 In this paper, the four successive guidelines of the United Nations on national accounting are discussed in view of economic theory (Keynesian analysis, welfare, Hicksian income, input-output analysis, etc.) and data compilation issues (e.g. the link with concepts in administrative data sources). The new guidelines of the EC should complement those of the UN and be simpler and more cost-efficient. It should define a balanced set of operational concepts and tables that is attainable for most EC countries within 5 years.

NA/62 Revision of the 1987-1992 Dutch agricultural accounts, Pauli, Peter and Nico van Stokrom (1994, forthcoming).
 During the recent revision of the Dutch national accounts, new agricultural accounts have been compiled for the Netherlands. This paper presents the major methodological and practical improvements and results for 1987, the base year for this revision. In addition, this paper demonstrates that a linkage can be established between the E.C. agricultural accounting system and the agricultural part of the standard national accounts.

NA/63 Implementing the revised SNA in the Dutch National Accounts, Bos, Frits (1993).
 This paper discusses the implementation of the new United Nations guidelines on national accounting (SNA) in the Netherlands. The changes in basic concepts and classifications in the SNA will be implemented during the forthcoming revision. The changes in scope will be introduced gradually. Important changes scheduled for the near future are the incorporation of balance sheets, an environmental module and a Social Accounting Matrix.

NA/64 Damage and insurance compensations in the SNA, the business accounts and the Dutch national accounts, Baris, Willem (1993).
 This paper describes the recording of damages to inventories and produced fixed assets in general, including damages as a result of legal product liability and of the liability for damage to the environment. In this regard, the 1993 System of National Accounts and the practice of business accounting are compared with the Dutch national accounts.

NA/65 Analyzing economic growth: a description of the basic data available for the Netherlands and an application, Van Leeuwen, George, Hendrie van der Hoeven and Gerrit Zijlmans (1994).
 This paper describes the STAN project of the OECD and the Dutch national accounts data supplied to the STAN database, which is designed for a structural analysis of the role of technology in economic performance. Following an OECD analysis for other industrial countries, the importance of international trade for a small open economy such as the Netherlands is investigated. The STAN database is also available on floppy disk at the costs of DFL. 25, an can be ordered by returning the order form below (Please mention: STAN floppy disk).

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