*[]) |*† >

-1-

COMPILING DUTCH GROSS NATIONAL PRODUCT (GNP); FULL REPORT ON THE FINAL ESTIMATES AFTER THE REVISION IN 1992

# Abstract

This report describes the compilation of 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. The description covers i.a. data sources used, sampling features of the surveys, grossing up procedures, adjustments for underreporting and the integration process. Global contents

1.	Introduction	4			
2.	The architecture of the system	5			
3.	The strategy of continuity	7			
4.	Delimitation of the Dutch economy	8			
5.	The production approach				
	5.1 Introduction	10			
	5.2 Establishments and the General Business Register (ABR)	10			
	5.3 Five groups of estimation procedures and data sources	14			
	5.4 Classes of economic activity with production statistics	16			
	5.5 Other classes of economic activity	28			
	5.6 Estimation of value added tax	96			
6.	The expenditure approach				
	6.1 Introduction	97			
	6.2 Imports and exports	97			
	6.3 Final consumption expenditure	106			
	6.4 Capital formation	111			
7.	The income approach				
	7.1 General remarks	115			
	7.2 The transition from GDP to GNP	116			
8.	The integration process				
	8.1 Introduction	121			
	8.2 The integration framework	121			
	8.3 Simultaneous balancing in current and constant prices	124			
	8.4 The net effects of balancing	130			
9.	Compliance with the guidelines of the EC (ESA)	131			
10	10. Conclusions 132				

References

133

# Contents of sub-sections 5.4 and 5.5: Estimation by class of economic activity.

5.4	Classes	of economic activity with production statistics	
	5.4.1 In	itroduction	16
	5.4.2 Se	cope and content of the production statistics	16
	5.4.3 G	cossing up procedures	21
	5.4.4 01	ther statistical procedures	24
	5.4.5 Ad	justments for underreporting and units absent	25
E E	0+1		
5.5	Uther C.	lasses of economic activity	00
	5.5.1 11 5.2.1 11		20
	5.5.2 De	escription by class of economic activity	20
	51	of Of Agriculture and northculture	20
	51	51 02, 03 Forestry and fishing	20
	51	12 Urude petroleum and natural gas production	39
	51	of 19.1 Sand, gravel and mart pits	41
	51	finite bland and finite for the stand of the	<b>٤</b> ٦
	<b>C</b> 1	115510hable materials	41 73
	51	SI 20, 21 Food, beverages and tobacco industry	43
	21	51 20.2 Manufacture of petroleum and coal products	52 53
	SI	of 39.5 Workshops for the disabled	55
	51	SI 40.5 water	54
	21	51 66.4-68.9 Repair of clocks, jewellery, electrical	55
	C 1	consumer goods and music instruments	55
	51	SI // Communication	50
	51	1 81 Banking	57
	51	of 82 Insurance	60
	51	a 83.1 Exploitation of and trade in real estate	04 20
	51	of ob.2 Estate agents	60 40
	51	of 04.1, 04.4 Legal services, services of engineers	70
	51	of notaling and auxiliary boates	70
	51	SI 90.1-90.7, 92.1-92.8 Data concerning general government	71
	51	1 91 Religious diganisations etc.	70
	21	1 92.9 Other education	/0 0/\
	21	1 93.1-93.4 Intramural heatth care	00 07
	51	or 95.5-95.9 Extramutal neating care	0Z 07.
	51	1 94, 97.1, 97.9 Social services	04 97
	51	of 95 Socio-cultural and cultural institutions	07 00
	51	1 96 Sports and recreation	07
	51	employees' organizations	91
	CT	T 97 5 Research institutions	93
	CI.	1 98 Other services	94
	51 51	T 99 Private households with wage-earning staff	95
	51	i so refere consense and and and set of the	

· •

#### 1. Introduction

In Gorter (1990a, 1990b), the sources and methods used for compiling the final estimate of Dutch Gross National Product (GNP) before the revision of the national accounts in 1992 are described. In this report, the estimation methods after the revision in 1992 will be discussed. A summary report can be found in Bos (1992). Explicit attention will be paid to sampling features of the surveys, grossing up procedures and the adjustments for underreporting.

This paper starts with three general sections. In section 2, the architecture of the Dutch National accounting system is described. The relation between continuity and up-to-date levels is discussed in section 3. The delimitation of the Dutch economy is the topic of section 4.

The three basic approaches to estimating Domestic Product are discussed in sections 5, 6 and 7. Estimation of value added from the production side is investigated in section 5. The expenditure approach is the topic of section 6 and the sources from the income side are dealt with in section 7.

The integration process determines the ultimate estimate of GNP. It is discussed in section 8. Compliance with the guidelines of the EC (European System of Integrated Economic Accounts, ESA; Eurostat, 1980) is the topic of section 9 and conclusions are drawn in section 10.

# 2. The architecture of the system

The three main features of the Dutch compilation method of GNP are:

- The use of an extensive Central Business Register in coordinating surveys on establishments;
- 2. The availability (and use) of numerous annual base statistics on production, income, final consumption and capital formation;
- 3. Integration in a detailed supply- and use framework in current as well as in constant prices.

All these aspects will be discussed in this report.

The <u>revision</u> of the Dutch National Accounts in 1992 has improved the estimate of GNP in several respects. Now more, mostly new, data sources are used. Cases in point are:

- Several new surveys on the production of services are employed in estimating value added in service industries;
- The retail trade statistics and the budget survey are used to estimate final consumption by households;
- Statistics on fixed capital formation (based on surveys) are also used to estimate fixed capital formation;

Furthermore, the integration process has been improved by the use of detailed make and use tables. Before revision, more aggregate inputoutput tables were used as the framework of integration.

The revision involved also several changes in bookkeeping conventions. Most of these changes do not affect the estimate of GNP. Cases in point are several of the changes from a net to a gross registration (e.g. of production of old people's homes and temporary employment agencies and the consumption of this output) or vice versa (after the revision a net registration of processing to order is used). Changes that do affect the estimate of GNP are the gross registration of dividends received and paid with the Rest of the World (see section 6) and the registration of VAT on accrual basis (see subsection 4.4). The revision increased the estimate of Gross Domestic Product at market prices in 1987 by 10.4 billion guilders, i.e. 2.4 %; Gross National Product at market prices in 1987 increased somewhat less, namely by 10.0 billion guilders. For more information on the revision, we refer to CBS Department of National Accounts (1992).

Table 1 shows how GNP at market prices is calculated for 1988 (after the revision).

Table 1. Dutch GNP and its components in 1988 (in million guilders).

Gross Domestic Product at market prices	457,410	
<b>a</b>	•	
+ Output of goods and services (excl. VAT)	839,080	
- Intermediate consumption	425,130	
+ VAT on accrual basis	37,450	
+ Levies on capital formation (e.g. cadastral	•	
levies, levies on construction)	420	
+ Net taxes on imports	5,590	
z		
+ Final consumption by households	271,640	
+ Final consumption by the government	70,200	
+ Gross fixed capital formation	97,390	
+ Change in stocks	310	
+ Net exports	17,870	
Gross National Product at market prices	453,910	
=		
+ Gross Domestic Product at market prices	457,410	
+ Net compensation of employees with ROW	- 10	
+ Net property and entrepreneurial income with ROW	-3,490	

-

. .

# 3. The strategy of continuity

The data in the National accounts are required to be both up-to-date and continuous. The former requirement means that estimates must comply with the most recent findings. Continuity means that the data from different reference periods must be mutually comparable. These two requirements come into conflict whenever definitions change, the availability of sources alters or the estimation methods improve.

Changes in sources may have a number of causes. One such cause is the availability of new basic statistics for a particular field. In rare cases, a source is no longer available and an alternative measurement must be used. Also, the statistical units on which observations are based may change (e.g. because the register of units is revised). There may be various reasons for altering the methods used to make estimates. Continuous improvement is going on.

In all cases - adoption of new definitions, changes in the source material available or the use of improved calculation methods - this would result in up-to-date figures that are correct with regard to level, but show year to year mutations that do not correspond to the real changes in these variables.

In the Netherlands, a compromise has been adopted to cope with this dilemma. In compiling the annual figures, the continuity aspect has been given priority - with the result that levels are not up-to-date in some cases. At intervals, however, the data are revised to bring the whole series into line with the updated level for a specific base year.

As a consequence of the recent revision, the figures for 1988 provide not only up-to-date changes, but also up-to-date levels.

- 7 -

#### 4. Delimitation of the Dutch economy

The definition of residents and the delimitation of the Dutch economic territory are in accordance with the recommendations made in paragraphs 204-211 of the ESA.

The Kingdom of the Netherlands consists of three parts:

- the Netherlands, that is, the territory of the Kingdom in Europe;
- the Netherlands Antilles (Curaçao, Bonaire, part of the Island of St. Martin and also St. Eustatius and Saba);
- Aruba (separated from the Netherlands Antilles in 1985).

A number of matters subject to royal authority such as defence and foreign relations are regulated jointly. With regard to other, socalled national matters, however, the three parts enjoy complete autonomy.

The Dutch economic territory does not encompass Aruba or the Netherlands Antilles, because:

- Under the protocol of 25 March 1957 the Treaty of Rome applies only to the Kingdom in Europe and to Netherlands New Guinea.
- By a convention of 13 November 1962 the Netherlands Antilles were incorporated in Annex IV (associated countries and areas) of the Treaty of Rome.
- The European Community is based on a customs union (Art. 9 of the Treaty of Rome); ESA 205a refers to the territory within which goods circulate freely.
- Only that part of the territory of the Kingdom that lies in Europe belongs to the Community customs area (EEC Directive No. 2151/84, 23 July 1984, PR No. L 197).

The Netherlands does not have any free trade areas on its territory. The value added in bonded warehouses, attributable to e.g. storage and duty-free sales at airports, is included in the Gross Domestic Product.

The Dutch part of the continental shelf is regarded as part of the

economic area of the Netherlands. The extraction of oil and gas which takes place in this area is thus included in the Dutch Gross Domestic Product. Inclusion in the statistics is based on the granting of an operating licence.

Territorial enclaves as defined in ESA 205d relate in particular to Dutch embassies and some barrack areas in the NATO partner countries. Extra-territorial enclaves as defined in ESA 205e include foreign embassies and consulates, the Permanent Court of Arbitration (het Permanente Hof van Internationale Justitie), AFCENT, the Dutch Reactor Centre (het Reactor Centrum Nederland), Estec, Eurocontrol and an air force base and a few mobilization complexes of other NATO countries.

The Netherlands does not have any deposits situated in international waters outside the Dutch part of the continental shelf which are exploited by resident units.

A special point worth mentioning is that in the province of Noord-Brabant there are about 30 small Belgian areas which together form the municipality of Baarle-Hertog. These areas in turn enclose two small enclaves which belong to the Dutch municipality Baarle-Nassau.

#### 5. Production approach

# 5.1 Introduction

In this section, the estimation of Gross Domestic Product (GDP) from the production side is described. The coordinating role of the General Business register is the topic of subsection 5.2. In subsection 5.3, two groups of classes of economic activity are distinguished: those with production statistics and those without production statistics. These classes are discussed in more detail in subsections 5.4 and 5.5. The section ends with a description of the estimation procedure of Value Added Tax (subsection 5.6).

# 5.2 Establishments and the Central Business Register

Statistics on the production process use the establishment as their statistical unit. An establishment is taken to be an enterprise, a part of an enterprise or a number of legal units grouped together (grouping of legal units occurs when some legal units only exists for fiscal reasons) which is as homogeneous as possible in terms of its activity and which can be described in full. An establishment is not necessarily a local unit. 'Homogeneity' is, of course, a relative concept. The benchmark for measuring the homogeneity of an establishment is the three-digit level of the 'Standaard bedrijfsindeling' (SBI). The SBI is the standard industrial classification used by the CBS. In designing both the activity classification of the European Community (NACE) and the United Nations Industrial classification (ISIC) were taken into account (see also Beekman, 1992). Originally, the SBI discerned four levels: economic branches, classes, groups and sub-groups. As time went on a fifth digit has been added. The criterion 'can be described in full' should be taken in this context to mean the availability of all necessary data for the description of the production process.

In practice, establishments are first sought in enterprises - i.e. natural persons, legal persons or associations of such persons trading on their own account. Should an enterprise not meet the criteria for an

establishment, because it exercises more than one activity, it will be split into two or more sections, each as homogeneous as possible, if the necessary descriptive data are available. Splitting is in fact applied only if the activities are relatively extensive and if the respondent cooperates (on large and complex enterprises, see also Willeboordse, 1992 ). For some enterprises it is not possible to describe the production process in full. If this is because such units are administered together with other enterprises, grouping is carried out. Such a group can sometimes be split again into homogeneous units. The establishment as it is made operational in the CBS statistics fully complies to the definition of 'establishment-type unit' in the UN System of national accounts (SNA). However, in view of the small size of the Netherlands, no account is taken of the regional aspect as discussed in the SNA. Establishments are real organizational units and thus more institutional in character than the homogeneous production unit defined in section 265 of the ESA.

The criteria for distinguishing establishments in the general government sector are largely the same as for private enterprises. For the classification by sector in the system of accounts, and in determining the value added, it is important to make a distinction between the producers of government services and market enterprises. This is done in line with the standards set out in section 304 and seq. of the ESA. In the Netherlands, all subsidized education is regarded as belonging to the general government sector.

The <u>General Business Register (ABR, Algemeen bedrijfsregister)</u> is an important instrument in ensuring consistent surveys of establishments and comprehensive estimates for the National accounts (see also Willeboordse 1991). Double counting and omissions can be avoided by a consistent use of the universe of units in the ABR. The production and value added of establishments will not be counted twice, as all establishments are uniquely classified as pertaining to one industry. In conducting integral surveys and drawing samples, the universe of reference is always the ABR. Data sources on production, compensation of employees and value added are compared by first ensuring their consistency with the ABR. Supplementary information, such as annual business reports, wage administrations and fiscal data frequently do not employ the establishment as statistical unit. So, establishing consistency with the ABR may require translation of information in these data sources into the terms of the ABR. Without such translation, data sources can only be compared imperfectly and omissions and doublecounting may occur.

For some years, the ABR comprised 706,000 establishments covering all economic activities, including general government but excluding agriculture. The ABR therefore covered 95% of all establishments in the Netherlands. Recently, the ABR was extended by the inclusion of units in agriculture. In the surveys on agriculture, the ABR is however not (yet) used.

Enterprises are not obliged to take steps to register with the CBS: the records are mainly based on a register held by the Chambers of Commerce and Industry (Kamer van Koophandel; 650,000 separate entities). In the Netherlands, firms must register at a Chamber of Commerce and Industry. Exceptions pertain to agriculture and to some very specific professions. The register of the Chambers of Commerce and Industry is supplemented by information from executive bodies of the social security system (100,000 legal entities). The latter cover all enterprises with employees. The CBS itself also organizes specific censuses of units engaged in particular activities. As a result of grouping there are 50,000 fewer statistical units than firms. On the other hand, splitting has generated 6,000 establishments.

The ABR is therefore fairly exhaustive and may only exclude a few businesses without employees and fully illegal production units, like some sweatshops in textile production or drugs trafficking.

The data recorded in the ABR include:

- Name and address;
- Legal form;
- Main activity as defined in the CBS standard industrial classification;

- Size category in terms of man-years employed.

Changes in these characteristics are updated monthly (400,000 changes annually), additions and deletions are made once a year (each involving approximately 50,000 firms).

#### 5.3 Five groups of estimation procedures and data sources

Value added per economic activity is estimated in various ways. For the Netherlands five broad groups could be distinguished:

1. Classes of economic activity with production statistics;

- 2. Classes of economic activity with good-quality data sources from supervising bodies;
- 3. Classes of economic activity which are (partly) estimated functionally;
- 4. Classes of economic activity which are estimated from the costs side (by convention as the sum of compensation of employees, consumption of fixed capital and VAT);
- 5. Other classes of economic activity (miscellaneous data sources and estimation procedures).

The relative importance of these groups is shown in table 2.

Compilation method	Classes of econ.act. <sup>a</sup> )	Value added <sup>b)</sup> X	Good-quality inst data sources %
Production statistics	Manufacturing Public Utilities Construction Trade, Hotels, repair of consumer goods Transport and storage Part of business services	51.3 <sup>c )</sup>	51.3° )
Good-quality data sources from supervising bodies	Banking, finance, insurance	e 5.1	5.1
Estimated (partly) functionally	Agriculture Operation of dwellings	12.7	
Estimated from the costs side	General government Subsidized education Social services	14.5	11.4
Estimated (mainly) on the basis of annual reports	Mining and quarrying Communication Intramural healthcare	8.4 <sup>c)</sup>	8.4
Miscellaneous	Other services	8.1	
Total		100.0	76.2° )

Table 2. Five groups of compilation procedures (production approach).

B) Hore detailed information on the groups of compilation methods and their classes of economic activity can be found in subsections 4.4 and 4.5.

b) The concept of value added employed to calculate the percentages deviates in some respects from Domestic product at market prices, see table 3. c) Approximately.

Table 2 also indicates that the coverage of good-quality institutional data sources is 76 % of Dutch value added.

The Netherlands Central Bureau of Statistics also compiles a system of Labour Accounts (CBS, 1992b; see also Altena et al., 1991 and Bos et al., 1988; for a general overview of integration at the CBS, see van Bochove, 1991). The Labour Accounts aim to give full information about the Dutch labour market (number of jobs, hours worked, persons with unemployment benefits, wages, wage-rates, etc.). It integrates labour market statistics obtained from persons (the Labour Force survey), social security institutions (Statistic on paid working days and gross wages and salaries, see subsection 5.4.2) and enterprises (e.g. Survey on wages and salaries and Statistic on employed persons). Due to differences in sources and goals, there are differences in population and definition between the National Accounts and the Labour Accounts. As a consequence, figures on compensation of employees and employment may also differ. Nevertheless, information from the Labour Accounts and the labour market statistics plays an important role in compiling the National Accounts.

Firstly, the labour market information is used to complete the information from the production statistics (see subsection 5.4.2). For some service activities, it is even employed as the main data source in estimating production and value added (see subsection 5.5).

Secondly, the Labour Accounts information is used to check the plausibility of the information from the Production statistics.

Thirdly, the Labour Accounts provides information on the relation between the number of employees (jobs) measured ultimo September and the volume of employment (full-time equivalents). This information is used in transforming the job figures from the Production Statistics into full-time equivalents as published in the Dutch National Accounts.

In subsection 5.4, the estimation procedures are discussed for the classes of economic activity with production statistics. The other

groups are described in subsection 5.5.

# 5.4 Classes of economic activity with production statistics

#### 5.4.1 Introduction

In this subsection, we describe the compilation procedures for classes of economic activity with production statistics. The scope and content of the production statistics are discussed first in subsection 5.4.2. The grossing up procedures are the topic of the second part of this subsection (5.4.3). The other compilation procedures (including adjustments for underreporting and units absent in the ABR) are described in 5.4.4.

#### 5.4.2 Scope and content of the production statistics

In table 3, it is shown in more detail for which classes of economic activity the estimates are mainly based on production statistics. The table for example shows that for 28 Petroleum industry:

- there is a production statistic on Oil refineries, but none on the Manufacturing of petroleum and coals products (the third column);
- that this production statistic was also used before the revision (the fourth column);
- that the value added of the Petroleum industry was 5766 million guilders in 1988, which is 1 % of total domestic value added (the fifth column);
- and that the Oil refineries, of which a production statistic is available, constitute also nearly 1 % of total domestic value added. This implies that the quantitative importance of the part of Petroleum industry not covered by production statistics (i.e. the manufacturing of petrol and coal products) is relatively small. (the sixth column).

The production statistics are compiled by the CBS on the basis of annual surveys (see also CBS, 1990b). For manufacturing, all establish-

-16-

SB1 Class/(sub) group of economic activities Annual Production Not before Value added 1988 mp Covered by statistics after revision the revision Total Covered by other Total coverage by prod. stat.a) good-quality<sup>C)</sup> good-quality<sup>c)</sup> instit.sources instit.sources 17955 (4%) 01,02,03 Agric., hort., forestry and fishing (0%) (0%)b) 11,12,19 Mining and guarrying 19.2 Salt mining 12504 (3%) (3%) 85896 (20%) Manufacturing 20-39 10495 (2%) 10495 (2%) 20.1-21.7 Food, beverage and tobacco industry 20.1-21.7 22.1-24.3 Textile, wearing apparel and leather ind. 22.1-24.3 2969 (1%) 2969 (1%) Wood, furniture and building materials 25,32 5752 (1%) 5752 (1%) 25,32 26,27 Paper, paper products, printing and publ. 26,27 9741 (2%) 9741 (2%) (1%)b) Petroleum industry 28.1 Oil ref.(= not 28.2 Manuf. 5766 (1%) 28 petr. and coal products) 29,30,31 Chemical, rubber, artificial mat. proc. 29,30,31 18869 (4%) 18869 (4%) Metal industry 33,34 10309 (2%) 10309 (2%) 33,34 35-39 Industrial manufacturing n.e.c. 35-39 38,39 (Manuf. 21995 (5%) 21995 (5%) of instr.) (2%)b) 40 Public utilities 40 excl. 40.3 Water 7999 (2%) 5 Construction 5 24724 (6%) 24724 (6%) (13%)<sup>b)</sup> 61-68 Trade, hotels, c&rest., rep.of cons.goods 66738 (15%) 61-66 Trade 61-66 67 Hotels, cafes & restaurants 68 Repair of cons. goods excl. 68.4-68.9 Repair of clocks, jew., electr. cons. goods, mus. instr. 20231 (5%) 20231 (5%) 71.76 Transport and storage 71-76 Comunication 8910 (2%) (2%) 77 Other services and n.e.c. 8.9 21845 (5%) (0%) (5%) Benking, finance and insurance 81.82 **Operation of dwellings** 36624 (8%) (0%) 83 (6%)<sup>b)</sup> 28559 (7%) 84,85,86 Business services, renting of machinery 84 excl. 84.1 Legal services 84 excl. 84.1 and holding and auxiliary bodies excl. 84.4 Services of eng. excl. 84.4 85 85 30285 (7%) (0%) (7%) 90 General government 92.1-92.8 Government: subsidized education 18994 (4%) (0%) (4%) (0X)b) 13155 (3%) 92.91 Driving Schools 91,92,9,94,97 Social services (0%) Health and veterinary services 23181 (5%) (4%) 93 (0%)b) 95.69 6493 (2%) Cultural, sports and recreational services 95.69 Renting of videos 95,96 5799 (1%) (0%) Other services 98 excl. 98.1 Cleaning, disinf 98 excl. 98.1 98 (0%) 1510 (0%) Private households with wage-earning staff 99 (51%)b) (76%) (25%) 431402 (100%) Total -17450 Imputed banking charge 5587 Import duties and subsidies on imports 36250 Other indirect taxes on imports 419 Levies on capital formation 1194 Difference between VAT at accrual basis and at approx. accr. basis 457402 Gross Domestic Product at market prices

Table 3. The classes of economic activity (SBI's) with production statistics and other good-quality institutional data sources (value added in million guilders).

a. Covered by production statistics indicates that for that class of economic activity, there is a production statistic. The values and percentages given pertain to the total size of that class of economic activity, irrespective to whether adjustments are to be made for the absence of small establishments.

b. Approximately.

c. 'Good-quality' refers only to the reliability of the data source in terms of estimating value added. For the meaning of 'coverage': see note a).

ments with 20 employees or more are surveyed. Furthermore, for the establishments with 1-19 employees, there is the Survey of Small Establishments in Manufacturing (see section 5.4.3). In construction, the integral survey pertains to 50 or more employees; samples are drawn for establishments with 1-49 employees. For service industries, like trade, there is an integrated survey of establishments with more than 20 employees. A sample is used for the other establishments. The classes transport and storage are surveyed fully; only in some specific subclasses, a sample is used for establishments with less than 20 employees. For public utilities, no additional estimate has to to be made for small establishments as these are absent in this class of economic activity (see table 4).

In case of non-response, people from the CBS-outside service visit the establishment. They try to persuade the non-respondent to cooperate, point to the legal obligation to provide information and in some cases they help filling in the survey form. If this does not succeed, the information provided by the establishment last year is used (and extrapolated on the basis of information of establishments of similar size in the same class of industry). In case of a sample, the grossing up for non-sampled units will include non-respondent units (on grossing up in general, see Kooiman and van de Stadt, 1991). Table 4. Main features of the surveys for the production statistics.

		Size classes D	in terms of 1-9	fulltime emplo 10-19	yees 20-49	50 or more	Integral % <sup>d )</sup>
20-39	Manufacturing	-	Sample <sup>a</sup> )	Sample <sup>a</sup> )	Integral	Integral	89%
40	Public utilities	(non-existen	t) Sample	Integral	Integral	Integral	87%
5	Construction <sup>b</sup> )	-	Sample	Sample	Sample	Integral	48%
61-68	Trade,hotels,c&rest. rep.of cons.goods	Sample	Sample	Sample	Integral	Integral	31%
71-76	Transport, storage	Sample <sup>c)</sup>	Sample <sup>c )</sup>	Sample <sup>c )</sup>	Integral	Integral	43%
84,85	Business services, renting of machinery	Sample	Sample	Sample	Integral	Integral	53%
98	Other services	Sample	Sample	Sample	Integral	Integral	65%

a. Survey small establishments in manufacturing: the major difference with the other samples (e.g. in trade) is that their results are not included in a Production statistic. The production statistic on manufacturing only includes the results of the integral surveys.

b. Establishments are only asked for their domestic construction activities. The exports of

construction services are takes from the cash flow figures of the Dutch Central Bank (DNB). c. There are integral surveys for the SBI-codes: 71,72.11,72.12,72.22,72.43,73.10,73.20,73.33,73.34,73.39,

74.22,74.23,75.10 and 75.20.

d. This column indicates the relative importance of the integral surveys in terms of value of production (construction), value added (manufacturing, transport) or number of employees (trade, business services, other services).

On the basis of the information on the survey form, gross value added can be calculated as the difference between the value of production and intermediate consumption. The value of production is equal to the aggregate of:

- + Sales of own-produce (036)
- + Net change in stocks of own-produce (038-032)
- + Own-account capital formation

Machines, instruments, etc. (092)

Buildings and other construction (094)

+ Trade margin on goods (and services) produced by others - Sales (056) -Purchases (054) + Net change in stocks (058-052)

+ Sales of other goods and services (e.g. rental) (076)

+ Other revenues excluding royalties, etc., but including revenues for overhead activities (941)

(The codes between brackets refer to the codes on the survey form).

Intermediate consumption is equal to the sum of: + Purchase of raw materials, etc. (014)

- Net change in stocks of raw materials, etc. (012-018)
- + Purchase of other goods and services (074)
- Net change in stocks of other goods and services (072-078)
- + Expenditure on energy (101)
- + Other expenditure on production (901).

The valuation principles for changes in stocks employed in the business administrations may differ widely and are often inconsistent with the international guidelines on national accounting. The changes in stocks are therefore not taken directly from the survey form, but revalued -as best as possible- at average sales prices. The revaluation is done at the level of individual products and at the 4-digit SBI level. Where possible, use is made of the unit-value price index for sales or purchases of the product in question (from the production statistics). In other instances, changes in stocks are corrected by using the CBS statistic on producers prices.

The surveys provide also important other information, like:

- A specification of output by CBS-commodity groups (on a separate leaflet);
- Compensation of employees (321..301);
- Number of employees (397..389);
- Capital consumption by type of capital good (430..468);
- Income taxes paid (852);
- VAT on sales and imports (581..589);

- A specification of the 'other expenditure on production' (Rent, Repair, Insurance premiums, Costs of marketing, etc.) (901..931). Information on fixed capital formation is included in the surveys for Trade and Business services.

In principle, the specification of output by commodity groups is much more detailed than that of intermediate consumption (in many cases 'other expenditure on production' is rather big). A problem frequently encountered is that the actual amount of detail is determined to a great extent by the size of the residual category 'other goods and services'. In some instances, this category surpasses 50% of the inputs. Then assumptions and the results of the balancing process also become important in determining the classification of outputs and inputs by commodity groups.

Establishments may be only part of an enterprise. The <u>overhead costs</u> of the parent company (that are not explicitly charged to individual establishments) are recorded in the special class of industry called Holding and auxiliary bodies (SBI 86).

## 5.4.3 Grossing up procedures

As the regular production statistics for manufacturing do not apply to establishments with less then 20 employees, an additional estimate has to be made for smaller units. In the case of units without employees (i.e. the self-employed), an additional estimate is made on the basis of the number of such units recorded in the ABR multiplied by the value added per employee ratio for the larger units. For example, if this ratio is 100 thousand guilders and the number of units is 30, the adjustment is 3 million guilders. Such an adjustment for units without employees is also made for construction.

Before 1987, the integral survey of the production statistics in manufacturing pertained to all establishments with 10 or more employees. As a result of economizing, since then the establishments with 10-19 employees are not all surveyed anymore. In 1983, the <u>Survey of Small</u> <u>establishments in manufacturing</u> (Enquête Kleine nijverheid) was set up to provide information on the establishments excluded from the integral surveys (see also Vosselman, 1990). Before 1987, the establishments with 1-9 employees were sampled; since 1987, the samples refer to establishments with 1-19 employees. This new survey provides the same general information as the integral surveys (see above).

The major sampling characteristics of this survey can be found in table 5.

Size class in terms of number of full time employees	Sample size	Population size	Sample size/ Population
	·····		
1	2188	5940	0.37
2,3,4	2758	6516	0.42
5-9	2959	4567	0.65
10-19	2966	3562	0.83
Total	10871	20585	0.53
Samples are drawn for the SBI-cl	asses 20-29, 31-3	9 and subclasses 20	.8, 25.3, 25.7, 27.1, 32.6,
34.4, 34.9 and 38.1. The samples	are stratified b	y SB1-(sub)class an	nd by size.

Table 5. Sample and population sizes of the Survey on small establishments in manufacturing, 1988.

The information from the Survey of Small establishments in manufacturing is not always directly used when grossing up. In some instances, this survey provides information at a higher level of aggregation than is used in compiling the national accounts (e.g. two digit instead of three digit classes of economic activity).

In some cases, the information from this survey is considered to be not reliable enough. This may appear when comparing the estimates of the levels of output and value added over a longer period of time. For example, the estimates are sometimes rather unstable (e.g. showing implausible increases and decreases of over 10 % or an absence of any trend), or they may be rejected on the basis of a comparison with the information on paid days and wages (e.g. when they indicate a substantial underestimation of wages). Another important check on the validity of the sample results is the comparison with output and value added per employee ratios and with the growth rates of output and value added in the integral surveys. For example, if the integral survey shows a zero growth rate, while the sample indicates 10% growth or more, the latter can be regarded as suspect. If the sample results pass these tests, there is reason to believe that they are of good quality and that they are useful in compiling the national accounts.

Unreliability of some of the sample results is not surprising. It concerns samples with changing sample populations. As a consequence, each year different establishments are involved. In a heterogeneous class of economic activity, like chemicals, this will pose more problems than in a fairly homogeneous class of economic activity (e.g. bakeries). The sample size may be too small to capture such heterogeneity. Furthermore, the establishments are not used to respond to the questionnaire. This could result in non-response or a large number of errors when filling in the questionnaire. However, if the sample surveys are not sufficiently reliable for a direct estimate of output and value added, ratios in the survey may still be useful for indirect estimation. Examples of such ratios are output/intermediate consumption (by commodity), output/employee and value added/employee.

For the estimate of the production of establishments in manufacturing with 1 to 20 employees, the <u>Statistic on paid working days and gross</u> <u>wages and salaries</u> (Statistiek Verloonde dagen en loonsommen; see CBS, 1988, pp. 5,6) is also a major data source. This statistic provides an integral survey of all employees insured under the Health Insurance Act (Ziektewet). The statistic covers 80% of total wages and salaries; the main category excluded concerns civil servants (Note: the self-employed are also excluded). It can be fully linked to the classification of establishments by economic activity in the ABR and is therefore very appropriate for grossing up. The additional estimate is made on the basis of gross wages and salaries from this statistic and of the output per unit of wage or salary as derived from the production statistic. The specification of production and intermediate consumption by type are obtained from the production statistics.

The procedure for grossing up the Production Statistics of manufacturing is not mechanic and depends on the outcome of plausibility checks, like those described above for the figures of the Survey of Small Establishments in Manufacturing. In most instances, the information from the Statistic on paid days of work and wages is used. In order to calculate output, operating surplus and value added, also information from the integral surveys or information from the Survey on Small Establishments in Manufacturing is employed.

The adjustments for establishments of size-classes not surveyed in the production statistics of manufacturing for 1988 are: - 1.2 billion Dfl for establishments without full-time employees;

-23-

- 4.3 billion Dfl for establishments with 1-9 full-time employees;
- 3.6 billion Dfl for establishments with 10-19 full-time employees.
So, the total adjustment for manufacturing is 9.1 billion Dfl (11% of value added in manufacturing). For construction, the adjustment for establishments without full-time employees amounted to 1.0 billion Dfl.

In the compiling the production statistic for construction (SBI 51), the sample results are grossed up by multiplying the ratio of value added per employee in the sample and the total number of employees in that size class. The latter is derived from the Statistic Paid days of work and wages. For example, if the value added per employee in the sample is 100 thousand guilders and the total number of employees in the size class is 5000, the estimate will be 500 million guilders.

In compiling the production statistics for installation on construction projects (SBI 52), trade, transport, business services and other services, the sample results are grossed up by the number of units in the same size-class according to the ABR. For example, if the value of production from the sample is 100 million guilders and 40% of the units in the ABR are sampled, the estimate for the population is 250 million guilders.

#### 5.4.4 Other statistical procedures

For most classes of economic activity, the <u>level</u> of value added is estimated first. This estimate is independent of the general benchmark year 1987. The estimated level is judged on its plausibility (rechecked) by a comparison with data from other sources, such as the Statistic on paid working days and gross wages and salaries, the Labour Accounts, annual reports, other CBS statistics and external investigations. A case in point is <u>construction</u>. In addition to the production statistics and the Statistic on paid working days and gross wages and salaries, also information is used about:

- Building permits guaranteed, building starts reported and completions reported by project (all projects in excess of DF1 50,000; providing

-24-

this information to municipalities is compulsory);

- Earth-moving works, road-building and hydraulic engineering (a quarterly survey which includes information on the value of the works, the total extent of the works and the part completed during the reporting period);

- CBS Statistics of capital formation (see section 6.5). (On CBS statistics on construction, see also Groeneweg, 1991).

Special attention is also paid to the movement at constant prices: changes in current prices could be plausible, but those in constant prices or the price change itself may then indicate that still something is wrong.

These checks could be regarded as a first stage of integration, namely at a very desaggregated level by class of industry. The second stage of integration comprises integration by commodity-group. At this stage, information about expenditure is systematically used and all estimates are checked on their consistency at a national level (see section 7).

Production, intermediate consumption and value added are deflated on the basis of the CBS Statistics on producers' prices supplemented by unit values from the production statistics. The monthly CBS Statistics on producers' prices provides price indices for domestic sales, exports and imports for some 3000 commodity groups. The valuation used is producers' value or free domicile (including all costs of transport and insurance up to the establishment of the purchaser). (On output and price indices, see Mensink, 1986).

# 5.4.6 Adjustments for units absent in the ABR and underreporting

The information provided in the surveys for the production statistics could possibly be incomplete, because of units absent in the ABR and underreporting. However as already discussed in section 4.3.2, missing units are in general no problem in the Netherlands. Therefore, a few minor adjustments are made for underreporting when estimating value added. However, in comparison to fiscal data, underreporting in the CBSsurveys is probably much less of a problem. The people in the establishments that are involved in reporting to the fiscal authorities and to the CBS are usually not the same: fiscal information is submitted by accountants and fiscal specialists, while the much more detailed information required for the production statistics is provided by internal administrators. There exists no real motive for supplying (too low) figures to the CBS, because it is generally known in the Netherlands, that information provided to the CBS is not transferred to the fiscal authorities. The latter is part of the CBS policy of stressing and safeguarding its independency.

Since the revision, an explicit adjustment is made for illegal textile production. In 1988, this amounted to nearly 0.2 billion. This adjustment was induced by a report presented to the Minister of Social Affairs in February 1992. The report suggested an important substitution between reductions in the imports of textile and textile processing services on the one hand and increases in illegal textile production on the other. By detailed comparison of various data on the supply and use of textile over several years adjustments were estimated. For 1987, no adjustment was necessary, as the figures indicated that the illegal textile production in the Netherlands was indeed mainly a recent phenomenon.

For Hotels, restaurants, cafés, adjustments are incorporated for underreporting (mainly underreported turnover on beer sales) and tips (both based on specific industry-wide investigations into fraud by the Fiscal Intelligence and Investigation Service, FIOD). The total adjustment amounted to 1.7 billion Dfl in 1988.

Adjustments for unreported income are also introduced for car repair and trade in second-hand cars. 'Black' car repair is calculated on the basis of the total number of registered cars multiplied by:

- the estimated costs of regular maintenance x the percentage of people that do not employ official car repair establishments for this purpose

-26-

(large maintenance services: 20%; small maintenance services: 40%; the percentages are derived from an investigation by the Organization of Car Selling and Repairing Enterprises, BOVAG);

- the estimated costs of average damage repair x the percentage of people that do not employ official car repair establishments for this purpose (40%, BOVAG).

In 1988, the total adjustment amounted to over 1 billion Dfl. If anything, this adjustment has led to an overestimation of GNP, as do-ityourself may not have been excluded.

Adjustments are also made for some subgroups of Other services. For hair-dressing an adjustment for underreporting is again made on the basis of an industry-wide investigations into fraud by the FIOD.

As part of the revision of 1977, a sensitivity analysis was made for various Business services and Social services, e.g. Accountants, Dentists and Legal services. For each group, the sensitivity of data sources to various types of fraud and evasion (underreporting of sales and income, overreporting of intermediate consumption, etc.) were investigated. This resulted in 'guestimates' for underreporting which are since then used in estimating output, value added and operating surplus.

## 5.5 Other classes of economic activity

#### 5.5.1 Introduction

In section 5.4, the estimation procedures for the classes of economic activity with production statistics (as the major data source) have been discussed. In this section, the focus is put on the data sources and compilation procedures for the other classes of economic activity. No further distinction is made between various groups of compilation procedures, like 'Good-quality data sources from supervising bodies', 'Estimated (partly) functionally', 'Estimated from the costs side' and 'Other' (see table 2). In order to facilitate looking up specific classes of economic activity, the description simply follows the sequence of the SBI-codes.

## 5.5.2 Description by class of economic activity

#### SBI 01 AGRICULTURE AND HORTICULTURE

# A. General

SBI Class 01 Agriculture and horticulture consists of:

- 01.1 Agriculture and livestock raising;

- 01.2 Horticulture;

- 01.3 Other gardening activities;
- 01.4 Agricultural services;
- 01.5 Hunting.

In 1988, the total amount of gross value added involved was 18.0 billion Dfl.

For hunting, no estimate is included in the Dutch national accounts and GNP, because no data sources are available. However, the importance of hunting activities in the Netherlands is presumably very small. Estimates on Other gardening activities and Agricultural services are included since the revision.

Output, intermediate consumption and value added of Agriculture and livestock raising and Horticulture are estimated mainly functionally, i.e. on the basis of information on flows of commodities and not on the basis of information by establishment or enterprise (institutional data). Examples of institutional data sources are production statistics and business accounts. The functional estimation method is not employed for most other economic activities in the Dutch national accounts. The functional estimation method is enforced by the mainly functional data sources (see below). The functional estimation method for Agriculture, livestock raising and horticulture bears also consequences for the data on related economic activities. Although the latter are in principle estimated institutionally, some exceptions are now necessary. For example, subsidiary livestock raising activities by animal feedstuff producers are not recorded as their subsidiary activity but at the economic activity livestock raising. This is a consequence of the functional estimation of livestock raising.

The revision of the Dutch national accounts in 1992 added institutional elements to the principally functional estimation and registration of agriculture and horticulture (see also Pauli, 1992 and Pauli and van Stokrom, 1992). Since the revision also intermediate deliveries between agricultural establishments are recorded. Furthermore, transport is shown as a subsidiary activity. This pertains e.g. to own-account transport of milk and cattle on contract-basis.

The output of agricultural products is mainly sold (delivered) to the Food, Beverages and Tobacco industry (SBI 20/21). The estimates for agricultural output are therefore largely intertwined with the estimates for the food industry's intermediate consumption. This pertains in particular to:

- supplies of slaughter cattle for the slaughterhouses,
- milk to the dairy product industry,
- raw materials for the flour mills, animal feedstuffs industry and breweries (grain), the starch and the potato product factories (potatoes), the sugar industry (sugar beet) and the vegetable- and fruit-processing industry (vegetables and fruit).

Another important destination of the output of agricultural products are exports.

In incidental cases, there is also a strong inverse relationship between agriculture and food industry. The major example is that the output of the animal feedstuffs industry is mainly used in agriculture or exported. This situation also stimulates intertwined estimation.

Other reasons for the intertwined estimation procedures for agriculture and food industry in the Netherlands relate to the fact that the functional information provided by Commodity Boards (Produktschappen) on prices and quantities is very detailed.

Furthermore, for the purposes of the national accounts, information from the production statistics has to be modified or supplemented with information from other data sources, because:

- The administrations of enterprises relate often to financial years. As a consequence, the figures in the production statistics for the food industry often do not relate to calendar-years as required by the National Accounts. The figures from the production statistics are therefore to be modified. For this purpose, other (functional) data sources are necessary.
- There are many joint and overlapping regulations, subsidies and levies. In the national accounts, all subsidies and levies on final products and the use of raw materials should be recorded at the producer's economic activity. However, subsidies and levies by product can not be derived from the sales and purchase values in the production statistics, because part of the subsidies (levies) are actually received (paid) by whole sale-traders. In practice, therefore, subsidies and levies are type-classified and (functionally) recorded by product.

#### B. Main sources

The detailed information on merchandise imports and exports from the Foreign Trade Statistics (see also subsection 6.2) plays a crucial role in all the compilation procedures. In order to attain figures pertaining to a calendar-year, the monthly figures from the Foreign Trade Statistics are corrected, e.g., for documents received too late and annual submissions. These corrections are made at the most detailed commodity level.

Another important set of information is that from the Commodity Boards. They provide functional statistics with information on output and industrial processing of products in the agricultural and food industry sector. Commodity Boards are institutions entrusted by the government with the implementation of the EEC product arrangements. They also advise the Government on all aspects of EEC commodity policy.

Registration of export subsidies (reimbursements) requires extra attention. Only the subsidies related to domestic production should be incorporated. In the Account of the Agricultural Equalization Fund of the Ministry of Agriculture, Nature conservation and Fishing all reimbursements paid by the Dutch government are recorded. This includes payments to non-resident establishments which export their commodities via the Netherlands by using EC-regulations on free circulation of merchandise. This part of the payments is estimated by comparing exports figures to non-EC countries in the Dutch Foreign Trade Statistics and those in the Account of the Agriculture-Equalization Fund.

A specification of subsidies and levies by product is based on information from the Commodity Boards and the Food Supply Purchase and Sale Office (Voedselvoorzieningsin- en verkoopbureau). The figures obtained are then brought into line with the accounts of the Agricultural Equalization Fund.

An important role in recording agricultural production is played by the Agricultural Census. This census is carried out annually by the CBS in co-operation with the Ministry of Agriculture, Nature Conservation and Fisheries. It is fully comprehensive and covers all the approximately 130 000 agricultural and horticultural enterprises. All establishments with agricultural activities of any extent are recorded. Questions are posed about, among other things, cultivated areas, the size of livestock herds, labour forces and the main and subsidiary occupation. It provides a good basis for grossing up various CBS surveys.

In calculating farming output, the Harvest Estimates are an important data source. A working party of experts whose members include representatives of the CBS and the Ministry of Agriculture makes annual estimates of yields per hectare (ha) from information obtained from some 66,000 respondents. The CBS grosses up these figures according to the level recorded in the agricultural census.

In estimating the production of livestock, the main data sources are:

the Slaughtering Statistics relating to approved slaughterings of inland livestock (including domestic slaughtering of pigs). The frequency is monthly and the degree of recording full (some 180 respondents, the so-called "inspection circles" ("keurkringen")). The number of poultry killed is calculated from the Commodity Board for Poultry and Eggs.

- Foreign Trade Statistics for exports of livestock on the hoof.
- The Agricultural Census is used for estimating the annual change in the size of livestock herds.

The Dairy Statistics (Zuivelstatistiek) is compiled by the CBS in cooperation with the Commodity Board for Dairy Products on the basis of weekly reports. It contains data on the quantities of milk produced for the dairy product factories, direct deliveries to the consumer, the preparation of butter and cheese on the farm and stock raising, and for farmers' own consumption. The degree of recording is complete. The estimate of egg production is based on data from the Commodity Board for Poultry and Eggs.

Hay harvests and stocks are taken from the CBS annual Statistics on the use of pasture land based on a sample of some 70 000 respondents.

For vegetables and fruit, figures concerning supplies to auctions

(broken down by product; full recording) from the Commodity Board for Vegetables and Fruit are employed. In addition, the Commodity Board makes estimates for vegetables and fruit not sold at auctions. The recipients by product are derived from information by the Commodity Board and from the CBS statistics Industrial processing of vegetables and fruit (see SBI 20/21 Food, Beverages and Tobacco Industry).

Production of bulbs, flowers and plants, trees and seed is calculated from export figures and estimates of national sales provided by the Commodity Board for Ornamental Plants.

In order to make a breakdown of the quantities produced by category of destination, use is made of the export figures in the Foreign Trade Statistics, data from the Main Commodity Board for Arable Crops and the Production Statistics of the Food Industry.

Since the revision, estimates on Other gardening activities and Agricultural services are included in the Dutch national accounts. For both SBI's, special surveys were set up for 1987. The surveys were mainly similar to those for the regular production statistics (see subsection 5.4). These incidental production statistics are employed to estimate the level of output and value added in 1987.

Agricultural services are services produced by establishments engaged in activities related in particular to (a part of) the production processes in agriculture and horticulture. Often, these activities could also have been done by the farmer, like ploughing, mowing, threshing, shearing sheeps and picking fruit. However, it also encompasses many other services. Examples are artificial insemination, cleaning services, spraying of insecticides and pesticides by plane and wage-work. In addition to agricultural wage-work, a rather sizeable amount of wagework on behalf of construction (e.g. preparing land) is also done by these establishments.

The value of production is equal to sales plus the changes in stocks. Transactions in goods and services are in principle to be recorded at

current market prices. As a consequence, changes in stocks should be valued at the prices relevant when goods are added to the stocks or withdrawn from the stocks. In the Dutch national accounts, the changes in stocks are in general approximated by valuing the change in volume of stocks at the average sales prices during the calendar-year. For seasonal products with largely fluctuating sales prices and substantial changes in stocks, this approximation is problematic. For example, the harvest of agricultural products is normally in the second half of the calendar-year, while the sales of these products continues up to the first half of the next year. Applying the common approximation rule based on calendar-years, would imply that production in the current year is valued using the average sales price in the current year. However, the sales in the first half of the calendar-year pertain to the production of last year. Therefore, since the revision in 1992, for potatoes, apples and pears, production is valued at the average sales price during the harvest-time (instead of that during the calendar-year)<sup>1)</sup>. The value of changes in stocks is equal to the value of production minus the sales valued at the weighted average sales price of the calendar year concerned.

Intermediate consumption is estimated by employing various data sources:

- Intermediate consumption of own-account agricultural production is determined when agricultural output is broken down by destination.
- Intermediate consumption of animal feedingstuffs is calculated from the estimates of the destination of the output and sales of the feedingstuffs industry (see SBI 21.2) and import figures. In determining the purchase value use is also made of the consumer prices of mixed feedingstuffs compiled by the Institute for Agricultural Economics (LEI).
- Intermediate consumption of fertilizers is calculated from figures for the quantities supplied to agriculture; the quantities of the use of Dutch-produced fertilizers are taken from the Artificial Fertilizer

<sup>1.</sup> In case of highly fluctuating sales prices of seasonal products, the recorded changes in volumes and those in values may well have reverse signs.

Statistics of the Institute for Agricultural Economics and those for imports from the Foreign Trade Statistics. Purchases from outside the fertilizer industry, like "schuimaarde" from the sugar industry or guano imports, are also taken into account. The Institute for Agricultural Economics provides information on the purchasers' prices. Total purchases should be split into that for agriculture, horticulture and agricultural services. This is done on the basis of information from the production statistics.

- The intermediate consumption of pesticides is calculated from the annual production statistics, plus imports and less exports.
- Data on energy consumption are obtained from:
  - \* a CBS survey of Agricultural Administration Offices
  - \* the Gasunie. The Gasunie is the sole buyer and distributor of natural gas in the Netherlands.
  - \* the CBS's annual statistics Consumption of energy in agriculture and horticulture. Recording is based on samples of varying size by sector, with grossing-up with the aid of the agricultural census.
- To a major extent since the revision, estimates are incorporated of the delivery costs of horticulture auctions. Examples of such delivery costs are auction provisions, subsidies from the Produktenfonds (i.e. guarantee prices paid for vegetables destroyed because of too much supply), rents for barrels, expenditure on packaging and maintenance and costs of transport. Delivery costs of other auctions (e.g. flowers) are still incorporated in the estimate of 'other costs'.
- Estimates of the expenditure on packaging, maintenance and other services are obtained from the CBS's <u>Production accounts for agricul-</u> <u>ture and horticulture</u>. These statistics provide an annual operational summary. Recording is with the aid of a stratified sample based on the results of the agricultural census, supplemented by data from agricultural accounting offices obtained by the Institute for Agricultural Economics. The total number of respondents is about 4 500.
- The other costs in 1987 were estimated as part of the integration process.

Final consumption of own-produce is derived from figures of the various Commodity boards.

Compensation of employees in SBI's 01.1 and 01.2 is estimated by the Institute for Agricultural Economics on the basis of:

- Labour information from the Agricultural Census
- Labour Force Statistics of the CBS
- Collective wage bargain-figures from the Network of Agricultural Administrative Offices (an annual survey, set up and directed by the Institute for Agricultural Economics).

Compensation of employees of the Agricultural services is calculated from the annual production statistic.

Information on prices is used in estimating values (when only volume information is available and to calculate the changes in stocks) and for deflating values.

Information on prices is obtained from:

- market quotations;
- the prices shown in the Production Statistics for Food, beverages and tobacco industry;
- the prices derived from the Foreign Trade Statistics;
- and also of figures from institutions such as the Institute for Agricultural Economics, the Main Commodity Board for Farm Crops, the Commodity Board for Dairy Products and the Commodity Board for Vegetables and Fruit.

If necessary, different prices are employed for different categories of destination.

As a consequence of the functional estimation methods, all kinds of illegal or unreported incomes from agriculture or horticulture are probably included in the estimate of Dutch GNP. For example, the occurrence of illegal labour in Dutch horticulture (i.e. no social premiums are paid and their wages are not incorporated in official administrations and surveys) probably does not affect the reliability of the estimate of output and value added in horticulture. Of course, it will affect its distribution between compensation of employees on the one hand and operating surplus on the other.

-36-
C. Determination of value added

Gross value added is obtained by deducting the value of intermediate consumption from gross output.

#### SBI 02 FORESTRY and SBI 03 FISHING

# A. General

SBI 02 Forestry is very small in the Netherlands: in 1988, gross value added amounted to only 93 million Dfl. Overall data on outputs and inputs can be obtained from the Annual Report of the Public Forests Trusteeship (Staatsbosbeheer) and the Statistics on the operating results of Private Forestry (this statistic is compiled by the Institute for Agricultural Economics). The changes in producer's prices are provided by the CBS's Timber Price Statistics (Prijsstatistiek Langhout). These are quarterly statistics and the respondents are the 200 largest forest managers. Gross value added is calculated as gross output minus the value of intermediate consumption.

In 1988, gross value added of SBI 03 Fishing was estimated as 534 million Dfl. The compilation of the most important source (the monthly fishery statistics) has been discontinued by the CBS in 1982. The reason is that the gathering of reliable data became impossible after the introduction of the EC quota arrangements. An indication of the level of gross output and of the input structure can be obtained from the data of the Institute for Agricultural Economics compiled with the aid of the ship accounts. Recording is on a sampling basis, covering some 30% of the potential number of respondents. The estimates include revenues from 'grey fish', i.e. fishing not reported for the EC-fish-quotas, but reported to the tax revenue authorities. Value added is calculated as gross output minus the value of intermediate consumption. SBI 12 CRUDE PETROLEUM AND NATURAL GAS PRODUCTION

A. General

In 1988, gross value added of SBI 12 Crude petroleum and natural gas production amounted to 11.5 billion Dfl.

- B. Main sources
- 1. General industrial statistics

Compilation: CBS

Frequency: Quarterly

Number of respondents: For all industries: 9 700; For SBI 12: 35.

Type of recording: Full for establishments with over 10 employees (as recorded in the General Business Register)

Main characteristics recorded: Sales and number of employees

- 2. Foreign trade statistics (see section 6.2)
- 3. CBS Price statistics (see section 5.4)
- Statistics on paid days of work and gross wages and salaries (see section 5.4)
- 5. The report Natural gas in the Netherlands and in the North Sea (Aardgas in Nederland en op de Noordzee) Compilation: Ministry of Economic Affairs Frequency: Annual

Type of recording: Full on the basis of exploitation permits granted Main characteristics recorded: Volume of output.

6. Annual Report of Gasunie

Gasunie is a subsidiary which buys the natural gas from the Netherlands Natural Gas Company (NAM; which exploits the resources) and takes care of its distribution in the Netherlands and abroad. Main characteristics recorded: sales, volumes by destination (domestic or abroad)

C. Determination of gross value added

Gross output is calculated on the basis of the General industrial Sta-

tistics, the Foreign Trade Statistics and the reports on gas (sources 5 and 6). Compensation of employees is obtained from the Statistics on paid days of work and gross wages and salaries. Explicit information is available for the main components of input (imports of natural gas from the Foreign Trade Statistics, imports of services from the Balance of Payments on cash basis, see section 6.2). In calculating intermediate consumption, ratios of gross output and intermediate consumption dating back to the 1977 revision are also used. SBI 19.1 SAND, GRAVEL AND MARL PITS SBI 19.91 PEAT-CUTTING SBI 19.92 BREEDER FUELS AND FISSIONABLE MATERIALS

A. General

In 1988, total gross value added of SBIs 19.1 Sand, gravel and marl pits, SBI 19.91 Peat-cutting, SBI 19.92 Breeder fuels and fissionable materials was 0.9 billion Dfl. Peat cutting is very small in size.

B. Main sources

General industrial statistics
 (See SBI 12, Crude petroleum and natural gas production, source 1)
 Sand and gravel survey

Compilation: CBS
Frequency: Monthly
Number of respondents: About 50
Potential number of respondents: About 50
Type of recording: The survey is conducted among all establishments
 with a concession.
Main characteristics recorded: Quantities extracted.

- 3. CBS price statistics (see section 5.4).
- 4. Statistics on paid days of work and gross wages and salaries (see section 5.4)

C. Determination of gross value added

For SBI 19.1 Sand, gravel and marl pits, the combination of the first two of the above-mentioned sources gives an indication of the changes in output. Compensation of employees is obtained from the Statistics on paid days of work and gross wages and salaries.

No direct information is available on peat cutting. In the 1977 revision, a rough estimate was made of the level of gross output, value added and intermediate consumption by commodity group. The source used

-41-

was the General Industrial Statistics (see SBI 12, source 1). More recent figures are calculated by assuming an annual increase in volume of nil and by only including changes in prices (from the CBS price statistics).

In the Netherlands, only one enterprise is involved with breeder conversion of nuclear fuel (SBI 19.92). The figures on this activity are estimated on the basis of the annual report of the enterprise and of the import and export data concerning inputs and outputs of the breeder conversion process of nuclear fuel.

#### SBIs 20, 21 FOOD, BEVERAGES AND TOBACCO INDUSTRY

A. General

In 1988, gross value added of SBIs 20, 21 Food, beverages and tobacco industry amounted to 10.5 billion Dfl.

There is a complete set of production statistics, but they play a less prominent role than for the other economic activities. Functional statistics are used to a considerable extent in estimating output and value added of the Food, beverages and tobacco industry. The estimates of the Food, beverages and tobacco industry are intertwined with those for Agriculture and horticulture. The reasons of the intertwined functional estimation methods are given at the description of Agriculture and horticulture.

For the groups within the Food, beverage and tobacco industry compilation procedures are rather heterogeneous. The main specific aspects of each group are therefore described separately, in Part D.

#### B. Main sources

 Production statistics of the Food, Beverages and Tobacco Industry Compilation: CBS Frequency: Annual Type of recording: Full recording among some 900 establishments

(with more than 20 employees). See also subsection 5.4.

- 2. CBS Price Statistics (see subsection 5.4)
- 3. Statistics on Paid Days of Work and Gross Wages and Salaries (See subsection 5.4)
- 4. Foreign Trade statistics (see section 6.2)
- 5. Slaughtering Statistics (See under SBI 01 Agriculture.)
- 6. Dairy Product statistics (See under SBI 01 Agriculture.)
- 7. Statistics on Production and Stocks of Beet Sugar, Pulp and Molasses Compilation: CBS

Frequency: Monthly

Number of respondents: 2

Type of recording: Full.

8. Statistics on Industrial Processing of Vegetables and Fruit Compilation: CBS Frequency: Annual

Number of respondents: 77

Type of recording: Full.

- 9. Mixed Feedingstuffs Survey on Private Establishments Compilation: CBS Frequency: On quarterly basis Number of respondents: About 40 Potential number of respondents: About 300
  - Type of recording: random sampling. Over 50% of gross output is covered by this sample.
- 10. Statistics on the Consumption and Sales of the Potato-processing industry
  - Compilation: CBS

Frequency: On quarterly basis

Number of respondents: 28

Type of recording: Full.

11. Excise forms 103 and 105

Forms on the production of spirits and the related consumption of raw materials. Compilation: CBS, using excise returns for spirits submitted to the

Ministry of Finance.

- 12. Statistics on Production and Sales of Non-alcoholic Beverages Compilation: CBS Frequency: Monthly Number of respondents: 19 Type of recording: Full.
- 13. Statistics on Consumption of Raw Tobacco; Production, Supply and Final Stock of Tobacco Products Compilation: CBS Frequency: Annual Number of respondents: 20

Type of recording: Full.

14. Revenue Label Statistics

Compilation: CBS (monthly figures) using excise duty returns to the Ministry of Finance

Main characteristics recorded: Quantities, VAT paid, excise duties and retail values of cigars, cigarettes and cut tobacco.

15. Statistics on Consumption of Ice Cream Mixture and Ice Cream Production

Compilation: CBS

Frequency: Monthly

Number of respondents: 9

Type of recording: Full.

16. Statistical data not compiled by the CBS

- The various Commodity Boards provide functional statistical information (on quantities and prices), of which considerable use is made. Supplementary information is dealt with under point D.
   "Special features by industry group".
- Survey of mixed fodder production by co-operative enterprises. This is full recording carried out by the co-operative bodies themselves with about 60 respondents (annual figures).
- Subsidies and levies: the information is obtained from the Agricultural Equalization Fund (Landbouw Egalisatiefonds, LEF) with details at product level from the Commodity Boards and the Food Supplies Purchase and Sale Office (VIB).
- Figures (monthly) for consumption of starch potatoes are published in the information bulletin of the largest starch (derivatives) enterprise.
- The Association of Dutch Coffee Roasters and Tea Packers publishes figures for production of coffee and consumption of raw coffee which are used for SBI 21.3 Other food industry.
- Use is also made of supplementary price material from the Institute for Agricultural Economics (LEI).
- The CBS obtains figures for excise duties on wine, spirits, beer, soft drinks, sugar and tobacco products (cash figures) from the Ministry of Finance.

C. Determination of value added

A characteristic feature of the functional elements described above is that initially comparisons of demand and supply of (groups of) commodities are made. These flows of commodities are then to be converted into inputs and outputs of industry groups. However, there is no one-to-one relationship between the supply and use of various commodities and industry groups. An effort is made to remedy this by using detailed basic information as far as possible.

In the estimates, the available production statistics play the role of a framework against which the results are tested on their plausibility. This applies particularly to the ratio of intermediate consumption and production and to changes in the operating surplus.

Value added is determined by deducting the value of intermediate consumption from gross output.

D. Special features by industry group

# SBI 20.1 Slaughtering and meat-processing industry

The estimates are based on the production statistics on private and municipal slaughterhouses. An additional functional estimate is made, with the aid of the CBS statistics, for slaughterings carried out as commission work (usually on behalf of traders). In the production statistics, only the "commission work" or "trade" are included, but not the related intermediate consumption or gross output (the value of the meat). In principle, activities carried out as commission work should be recorded as a (subsidiary) activity of the principal. However, this is not feasible in the case of SBI 20.1, partly because there is no information enabling the subsidies to be broken down by establishments.

With the aid of the slaughtering statistics, the weight of purchases of live animals is broken down between cut-off fat, meat with bone excluding cut-off fat, hides, edible and inedible offal.

-46-

There are EC subsidies on exports of beef, veal and pork. For beef and pork intervention measures are still in force, too. These are implemented by the Food Supply Purchase and Sale Bureau (Voedselvoorzienings In- en verkoopbureau) either directly by public storage or, under a contract with producers or dealers, by private storage. The resultant losses are borne by the Agricultural Equalization Fund and assigned on a transactions basis as a subsidy to SBI 20.1.

# SBI 20.2 Manufacture of dairy products

The production statistics play a subordinate role in the estimates for SBI 20.2. This is due mainly to incomplete coverage and to valuation problems connected with the substantial subsidies. The dairy statistics contain information on the volumes of the output of milk and milk products, butter, cheese, colza oil, cottage cheese, milk powders, condensed milk and whey powders. Additional information on output of the other products in this industry is taken from the production statistics.

The information on prices consists of the prices quoted by the Dairy Products Commodity Board for the Main Food Milk Products, and also CBS price statistics.

Estimation of the sales by type of user is greatly complicated by the high subsidies granted on exporting butter, colza oil, cheese, milk powder and condensed milk and by the interventions in butter and lowerfat-milk powder. There is also a processing subsidy on the use of skimmed milk.

## SBI 20.3 Fish-processing plants

A set of production statistics serves as the basis for SBI 20.3 Fish processing plants. Its intermediate consumption is also used to determine (partly) the estimates of the destination of sales in Fishing.

## SBI 20.4 Flour mills, groats and rice husking mills etc.

For SBI 20.4 Flour mills, groats and rice husking mills etc. use is made of production statistics and of information from the Grain, Seed and Pulse Commodity Board. The latter source contains data on output of grain flour, wheat flour, rice and groat products. The Commodity Board also provides sales breakdowns for grain. This is important for estimating intermediate consumption of SBI 20.4. There are export subsidies on flour and rice; import levies exist on grain and rice.

#### SBI 20.5 Sugar industry

There are three sugar producers in the Netherlands. One of them does not employ the calendar year as accounting year. With the aid of additional information obtained from that enterprise, the data from the production statistics are converted into calendar years. In estimating output and changes in stocks, use is also made of the CBS statistics "Production and stocks of beet sugar, pulp and molasses". The excise duty on sugar is subdivided between domestic production and imports in proportion to the quantities involved. For the sugar industry, there is a EC-regulation: a complicated system of export refunds, payments for and levies on storage costs, production levies and compensation levies. These subsidies and levies are registered on transactions basis.

# SBI 20.6 Manufacture of margarine and other vegetable and animal oils and fats

The production statistic on Margarine, Oils and Fats is the starting point for the estimates on SBI 20.6. In addition, functional information about production and intermediate consumption (quantities and prices) of the Commodity Board for Margarine, Oils and Fats is employed. The classification by commodities is rather similar to that in the Foreign Trade Statistics.

Subsidies are granted on the processing of oilseeds (coleseed, rape seed and sunflower seed).

# SBI 20.7 Preserving and processing of fruit and vegetables For SBI 20.7 Preserving and processing of fruit and vegetables, esti-

mates are based on the data from the relevant production statistics. The categories of use are further broken down with the aid of the statistics on "Industrial processing of vegetables and fruit".

# SBI 20.8 Manufacture of bread, rusks, pastries, cakes and biscuits

Production statistics are also used for the manufacture of bread, rusks, pastries, cakes and biscuits. The surveys do not cover bakeries with less than 20 employees. An additional estimate is made for these on the basis of supplies of flour, i.e. the sales breakdown of SBI 20.4.

# SBI 20.9 Manufacture of cacao, chocolate and confectionery

Production statistics constitute the chief source for estimating data on the manufacture of cacao, chocolate and confectionery. The industry consists of a relatively large number of establishments which keep accounts for the financial year (i.e. not the calendar year as in the national accounts). The input and output prices often fluctuate widely. It is therefore necessary to make adjustments for changes in prices on the basis of the information provided by the establishments which keep accounts by calendar year. A subsidy is granted on exports of chocolate products.

# SBI 21.1 Manufacture of starch and starch derivatives

Only five establishments in the Netherlands engage in the manufacturing of starch and starch derivatives. On both the use and production side there are a large number of products on which subsidies are granted. The basis for the estimates is a set of production statistics and information provided by the biggest producer on the processing of starch potatoes.

# SBI 21.2 Manufacture of compounded animal stock feeds

The large number of small establishments in the feedingstuffs industry causes that the coverage of the production statistics in question are relatively small. Functional data from the Commodity Board for Feedingstuffs (Feedingstuffs survey, "Mengvoeder enquête") are employed to fill this lacuna. The intermediate consumption of this industry is estimated on the basis of a comparison of supply and use. An important role is then played by the breakdown according to the destination of imports. The breakdown of the sales of the feedingstuffs industry is decisive for the estimate of the intermediate consumption of feedingstuffs in agriculture. Account has to be taken of export subsidies on mixed feedingstuffs and artificial milk for calves. Processing subsidies are applicable to pulses, low-fat milk powder and skimmed milk. On the other hand, low-fat milk powder, grain and manioc root are subject to an import levy.

### SBI 21.3 Other food products industry

For other food products industry the data from the production statistics are supplemented by functional figures on coffee obtained from the Dutch Association of Coffee Roasters and Tea Packers. Exports of various products (mainly colza oil) are subsidized.

# SBI 21.4 Alcohol manufacturing and distilleries

The estimates of production of distilled beverages are based on data on production, purchases and sales of alcohol. This information is obtained from the producer (there is only one in the Netherlands) and the Foreign Trade Statistics. Furthermore, there is also a production statistic, and use is also made of information from the excise returns and the Commodity Board for Distilled Beverages.

# SBI 21.5 Breweries

The Commodity Board for Grain, Seeds and Pulses possesses functional data on output and sales of barley malt, the processing of barley and beer production. These data are supplemented by information from the production statistics. Export subsidies are paid on beer and there are levies on imports of barley and barley meal.

# SBI 21.6 Non-alcoholic beverages

The sources for estimating the figures for the non-alcoholic beverages industry are production statistics and the CBS statistics on "Production and Sales of Non-alcoholic Beverages".

# SBI 21.7 Tobacco-processing industry

The data from the production statistics for the tobacco-processing industry are supplemented by figures from the statistics on "Use of Raw Tobacco, Production, Supplies and Final Stocks of Tobacco Products" (mainly information on production) and the Revenue Label Statistics. Indications regarding the sales of tobacco products are obtained from the revenue label statistics. These statistics also provide ratios for the value of sales, excise duties and retail values. These data are important for breaking down the amount of excise duties received between the output of Dutch enterprises and imports. SBI 28.2 MANUFACTURE OF PETROLEUN AND COAL PRODUCTS

A. General

In 1988, gross value added of SBI 28.2 Manufacture of petroleum and coal products amounted to 0.2 billion Dfl.

B. Main sources

General industrial statistics
 (See SBI 12, Crude petroleum and natural gas production, source 1)

C. Determination of value added

Gross output is calculated on the basis of the General industrial statistics. The input structure, including the elements of value added, is based on the ratios estimated during the 1977 revision.

#### SBI 39.5 WORKSHOPS FOR THE DISABLED

This SBI group consists predominantly of establishments with a public legal form of their own (such as a communal scheme) or of ones which form part of a public body (for instance a municipal service branch). Figures on these establishments can be derived from the administrative data sources on the government, like the accounts of municipalities. Compiling data on these workshops for the disabled is therefore part of compiling data on the general government industries (see SBIs 90.1-90.7, 92.1-92.8). For a description of these compilation procedures, we refer to the description on those industries.

As it concerns non-profit units, gross value added is estimated from the costs-side as the sum of compensation of employees, indirect taxes and capital consumption. In 1988, gross value added amounted to 520 million Dfl. In the Dutch national accounts, only the payments to staff personell and management are regarded as compensation of employees. The payments to the disabled employed are regarded as social transfers and not as compensation of employees. In 1988, these payments amounted to 2.8 billion Dfl.

A very small proportion of workshops for the disabled have a private legal form. Before the revision in 1992, these units were not recorded in the Dutch national accounts. Since the revision, a production statistic covering all workshops for the disabled is employed to estimate gross output, value added and intermediate consumption for the whole industry. Only the production statistic for 1987 was used, because the more recent production statistics were not available in time. Figures on more recent years are therefore calculated by extrapolating figures from the 1987 production statistic on the basis of information from the government and price statistics.

Intermediate consumption by commodity group is also derived from the 1987 production statistic. Gross output by commodity group is determined as part of the integration process (see section 8).

# SBI 40.3 WATER SUPPLY

A. General

In 1988, gross value added of SBI 40.3 Water supply amounted to 1.4 billion Dfl.

B. Main sources

- Annual report of the the Dutch Association of Water Supply Enterprises (VEWIN). The VEWIN embraces all 88 water supply companies. Characteristics recorded: production and employment data.
- 2. CBS Statistics on producers' prices

# C. Determination of value added

Output is estimated on the basis of the VEWIN report and the statistics on producers' prices. The input structure, including the elements of value added, is taken from the Energy supply in the Netherlands (NEH), Energy message water suply and statistics on gas- and electricitysupply in the Netherlands.

Production statistics covering all public utilities will come available for 1991 and more recent years. Then, output, value added and intermediate consumption of Water supply will be estimated (mainly) on the basis of the extended production statistics.

# SBIS 68.4-68.9 REPAIR OF CLOCKS, JEWELLERY, ELECTRICAL CONSUMER GOODS AND MUSIC INSTRUMENTS

The major part of SBI 68 Repair of Consumer Goods is covered by production statistics. Only a very small part is not covered. This pertains to SBIs 68.4-68.9 Repair of clocks, jewellery, electrical consumer goods and music instruments. In 1988, gross value added of these SBIs amounted to only 65 million Dfl.

As part of the 1977 revision, gross output, value added and intermediate consumption of SBIs 68.4-68.9 were estimated. Data sources employed were:

- Number of sales offices in retail trade and crafts provided by the Central Registration Office for retail trade and crafts (this information does not cover SBIs 68.4-68.9 completely);
- Operating summaries on trade in jewellery in 1976 and 1977 from an incidental investigation by the Institute for Small and Medium Size
- Enterprises (this investigation was based on units registered by the Central Registration Office for retail trade and crafts);
- Budget survey (for the expenditure by households on the sales of these SBIs);
- Various statistics on wages and employment.

More recent figures are calculated on the basis of various statistics on wages and employment, in particular the Statistics on paid days of work and gross wages and salaries (see section 5.4), the number of sales offices in retail trade and crafts (see above) and price statistics.

No explicit adjustments are made for underreporting and fraud.

### SBI 77 COMMUNICATION

SBI 77 Communication is dominated by one company, i.e. PTT. Its value added comprises some 99% of the total value added of SBI 77. In 1988, total gross value added amounted to 9 billion Dfl.

The PTT was privatized in 1989. Before this privatization, very detailed information was obtained from the PTT. These figures were adjusted to comply with the national accounts concepts (e.g. with respect to internal deliveries) and classifications. Since the privatization, the information available consists mainly of the information in the annual report. This is now used to update the more detailed figures of 1988. Soon, information from a new production statistic (on production statistics, see section 5.4) will become available. This will provide detailed figures for 1989-1992.

#### SBI 81 BANKING

## A. General

Money creating banks and savings banks are supervised by De Nederlandsche Bank N.V. (DNB, i.e. the central bank). They should provide deconsolidated information about their financial and non-financial activities to DNB. This information is the major data source for the estimates for Banking. In terms of value added, these banks cover over 96% of the economic activity Banking.

On the basis of the CBS's "own" records supplementary estimates are made for:

- mortgage banks and building funds;
- financing companies (in so far as they are not subsidiaries of other banks) and municipal lending institutions;
- investment institutions.

For various specialized credit institutions, such as banks for local authority purposes and development companies, information from their annual reports are employed.

For Banking, the register of the DNB is the starting point of the estimates and not the General Business Register. Double-counting and ommissions with respect to e.g. non-financial activities (mainly insurance and travel services) are avoided by direct linkage to the estimates for the SBI's involved. For example, in the functional estimates of insurance services in SBI 82, those services provided by banks are deducted.

## B. Main sources

 Operating data of banks compiled from information provided under the Wet Toezicht kredietwezen (Credit Supervision Act) Compilation: The Netherlands Bank N.V. Frequency: Annual Number of respondents: Over 100

Type of recording: Full

- Main characteristics recorded: For general banks and savings banks, separately, an operating account in which receipts are broken down into fifteen categories and expenditure as a rule in twenty categories.
- Operating data of mortgage banks, building funds, financing companies, municipal credit institutions and investment institutions Compilation: CBS

Frequency: Annual

Number of respondents: About 250

- Type of recording: Full
- Main characteristics recorded: For each of the five above-mentioned groups of establishments an operating account: receipts generally broken down into five categories and expenditures broken down as a rule into ten categories.
- 3. Annual reports

Frequency: Annual

Number of establishments involved: About 20 Type of recording: Full (all establishments classified as banks).

C. Determination of gross value added

The gross output of the banking system comprises two components, namely: 1. The interest margin (about 85% of gross output).

- The interest margin is calculated as the difference between the "income received from property and economic activities" (interest, dividend, net income from activities outside the branch) minus interest paid. The costs of bad debts are disregarded. The interest margin is recorded on a "revenue basis", i.e.: the receipts and payments are recorded in the periods of the underlying claims and debts.
- 2. Commission proceeds (about 15% of gross output).

These are regarded as comprising all amounts explicitly charged for services (that is, not as part of the interest payment). Examples are commissions for arranging insurance, payments for the use of credit cards and costs of administration charged by investment institutions to its share holders.

Holding gains and losses on financial assets and liabilities are not regarded as part of gross output.

Gross value added is determined by subtracting intermediate consumption from gross output.

Some special features of the estimation methods are:

- The demarcation and classification of transactions in the banks' reports to DNB is partly based on the principles of business administration. In general, the concepts of capital formation employed in business administrations are broader than that in the national accounts. For example, the purchase of software is usually included in capital formation and not recorded as intermediate consumption (current costs). In order to estimate intermediate consumption, rough estimates about the relative size of such deviations in concepts are used. These are derived in various ways, e.g. by a detailed comparison of the supply and use of capital goods.
- The sale of directly charged financial services is recorded for various categories (e.g. intermediation of insurance, revenues from exchanging foreign currencies and travel services). However, this amount of detail is not available for the purchase of these services as recorded in the production statistics. Frequently, these are lumped together with other costs or not specified at all. It is therefore difficult to compare the estimates on the sales with those on the purchases from other sources (comparisons of demand and supply). So, comparisons with secondary sources relate mainly to data on gross wages and salaries.

-59-

# SBI 82 INSURANCE

# A. General

The activity Insurance mainly relates to units which are supervised by the Chamber of Insurance (Verzekeringskamer). The regulations concerning the supervision of insurance distinguish between:

- non-life insurance companies;
- life insurance companies;
- industry and company pension funds;
- professional pension funds.

The reporting statements to the Verzekeringskamer are the major data source for the estimates on Insurance.

In addition, estimates are made for a number of units not subject to supervision by the Chamber of Insurance. Examples are the General Public Pension Fund (Algemeen Burgerlijk Pensioenfonds), the Railway Pension Fund (Spoorwegpensioenfonds) and insurance intermediaries.

Like for Banking, the estimates are not directly linked to the General Business Register. Double-counting and omissions are avoided by comparing and adjusting the estimates for the other SBI's (e.g. the insurance activities by banks).

B. Main sources

 Reporting statements in connection with the supervision exercised by the Chamber of Insurance Compilation: CBS Frequency: Annual Number of respondents: About 600 Type of recording: A nearly full sample for non-life insurance companies and company pension funds (covering 96 and 99 % respectively); full for all other groups of institutions Main characteristics recorded: Operating accounts broken down, depending on the group of institutions, into 40 to 60 transaction categories, including data on gross wages and salaries, intermediate consumption, commission paid for insurance-broking and all transactions necessary in order to determine gross output.

2. Annual accounts and reports of pension funds not subject to supervision by the Chamber of Insurance. Frequency: Annual Number analysed: 5 Type of recording: Full

3. Other sources

In order to calculate the data on insurance brokers, use is made of, among other sources, the published results of an annual survey carried out by the University of Amsterdam into the operating results of insurance brokers. This survey covers about 10% of total activity.

C. Determination of gross value added

#### General

The gross value added of the Insurance industry is indirectly determined by subtracting intermediate consumption from gross output. The figures are estimated at current prices without use being made of a base year.

#### Gross output

Various specific definitions and concomittant estimation procedures of gross output are relevant here:

- Pension funds

The gross output of pension funds is the "costs of administration", that is, all necessary costs connected with the administration of pensions.

- Life insurance companies

The gross output of life insurance companies is defined as premiums receivable plus net interest received minus claims payable minus the addition to actuarial reserves. This can also be expressed as: the sum of costs of administration and "other income" (excluding interest transactions).

- Non-life insurance companies

In this case, gross output is defined as: premiums receivable minus addition to premium reserve minus claims payable minus addition to claims reserves. This can be reformulated as: administrative costs plus "other income" (in this case, however, including interest transactions).

- Insurance intermediaries

There are not (yet) any production statistics for insurance intermediaries. Their gross output is therefore derived from the payments for arranging insurance as shown by the administration of costs by insurance companies and pension funds. This concerns the total of net commissions on policies taken out and the costs for renewal, collection, payment and inspection. This total is reduced by subtracting payments to the companies' own staff, the proceeds from arranging insurance, proceeds of banks and other services industries from insurance intermediaries (as far as can be measured). The remainder is treated as the output of the insurance intermediaries belonging to the Insurance industry. This gross output of insurance intermediairies is thus calculated on a "functional" basis. It is of course all sold within the same economic activity. Subsidiary revenues of insurance intermediaries are disregarded.

### Intermediate consumption

For all institutions subject to supervision by the Chamber of Insurance, intermediate consumption is calculated from the reporting statements. As in the case of banking, these statements are based on concepts of business costs which do not fully tally with the concept of intermediate consumption employed in the national accounts. The gross value added ultimately arrived at is therefore subject to some margins of uncertainty. A more serious data problem is the lack of information about the intermediate consumption of insurance intermediaries. All that is known (from the annual survey by the University of Amsterdam) is the ratio of intermediate consumption and gross output for a group of establishments which altogether represent 10% of the total. Their ratio is used in estimating intermediate consumption and value added of all insurance intermediairies.

# Grossing-up

There are two groups of establishments which are not fully covered by the statistical processing (including grossing-up) of the reporting statements mentioned above. These are the non-life insurance companies not subject to supervision and the "small" company pension funds which are largely exempt from the obligation to submit reporting statements. These units are only obliged to submit information on their premium income. This information is used to gross up the totals for the groups of establishments supervised, for all transactions. The actual amounts grossed up are 4% and 1% respectively.

# SBI 83.1 EXPLOITATION OF AND TRADE IN REAL ESTATE

#### A. General

Before the revision, SBI 83.1 included only the exploitation of dwellings. The exploitation of buildings used for business purposes was recorded at the industry in which these buildings were actually used. Now, also the exploitation of buildings used for business purposes is incorporated in SBI 83.1. Trade in real estate is recorded in SBI 61-64 Trade (see section 5.4).

In terms of gross value added, in 1988 SBI 83.1 consists of: - Exploitation of dwellings: 34.0 billion Df1;

- Exploitation of real estate used for business purposes: 6.5 billion Dfl.

B. Main sources

Housing statistics
 Compilation: CBS
 Frequency: Monthly
 Number of respondents: 700 (municipalities)
 Type of recording: Full
 Main characteristics recorded: Changes in volume of dwellings (new
 buildings, subdivisions, conversions and demolition of dwellings
 rented and owner-occupied dwellings).

The housing statistics are assumed to have a full coverage. Therefore, no grossing-up is necessary. In order to estimate the rent for dwellings which are permanently in use, the data from the housing statistics are adjusted by using estimates of vacancies received from the municipalities (Dwelling Vacancy Statistics, CBS). For dwellings which are unoccupied for less than 4 months rent is supposed to be paid. Houseboats and permanently occupied caravans are counted as dwellings. The housing statistics distinguish between the part of the dwelling which is used for living and the part that is employed for business purposes. 2. Rent survey

Compilation: CBS Frequency: Annual Number of respondents: 12 100 Potential number of respondents: About 2 420 000 Type of recording: Panel based on a random sample Main characteristics recorded: Basic rents for dwellings by type and year of construction (and socio-economic category of the occupants).

C. Determination of gross value added

Output and value added of exploitation of <u>dwellings</u> (owner-occupied as well as rented) are estimated in a functional way. The starting point is the total housing stock which was estimated on the basis of the General Census on Dwellings in 1971. (On Dutch dwelling stock statistics, see Amse, 1992).

In the revision year 1977, the level of output was determined by multiplying the number of <u>dwellings rented</u> by category (a global classification was made according to aspects such as year of construction, number of rooms, presence of central heating and the like) by the relevant rental values. For more recent years, output on dwellings rented is calculated by multiplication with price and volume measures from the Rent Survey and the Housing Statistic.

The <u>imputed rent of owner-occupied dwellings</u> is calculated on the basis of research by independent brokers every five years. Several types of dwellings are distinguished and for each type a comparison is made of rented and owner-occupied dwellings. For the total Dutch economy, the average ratio of 'comparable' rental values was 1:1.9, with only litle variations in the different years of research. This ratio was employed to calculate the imputed rent for 1977. For more recent years, the imputed rent of owner-occupied dwellings is updated by multiplication with price and volume measures from the Rent Survey, the Budget Survey and the Housing Statistic. Changes in volume of the stock of dwellings are calculated annually on the basis of on an integral survey of municipalities (the Housing statistic). The changes may involve new dwellings, transitions from owner-occupied to rented (or vice versa) or demolishments.

The price change in the output of both rented and owner-occupied dwellings is calculated annually on the day the general (allowed) increase in rents takes place (1 July). For rented dwellings, account is taken of:

- The trend increase in rents (a regulated increase on the basis of building costs);
- The increase in rents due to improvement of dwellings;
- The government's harmonization procedure for bringing the rent for certain older dwellings gradually up to the level of the "lowest reasonable rental value" (The rents for some older dwellings are sometimes regarded as 'unreasonably low'. However, increasing the rents immediately to market rates is regarded as 'unreasonable' to renters. Therefore, such increases surpassing the trend increase are allowed but should be introduced stepwise in order to avoid too large annual increases).

For owner-occupied dwellings, the trend increase in rent is also applied. Furthermore, a correction is made for improvements in owneroccupied dwellings. Data on the improvement of owner-occupied dwellings are available from the CBS Statistics on the granting of permits for the improvement of dwellings and from the Statistics on the improvements to housing.

Intermediate consumption for rented and owner-occupied dwellings are estimated on the basis of annual figures on the expenditure of housing associations and municipal housing enterprises. These estimates pertain to bare rents, e.g. the costs for heating of dwellings rented are excluded. These non-profit institutions administer about 75% of rented dwellings. The input structure of owner-occupied dwellings is also derived from this source. In that case, account is being taken of the fact that overhead costs such as costs of administration are absent for owner-occupied dwellings. An exception pertains to the small amount spent by associations of owners started in 1976. Similarly, own-account repair is assumed to be relatively large for owner-occupied dwellings.

Gross value added is arrived at by subtracting intermediate consumption from gross output. Comparisons with various institutional data sources, e.g. data from housing associations, municipal housing enterprises and various financial institutions which invest in real estate, are only used to a very limited extent. The reason is that the functional estimation method is difficult to reconcile with such institutional information.

As a consequence of the functional estimation of the rents of dwellings, the estimate is not vulnerable to whether this income (net rent) is reported to the fiscal authorities.

For the exploitation of buildings used for business purposes no specific production statistics are available. Therefore, the rents on buildings for business purposes received by SBI 83.1 are calculated as a residual, namely as the difference between rents paid and received by other SBI's. This information is available in all production statistics (see section 5.4). Intermediate consumption is calculated by employing the ratios for the dwellings.

#### SBI 83.2 ESTATE AGENTS

# A. General

In 1988 the gross value added of SBI 83.2 Estate agents was 500 million Dfl. The gross output of estate agents consists of a number of components, including brokerage from arranging sales and purchases of estate, income from the arranging of mortgages and insurance, appraisements and management of real estate.

# B. Main sources

- Comparative survey of activities (Bedrijfsvergelijkend onderzoek)
   Compilation: Dutch Association of Estate Agents (NVM)
   Frequency: Annual
   Type of recording: All members of NVM.
   Main characteristics recorded: Costs and proceeds of real estate
   agents by size-class and for the average establishment. Various
   costs and proceeds are distinguished (e.g. costs for transport, for
   housing, etc.). Also volume figures on costs and proceeds are
   available.
- Statistic on paid days of work and gross wages and salaries (see section 5.4)
- C. Determination of value added

The specification of costs in the NVM report are transformed into the national accounts-commodity classification. The figures from the NVM report are grossed up for the real estate agents which are not a member of the NVM. The latter comprise about 20 % of gross value added. In grossing up, account is taken of differences in size between members and non-members. By comparison with the Statistic on paid days of work and gross wages and salaries, the plausibility of the figures is checked and linkage to the General Business Register is established. No specific adjustments are made for underreporting and fraud.

#### SBI 84.1, 84.4 LEGAL SERVICES AND SERVICES OF ENGINEERS

A. General

Since 1989, production statistics are compiled for SBI 84.4 Services of Engineers. Therefore, for 1989 and more recent years, this is the major source for Services of Engineers. For earlier years, other data sources were employed.

In 1988, gross value added of Legal services amounted to 1.9 billion Dfl., while that of the Services of Engineers was 4.7 billion Dfl.

# B. Main sources

- Statistics on paid days of work and gross wages and salaries (see section 5.4)
- 2. Various external sources
  - On volume indicators: Information from trade organizations on number of self-employed persons (legal advisers, lawyers, notaries) or number of documents issued by notaries;
  - On price indicators: Information from trade organizations and the Staatscourant (i.e. the government's newspaper for announcing changes in official laws and regulations). This pertains e.g. to adjustments in scales of fixed charges by trade group or type of service;
  - Special research reports and surveys provide also information on changes in prices, volumes and values.

## C. Determination of value added

The size of intermediate consumption and operating surplus and intermediate consumption by commodity group was calculated during the 1977 revision. Adjustments were also made for underreporting and fraud on the basis of sensitivity analysis (see section 5.4). Figures on more recent years are calculated on the basis of the various indicators and the Statistic on paid days of work and gross wages and salaries. SBI 86 HOLDING AND AUXILIARY BODIES (non-financial holdings)

#### A. General

SBI 86 consists of non-financial holdings and auiliary bodies that are not grouped together in the General Business register with a unit which carries out a different main activity. In 1988, the gross value added involved was 2.8 billion Dfl.

#### B. Main sources

- Statistics on paid days of work and gross wages and salaries (See section 5.4).
- 2. Production statistics, in particular their figures on overhead costs explicitly charged to individual establishments.

# C. Determination of gross value added

As part of the revision, units in the General Business Register and the Statistics on paid days of work and gross wages and salaries were compared systematically. This resulted in revised estimates of output, value added and intermediate consumption for non-financial holdings and auxiliary bodies.

Gross output is calculated from the production statistics and the Statistics on paid days of work and gross wages and salaries (as alternative indicator for changes in gross output).

Intermediate consumption (by commodity groups) is taken from the intermediate consumption/output ratios in SBI 84.2 Auditors, accountants and tax-experts (see section 5.4).

Secondly, in order to incorporate the information on the general government in the supply and use tables, the sales and purchases should also be classified by commodity-groups. For the central government, the administrative classifications are rather detailed and can therefore be transformed without too much problems into the commodity-classification in the Dutch national accounts. However, for other government units, costs are frequently broken down into a very limited number of functional categories which do not fit to the national accounts commodityclassification. Then assumptions about the composition of income and expenditure by commodity-group are unavoidable. These assumptions are tested in integrating the national accounts (see section 8). Important commodity-groups involved are e.g. food and beverages, furniture, vehicles and construction.

Plausibility checks on the basis of the changes in prices and volumes are made at a detailed level (SBIs, departments). In addition, the changes in compensation of employees by government units are compared with estimates of the changes in the volume of labour in the Labour Accounts (see section 5.3) and wage rates.

Capital consumption is not taken from the government accounts, but calculated on the basis of the Perpetual Inventory Method (PIM). The economic life times employed are:

- Buildings: 60 years;
- Furniture and equipment: 18 years;
- Vehicles: 7 years;
- Ships: 22 years;
- Planes: 15 years.

Straight-line depreciation is assumed (on the reliability of such estimates, see Bos, 1990, pp. 17-27). In accordance with the international guidelines, no capital consumption is calculated for infrastructural works (e.g. dikes, roads and bridges).

# 2. <u>Municipal education, academic education and subsidized special</u> education

This group does not encompass all education. Private non-subsidized education is registered in SBI 92.9 Other education. Furthermore, a very limited amount of education is still included in the Government and Municipal Accounts and not deconsolidated. This is therefore not registered in SBI 92.1-92.9 Education.

In compiling the figures for this group of educational units, the main data sources are:

- The accounts of the universities;
- The state government accounts;
- A survey of the incomes and expenditures of municipalities relating to education.

Like for the civilian government, modifications are made for differences in units, concepts and classifications. Capital consumption is also calculated analogously.

The basic data sources on education are adjusted to show the incomes and expenditures by type of school. For various educational units, the figures are then compared to other data. These include the state government's contributions towards meeting expenditure on education, transformed data from the municipal accounts (as far as municipal education is concerned) and data on the volume of employment.

For special education (e.g. Catholic or Calvinist schools) no institutional data sources are available. Their value added is therefore estimated on the basis of the state government's contributions. These figures are grossed up by using the ratio's of the other schools. A problem with this estimation procedure is that in particular the special schools may have sizeable income from property. Special education is a substantial group as its gross value added amounted to 12.2 billion Dfl. in 1988.
SBI 90.1-90.7, 92.1-92.8 DATA CONCERNING GENERAL GOVERNMENT

A. General

In the Dutch national accounts, general government pertains to three industries: - SBI 90.1-90.5, 90.7 Civilian government and social security; - SBI 90.6 Defence; - SBI 92.1-92.8 Subsidised education. In 1988, their gross value added amounted to 23.9, 6.4 and 19.0 billion Dfl.

The gross output of general government is defined as the sum of: - purchases of goods and services ("tangible purchases") - compensation of employees

- capital consumption
- indirect taxes paid by general government itself.

General government therefore has no operating surplus. Changes in stocks are assumed to be nil. Only a small proportion of the output by general government institutions is sold via the market. The greater part is recorded as collective production in the form of "final consumption by the general government".

The national accounts data on general government are based on CBS statistics derived from various government accounts. These are usually complete censuses, but in some cases grossed-up samples.

B. Main sources and compilation procedures

 State government (including defence), <u>Provinces, Polder boards,</u> <u>Municipalities, Intercommunal arrangements</u> (e.g. arrangements by small municipalites for intercommunal schools, energy supply and garbage collecting)

The CBS receives the accounts from these government institutions annually. On the basis of this information an overall summary of incomes and expenditures is compiled. The figures in this summary reflect the administrative units, classifications and concepts employed in the government administrations.

For the purposes of the national accounts, establishments and institutional units are selected out of the administrative units and grouped into industries and sectors. The incomes and expenditures are broken down and transformed into the basic national accounts transactions (capital formation, intermediate consumption, property income, transfers, etc.). For example, in the municipal accounts, the regular purchases of police cars may be recorded as current expenditure, while only incidental large purchases are recorded as fixed capital formation (investment). In the national accounts, all purchases of police cars should be registered as fixed capital formation. Adjustments for such differences in concepts are to be made for each individual account, because the accounting procedures may differ (e.g. among municipalities) and the quantitative importance of similar differences in concepts may also differ widely.

The information from government administrations should also be adjusted in two other respects. First, in the Netherlands, there is often an organizational unit Municipal Works within the municipality. The Municipal Works act frequently as centres of payment for all municipal units, e.g. with respect to payments for energy. In the administrations, these payments are often recorded at Municipal Works and settled with the administrative municipal units that are really involved in an overall payment. So, for the purposes of the national accounts, these payments should be classified by type and be allocated to the municipal units distinguished for the national accounts (not the administrative units). A similar situation occurs for services by Municipal Works delivered to other municipal units, e.g. maintenance and cleaning of buildings. The provision of these services is also not reflected (as such) in the various accounts, but is part of the same overall payment. Therefore the related costs should also be allocated to the municipal units involved.

-72-

# 3. Parastatal institutions

Parastatal institutions are institutions under private law financed by general government. In the Dutch national accounts, only a very limited group of institutions is recorded as such, e.g. Development and redevelopment funds for agriculture and small and medium-sized enterprises (Ontwikkelings- en Saneringsfondsen voor de Landbouw en het Midden- en Kleinbedrijf), the Central Health Commission (Centrale Gezondheidsraad) and the Emancipation Commission (Emancipatieraad). In 1988, the value added of these institutions was only 17 million Dfl. In 1991, labour exchange offices were 'privatised' in the Netherlands (but still mainly paid by the government). It has therefore been decided to incorporate these offices now also as parastatal institutions in the Dutch national accounts.

In contrast to the recommendations in the international guidelines, the parastatal institutions do not include various other non-profit institutions serving the government. Cases in point are TNO (Technical Research Institute) and ZWO (General Organisation for Scientific Research).

The figures on the parastatal institutions are estimated on the basis of their annual reports.

## 4. Social security

The industry and sector Social security in the Dutch system of national accounts are defined by function and encompass all transactions involved with execution of social security-regulations (including the institutions involved with the execution of these tasks). The sources are the annual reports of the social security institutions and various financial monthly and quarterly surveys. The most important are:

- Annual reports of industrial insurance boards;
- The annual report of the Joint Administration Office;
- The annual report of the Joint Medical Service;
- Data from summary reports of:

- . The Social Security Council;
- . The Central Administration Office's Foundation for the General Act concerning Special Medical Expenses (Algemene Wet Bijzondere Ziektekosten);
- . The Social Security Bank;
- . Labour Councils;
- . Risk funds;
- . Funds connected with early retirement (VUT);
- . The Building Industry Social Fund Foundation;
- . The Printing Enterprises Fund Foundation, the Police Medical Care Service, the Civil Servants' Medical Expenses Institute and the Interprovincial Medical Expenses Scheme;
- . The annual report of the General Unemployment Fund;
- . Annual reports of the redundancy payment funds;
- . The annual report of the General Disability Insurance Fund;
- . The annual report of the Disability Insurance Fund;
- . The General Fund of the Medical Insurance Board;
- . The General Special Medical Expenses Fund.

Like for the civilian government, modifications are made for differences in units, concepts and classifications. Capital consumption is calculated analogously.

Before the revision, figures on social insurance bodies were estimated and recorded functionally, e.g. their secondary activities were registered in other industries. Since the revision, an institutional method of compilation and registration is employed. Comparisons of estimates from the sources above are made with corresponding estimates by the Ministry of Social Affairs and Employment. Main characteristics recorded: Persons occupied classified by sexe and municipality of employment.

C. Determination of value added

Output, intermediate consumption and value added (including operating surplus) are estimated on the basis of Statistics on postal tuition, Statistics on paid days of work and gross wages and salaries and Statistics on persons occupied. The composition of intermediate consumption in terms of commodity groups is mainly derived from the Statistics on postal tuition and from the ratios estimated for subsidized education.

No explicit adjustments are made for underreporting and fraud.

## SBI 93.1-93.4 INTRAMURAL HEALTH CARE

A. General

Intramural health care consists of:

- 93.1 General and specialized hospitals (except psychiatrical);
- 93.2 Mental homes and special psychiatrical clinics etc. (except nursing homes);
- 93.3 Mental defectives homes (except family substituting homes);
- 93.4 Nursing homes.

With regard to the subgroup university hospitals, it should be pointed out that the "education" (teaching) aspect of these institutions is recorded in SBI 921-928.

In 1988, gross value added of intramural health care amounted to 15.0 billion Dfl.

B. Main sources

- Statistics on intramural health care Compilation: CBS Frequency: Annual Respondents: All recognized intramural health care institutions Recording: Full Characteristics recorded: Capacity in terms of number of beds available, output, compensation of employees, intermediate consumption, capital formation and employment.
   Overall summary of financial statistics Compilation: National Hospital Institute (National Ziekenhuis Instituut, NZI) Frequency: Annual Respondents: Recognized institutions Recording: Full (in principle) Characteristics recorded: All variables from the institution's opera
  - ting summary in accordance with the NZI's accounts classification.

SBI 91 RELIGIOUS ORGANIZATIONS ETC.

A. General

In 1988, gross value added of SBI 91 Religious organisations was 0.8 billion Dfl.

B. Main sources

- Statistics on paid days of work and gross wages and salaries (See section 5.4)
- 2. Statistics on religious communities 1984 and earlier years (The statistic was stopped in 1987. So, no data are available for 1985 or later) Compilation: CBS Frequency: Semi-annual Type of recording: Full (as far as known) Main characteristics recorded: Receipts and expenditure by type
- C. Determination of value added

For the subdivision Churches, detailed information about the cost structure (i.e. the composition of intermediate consumption and the ratio of intermediate consumption and compensation of employees) was obtained from a number of institutions and parishes for 1984 and earlier years. With regard to the subdivision Church authorities and Philosophical organizations, only some ad hoc material about the cost structure is available. This is therefore supplemented by the ratios found for churches. Compensation of employees is estimated on the basis of the Statistics on paid days of work and gross wages and salaries.

For more recent years, figures are calculated on the basis of the Statistics on paid days of work and gross wages and salaries.

#### SBI 92.9 OTHER EDUCATION

#### A. General

Other education encompasses private education not mainly financed by general government. Subsidized education, whether public or special, is recorded as part of general government in the Dutch national accounts. Major examples of education included in Other education are Driving Schools, Postal tuition, Schools for Fashion Design, Institutes for Language Courses and Schools for Word processing and secretarial activities.

Since the revision, production statistics are available and used as the major data source for driving schools. The compilation procedures for driving schools are therefore already described in section 5.4.

In 1988, the gross value added of driving schools amounted to 270 million Dfl. The total gross value added of Other education was then 1150 million Dfl.

## B. Main sources

- Statistics on postal tuition Compilation: CBS Frequency: Annual Type of recording: Sample Main characteristics recorded: Number of students and employees)
- Statistics on paid days of work and gross wages and salaries (See section 5.4)
- 3. Statistics on persons occupied (for more information, see CBS, 1990a) Compilation: CBS Frequency: Annual Number of respondents: 69 000 Type of recording: Full for establishments with 10 or more years of work, smaller establishments on a random sample basis.

## C. Determination of gross value added

In the Netherlands, gross value added of intramural health care is calculated as the difference between the sales (value of production) and intermediate consumption. The sales are based on regulated tariffs, which have been agreed upon by all parties involved (government, health care institutions and insurance companies). The tariffs should include all costs involved in producing intramural health care services. In the Dutch national accounts, the estimates of the sales are therefore based on adding up the various cost-items included in the tariffs: intermediate consumption, compensation of employees, the bookkeeping values of capital consumption and interest paid. Operating surplus is not included, as it concerns non-profit institutions (however, in practice temporary excesses or shortages of funds are possible due to employing a budget mechanism).

The detailed cost structure (national accounts commodity groups) is obtained from the major data sources and by employing some assumptions.

Several adjustments are made for differences between national accounts concepts and administrative concepts (e.g. different concepts of intermediate consumption and capital formation, see SBIs 90.1-90.7, 92.1-92.8).

Output is deflated on the basis of the prices of the various inputs. In addition, some specific adjustments are made for changes in the quality of output.

-81-

## SBI 93.5-93.9 EXTRAMURAL HEALTH CARE

A. General

Extramural health care consists of:

- 93.5 Medical practices;
- 93.6 Dental practices and dental (poli-)clinics etc.;
- 93.7 Midwives, nurses, etc. (private practice);
- 93.8 Other medical services;

- 93.9 Veterinary services.

In 1988, gross value added of extramural health care amounted to 9.1 billion Dfl.

In the Netherlands, a major part of extramural health care services is sold at fixed rates. These rates are negotiated and regulated in advance by all parties involved (government, health care institutions, insurance companies, trade groups for extramural health care services). Fixed rates are not employed for SBI groups 93.8 Other medical services (including e.g. acupunctuur, homeopathy and various mental therapies) and 93.9 Veterinary services.

B. Main sources

- 1) Statistics on costs and financing of health care With respect to extramural health care, the Statistics on costs and financing of health care is based on information provided by the Medical Insurance Board (In the Netherlands, health care for all employees with an income below 40,000 Dfl. is fully regulated; The Medical Insurance Board supervises this health care), private medical expenses insurers and various operating summaries (annual reports) of extra mural health care institutions. Other data included are number of self-employed, number of contacts with patients, number of referral letters and the number of independent practices.
- 2) Prices from the Budget Survey (see section 6.3).
- Price index number of household consumption from the CBS Price statistics (used to calculate constant prices).

C. Determination of gross value added

Gross output, value added and intermediate consumption are calculated on the basis of the Statistics on costs and financing of health care.

Adjustments are made for underreporting of income (e.g. by overreporting intermediate consumption and underreporting services sold). These adjustments are based on sensitivity analysis (see section 5.4.5) and specific investigations into tax evasion by the Fiscal Intelligence and Investigation Service (FIOD), e.g. the project "Golden Teeth" (Operatie Goudtand). For some groups not investigated by the FIOD, similar amounts of underreporting are assumed.

In order to calculate intermediate consumption by commodity-group also some supplementary assumptions are employed.

The figures of the Statistics on costs and financing of health care do not cover the whole industry Extramural health care. Supplementary estimates are therefore to be made for Veterinary services and Other medical services.

The estimates for Veterinary services are based on estimates during the 1977 revision. Compensation of employees was derived from the Statistics on paid days of work and gross wages and salaries. The income of vets was estimated on the basis of 1975 income tax figures (CBS Income Statistics) and figures on the number of vets. Information on intermediate consumption was obtained from the Association of Producers and Importers of Medicines for Animals. Adjustments were also made for underreporting.

More recent estimates are made on the basis of figures on the number of vets and prices derived from the Budget Survey.

Figures on Other medical services are estimated on the basis of the Statistic for paid days of work and gross wages and salaries.

-83-

## SBI 94 SOCIAL SERVICES

A. General

SBI 94 consists of:

- 94.1 Old people's homes (except for psychically deranged elderly);
- 94.2 Children's homes, social homes, etc. (for not-handicapped);
- 94.3 Homes and day-rooms for handicapped (no school);
- 94.4 Social-medical, social-psychological and social-pedagogical services, etc.;
- 94.5 Welfare institutions;
- 94.6 Mother's help and elderly help institutions;
- 94.7 Family information and other family services.

Before the revision, no intermediate consumption was registered in the SBI 94 Social services. Dutch practice was to record the goods and services involved directly as final consumption of households. Since the revision, the system of Dutch national accounts is much more institutional and intermediate consumption is now also registered in this industry.

By far the most important activity in the industry Social services is Old people's homes. This accounts for about 40% of the gross value added. In 1988, total value added in SBI 94 was 7.2 billion Dfl.

B. Main sources

- Statistics on old people's homes
   Compilation: CBS
   Frequency: Annual
   Type of recording: Full
   Main characteristics recorded: Detailed operating summary
   Statistics on homes and day-rooms for handicapped
- Compilation: CBS Frequency: Annual Type of recording: Full

Main characteristics recorded: Detailed operating summary

- 3. Statistics on social work
  - Compilation: CBS

Frequency: Annual

Type of recording: Full (it covers part of SBI 94.5 Welfare Institutions)

Main characteristics recorded: Detailed operating summary

- 4. Statistics on costs and financing of health care (see SBI 93.5-93.9 extramural health care), more in particular the Statistic extramural mental health care for estimating figures on SBI 94.4.
- 5. Statistic on créches, kindergartens, infant schools, etc.
- 6. Statistics on paid days of work and gross wages and salaries (See section 5.4)
- Statistics on persons occupied (See SBI 92.9 Other education, source 3.)
- 8. Wage survey [Jaarlijks loononderzoek] (for more information, see CBS 1987)

Compilation: CBS

Frequency: Annual

- Number of respondents: 18 000 establishments covering 3.2 million employees (in 1988)
- Type of recording: Two stage sampling. First stage: full recording of establishments with over 100 employees and sampling for smaller establishments. Second stage: full recording of all employees in the smallest establishments and decreasing percentages of sampling for larger establishments (e.g. 5% of the employees in the largest size class, i.e. for over 100 employees). In 1988, the number of employees surveyed was 311 000, i.e. 6% of total employment. Characteristics recorded: Wage rates, annual wage, number of days actually worked, number of days on holiday, etc. and sexe and age of the employees.

C. Determination of value added

Gross output, compensation of employees and intermediate consumption are calculated on the basis of the Statistics on old people's homes and the

other statistics listed above. For compensation of employees and employment also the Statistics on paid days of work and gross wages and salaries are employed. In this way, linkage to the Central Business Register is established.

In order to calculate intermediate consumption by commodity-group also some supplementary assumptions are used. SBI 95 SOCIO-CULTURAL AND CULTURAL INSTITUTIONS

A. General

SBI 95 consists of:

- 95.1 Quarter-, district- and village work;

- 95.2 Juvenile work;

- 95.3 Day-release courses and education (extra curricular);
- 95.4 Libraries, museums and preservation of cultivation;
- 95.5 Radio and television;
- 95.6 Film, renting of videos;
- 95.7 Theatres, concert halls, etc.;
- 95.8 Artistic companies and liberal artists;
- 95.9 Social-cultural and cultural umbrella, co-operation and advise organisations.

In 1988, total gross value added involved was 2.5 billion Dfl.

Since the revision, a production statistic on the Renting of videos (SBI 95.69) is available and used as the major data source. For the compilation procedures for this group of establishments, we refer therefore to section 5.4.

B. Main source

- 1. Statistics on paid days of work and gross wages and salaries (See section 5.4)
- Statistics on the incomes and expenditures of general government in the field of social work, culture and recreation Compilation: CBS

Frequency: Annual

- Type of recording: Full (on the basis of administrative government) Main characteristics recorded: Data on subsidies granted and the operating data of government institutions which engage in the activities in question.
- Statistics on broad-casting companies Compilation: CBS

Frequency: Annual

- Type of recording: The statistics are based on the annual report of the Government Commissioner for Broadcasting
- Main characteristics recorded: Operating summaries of the broadcasting organizations and the broadcasting industry.
- 4. Statistics on persons occupied (See SBI 92.9 Other education, source3.)
- 5. Annual wage survey (See SBI 94 Social services, source 4.)
- Various volume data This relates to numbers of visitors at performances, exhibitions, etc., usually compiled by the CBS.

C. Determination of value added

For most parts of SBI 95, the initial levels of gross output, value added and intermediate consumption were estimated during the 1977 revision. The major data sources were government information (see source 2, not for all SBIs) and the Statistics on paid days of work and gross wages and salaries. These sources are also used to update the figures. The data on volumes serve as a check on the plausibility.

Figures on SBI 95.5 Radio and television were recalculated during the most recent revision. Data sources employed were information from the government (see above, source 2), Statistics on broad-casting companies, annual reports from the public broad casting companies (NOS, NOB) and the Statistics on paid days of work and gross wages and salaries. All these data sources are also employed to update the revised figures.

Intermediate consumption by commodity groups is calculated from the various data sources and by employing assumptions and ratios dating back to the 1977 revision.

#### SBI 96 SPORTS AND RECREATION

A. General

SBI 96 consists of:

- 96.1 Sport;

- 96.2 Recreation, e.g. casino's, dancing schools, organisations on recreation and nature conservation (no vocational training);
- 96.9 Umbrella, co-operation- and advise organisations on sport and recreation (e.g. National and regional organisations of soccer, tennis and swimming).

Before the revision, the information available on SBI 96 Sports and recreation was rather sparse. Since the revision, this situation has drastically improved due to the 1986 Census on sports and recreation. In 1988, the industry Sports and recreation involved in terms of gross value added 3.3 billion Dfl.

B. Main sources

- Statistics on paid days of work and gross wages and salaries (See section 5.4)
- Census on sports and recreation in 1986
   Main characteristics recorded: Total revenues, type of revenues (contributions, subsidies, etc.), number of employees.
- 3. Statistics on sport schools and clubs Statistics on watersport, swimming pools and sport accommodations Statistics on recreation These three statistics alternate: each year one is published by the CBS. Main characteristics recorded: output, value added, intermediate
  - consumption, compensation of employees and various volume data, like the number of members of sport schools or the number of visitors of swimming pools.
- 4. Ad hoc information These widely differing data are mainly obtained from a source outside

-89-

the CBS, like annual reports of casino's.

C. Determination of value added

The 1986 Census is the major source for estimating gross output. Intermediate consumption and value added are calculated on the basis of the alternating CBS statistics (e.g. that on sport schools and clubs) and annual reports. As part of the revision, the resulting figures were compared with those of the Statistics on paid days of work and gross wages and salaries.

For recent years, the 1986 figures are updated on the basis of the Statistics on paid days of work and gross wages and salaries, the alternating CBS Statistics like that on sport schools and clubs, and ad hoc information, like annual reports of casino's.

Intermediate consumption by commodity groups is calculated from the same sources and by employing some additional assumptions.

No adjustments are made for underreporting and fraud.

SBI 97.1-97.4 EMPLOYERS, ENTREPRENEURS, PROFESSIONAL AND EMPLOYEES ASSOCIATIONS

A. General

The subgroups involved here are:

- 97.1 Public corporate business institutions (e.g. Commodity Boards, see also SBI 01, 02 Agriculture and Horticulture);
- 97.2 Employers' associations;
- 97.3 Employee associations;
- 97.4 Professional Associations.

In 1988, their total gross value added amounted to 1.8 billion Dfl.

Before the revision, for SBIs 97.2-97.4, the levels of output, value added and intermediate consumption were extrapolations of estimates of the 1977 revision. For reasons of continuity (see section 3), only since the recent revision, the results from the 1983 Census could be employed.

B. Main sources

- Statistics on paid days of work and gross wages and salaries (See section 5.4)
- 2. Statistics on occupied persons
  (See SBI 92.9 Other education, source 3)
- 3. Semi-annual wage and salary survey (See SBI 94, 97.1 and 97.9 Social services, source 4)
- 4. Statistics of the trade union movement Compilation: CBS Frequency: Annual Number of respondents: 19 500 Potential number of respondents: 250 000 Type of recording: Full Characteristic recorded: Numbers of members.
- 6. Data on Public Corporate Business Institutions (PBOs) from the government accounts and annual reports of the PBOs
- 7. 1983 Census (the figures pertain to 1983, the Census was held in

1984)

C. Determination of value added

In estimating value added on SBI 97.1 Public Corporate Business Institutions (PBOs), the annual reports of the PBOs and the figures from the government accounts (of the Ministry of Economic Affairs) are employed. How such data are transformed for the purposes of the national accounts is described at industries for the general government (SBIs 90.1-90.5).

The SBIs 97.2-97.4 are estimated in another way. In revising the Dutch national accounts, the figures from the 1983 Census were employed and compared to various other data sources. The revision resulted in new levels for 1987 and 1988. Intermediate consumption by commodity groups was also calculated from the 1983 Census and by employing some additional assumptions.

For more recent years, the figures are updated on the basis of the various data sources on wages (values and rates) and employment. Checks on the plausibility of these new levels are made on the basis of various external data sources, like the Statistics on the Trade union movement.

Capital consumption is calculated on the basis of the Perpetual Inventory Method (PIM) (see SBIs 90.1-90.7, 92.1-92.8).

#### SBI 97.5 RESEARCH INSTITUTIONS

#### A. General

SBI 97.5 consists of non-profit institutions and of establishments which operate on a commercial basis (for a parent enterprise or purely for the market). In 1988, gross value added of the Research Institutions amounted to 2.4 billion Dfl.

B. Main sources

- Statistics on paid days of work and gross wages and salaries (See section 5.4)
- Statistics on occupied persons (See SBI 92.9 Other education, source 3)
- 3. Statistics on research and development Compilation: CBS Frequency: Annual Type of recording: Only enterprises with 50 or more employees; there is no link to the General Business Register Main characteristics recorded: Costs and revenues by type of research (Basic, applied, experimental)

C. Determination of value added

During the 1977 revision, levels of gross output, value added and intermediate consumption were estimated on the basis of the sources listed above. For intermediate consumption by commodity group, some supplementary assumptions were necessary.

For the more recent years, the 1977 figures are updated on the basis of statistics on employment and wages (see above, sources 1 and 2) and the Statistics on research and development.

#### SBI 98 OTHER SERVICES

A. General

SBI 98 consists of:

- 98.1 Cleaning and sanitary departments;
- 98.2 Cleaning services;
- 98.3 Laundries, chemical cleaning and dye-works;
- 98.4 Hairdressing and beauty-parlors;
- 98.5 Photographic studios;
- 98.9 Other personal services.

In 1988, the gross value added of the industry Other Services amounted to 5.9 billion Dfl. Gross value added of SBI 98.1 Cleaning and sanitary departments was 1.1 billion Dfl.

B. Main sources and determination of value added

#### Sources:

- 1. Government accounts (for SBI 98.1).
- Statistics on paid days of work and gross wages and salaries (See section 5.4)
- 3. Production statistics on SBIs 98.2-98.9 (see section 5.4).

Since the revision, the estimates of the level of gross output, value added and intermediate consumption for SBIs 98.2-98.9 are based on new production statistics. The compilation procedures for these SBIs are therefore already described in the section on SBIs with production statistics (see section 5.4).

The public part of SBI 98.1 Cleaning and sanitary departments is estimated on the basis of the municipalities accounts. The estimates of the levels of gross output, value added and intermediate consumption of the private part of SBI 98.1 date back to the 1977 revision. These figures are updated on the basis of the Statistics on paid days of work and gross wages and salaries.

#### SBI 99 PRIVATE HOUSEHOLDS WITH WAGE-EARNING STAFF

A. General

Private households with wage-earning staff consists of e.g. charwomen, butlers, gardeners and baby-sitters. In 1988, the total amount of gross value added involved was 1.5 billion Dfl. The revenues of charwomen amounted to over 0.5 billion Dfl.

B. Main sources

- 1. Budget survey (see section 6.3)
- 2. Annual report of the Industrial Insurance Board for Retail Trade and Business services (Detam) Characteristics used: Total insured wages and salaries and number of employees.
- 3. Labour force survey
- C. Determination of value added

In the Dutch national accounts, for SBI 99 no intermediate consumption is registered.

For the wage-earning staff for which social premiums are paid, figures on compensation of employees are available from the annual report by the DETAM. As part of the 1977 revision, these levels were grossed up for underreporting on the basis of various other data sources (the labour force census, the 1971 population census and an investigation on unreported revenues of charwomen). The ratio employed for grossing up the figures for 1977 are still employed in calculating more recent figures.

The revenues of charwomen are estimated on the basis of the Labour Force Survey (for the volume) and the Budget survey (for the prices). Therefore, whether or not these reveneus are reported to the fiscal authorities, they are always included in the estimate of GNP.

#### 5.4 Estimation of value added tax

As part of the integration process (see section 8), value added tax on accrual basis is estimated by combining official VAT rates with the estimates on the use of commodities. In the Dutch National Accounts, also VAT on approximate accrual basis (i.e. cash basis with a delay of two months<sup>1</sup>) is recorded. The difference between VAT on accrual basis and VAT on approximate accrual basis is not only caused by fraud, but also by exemptions, remissions of tax debts, fines and differences in timing.

For 1988 paid VAT on accrual basis was estimated at 37.45 billion guilders (1987: 36.42), while received VAT on approximate accrual basis was 1.19 billion (1987: 1.72) lower. The registration of VAT as VAT paid on accrual basis, has been introduced in the recent revision. This has led to an increase of GDP and GNP at market prices.

1. Starting from 1990, fiscal figures on accrual basis will be used instead of fiscal figures on cash basis.

# 6. Expenditure approach

## 6.1 Introduction

In this section, the estimation of the GDP from the expenditure side is described. Imports and exports are discussed in subsection 6.2, final consumption is the topic of subsection 6.3 and the estimation of capital formation is described in subsection 6.4.

## 6.2 Imports and exports

#### 6.2.1 Imports and exports of merchandise

In conformity with the guidelines of the EC (EC, 1970, paras 358 and 377), special trade information (- not general trade) has been taken as the basis for recording imports and exports of merchandise. Special trade implies that foreign goods entering free zones or bonded customs warehouses within the country are not regarded as imports (unless they are also brought in free -national- circulation within the same accounting period).

The flows of goods to territorial enclaves from the rest of the world are treated as imports. However, the sources used do not permit a distinction to be made between flows of goods and service transactions (the same problem arises with the breakdown of expenditure on consumption by residents abroad). For this reason, all the expenditure on goods and services by embassies, consulates, army units etc. have been included in the transaction category 'Imports of services by general government'.

The treatment of extra-territorial enclaves is analogous to that of the territorial enclaves. All the incidental expenditure of the establishments concerned has been included under the undifferentiated heading 'Consumption by non-residents in the Netherlands'. The source is the balance of payments on a cash basis.

Since the revision, for most goods processing to order is now regis-

tered net, i.e. the goods processed are not included in imports and exports of merchandise. Exceptions are petroleum, breeder fuels and fissionable materials. The payments on and revenues from processing to order are recorded as imports and exports of services.

Deliveries of fuels and provisions to foreign ships and aircraft from the free circulation of goods are recorded as exports of goods. Similar purchases abroad for ships and aircraft operated by residents are treated as imports of services for practical reasons.

The supplies of gas, water and electricity are in principle recorded when the frontier is crossed. However, the delivery to Germany of gas extracted by Dutch companies and originating from German soil is not registered as exports in the Dutch national accounts.

Military goods may also be imported and exported without the frontier being crossed. In line with this, purchases abroad by Dutch army units stationed abroad are treated as imports of goods and services.

In so far as they are recorded as cross-frontier goods traffic, works of art, antiques etc. are included in imports and exports of goods. However, this does not apply to goods intended for temporary exhibition in the Netherlands.

Inflow or outflow of industrial gold is recorded as imports and exports of goods if it is included in the Foreign Trade Statistics. However, purchases and sales of financial gold are not recorded as imports and exports of goods. If industrial gold is converted into financial gold, the guidelines of the EC and UN require the associated value to be recorded as exports of goods. A corresponding entry has to be made when financial gold is converted into industrial gold. Such conversions are not registered in the Netherlands. There is no source for recording the purpose for which gold is held by private individuals, and no conversions are actually made of financial gold into industrial gold or vice versa.

-98-

The Foreign Trade Statistics compiled by the CBS are the principal source for recording imports and exports of merchandise. The Foreign Trade Statistics are based on customs documents which register almost all goods that cross the national frontiers. Monthly values and volumes of merchandise imports and exports are published for over 9600 items and, broken down (by item) per country/region of provenance, origin or destination. Changes in volume and unit value price indices can be calculated from the figures contained in the Foreign Trade Statistics. The amount of detail provided by the Foreign Trade Statistics is very important in a successful application of the supply and use method.

In the Dutch Foreign Trade Statistics, imports of merchandise amounts to bringing goods into the free circulation of the Netherlands and at the free disposal of the parties involved (i.e. after the customs formalities have been complied with). It is therefore not sufficient that the goods have been brought into free circulation in the European Community. Exports are defined as those goods which have been removed from the national free circulation of goods. These may be goods produced or manufactured in the Netherlands, or goods which were originally imported. The Dutch national accounts make a clear distinction between exports produced in the Netherlands and those produced elsewhere. The latter are described as 're-exports'. Goods which are imported or exported for processing, returned goods and goods which are imported and exported more or less simultaneously for tax or other reasons are included in the import and export figures of the Foreign Trade Statistics.

A copy of the relevant customs document is kept in the statistical records for all cross-frontier goods consignments with a value of over Dfl 1 100. The time of recording is the time when the goods actually cross the frontier. For example, goods of Dutch origin held in a bonded warehouse are not recorded as exports until the moment when they leave the bonded warehouse for a destination outside the Netherlands. The goods are valued on the basis of the 'statistical' value stated on the document. This corresponds to the cif value for imports and the fob value for exports. Much of the recording is now no longer based on customs documents but on monthly figures supplied directly to the CBS by enterprises. These may be submitted in the form of special summary lists or magnetic tapes, floppy disks etc.

The Foreign Trade Statistics are not fully exhaustive with respect to the imports and exports of merchandise and some supplementary estimates have to be made. Cases in point are:

- Small consignments (- with a value below Dfl. 1100) are estimated on the basis of a periodical sample survey from which the ratio of the value of small consignments to the total value of consignments is derived.
- Cross-frontier sales are estimated on the basis of figures on purchases of foreign currencies by banks in the frontier zone.
- Sales and purchases of ships and aircraft are derived from the registers of shipping and aircraft. In fact, these figures are compared and reconciled with the incomplete figures on ships and aircraft in the Foreign Trade Statistics.
- Military goods. The purchase and sale of military goods by the Dutch government where no crossing of the national frontiers is involved is derived from CBS government finance statistics.
- The export of fish caught by Dutch fishermen and landed directly at foreign ports is not recorded in customs documents. A small adjustment to the export value is estimated from fisheries data collected by the CBS.
- Some other sales and purchases without crossing the national frontier, like transactions in coins and stamps for collection purposes. The figures are derived from the balance of payments on cash basis.

Imports and exports of merchandise are broken down by economic activity. For this purpose, various sources are employed. For example, most of the production statistics on manufacturing give the value of the sales invoiced to non-residents specified by product group. This figure provides a lower limit for the actual exports by (group of) economic activity. Firstly, it takes no account of exports through trading channels and, secondly, the production statistics generally provide no estimates for enterprises with under 10 employees. The relative size of trade and small enterprises vary widely. So, for some groups of economic activities (SBIs) the export figure from the production statistics is a very good indicator, but for others it is not.

The most important source for estimates of exports of merchandise are the Foreign Trade Statistics, which give exports by product group (A number). It is then a matter of allocating these product groups to the SBI groups of origin (and to imports, where re-exporting is involved). Two complications arise here:

- Exports are valued at fob prices, including trade and transport margins, while in the production statistics the valuation is at producers' prices, excluding trade and transport margins.
- A product group may form part of the export package of several SBI groups.

The implication is that the value of exports by "A" number valued on an fob basis must be split into:

- The trade and transport margin;
- Re-exports valued on a cif basis;
- Exports by the various industries valued at producers' prices.

Imports and exports of merchandise are also deflated. In principle, there is a choice between three deflators:

- an index of a unit value from the production statistics
- an index of a unit value from the Foreign Trade Statistics (on index figures from the Foreign Trade Statistics, see Smits, 1989)
- a 'true' price index for sales to the rest of the world, such as that compiled by the Price Statistics Department of the CBS.

The following should be noted about the choice between a unit value index and a price index. Unit value indices are often distorted in the course of time by heterogeneity of the commodities within a unit (cubic metre, tonne, litre, numbers of the item in question) and are therefore not considered suitable. Price indices do not suffer from this drawback, but have the disadvantage that the composition of the product package becomes increasingly obsolete as the base year recedes into the past. The unit value indices based on foreign trade have also the disadvantage that they are based on fob values. The severity of this disadvantage depends upon what proportion of the fob value is represented by the trade and transport margins.

The choice of deflators is not only influenced by the characteristics of the price material. The assessment of movements in volume derived from the value indices and deflators is also very important. Particularly where exports of goods form a substantial part of the output value, the deflation of exports helps to determine the overall picture of the group of activities as far as the volume movements of production, consumption and value added, and such factors as the growth in measured productivity (value added at the preceding year's prices per employee), are concerned. Conversely, the branch specialist's view of the movements just mentioned affects the deflation of exports.

#### 5.2.2 Imports and exports of services

An important source for the total imports and exports of services is the <u>Balance of Payments on cash basis</u>. The Balance of Payments on cash basis is compiled by the Dutch National Bank (DNB). Information is derived from the obligation of residents to use an authorised financial institution for their financial transactions with non-residents. A report form must be submitted for all transactions above the limit of DF1 5000. In turn, this enables the financial institutions to explain to the central bank the changes in their accounts. The total amount of the submitted forms must correspond to the changes in the foreign accounts for each currency.

In addition, residents are allowed to use an account with a nonresident bank or giro institution provided they comply with the central bank's requirements to report on their transactions. If they make use of this right, they must periodically submit reconciled statements of the opening and closing figures of the account, all the changes and a description of the nature of the changes by transaction. In some cases, settlements in cash are also permitted. Then the bank or foreign exchange office where the counter transactions take place has to submit the report. These data are supplemented by the returns of foreign exchange banks concerning the exchanging of Dutch and foreign currency with the rest of the world. Besides payments and receipts, all kinds of special transactions must be reported. Examples are current account relationships with foreign companies, payment in goods, services or shares, renewal of debts, gifts in kind and long-term trade credit.

The DNB provides also estimates of the 'travel expenditure' by residents abroad and non-residents in the Netherlands. At the National Accounts Department, these expenditure are splitted into those of households, business and the government. The DNB-figures on the travel expenditure by residents abroad are grossed up for payments by residents to foreign transport companies (e.g. not every Dutch resident flies KLM).

The national accounts department modifies the balance of payments figures on international trade in services for differences in definition. For example, bunker supplies to non-resident ships and aircraft are recorded as exports of services in the balance of payments. However, these sales are already incorporated in the national accounts exports of merchandise (as derived from the Foreign Trade Statistics). In order to avoid double-counting, the balance of payments figures on exports of services are therefore to be modified. Another case in point pertains to transport and insurance data. In the balance of payments on cash basis, imports and exports of merchandise are recorded at invoice values. In the balance of payments on transaction basis, imports and exports of merchandise are recorded at fob values. However, in order to be consistent with the cif valuation of merchandise imports in the national accounts, the transport and insurance data have to be modified (see Bos, cif-fob in CBS-select).

In the national accounts (and the balance of payments on transactions basis) international trade in services should be recorded on transactions basis. However, all that is available from the balance of payments on cash basis is a record of receipts and payments. Therefore, part of international trade in services is recorded in fact on cash basis in the Dutch national accounts. A registration on transactions basis is only

-103-

possible when data sources other than the balance of payments on cash basis are available.

For a number of service transactions, the national accounts do not employ the balance of payments on cash basis data but prefer a data source provided by the CBS. This pertains to:

- Imports and exports of services by transport enterprises (information from the production statistics of transport enterprises);
- Imports and exports of services by general government (information from general government accounts);
- Subcontracted labour imported or exported by the metal and manufacturing industry (information from the production statistics);
- Processing to order-transactions (information from the production statistics, commodity-flow estimates).

The only information available about non-life insurance transactions is the net balance of the amount paid to the rest of the world, which is derived from the balance of payments on cash basis. The figure may be regarded as net imports in respect of non-life insurance. To this net figure is added the balance of corrections made to achieve consistency between service transactions and the cif valuation of merchandise imports. The said corrections are estimates. The balance thus obtained is then broken down, partly with the aid of indicators and ratios derived from domestic non-life insurance industry data, into four transactions with the rest of the world:

- 1. Premiums received
- 2. Premiums paid
- 3. Insurance payments received
- 4. Insurance payments made.

Lastly, the receipts (1 + 3) are added to the exports of insurance services and the payments (2 + 4) are added to the corresponding imports. The imports and exports thus defined are allocated to the Insurance branch.

Transactions with the rest of the world in respect of life insurance policies are registered as financial transactions. Only premiums and payments are recorded. Accrued interest is not recorded as part of primary income.

In order to improve the registration of international trade in services, the CBS has recently incorporated specific questions on the imports and exports of services in most of the surveys for the production statistics. The classes of economic activity involved are manufacturing, construction and business services. A major part of the new figures are only available for 1991 and later years (see van den Berg, 1992).

The imports and exports of services are broken down by economic activity. The breakdown by economic activity is mainly derived from the production statistics. In addition, the breakdown by types of services from the balance of payments on cash basis is taken as an indicator. In all calculations, it is assumed that establishments only export services that correspond to their main economic activity.

The balance of payments does not yet include a specification by economic activity. However, it does provide the information for the distinction between consumption by Dutch residents abroad and by nonresidents in the Netherlands, on the one hand, and between imports and exports of services by enterprises and general government, on the other.

In section 7.2, data sources and compilation procedures for the primary and secondary income flows with the Rest of the World are described. The section provides also a further discussion of the relationship with the Balance of Payments on transaction basis.

## 6.3 Final consumption expenditure

Final consumption expenditure by the government is equal to the government's gross value added plus the expenditure on goods and services by the government minus the sales by the government. In subsection 5.3.5, the estimation of all these items is already described. In this section, we will therefore limit ourselves to the estimation procedures for <u>final</u> consumption expenditure by households.

Before the revision, a major part of final consumption expenditure by households was estimated on the basis of the commodity flow-method. Final consumption at producers' prices (or at cif in case of imports) was calculated as the balance between the supply (production, imports, decrease in stocks) and use (intermediate consumption, exports, fixed capital formation and increase in stocks) by commodity group. On the basis of estimates of trade- and transport margins and VAT-rates, final consumption at producers' prices was then transformed into final consumption at market prices.

Since the revision, the compilation has been based to a main extent on the budget survey and the Production statistics for retail trade (see also Buiten, 1992a).

The Dutch Budget Survey (CBS, 1992c) is an annual sample of 2000 households in 1988 (in 1990: 2800 households). The survey is pre- and post-stratified to take account of selective non-response, expected differences in standard deviation by type of households, etc.) (see also Berends-Ballast and de Heer, 1989). The budget survey has some clear limitations as data source for estimating the level of final consumption (see e.g. Buiten, 1992b). The budget survey's sample size is relatively small, the sample is not fully representative, the purchase of some goods and services is probably systematically underreported and grossing up the budget's information to national totals is problematic due to the absence of a complete register of households (Note: there is sufficient information on persons, but the budget survey pertains to households). Furthermore, the budget survey does not provide information on expenditure of people living in institutional households and the expenditure of foreigners in the Netherlands.

In most cases, the Production statistic for retail trade constitutes an important source. Of course, some goods or services such as health services are never distributed by retail trade. The consumption of these goods and services is estimated in a different way (see below). In addition, it applies to most commodities that they are not completely provided by retail traders (e.g. cheese sold directly at farms) and for this phenomenon positive corrections are made. On the other hand, the retail trade also partly includes sales to enterprises, which is separated out.

The problem of the existence of more than one distribution channel for a single commodity is overcome by combining the information in both sources. In the budget survey, it is also asked where the goods and services are bought, e.g. in the supermarket, the grocery, flower shop, department store, abroad, obtained as income in kind, etc.. This information on the distribution channels can then be used to calculate the market shares. The underlying assumption is that information on the relative importance of distribution channels is less vulnerable to the limitations of the budget survey. This assumption was tested by comparing the ratios for 1985 and 1986. These ratios were indeed stable.

The combined method consists of the following steps:

- Sales from the production statistics on retail trade by commodity are adjusted for sales to enterprises, people in institutional households (like old people's homes) and non-residents;
- 2. This modified sales figure is divided by the market share of subclasses of economic activity as derived from the budget survey. For example, if the budget survey indicates that households purchase 80% of their total purchases of milk at a specific subgroup of retail trade, the sales figures of this subgroup to households for milk can be multiplied by 10/8 in order to arrive at an estimate of total purchases of milk by households.
- 3. Estimates of final consumption by people in institutional households

and non-residents are added;

- 4. An estimate of VAT is added;
- 5. Final consumption by commodity group as distinguished in the retail trade statistics is transformed and (des)aggregated in order to arrive at the commodity classification in the National Accounts; this (des)aggregation is mainly based on ratios derived from the budget survey. For some commodity groups, also a split is made between a part which is sold directly by the producer and a part which is sold via retail trade.

In order to apply this method, it is necessary that a clear link can be established between the sales in the production statistic, the commodities distinguished in the budget survey and the commodity classification in the National accounts. For services and for goods classified in the category 'Other goods and services', the combined method is therefore not used. These estimates are mainly based on the budget survey. Neither of these methods are adopted for commodities which are vulnerable to the small size of the sample and the lack of representativeness. This vulnerability was tested by comparing figures for several years. In such instances, the commodity-flow method is applied (see below).

The final consumption of fuel is estimated on the basis of the CBS statistic Ownership and use of private cars. This statistic is based on a panel survey, in which car owners are asked for the number of kilometers driven, average fuel consumption per kilometer, type of fuel and the motive for driving (private, travelling to the workplace, for business purposes). This survey is grossed up by means of the CBS Statistic of automobiles.

Estimation on the basis of the production method is used for e.g.:

- Second-hand goods from desinvestments and imports;
- Imputed services of owner-occupied dwellings;
- Organizing travels (in order to distinguish organizing travels from transport services);
- Health services (because these are mainly paid by public and private
insurance companies);

- Services of life insurance companies and pension funds;
- Social services (as these are frequently subsidized).

The commodity-flow method is used for, e.g.:

- Various commodity groups related to 'other products', like Other textile products, Fashion-articles, Other chemical products, Other metal products and Other electrical products;
- Repair of consumer durables and cleaning services;
- Materials for construction and maintenance of houses and gardens;
- Services of hotels, cafes and restaurants;
- Directly paid bank services (charges for administration, etc.);
- Business services;
- Services of casualty insurance companies.

In table 4, the estimation methods for the level of 1987 are summarized.

Esti	mation method	Level of	F 1987	Level of	1989
		Value	x	Value	*
1.	Direct estimates				
a.	Combination of sales from retail trade stat. and				
	market shares from the budget survey	83.0	31.0	98.7	34.7
b.	Budget survey	44.6	16.6	23.9	8.4
c.	Estimate of fuel consumption on the basis of the				
	stat. Ownership and use of private cars	7.2	2.7	7.9	2.8
d.	Sales figures from production statistics	-	-	8.8	3.1
e.	Other direct sources of data	-	-	29.1	10.2
f.	Estimate as the value of production	93.5	34.9	101.8	35.8
1.	Total	228.3	85.2	270.1	95.0
11.	Commodity-flow method	39.6	14.8	14.3	5.0
T	otal	267.9	100.0	284.4	100.0

Table 4. Estimation methods for final consumption by households

The estimation procedures for the level of final consumption in 1987 were described above. In estimating the levels for more recent years, some other estimation procedures and data sources are used. The reason for this difference is that for more recent years, a reliable estimate

of the changes compared to 1987 is aimed at (instead of a level estimate sec). Estimation of changes in levels puts stronger requirements on the reliability of sampling results than estimation of levels. For example, a measurement error of 5% may be acceptable in only estimating the level, but in comparing levels such errors would result in meaningless estimates of the changes in level. As a consequence, in estimating the changes in levels, the results from the budget survey are less frequently used. In such instances, other estimation procedures or data sources are employed (for the estimates of 1989, see table 4). As only the changes in level are to be estimated, also various indicators on changes in values could be used as a data source. A case in point is the estimation of changes in the sales of some distribution channel on the basis of the changes in other distribution channels. In other cases, the change in value is approximated by employing separate indicators for changes in prices and volumes (e.g. for the consumption of medical services or transportation services). For information on CBS price index-figures for household consumption expenditure, see Mensink (1989).

# 6.5 Capital formation

In tables 5 and 6, the size of fixed capital formation in the Netherlands is shown by economic activity and by type of asset.

SBI	Economic activity	Fixed capital mln. Dfl.	formation X
01,02,03	Agr., hort.,fishing	4609	4.6
11, 12, 19	Mining and quarrying	1147	1.1
20-39	Manufacturing	15657	15.7
40	Public utilities	3838	3.8
5	Construction	1697	1.7
61-68	Trade,hotels,c&rest,		
	repair of consigoods	9535	9.5
71-77	Transport, storage, comm.	9303	9.3
83	Operation of dwellings	28451	28.5
90	General government	10396	10.4
81,82,84	-86,		
91-99	Other services n.e.c.	15247	15.3
Total fi	ed cap.form. from		
domestic	production and imports	99880	100.0
Sales of	second-hand fixed asset	s -2490	
Total fix	ed capital formation	97390	

Table 5. Fixed capital formation by economic activity in 1988.

Table 6. Fixed capital formation by type in 1988.

Type of asset	Fixed capital mln. Dfl.	formation X
Dwellings	26470	26.5
Buildings	15910	15.9
Infrastructural works	10480	10.5
Means of transport	9880	9.9
Increase in live stock	-130	-0.1
Machines and other equips	. 34660	34.7
Transfer costs	2610	2.6
Total f.cap.form. from		
dom.prod. and imports	99880	100.0
Sales of sec. hand assets	-2490	
Total fixed cap.form.	97390	

Before the revision, fixed capital formation was estimated on the basis of information on the supply of capital goods, like those in the production statistics and the Foreign Trade Statistics. Since the revision, a separate estimate is made of the demand for capital goods by type and by class of economic activity which actually employs the capital good (i.e. not the owner) (see Kroon, 1992).

The classification by type of asset employed in the compilation procedures is in some respects more refined than the classification shown in table 6:

- Buildings consists of:
  - \* Schools;
  - \* Other buildings;
- Means of transport consists of:
  - \* Cars and trucks:
    - . Passenger cars;
    - . Other;
  - \* Trains;
  - \* Ships;
  - \* Aircraft;
- Machines and other equipment consists of:
  - \* Computers;
  - \* Other.

The most important data sources in estimating fixed capital formation are:

- CBS Statistic on fixed capital formation in mining and quarrying, manufacturing, public utilities and construction (see below);
- CBS Statistic on capital formation in transport, storage and communication (see below);
- CBS Production statistics on trade and business services (their surveys include questions on fixed capital formation, see section 5.4);
- CBS Statistic on the Accounts of Municipalities (Gemeenterekeningen);
- CBS Statistic on Government Finance;
- CBS Statistic on capital formation in intramural health care;
- Information on capital formation in agriculture and fishing by the Institute for Agricultural Economics (LEI);
- Annual reports of banks and insurance companies;
- CBS Statistic on automation;
- Information of Production Organizations on leasing of cars;

- CBS Business Finance Statistic (only as a plausibility check; on this statistic, see section 7).

The CBS Statistic on fixed capital formation in mining and quarrying, manufacturing, public utilities and construction (see CBS, 1992d) and the CBS Statistic on capital formation in transport, storage and communication (see CBS, 1991) are based on surveys. These surveys are linked to the General Business Register. Establishments are asked about their use of capital goods, including whether they are leased or  $not^{2}$ . The major sampling features of these surveys are shown in table 7. The table for example shows that for manufacturing about 12 % of fixed capital formation is to be grossed up, due to sampling, non-response or absence of small establisments in the survey.

		Size classes <sup>a )</sup> surveyed	% of Fixed Capital Formation Grossed up <sup>b }</sup>
12-19	Mining and quarrying	10 and more	
20-39	Manufacturing	10 and more	12%
40	Public utilities	10 and more	. 4%
5	Construction	10 and more	56%
71-77	Transport, storage	All	14%

Table 7. Main sampling features of the CBS-Statistics on fixed capital formation in 1988.

a) In terms of number of full-time employees.

b) This includes grossing up due to sampling, non-response and for the absence of small establishments.

Adjustments for the absence of small establishments are made on the basis of the Statistic Paid working days and gross wages and salaries. Capital formation by establishments outside the sample or that do not respond is estimated on the basis of the survey results (by size class).

The information from the various data sources is adjusted for differences in definition (e.g. purchase of land should be excluded), differences in timing (e.g. when the period of reporting does not coincide with the calendar-year) and coverage (e.g absence of small establish-

Upto surveys on 1989, information about leasing in SBIs 71-77 was only obtained for establishments with over 100 employees and all establishments in SBI 72.3. For 1990 and more recent years, such information is available for the whole of SBIs 71-77.

ments or workshops for the disabled are not included).

For some (parts of) classes of economic activity, there is no or insufficient information on the demand for capital goods by type. This pertains to capital formation in dwellings. Therefore, this is estimated on the basis of the supply information (e.g. from the production statistics, see subsection 5.4). In all other instances, an estimate is made on the basis of the ratio of capital formation to output for similar (sub)classes of economic activity. The latter estimation procedure is used for only 2% of total capital formation.

The estimates on the demand and supply of fixed capital formation are then compared and integrated. In 1988, this meant that the estimate on the basis of the CBS Statistic on fixed capital formation in mining and quarrying, manufacturing, etc. had the net effect of increasing estimated fixed capital formation by 0.7 billion Dfl (after integration, the value was 23.2 billion Dfl).

Changes in stocks are mainly estimated on the basis of the information on changes in stocks in the Production Statistics. So, in this respect, there is a clear depency between the estimates of value added from the production approach and those of the expenditure approach. As part of the revision, the supply and use of oil products (e.g. refined oil, fuel) and related chemical products in 1985, 1986 and 1987 were extensively investigated. This led to a substantial improvement in the estimate of the change in stock in these products. The difference with the estimate before the revision was 2 billion Dfl.

# 7. Income approach

# 7.1 General remarks

In compiling the national accounts and estimating GNP at market prices, several data sources on income received and distributed are used. In section 5, the production approach was discussed. This production approach involved the use of data on compensation of employees from the production statistics. Furthermore, in grossing up and checking the compensation of employees figures from the production statistics, the statistic Paid days of work and wages is employed. As another check on plausibility, in some cases also information on income from annual reports is used. So, in fact, the Dutch 'production approach' already encompasses the income approach.

In the integration process, use is made of data from the Business Finance Statistics (SFO, 'Statistiek Financiën van Ondernemingen'; see also Daamen, 1986 and Bonger, 1989). This CBS statistic is based on a survey of incorporated non-financial enterprises<sup>3)</sup> with assets of at least 10 million guilders (excluding rented dwellings). The unit for these statistics is the financial-administrative unit, but the data only relate to the part located in the Netherlands. The survey comprises a detailed breakdown of the profit-and-loss account and the balance sheets.

In compiling the financial accounts, information on financial flows is used. The balancing items in the financial accounts and the capital accounts are by definition the same (both indicate the Net change in liabilities). As a consequence, the information from the financial accounts can serve as a check on the estimates of the balancing items in the capital accounts. This provides also a very rough check on the balancing items in the income accounts, i.e. Operating surplus and Disposable income.

In fact, only limited liability companies (NVs), private companies (BVs) and cooperative associations are surveyed. Not surveyed are other associations, societies, foundations, institutions and foreign legal forms.

#### 7.2 The transition from GDP to GNP

In order to estimate GNP, the estimate of Dutch GDP should be supplemented by estimates of the net primary income flows with the rest of the world. In principle, the estimate should pertain to transactions basis. However, in fact it is recorded on cash basis as the data source employed is the Balance of Payments on cash basis.

The estimates on compensation of employees relate to residents employed abroad and non-residents employed in the Netherlands [with the exception of government personnel (embassies etc.) and personnel employed on ships and aircraft]. Compensation of employees comprises actual payments after deduction of tax and social security contributions where these have to be deducted by employers under the national taxation and social security legislation. Employers' contributions to payments for national insurance and pensions (actual social charges), which are also paid by employers, are not included in the compensation, nor, consequently, are they transferred by those concerned to social and pension funds. In this respect, the compensation of employees is recorded net. However, it does include such components as unemployment and sickness benefits, which would be regarded under normal (domestic) circumstances as 'imputed social contributions'.

Property and entrepreneurial income includes only the categories:

- Actual interest
- Dividends, royalties etc.

In comformity with the international guidelines, a transaction category 'reinvested earnings' in respect of cross-frontier direct investments is not incorporated. A similar remark applies to interest allocated on the actuarial reserves of life insurance companies and pension funds.

Actual interest comprises all actually occurring interest transactions between residents and non-residents, including those between affiliates of the same enterprise. Dividends, royalties etc. comprises all income from property and entrepreneurial activity not counted as interest, including income from transactions in intangibles. Dividends received from abroad and paid to abroad are registered gross, i.e. including taxes to be paid on dividends. These taxes are registered in the secondary income distribution account.

The transition from GDP to GNP requires in principle only an estimate of the primary income flows with the rest of the world. However, the current external account data in the national accounts are related to the current account of <u>the Balance of Payments on transactions basis</u>. Initial differences between the current account balancing items are corrected in the income accounts of the national accounts (Note: these are part of the current accounts). Therefore, in explaining the estimation of GNP, also the Balance of Payments on transactions basis and its relationship to the national accounts are to be discussed.

The Balance of Payments on transactions basis coincides mostly with the Balance of Payments on cash basis (see DNB, 1988). The only difference is that the Balance of Payments on transactions basis employs the Foreign Trade Statistics in recording imports and exports of merchandise. The Balance of Payments on transactions basis is therefore actually a cash basis registration with the exception of the imports and exports of merchandise and cif/fob adjustments.

Differences between items on the Balance of Payments on transactions basis and corresponding entries on the current external account in the national accounts occur due to differences in definition, data sources and compilation procedures (integration).

The differences in definition refer to:

The valuation of imports of merchandise. In the Balance of Payments imports of merchandise are valued fob, while in the national accounts cif valuation is employed. The difference between the cif and fob values is cancelled out by opposite corrections for services. To achieve this, the estimated cif value is broken down into three parts, to which the same number of corrections are applied, viz.:
\* exports of services by resident transport enterprises

\* imports of transport services

\* net imports of insurance services

In this way, the balance of goods and services with the rest of the world is not affected.

- Deliveries to non-resident aircraft and ships are treated as exports of goods in the national accounts, while they are recorded as exports of services in the balance of payments. Because of this difference in classification a cash/transaction difference is introduced, since goods are ordinarily recorded on a transactions basis and services on a cash basis. This difference is also cancelled out under the heading 'services n.e.s.'.
- Transactions free of charge (free deliveries, sample consignments, ancillary goods, intra-group transactions). Transactions free of charge are included in the national accounts, but not in the balance of payments. The balance with the rest of world of the transactions free of charge is recorded with an opposite sign as 'services n.e.s.'.
- Returned goods.

Returned goods are included in the national accounts as imports and exports, but they are not in the balance of payments. Returned goods produce incoming and outgoing flows of equal value. Therefore, they do not require a correction to cancel out the balance. Returned goods are separately identifiable in the Foreign Trade Statistics from the characteristic: 'type of transaction' (as are processing traffic and transactions free of charge).

- Government transactions. The government accounts are used as a data source in the national accounts. However, there are some differences between the government accounts and the balance of payments with respect to the recording of transactions as current or capital.

Only the difference with respect to the government transactions causes a discrepancy between the current account balance in the balance of payments on transactions basis and the current external account in the national accounts. In the Dutch national accounts, this difference is dubbed 'a difference in definition'. All other differences are 'differences in measurement' (see also table 8).

The Balance of Payments on transactions basis employs to a large

extent the same data sources as the national accounts. This applies to:

- imports and exports of merchandise (Foreign Trade statistics)
- imports and exports of some services (Balance of Payments on cash basis)
- primary income flows with the rest of the world (Balance of Payments on cash basis)
- some secundary income flows with the rest of the world
  - \* Income transfers to/by the household sector
  - \* Social security benefits
  - (Balance of Payments on cash basis)

Data sources for the national accounts and the Balance of Payments on transactions basis differ with respect to the imports and exports of some services, like transport services and the services by the government (see subsection 6.2) and for income transfers to/by the central government and other public bodies. In the Dutch national accounts, this last transaction category is derived from Government Finance Statistics. It consists of:

- \* Payments to the rest of the world:
  - . General contribution to EC expenditure
  - . Transfer of VAT to the EC
  - . Transfer of import duties to the EC
  - . Transfer of price-increasing levies on food to the EC
  - . Other income transfers to the EC
  - . Income transfers to international institutions other than the EC
  - . Food aid
  - . Transfers of EC subsidies on food exports
  - . Other payments.
- \* Receipts from the rest of the world
  - . Price-reducing subsidies from the EC
  - . Food aid contributions from the EC
  - . Other income transfers from the EC
  - . Income transfers from international institutions other than the EC
  - . Other receipts.

The differences between the National Accounts figures on international income transfers by the goverment and those of the Balance of Payments

on transaction basis are counterbalanced by recording a net primary income flow (see table 8). The reason is that the differences will mainly arise due to misclassification in the Government Finance Statistics of financial flows by the government (from the point of view of the national accounts). They are not caused by measurement errors of the total financial flows of the government (primary plus secundary) with abroad.

	Initial national accounts estimate	Integration adjustment	Published
Exports of merchandise	182389	17	182406
Imports of merchandise	-177812	-1	-177813
Balance	4577	16	4593
Exports of services	38416	- 1563	36853
Imports of services	-32466	2725	-29741
Balance	5950	1162	7112
Exp. of goods and serv.	220805	-1546	219259
Imp. of goods and serv.	-210278	2724	-207554
Balance	10527	1178	11705
Net primary incomes	-285	- 870	- 1155
Net secundary incomes	-2855	870	- 1985
Current external account	7387	1178	8565
Balance of Payments	7385	-976	6409
Total differences	2	2154	2156
Differences in definition	ו	447	
in measuremen	nt	1707	

Table 8. The National Accounts and the Balance of Payments on transactions basis for 1987

# 8. The integration process

## 8.1 Introduction

Sections 5, 6 and 7 made clear that all three basic approaches for estimating GNP are used in the Netherlands. Sometimes the estimate from the production side is a combination of two or three basic approaches.

In the integration process, information on production, value added, intermediate consumption and final expenditure is combined, checked and made consistent at a very desaggregated level: information about 260 classes of economic activity and 800 commodity groups is integrated by means of supply and use tables. Current and constant price data are balanced simultaneously.

#### 8.2 The integration framework

In tables 9 and 10, the supply and use tables employed for the integration process in the Netherlands are shown.

The columns of the use table relate to the intermediate consumption of 260 industries and to final consumption and capital formation. Consumption of goods and services is desaggregated into 800 commodities. The use table is completed by columns for the exports of goods and services.

The columns of the supply table relate to the production of 260 domestic industries (- groups of establishments). In the rows, production is desaggregated into 800 commodities (- groups of goods and services). The supply table is completed by columns for imported goods and services.

The classifications of industries and commodities are of course the same in the supply and use tables. The 260 industries are closely related to the classification of economic activities in the data sources

Table 9. The supply and use system emp	oloyed in the Dutch integration proc	ess: The u	se table								
	Inputs of 260 industry groups		Final Cons.	Final Cons.	Gross Fixed	Increase in	Trade	Transport	Commodi ty	Commodity	•
	1 2 3 259 260	Exports	Househ.	Gov.	Cap.form.	Stocks	Margins	Margins	Taxes	Subsidies	Total
800 Commodity groups							<del>.</del>				
3											
:	Purchaser's value (excl. (Exports of merch. at fo	. VAT) bb values)					I	1	1	1	
799 800											
Trade maroins	(empty)						ĸ				
Transcort mardins	(empty)							м			
Non-commodity taxes and subsidies											
formensation of employees											
Gross oberating surplus											
lotat											

Table 10. The supply and use system employed in the Dutch integration process: The supply table

Г

╞

	Gross outputs of 260 industries		
	1 2 3 259 260	Imports	Total
800 Commodity groups 1 3			
:	Basic values	cif	
799 800			
Trade margins			
Transport margins			
Total			

(see section 5.2).

The choice of the 800 commodities is a compromise between several requirements:

- Correspondence with the classification of goods and services in main data sources, like the classification in the Foreign Trade Statistics.
- Homogeneity with respect to:
  - \* cost structure
  - \* price

\* rates of value added tax, excise-duties, subsidies, etc.

For this reason, for example, beer on draught is distinguished from other beer, like beer sold in crates. Similarly, a distinction is made between benzine, diesel for cars and other diesel because of substantial differences in excise-duties.

- Reflect the main industry of origin (3-digit SBI), e.g. the distinction between wooden and metal pieces of furniture.
- Reflect the categories of use: Goods used by private households, fixed capital goods and special intermediate goods with a limited number of use categories are usually specified as different commodities. For example, metal pieces of furnitures are subdivided into those for offices and those bought by households.
- A certain level of supply and use: every commodity needs to have a certain quantitative interest. For that reason, e.g. the number of metal products originally chosen was reduced in the Netherlands.
- Manageability also asks for restrictions in the number of commodities.

Principles of valuation in the supply and use tables correspond more or less with those in the basic data sources, like those in the production statistics and the Foreign Trade Statistics.

In the supply table, production is recorded at basic value and imports of merchandise at cif values. The valuation principle in the use table is purchasers' value (excl. value added tax) for domestic uses and fob for exports.

The gap resulting from employing different principles of valuation in

the supply and use tables is resolved by adding columns to the use table for (the negative value of) trade and transport margins and for indirect taxes and subsidies (see table 9).<sup>3)</sup>

In the integration framework, two basic identities have to be met: 1. For every industry holds: Total output - Total input (including

operating surplus).

Or: Total output of goods and services

Total intermediate consumption of goods and services + Value added.

2. For every commodity holds: Total supply = Total use.

Or: Total domestic production (basic value)

+ Imports of goods (cif) and services

Total intermediate consumption (purchasers' value excl. VAT)

- + Total final domestic consuption (purchasers' value excl. VAT)
- + Exports of goods (fob) and services
- Trade and transport margins, indirect taxes and subsidies.

An identity that can be deduced from this identity is that the total of trade and transport margins in the extra columns of the use table equals the total of the produced margins.

If all these identities are met, the supply and use tables are consistent. The purpose of the balancing process is to meet the two basic identities in a way that give plausible volume and price indexes for every entry of the supply and use table in relation to the previous year (see section 8.3) and does justice to the quality of the various data sources.

#### 8.3 Simultaneous balancing in current and constant prices

All the estimates that are used as inputs in the integration process

<sup>3.</sup> Adding extra columns to the supply table (with positive sign) would also have been possible. In Dutch compilation practice, in comparison to the supply table, more balancing corrections are made in the use table, because they are estimated more on the basis of assumptions and fixed proportions. The various margins are also subject to relatively many balancing corrections. By adding the margins to the use table, balancing corrections are mainly concentrated in the use table (see e.g. table 12).

(see sections 5, 6 and 7) are carried out in current prices as well as in prices of the previous year. So, for every cell (entry) in the supply and of the use table, estimates are made of:

- The current value;
- The current value in prices of the previous year;
- The value of previous year (already available);
- The volume index (current value in prices of the previous year/value of previous year);
- The price index (current value/current value in prices of the previous year);
- The value index (current value/value of previous year).

These indexes are important tools to check the plausibility of the basic data (e.g. comparing the volume index of value added with the volume indexes of production, intermediate consumption and the index of the labour force of an industry).

All this information is also intensively used in the integration process. Actually, <u>two sets of supply and use tables (current values and</u> <u>current values in prices of the previous year) are balanced simulta-</u> <u>neously, while the resulting tables of volume and price indices are</u> <u>checked on their plausibility</u> (see table 11). For a more comprehensive discussion of a simultaneous compilation of current and constant price data we refer to De Boer and Broesterhuizen (1986).

In Dutch compilation practice, the balancing procedure starts with the data by industry. It is checked whether these data have been transferred without errors to the make and use framework. For example, comparison with last year figures may show implausible growth rates in value added, indicating that some costs have been forgotten or filled in wrongly.

Then, the identities of supply and use per commodity are checked. Usually for most of the 800 commodity groups the basic identity will not be met.

Frequently, there are quite a number of smaller and bigger discre-



pancies between total supply and total use in current prices as well as in constant prices. During the balancing procedures these discrepancies are eliminated by correcting the entries of the use and/or supply table. Balancing procedures can be understood as a search for mistakes, weaknesses and estimation margins in the entries of the supply and use table. In several stages of the balancing process, the compilers of the basic data are consulted in order to avoid rash corrections.

In practice the procedure of balancing follows a rather standard sequence. The discrepancies between supply and use are removed by taking the following steps:

- First, for every commodity, the plausibility of the deflators is checked for all suppliers and users. Suspicious price indexes are examined and, if necessary, corrected. Price indexes are suspicious if e.g.:
  - they differ widely among users;
  - when the price index for production diverges substantially from those for use;
  - when the price index for imports diverges substantially from that of production.

As a result of these corrections, for every commodity the discrepancies in constant and current prices should mainly be solved by correcting volumes.

- 2. Secondly, an attempt is made to find solutions which do not affect the value added by industry and the total value of final consumption, capital formation and exports. Within this category of solutions the following stages can be distinguished:
  - Adjustment of the distribution of items which are distributed according to fixed proportions, because they were not specified or inadequately specified in the statistical sources;
  - A shift within total intermediate consumption of goods and services other than in the situation described above;
  - A shift within the distribution of trade margins and/or transport

margins;

- A shift within the estimates of expenditure on consumption by households;
- A shift within the estimates of gross fixed capital formation by establishments;
- Shifts within imports of goods and/or within exports of goods.
- 3. If the options given under point 2 do not provide a solution, the next point studied is whether it is reasonable to adjust the total figures for household consumption and/or the total for gross fixed capital formation.
- 4. After that, consideration can be given to adjusting total intermediate consumption by industry. This process naturally starts with the industries for which the estimates are considered to be least reliable. A role is also played by the relative size of the original difference between supply and demand. An adjustment of intermediate consumption in principle leads to a change in the estimate of value added. It is sometimes preferred, however, <u>also</u> to adjust gross output of the industry in question, thus leaving the estimate of value added intact.
- 5. In exceptional cases, if all other possibilities have been exhausted, the gross output of an industry is adjusted with a concomitant adjustment of value added.
- 6. Sometimes information about changes in stocks is not available, inadequate or incomplete. This provides an opportunity to remove a (part of a) discrepancy by a correction of the stock change entry. In such cases it is important to recheck that other solutions, e.g. (further) corrections of intermediate consumption (and value added) are not justified. This kind of solution must be seen as a last resort and only applied carefully. There is a substantial risk that in later years these statistical discrepancies will turn out to be systematic, e.g. will always be positive.

A concrete example of the balancing process and its registration is provided in table 12.

		Use t	able			Supply t	able	
Commodity-group <sup>a</sup> )	Before integr.	Unspec. items	Balan- cing	Total	Before integr	Unspec. . items	Balan- cing	Total
Wood (not sawn)	5	15	0	20				
Wood (sawn)	337	57	4	398	21	0	0	21
Plywood, fibreboard, etc.	202	61	-5	258	11	0	0	11
Carpent, parg. products					2037	0	0	2037
Wooden containers					18	Ō	õ	18
Wooden furnîture	Ó	6	O	6	71	ŏ	ŏ	71
Paper and printing prod	ž	10	2	25		Ū	•	••
Petroleum products	ž		-1	2				
Chemical products	ő	43	- 1	<u>د</u>				
Rubber and plactic prod	<b>7</b>	02	- /	100	70	•	•	70
Minopol and plastic prod.	0	70	-2	100	28	U	U	28
Mineral and glass prod.	U	44	-1	43		•		
Metal products	U	1		78	6	U	U	6
Repair etc.	0	16	1	17				
Public utility prod.	19	0	2	21				
Construction	0	9	- 1	8	0	29	0	29
Sand, gravel	0	21	1	22				
Services on contract	130	1	0	131	44	0	0	44
Trade margins					18	0	0	18
Insurance services	15	0	(طو_	) 6				
Other interm. services	80	143	8	231	1	12	0	13
Own-account canital form			-		Ĺ	0	ň	
Work-in-progress					-16	ñ	ň	- 16
Not (suffic ) spec items	421	- 621	0	ń.	41	- 4 1	ň	10
Hot (suffici) specificas		-061			•,		Ū	U
Total interm. cons.	1431	0	-1	1430				
Non-comm.taxes, subs.	1	0	4	5				
Comp.of employees	636	O	0	636				
Operating surplus before integration:	227	0	D	227				
			~	•				
* Insurance services	<u>بر بر</u>	y.	¥.	y a				
- interm. consumption	`		-8	-8				
<ul> <li>non-comm.taxes,subs.</li> </ul>			-4	-4				
Oper.surpl.after integr.	227	0	-3	224				
Value added (basic v.)	864	0	1	865				
Total	2295	0	0	2295	2295	0	0	2295

Table 12. A concrete example of balancing: Carpenting and parqueting industry in 1988.

 a. The classification by commodities is strongly aggregated.
 b. Gross insurance premiums are transformed into "net" insurance premiums: the gross insurance premiums are those actually paid, but according to the international guidelines this payment should not be fully regarded as a payment for services (intermediate consumption for enterprises). Claims paid out (due) should be deducted.

Transparency of the balancing process is guaranteed in different ways. First, for every entry of the supply and use tables there is a registration of:

- the value before integration;
- value from the distribution of items not specified sufficiently before integration;
- corrections in the balancing process.

Secondly, for every industry there is a registration of corrections from the balancing process on:

- total intermediate consumption of goods and services;
- total production;
- value added;
- operating surplus (distributed into causes of correction).

# 8.4 The net effects of balancing

As a consequence of balancing at a very low level of aggregation, there are several checks on errors in data sources, human errors and checks on the reliability of all kinds of statistical adjustments (for small establishments, fraud, etc.). Using a (much) higher level of aggregation would imply that most of these checks are absent, as errors may cancel out and causes cannot be traced. In incidental cases, the integration process may even lead to rechecking the figures in some individual survey forms.

The influence of the integration process in the estimation of GNP is not insignificant, but it mainly alters its distribution over components and not so much its absolute size. For instance, in 1988, the estimate of value added from the production side was reduced by 2 billion guilders, while the estimate from the expenditure side was increased with 1.3 billion. This was the result of:

- an increase in fixed capital formation by 1.1 billion;
- a reduction in the balance of imports and exports of services as recorded by the DNB by 1 billion (less imports);

a reduction in consumption expenditure of households by 0.5 billion;
a reduction in the changes in stocks by 0.3 billion.

The rest did not change. GDP at market prices equalled 457.4 billion guilders in 1988, so that the size of these adjustments is relatively minor.

# 8. Compliance with the guidelines of the EC (ESA)

In principle, the Dutch estimate of GNP at market prices complies with the concepts in the ESA. An exception is the calculation of value added of some types of non-market production.

In the Dutch national accounts, Non-Profit Institutions which are part of the government sector are valued from the cost side, in accordance with the ESA-prescriptions. All other Non-Profit Institutions are considered quasi-corporations and estimated from the cost-side, but including interest payments. Thus, that part of these activities which are considered non-market by the present ESA, value added is slightly overestimated by the amount of these interest payments.

On specific practical issues, there are some small imperfections in the Dutch national accounts, like:

- No estimates are made for the Dutch ownership of dwellings abroad or of foreign ownership of Dutch dwellings (e.g. holiday homes of Germans). In principle, this should be recorded as property income flows with the Rest of the World. In practice, these flows may be small and cancel out.
- No full gross registration of wages with the Rest of the World (the guidelines of the IMF are followed in this respect);
- No estimate of the produce of allotments is included;

### 9. Conclusions

In this report, the estimation procedure of GNP at market prices in 1988 was described for the Netherlands. The main features of this estimation procedure are:

- The estimation from the production side is very well developed due to the existence of an elaborate system of good-quality base statistics on production (production statistics, government finance statistics). Yearly data are available on outputs and inputs. A very comprehensive central business register is used as the universe of reference in drawing samples and coordinating the base statistics.
- Since the revision, the estimation on the basis of the expenditure method is also very well developed. Good-quality data sources are available on imports and exports of merchandise, the demand of capital goods, changes in stocks and final consumption expenditure by households (budget survey, retail trade statistic).
- No separate estimate is made from the income side. However, data on income are already used in the estimation from the production side (e.g. the production statistics also contain information on compensation of employees).
- The estimates from the production side and the estimates on the expenditure side are integrated by means of very detailed supply and use tables, both in constant and in current prices.
- In several instances, explicit adjustments are made for underreporting (e.g. for car repair or cafes and restaurants) or absence of units (e.g. charwomen, illegal textile production).

## References

- Altena, J.W., C.A. van Bochove and W.P. Leunis, 1991, Reconciling labour data from various sources: the compilation of labour accounts data for the Netherlands, 1987. CBS-Select 7 (SDU publishers, The Hague), pp. 21-40.
- Amse, A.K., 1992, Dwelling stock statistics. Netherlands Official Statistics, vol. 7, no. 3, pp. 42-46.

Beekman, M.M., 1992, Development and implementation of a new standard industrial classification. Netherlands Official Statistics, vol. 7, no. 3, pp. 18-26.

- Berends-Ballast, H. and W.F. de Heer, 1989, A new method for the budget survey. Netherlands Official Statistics, vol. 4, no. 4, pp. 22-25.
- Berg, A.T. van den (ed.), 1992, Eindrapportage project internationale handel in diensten [Final report on the project international trade in services] (CBS National Accounts Department, Voorburg).

Bochove, C.A. van, 1991, Statistical integration at the CBS: a brief review. CBS-Select 7 (SDU publishers, The Hague), pp. 11-20.

Boer, S. de and G.A.A.M. Broesterhuizen, 1986, The simultaneous compilation of current price and deflated input-output tables. National Accounts Occasional Paper nr. 13 (CBS, Voorburg).

Bonger, F.A., 1989, The database of non-financial enterprises [The statistics on finances of enterprises]. Netherlands Official Statistics, vol. 4, no. 2, pp. 41,42.

Bos, F., 1989, Valuation of merchandise imports and exports and the registration of trade in services. CBS-Select 5 (SDU publishers, Den Haag), pp. 63-74.

Bos, F., 1990, Net versus Gross National Income. National Accounts Occasional Paper nr. 38 (CBS Voorburg).

Bos, F., 1992, Compiling Dutch Gross National Product (GNP); summary report on the final estimates after the revision in 1992. National Accounts Occasional Paper nr. 57 (CBS, Voorburg).

Bos, W., W.P. Leunis, A.H. Sprangers, C.J. Veenstra and C.G. Verhage, 1988, Towards a system of labour accounts. Netherlands Official Statistics, vol. 3, no. 4, pp. 5-30.

- Buiten, G., 1992a, Bronnen en methoden voor het ramen van de omvang en de ontwikkeling van de consumptieve bestedingen van gezinshuishoudingen in Nederland [Sources and methods for estimating final consumption expenditure by households in the Netherlands] (CBS National Accounts Department, Voorburg).
- Buiten, G., 1992b, Vergelijking van de gezinsconsumptie volgens de Nationale rekeningen met de uitkomsten van het budgetonderzoek over 1987 (voor revisie) [Comparison of final consumption expenditure in the Dutch national accounts and the figures in the budget survey, before the revision in 1992] (CBS National Accounts Department, Voorburg).
- CBS, 1987, Methode en opzet van het jaarlijks onderzoek naar de verdiende lonen [Methodology of the annual survey on wages] (CBS, Voorburg).
- CBS, 1988, Verloonde dagen en loonsommen [Statistic on Paid days of Work and Gross Wages and Salaries]. CBS Sociaal Economicsche Maandstatistiek, nr. 11, pp. 5,6.
- CBS, 1990a, Statistiek werkzame personen 1987 en 1988 [Statistic on persons occupied 1987 and 1988] (CBS, Voorburg).

- CBS, 1990b, Inrichting produktiestatistieken van de industrie 1987/1988 [Production statistics for manufacturing 1987/1988] (CBS, Voorburg).
- CBS, 1991, Investeringen van transport-, opslag- en communicatiebedrijven [Gross fixed investments of transport enterprises]. CBS Maandstatistiek Verkeer en Vervoer, no. 3, pp. 50-57.
- CBS, 1992a, Nationale rekeningen 1991; Volume I and II (SDU publishers, Den Haag). [Volume II is a special issue on the revision of the Dutch National Accounts; CBS Department of National Accounts, 1992 contains a translation in english).
- CBS, 1992b, Arbeidsrekeningen 1988 [Labour Accounts 1988] (SDU publishers, Den Haag).
- CBS, 1992c, Budgetonderzoek 1990; kerncijfers [Budget survey 1990; main figures] (SDU publishers, The Hague), pp. 5-9.
- CBS, 1992d, Statistiek van de investeringen in vaste activa in de nijverheid 1990 [Statistic on fixed capital formation in mining and quarrying, manufacturing, public utilities and construction, 1990] (SDU publishers, The Hague), pp. 4-9.
- CBS Department of National Accounts, 1992, Major changes and results of the revision of the Dutch National Accounts in 1992. National Accounts Occasional Paper nr. 58 (CBS, Voorburg).
- Daamen, J.H.G.M., 1986, Statistics on the finances of enterprises. Netherlands Official Statistics, vol. 1, no. 4, pp. 43,44.
- Department of National Accounts, 1992 (forthcoming), Major changes and results of the revision of the Dutch National Accounts in 1992. National Accounts Occasional Paper nr. 58 (CBS, Voorburg).
- DNB (De Nederlandsche Bank), 1988, Methodology of the Balance of Payments of the Netherlands. Eurostat, Economics and Finance (2), Series on Methods (E) (Office for official publications of the European Communities, Luxembourg).
- Eurostat, 1980, European System of Integrated Economic Accounts (ESA). (Office for official publications of the European Communities, Luxembourg).
- Gorter, C.N. and others, 1990a, A summary description of sources and methods used in compiling the final estimates of Dutch National Income 1986. National Accounts Occasional Paper nr. 35 (CBS, Voorburg)
- Gorter, C.N. and others, 1990b, Methodenbeschrijving van de berekening van het Nationaal inkomen (bruto, marktprijzen) over 1986 in Nederland [Full report on the sources and methods used for estimating National income in the Netherlands before the revision of 1992; a translation in English is available] (CBS, Voorburg).
- Groeneweg, J.M., 1991, De statistieken van de bouwnijverheid [CBS Statistics on construction]. CBS Statistisch Magazine, nr. 1, pp. 51-58.
- International Monetary Fund (IMF), 1977, Balance of Payments Manual. (IMF, Washington).
- Kooiman, P. and H. van de Stadt, 1991, Missing data: raising, reweighting, synthetic estimation, imputations, synthetic matching and integration. CBS-Select 7 (SDU-publishers, The Hague), pp. 119-136.
- Kroon, F., 1992, Een nieuwe methode voor de raming van de investeringen voor het definitieve jaar na de revisie [A new estimation method for final figures on capital formation after the revision in 1992] (CBS National Accounts Department, Den Haag).

Mensink, G.J.A., 1986, Output and input price indexes for the industry,

1980-100. Netherlands Official Statistics, vol. 1, no. 4, pp. 41,42. Mensink, G.J.A., 1989, Ontwikkelingen in het CBS-programma van prijsindexcijfers van de gezinsconsumptie sinds 1951 [Developments in CBS price index figures of household consumption since 1951]. CBS Statistisch Magazine, nr. 1, pp. 5-8.

Pauli, F., 1992, Beknopte beschrijving van bronnen en methoden voor de landbouwrekeningen na revisie 1987 [Summary description of sources and methods for compiling the labour accounts after the revision in 1992] (CBS National Accounts Department, Voorburg).

Pauli, P. and N.Th. van Stokrom, 1992, Revisie van de landbouwrekeningen 1987-1991 [Major changes and results of the revision of the Dutch agricultural accounts in 1992]. CBS Maandstatistiek van de Landbouw, November issue (CBS, Voorburg), pp. 40-49.

Smits, W.F., 1989, Indexcijfers van de buitenlandse handel [Index figures on imports and exports of merchandise]. CBS Statistisch Magazine, nr. 4, pp. 75-78.

United Nations (UN), 1968, A System of National Accounts. Studies in Methods, Series F, No. 2, Rev. 3 (UN, New York).

Verhage, C.G., 1990, Schets van de ontwikkeling van de arbeidsstatistieken in Nederland [The development of labour statistics in the Netherlands]. CBS Statistisch Magazine, nr. 3, pp. 29-40.

Vosselman, W.H., 1992, De enquête 'Kleine bedrijven in de nijverheid' 1985-1989 [The survey 'Small manufacturing firms' 1985-1989]. CBS Maandstatistiek voor de Industrie, nr. 4, pp. 70-73.

Willeboordse, A.J., 1991, The General Business Register as a tool for co-ordinating economic statistics. Netherlands Official Statistics, vol. 6, no. 3, pp. 26-34.

Willeboordse, A.J., 1992, Large and complex businesses in the CBS system of economic statistics. Netherlands Official Statistics, vol. 7, no. 1, pp. 5-14.

#### 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 inputoutput 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 compilating 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 agroindustrial 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 inputoutput 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 then 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 inputoutput 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 employ-ment 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 ECcountries 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 constists 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 thi 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-ofactivity 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 concomittant 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/57\_A).
- 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 Dutch agricultural accounts, Pauli, Peter and Nico van Stokrom (1994). 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).
- NA/66 Comparability of the sector General Government in the National Accounts, a case study for the Netherlands and Germany, Streppel, Irene and Dick Van Tongeren (1994). This paper questions the international comparability of data concerning the sector General Government in the National Accounts. Two differences are distinguished: differences due to lack of compliance with international guidelines and institutional differences. Adjustments to National Accounts data are reflected in a separate module which comparises Germany versus The Netherlands. The module shows that total General Government resources as well as uses are substantially higher in the Netherlands.
- NA/67 What would Net Domestic Product have been in an environmentally sustainable economy?, Preliminary views and results, De Boer, Bart, Mark de Haan and Monique Voogt (1994). Sustainable use of the environment is a pattern of use that can last forever, at least in theory. This pattern is likely to render a lower net domestic product than the present economy. The coherence between reductions in pressure on the environment and changes in net domestic product is investigated with the help of a simple multiplier model. This model is based on a National Accounting Matrix including Environmental Accounts (NAMEA).
- NA/68 A Social Accounting Matrix for the Netherlands, conceptual issues and results, (forthcoming) Timmerman, Jolanda (1994). In this paper a Social Accounting Matrix (SAM) for the Netherlands is presented. Two years are covered: 1988 and 1990. The SAMs integrate statistics on the distribution of income, and consumption expenditure among various household groups in a national accounts framework. Simultaniously, labour income and employment are disaggregated into several labour categories.
- NA/69 Analyzing relative factor inputs of Dutch exports: An application of the 1990 Social Accounting Matrix for the Netherlands (forthcoming), Reininga, Ted (1994). In this paper the validity of neoclassical trade theory for explaining Dutch international trade patterns is studied. The analysis is carried out with the use of a Social Accounting Matrix for The Netherlands. This study corroborates the outcome of other recent analysis in this field: classical trade theory offers a better starting-point to understand Dutch trade patterns than neoclassical trade theory. Moreover, these recent studies point to the increasing relevance of insights derived from modern trade theory. The results presented here seem to support this point of view.
- NA/70 SESAME for the evaluation of economic development and social change, Keuning, Steven J. (1994). This paper elaborates on the concept of a System of Economic and Social Accounting Matrices and Extensions, or SESAME for short. The SESAMEconcept serves to meet the criticism that conventional national accounts take a too limited view at social, environmental and economic development. SESAME details the monetary accounts and couples nonmonetary information in an integral system approach. SESAME is meant as a synthesis of national accounts and the social indicators approach.
- NA/71 New revision policies for the Dutch National Accounts, Den Bakker, Gert P., Jan de Gijt and Robert A.M. van Rooijen (1994). This paper presents the (new) revision policy for the Dutch National Accounts. In the past, several major revisions of national accounting data have been carried out in the Netherlands. In the course of time, the policy has changed several times. Recently, the aim has become to publish relatively long time-series shortly after the publication of the revised benchmark year data.
- NA/72 Labour force data in a National Accounting framework, Den Bakker, Gert P. and Jan de Gijt (1994). This paper deals with the Dutch interwar labour force data. Starting with census data the estimation of the working and non-working labour force by industry and by occupational type is described and the results are discussed. The data have been estimated within the national accounts framework. It is the first time that labour market figures at a mesolevel have been estimated which are linked to other national accounting figures.
- NA/73 Integrated estimates of productivity and terms-of-trade changes from a Social Accounting Matrix at constant prices, Keuning, Steven J. 1994). This paper demonstrates that measures of real income change for the total economy can best be derived from real income changes per subsector. For this purpose a Social Accounting Matrix (SAM) at constant prices has been compiled. By breaking down value added at constant prices into constant price estimates for each primary input category, productivity changes by industry can be estimated as an integral part of the regular national accounts compilation. The national total trading gain or loss from a change in the terms of trade is as well allocated to subsectors, thus embedding the estimation of this macro-measure into a meso-consistency framework. These ideas have been applied in a case-study for Indonesia.

Statistics Netherlands National Accounts Occasional Papers	
Please	send me the following paper(s):
	(For each copy DFL. 20 will be
	incurred as a contribution to the costs).
Name:	
Address	:
Country	: Organization:
Return	to: Statistics Netherlands, National Accounts P.O. Box 959, 2270 AZ Voorburg The Netherlands