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Statistics Netherlands

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Regional Accounts Inventory

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Chapter 1 SUMMARY: OVERVIEW OF ORGANISATION, METHODOLOGY AND SOURCES

1.1 Organisation of the statistical process for compiling regional GVA

The statistical programme of Statistics Netherlands cover a multitude of societal topics, from macro-economic indicators such as economic growth and consumer prices, to the incomes of individuals and households. Statistics Netherlands' statistical programme (the long-term statistical programme and the annual work programme) are set by the **Director General**. The Director General is also responsible for applied statistical methodology and the publication of statistical information.

Since 1 January 2017, CBS has an **Advisory Council**. As stipulated by the Statistics Netherlands Act, the Advisory Council's main task is to provide the Director General with solicited and unsolicited advice about the performance of his tasks and the exercise of his powers. The Advisory Council shall in any case advise the Director General on the following matters:

- Statistics Netherlands' Multi-annual Programme and work programme;
- Possible ways to advance the accuracy and completeness of mandatory official statistics so as to meet the demands of users for the purposes of practice, policy and science;
- Statistics Netherlands' operations and efficient allocation of resources.

In view of preparing its opinions, the Advisory Council may form (sub)committees from among its members, which may also include non-council members. Opinions are to be adopted by the Advisory Council. All advisory committees are chaired by an Advisory Council member. The Advisory Council shall in any case set up the following advisory committees:

- An audit committee (AC) for the preparation of advice to the Director General on operations, including financial reporting and risk management policies;
- An ICT committee (Cie ICT) for the preparation of advice to the Director General on strategy, policy and implementation thereof in the areas of data protection and ICT;
- A programme committee (PR) for the preparation of advice to the Director General on the Multi-annual programme, the work programme and the advancement of accuracy and completeness of the statistical releases.

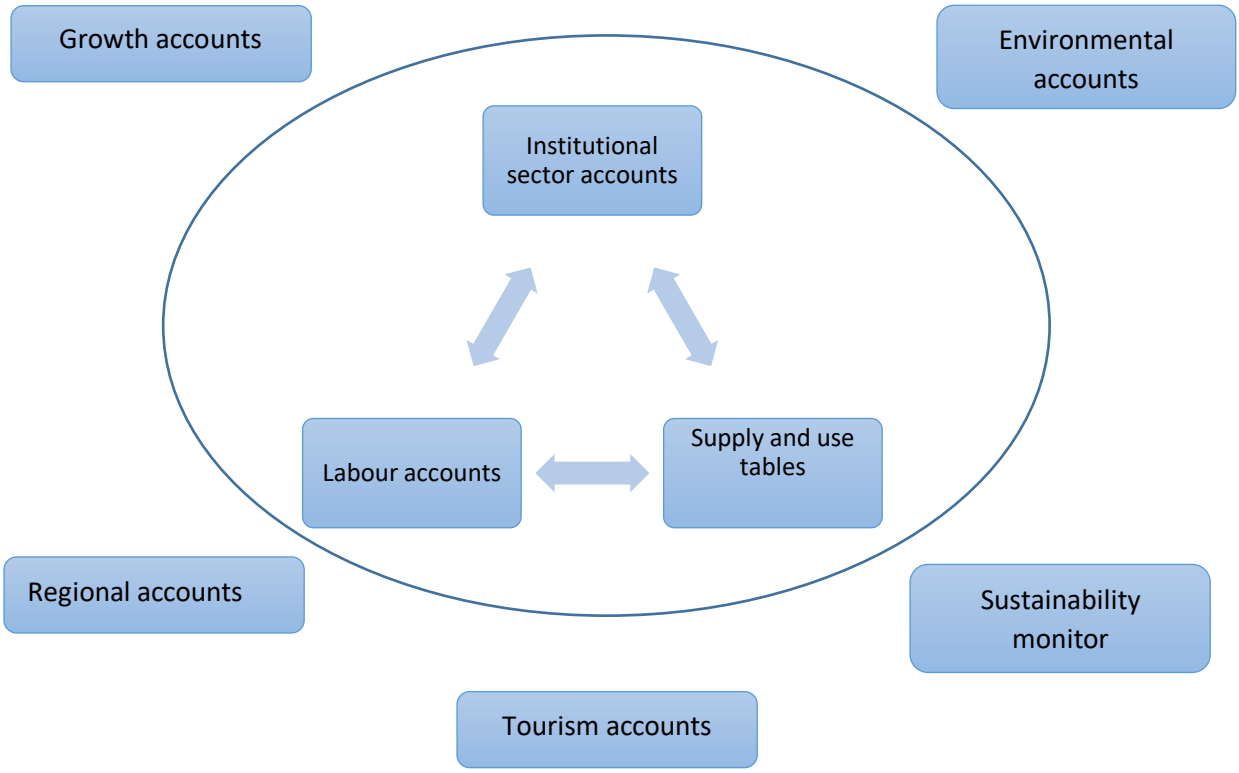
In accordance with the Statistics Netherlands Act, **Advisory Council members** are appointed by the Minister of Economic Affairs. Members of any subcommittee are appointed by the Director General. Conform the Regulations of the Board, the DG determines financial compensation of the council members.

Regional accounts are part of one of the four teams of the National Accounts Department. Within the team, the regional accounts are clustered with the labour accounts. At the moment, this cluster consists of 7 employees and 1 project manager. The cluster performs work on both the regional accounts and the labour accounts. The regional accounts take around 35 percent of the work programme of the cluster. The total staff at the National Accounts Department numbers around 100 fte. Since all the teams are on the same floor and there are different joint meetings, the communication with the other teams of the national accounts is easy. Some of the other teams are responsible for the coordination and dissemination of microdata that are among others used for both the national accounts and the regional accounts.

Figures on regional accounts are published twice a year. In April, a preliminary release of the regional GDP growth rate of reporting year t-1 is scheduled. In October, a full set of regional figures is published that includes figures of the year t-2 and labour data. In October the earlier published provisional data figures of t-2 are adjusted to the final version. Furthermore the growth rates of year t-1 that were published in April are updated.

Besides gross value added (production, intermediate consumption and gross operating surplus) the regional accounts provide figures on labour input (jobs in fte, employed persons and hours worked), compensation of employees, not product-related taxes and subsidies, gross domestic product (GDP) per capita, income accounts of the household sector to region, fixed capital formation by industry and region. The dataset of October is the basis for the publication 'De Regionale Economie'. This publication is released annually in December as online publication and hard copy.

Figure 1.1 – Organisation chart



The National Accounts Department is responsible for compiling integrated statistics which provide a coherent overview of socio-economic developments in the Dutch society at both macro and meso level. The core of the national accounts includes supply-and-use tables, institutional sector accounts (financial and current accounts) and labour accounts.

The above mentioned three sub-systems are fully consistent representing the elements of the national accounting system. Maintaining this overall consistency is resource demanding in terms of organisational skills and subject knowledge.

It should be mentioned that the National Accounts Department is also responsible for a range of supplementary macro- and socio-economic statistics. Besides the core system, specific topics are covered in separate modules. The environmental accounts are one example of this.

Other modules deal with regional accounting, growth accounting, sustainability, tourism, Macroeconomic Imbalance Procedure indicators and various statistics on the financial market and financial institutes.

1.2 Overview of the methodology of regional GVA compilation

For the compilation of regional gross value added (GVA), the income method is primarily used[1]. For reference year 2018, around 2 percent of GVA was regionalised bottom-up. A large part (around 98 percent) is distributed top-down using a closely related indicator. In many cases, the compensation of employees per region is used as an indicator. A small part is regionalised based on extrapolations of the regional distributions of previous years.

Figure 1.2 Importance of methods (2018)

		% of GVA	Mainly in groups
Bottom-up	*(SBS, large KAUs)*	1,7	C
Top-down	*(SBS, small KAUs) closely related indicator*	0,4	
	Closely related indicator	96,4	A, B, C, J, K, L, M, N, O/P
	Extrapolation/ models	1,4	B, C, L
Adjustments to National accounts		0,2	
		100	

Compilation is done on a subdivision of NUTS3 level, for a number of 53 regions, including the Extra-regio. Figures are published at this level also. If necessary for transmission of statistics, the figures are aggregated to, for instance, NUTS2 level.

Time series are available from 1995 and were compiled after the major revision of the National accounts for the reporting year 2015. The corrections in the national accounts for 2015 are also extrapolated backwards to ensure consistency in the time series.

In Annex 1 the importance of methods is given for the reference years 2001 and 2018 for comparison.

1.2.1 Regional territory

The Dutch national accounts and the regional accounts refer to the economic territory of the Kingdom of the Netherlands in Europe. The Dutch section of the continental shelf in the North Sea is regarded as a part of that economic territory.

From October 10 2010 onward the Kingdom of the Netherlands consists of four parts:

- The Netherlands, that is the territory of the Kingdom in Europe plus Bonaire, St. Eustatius and Saba as special municipalities;
- Curaçao;
- St. Maarten;
- Aruba.

[1] Manual on Regional Accounts Methods, Eurostat, section 3.2.1: https://ec.europa.eu/eurostat/documents/3859598/5937641/KS-GQ-13-001-EN.PDF/7114fba9-1a3f-43df-b028-e97232b6bac5

While a number of matters subject to the authority of the Kingdom, such as defence and foreign relations, are regulated jointly, the four parts enjoy complete autonomy with regard to other 'national' matters. The Dutch economic territory does not encompass Aruba, Bonaire, Curaçao, St. Maarten, St. Eustatius and Saba, because:

- Under the protocol of 25 March 1957, the Treaty of Rome applies only to the Kingdom in Europe and 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 (Article 9 of the Treaty of Rome);
- ESA 95, section 2.05, refers to the territory benefiting from the free movement of goods;
- Only that part of the territory of the Kingdom lying within Europe forms part of the Community customs area (Directive 2151/84/EC of 23 July 1984).

1.2.2 Statistical unit and residence

The unit of observation for the most important source statistics of the regional accounts, the business statistics (SBS) and the statistics on employment and wages, is the kind-of-activity unit (KAU, in Dutch: *bedrijfseenheid*[2]). A KAU may consist of more than one local KAU, located in one or more regions. There is no available industry classification for each separate local KAU. Except for some very rare cases, the number of employees is used to distribute gross value added of each (large) KAU over the regions concerned, irrespective of the actual activities executed in each local KAU.

1.2.3 Classifications of industries and sectors

In the supply and use framework of the national accounts the production and income approach are balanced at all times. The production and expenditure based estimations of GDP are integrated in the annually compiled supply-use tables. For a final year the Dutch supply-use tables distinguishes approximately 142 industries and 650 product groups (for a provisional year 135 industries). The classifications of the industries are based on the Nace Rev.2 classification. Output and intermediate consumption have the same breakdown. Prior to balancing, all data sources are translated into the required classification and as such the supply-use tables provide a structured overview of the supply and use of products including the possible occurrence of statistical discrepancies.

The classifications of industries and regions form the basic framework for the system. The national totals for each variable and industry are obtained from the supply-and-use tables compiled for the national accounts. In the compilation of the regional accounts a classification

[2] The units in Employees' Register of the Employee Insurance Agency are based on the delineation as in the Statistical Business Register SBR. This delineation is according to the Eurostat business register recommendations manual and therefore strictly speaking not in full accordance with ESA 2010. However, in practical terms the definition of the institutional unit in ESA 2010 and the definition of the enterprise group in the manual on business register are closely related. Both the institutional unit and the enterprise group may be defined as an economic entity that is capable in its own right of owning assets, incurring liabilities and engaging in economic activities and in transaction with other entities. Therefore for national accounts purposes the enterprise group is considered as an appropriate approximation of the institutional unit.

A similar relationship holds with regard to the (local) Kind of activity Unit (KAU) and the enterprise. An institutional unit may be partitioned into local KAU's following the principles by which an enterprise group is partitioned into enterprises. Both the local KAU and the enterprise are defined as producers with activities that are characterized by an input of products, a production process and an output of products, whereby in the SBR the activities are classified at the class level (four digits) of Nace Rev. 2. In the definition of the local KAU emphasis is put on the location of production at a single site or at closely related sites. This is absent in the definition of the enterprise. In the business register the local KAU can be compared to the local unit as it is distinguished within an enterprise. From a national accounts perspective "enterprise group" should be read as "institutional unit" and "enterprise" as "KAU".

of 135 industries is applied for both final and provisional year estimates. Regional estimates are not compiled to sector.

1.2.4 Business register

The national accounts use two systems to classify businesses, one by type of economic activity, the Nace Rev.2 classification, and one by sector code. Both classifications are maintained in the general business register (GBR) of Statistics Netherlands. With regard to the sector coding in the GBR, Statistics Netherlands has made additional efforts in recent years to improve the classification of businesses, partly based on European regulations on statistical business registers. This has led to changes in the sector coding attributed to businesses that impacted the post-revision results of the national accounts.

Regional accounts are largely based on the labour accounts and the Structural Business Statistics. The structural business survey is coordinated on the basis of a General Business Register (GBR). The GBR records are obtained from the obligatory subscription of all businesses with the Chambers of Commerce (*Nieuw Handelsregisters*) including the unincorporated business. All businesses have to report on the nature of their activities in terms of Nace coding. Data on employment are integrally obtained from the employers' tax register. Its coordination is equally based on the GBR.

1.2.5 Methods used at regional level

There are no methods that are used at regional level

1.3 Main sources used for the compilation of regional GVA

For a large part, the regionalisation of GVA is based on survey or census data. These sources accounted for almost 92 percent in 2018. The regionalised labour accounts account for almost 90 percent, the remaining 2 percent is based on the data of the Structural Business Survey. Regionalised labour accounts data are a combination of data from the monthly micro-datasets on job level derived from the integral Employees' Register of the Employee Insurance Agency and the Statistics on regional Employment and Earnings that use, among others, a survey to determine the individual job location. This survey yields a complete picture of the regional distribution of employment in the Netherlands, down to the geographical level of 'municipality'. Subsequently, the labour accounts make some adjustments in order to be consistent with the national accounts and ESA 2010 guidelines. The labour accounts also contain data on self-employed and mixed income. These are based on the satellite Self-Employed Persons and the dataset representing self-employed persons and their annual profits from the Systems of Social statistical Datasets (SSD).

Furthermore, data from the agricultural census and other standardised registers, like tax registers or housing register are used. In 2018, around 6 percent of regional GVA was obtained from administrative data. For each industry, the regionalised data are grossed up to equal the national totals provided by the supply-and-use tables.

Metadata for the main sources is given in Annex 2

1.4 Compilation table and metadata table

See Annex 2 and Annex 3 for the metadata table and the compilation table.

Chapter 2 RELEASE AND PUBLICATION TIMETABLE, REVISION POLICY, ACCESS FOR THE PUBLIC

2.1 Timetable for release and publication of provisional and final estimates

The regional accounts release cycle has two publication dates each year. In April, a preliminary release of the regional GDP growth rate of reporting year t-1 is scheduled. The growth rate corresponds to the first estimate of t-1 based on the updated quarterly national accounts. This release only includes regional GDP growth rates which are available at NUTS level 1, 2 and 3. In October, the full set of regional figures is published which also contains figures of the year t-2 and labour data.

The most detailed regional subdivision of both t-1 and t-2 is the NUTS 3 level. Data of t-1 are provisional and correspond to the provisional year of the national accounts. Likewise, the data of t-2 are final and correspond to the national account data with the final status. In contrast to the data of t-2, the regional data of t-1 has no subdivision of industries. For t-2 the regional data are available for 21 industries (Nace sections).

The set released in October includes GDP values and volume changes for t-1 as well as several labour statistics such as fte, employed persons and hours worked. Furthermore, t-2 includes additional variables such as production, intermediate consumption and not product-related taxes and subsidies.

All regional accounts data are published on StatLine, the data website of Statistics Netherlands[3]. The dataset released in October is also (partly) published in 'De Regionale Economie' and used as input for various articles in this publication. 'De Regionale Economie' is released annually in December as online publication and hard copy.

Table 2.1 provides an overview of the regional GDP and GVA statistics that are released in April and October.

[3] Statistics Netherlands publishes three tables on regional GVA and GDP:
http://opendata.cbs.nl/statline/#/CBS/en/dataset/84432ENG/table?dl=45940
http://opendata.cbs.nl/statline/#/CBS/en/dataset/84361ENG/table?dl=4F8DF
http://opendata.cbs.nl/statline/#/CBS/en/dataset/84419ENG/table?dl=4593D

Table 2.1 – Release calendar regional GDP and GVA statistics

Month of release	Variables t-1	Detail t-1	Status t-1	Variables t-2	Detail t-2	Status t-2
April	GDP volume change	NUTS 1, 2, 3	Preliminary, corresponds to updated quarters t-1 national accounts			
October	GDP volume change/levels, at market prices GVA volume change/levels at basic prices	NUTS 1, 2, 3	Preliminary, corresponds to preliminary year t-1 national accounts	GDP volume change, levels at market prices, GVA volume change, levels at basic prices Output (basic prices), intermediate consumption, GVA, taxes not product-related, subsidies not product-related Gross operating surpluss	NUTS 1, 2, 3 Nace Rev.2 Section level NUTS 2, 3 Nace Rev.2 21 sections	Final, corresponds to final year t-1 national accounts Final, corresponds to final year t-1 national accounts

2.2 Policy on benchmark revisions

The regional accounts are closely connected to the national accounts. The same classifications, concepts and definitions are used. Both follow the same policy, placing emphasis on correct growth changes rather than a correct level of the figures between years of the benchmark revisions. Moreover, the national totals per industry are the basis for the regional distribution of GVA and other indicators. Hence, revisions at the national level are always followed at the regional level. The most recent benchmark revision of the national and regional accounts took place for reporting year 2015 (carried out in calendar year 2018). The revised time series 1995-2014 was published in 2019.

Apart from revisions of the national accounts, a benchmark revision of the regional accounts is the right moment to update the regional distribution, allowing for the availability of new sources, errors encountered in the past and changes in international regulations.

2.3 Comparability over time

Statistics Netherlands has published regional economic indicators since reporting year 1960. After the reporting years 1965 and 1970, starting in 1973 the figures are published annually. The most recent benchmark revision related to the reporting year 2015. The corresponding times series 1995-2014 has been compiled based on the pre-revision series (revision 2010) and adjusted to the revised industry totals of the national accounts. Since the time series is based on the pre-revision data, the regional distribution of the different variables have not changed significantly after the revision of 2015. Structural breaks have been addressed in the revision of 2001. Those breaks arose due to the inclusion of Special Purpose Entities in the national accounts and the allocation of FISIM (financial intermediate services indirectly

measured) to the users. Therefore, the current time series provides a consistent set of economic main variables that is comparable over time.

Method for compiling time series
For the time series corresponding to the revision of 2015 no new regional source data were used. Therefore, the method is relatively straightforward and based on the pre-revision time series (revision of 2010). Firstly, for production and intermediate consumption, factors between revised 2015 and pre-revision 2015 values were computed on industry-NUTS-3 level. Secondly, the pre-revision time series on industry-NUTS-3 level was multiplied with the revision factors. Finally, the results were made consistent with the national accounts industry totals for production and intermediate consumption. Gross value added was simply determined by subtracting intermediate consumption from production. For evaluation, the results of gross value added were on industry-NUTS-3 level compared with the pre-revision time series.

2.4 Transmission to international institutions other than Eurostat

There are no direct transmissions to international institutes other than Eurostat.

2.5 Accessibility for the public

Apart from the regional growth rates of GVA and GDP, data are available on production, intermediate consumption, gross value added, wages and salaries, taxes and subsidies, operating surplus and labour input. For the estimation of the provisional year figures limited source data are available. Therefore, these figures are estimated by extrapolating the regional distribution of the preceding year using changes in production and intermediate consumption on industry level. Figures of the provisional year are published at the level of 13 industries while final year figures are published at the level of 21 industries. Both reporting years are available at a regional subdivision of the NUTS 3 level that divides the Netherlands into 52 regions, apart from the Extra-regio.

Data on production, intermediate consumption, value added and labour input are publicly available from 1995 onwards on StatLine (in Dutch and English), the public database on the Statistics Netherlands website)[4]. From the 1996 onwards also growth rates of the regional GVA and GDP are available[5]

2.6 Policy for metadata

Metadata on regional data published on StatLine can be found in the corresponding information tables. Since 2018 these tables are structured similarly across all data tables on StatLine and available in Dutch and English. This way the metadata is presented in a consistent and comprehensive manner enabling users to access information quickly. The metadata in the information table is subdivided in two sections: table explanation and topics/classification. The table explanation consists of general information (such as the availability and the status of the reporting years and the date of the last update), definitions (e.g. classifications regions and industry), links to relevant tables and articles, and information on sources and methods. The section topics/classification addresses all variables that can be selected in the table. For instance, in the regional dataset on production all selectable variables in the selection menu ‘topics’ are defined. These include output, intermediate consumption and

[4] http://opendata.cbs.nl/statline/#/CBS/en/dataset/84419ENG/table?dl=4F8E3
[5] http://opendata.cbs.nl/statline/#/CBS/en/dataset/84361ENG/table?dl=4F8E4

value added. For the regional accounts, the concepts and definitions in use are identical to those in the national accounts.

Chapter 3 METHODOLOGY FOR THE CALCULATION OF REGIONAL GVA

This chapter provides an overview of the methodological principles of the calculation of regional GVA, describing the various sources and methods used. The sources and methods applicable to all industries are described in section 3.1. This part starts with a general overview of the process of compiling regional accounts in the Netherlands. Section 3.2 examines sources and methods in use for specific industries.

3.1 Principles applicable to all industries

General overview

The most important regional division in use for compiling the regional accounts is the so-called COROP-plus classification (see section 1.2.1). The COROP-plus division is the most detailed classification at which Statistics Netherland publishes regional statistics. It consists of 52 regions plus the extra-regio. The COROP-plus subdivision was designed by Statistics Netherlands to distinguish regions with a different economic structure. For instance, in the COROP-plus classification the city Almere is excluded from the NUTS 3 region Flevoland because of the large differences between the economies of Almere and the remaining part of Flevoland. This is because Almere is largely determined by the economy of Amsterdam since many of its inhabitants work in Amsterdam.

While the greatest level of detail is provided by the COROP-plus classification, Statistic Netherlands also publishes regional statistics at NUTS 1, 2, and 3. A table containing both classifications of COROP-plus and NUTS 3 can be found in Annex 4.

Figure 3.1 provides an overview of the different classifications in use for the compilation of the regional accounts with '+' denoting the extra-regio. Some microdata are available at the level of LAU2 (municipalities). However, regional statistics are not published at this level.

Figure 3.1 – Regions in the Netherlands

Level	*Name*	*# regions*
NUTS1	Groups of provinces	4+
NUTS2	Provinces	12+
NUTS3	COROP-regions	40+
	COROP-plus-regions	52+
LAU2	Municipalities (year 2018)	380

Statistics Netherlands compiles regional accounts for the following variables: output, intermediate consumption, gross value added, compensation of employees, taxes not product-related, subsidies not product-related, gross operating surplus and several variables for labour input. Labour input includes jobs in full-time equivalents, number of employed persons and

hours worked. The variables for labour input are published for employed and self-employed. Finally, Statistics Netherlands also publishes levels and growth rates of regional GDP.

Figure 3.2 – Regional distributed variables

	Variable	*Code*
	Output	*P.1*
–	Intermediate Consumption	*P.2*
=	**Gross Value Added**	*B.1g*
–	Compensation of employees	*D.1*
–	Other taxes on production	*D.29*
+	Other subsidies on production	*D.39*
=	**Operating surplus/Mixed income**	*B.2/B.3*

For the provisional estimation of the output of t-1, a detailed classification of 135 industries is used for the compilation process. For the final estimation of t-2 the classification of the input is slightly larger with 142 industries. This is due to a more detailed subdivision of the wholesale trade in the supply-and-use table. The compilation process of t-2 is however executed at the same level of detail as t-1 with the classification of 135 industries. The industry classifications correspond to the classifications of the supply-and-use tables in the national accounts.

As mentioned in chapter 2, the yearly compilation cycle consists of two subsequent years. This chapter elaborates on the method for compiling the final year figures. By comparison, the method for compiling the provisional figures is relatively straightforward and uniform for the various industries. For most industries, the composition of the final year figure is extrapolated in proportion to the volume change of production. For some industries, for instance agriculture, mining and quarrying, real estate activities, definite source data are available at an early stage. For these industries, provisional figures and final figures are calculated in the same way.

Sources

For the estimation of the final year, the regional accounts are largely compiled using two data sources: the regionalised labour accounts and the structural business statistics. Also, to achieve consistency with the national accounts, macroeconomic totals of the supply and use table are used as input for the compilation.

Regionalised labour accounts

The direct source for compiling the regional accounts is regionalised labour accounts. These data are based on the Statistics on regional Employment and Earnings which provide information on the level of individual employees. The Statistics on regional Employment and Earnings is an administrative source based on micro-datasets on job level derived from the integral Employees' Register of the Employee Insurance Agency. Thus, although the compilation of regional accounts is directly based on regionalised labour accounts, the latter is largely determined by the result of the Statistics on regional Employment and Earnings.

Regionalisation of Statistics on regional Employment and Earnings is achieved by combining several integral data sources, a survey, and the use of an algorithm.

Through the available register data Statistics Netherlands has the following information at its disposal:

- Which employee works for which employer (integral data based on job datasets from the Employees' Register of the Employee Insurance Agency.)

- The different locations of an employer (mainly integral data, based on the chambers of commerce)
- Home-addresses of Dutch inhabitants (based on the Personal Records Database (BRP))

The integral data do not provide information of individual job location, it cannot be inferred at which location an employee works. Also no register data are available on the number of employees that work at the different locations of an employer.

To fill this information gap, Statistics Netherlands yearly conducts a large survey (Survey on Regional Employment) under employers, asking how many employees they had working in each municipality in the Netherlands in December of the reporting year. As this survey is conducted under all employers with locations in multiple municipalities, this survey yields a complete picture of the regional distribution of employment in the Netherlands, down to the geographical level of 'municipality'. The end result of this survey is a dataset called 'Regional Employment'.

For further purposes an algorithm is used to relate individual employees to the different locations specifically. The algorithm has been developed to assign to every employee to the most probable working location of his/her employer. In addition to the information above the algorithm uses information on:

- The number of employees of an employer in each municipality (derived from dataset Regional Employment)
- Distances between neighbourhoods

The algorithm works under the assumption that an employee works at the location of his/her employer that is closest to home. Furthermore, the algorithm takes into account the number of employees per employer per municipality, as is known from 'Regional Employment'. The algorithm yields a dataset on person-level, containing a (observed) home address and a (estimated) working address for each employee in December of the reporting year. This dataset is called the 'Commuting dataset'.

The Commuting dataset serves as an input to compile the regional labour accounts. In addition, it can be linked to other person-level socio-demographic datasets available at Statistics Netherlands[6].

The regional labour accounts are consistent with the labour accounts and the national accounts. The statistics of the labour accounts are derived after balancing in the supply and use table and are consistent with the national accounts and ESA 2010. Annually, the population of the included businesses in the labour accounts are evaluated, ensuring continuity. In addition, estimations for exhaustiveness are included such as illegal activities. The labour accounts also include information about the self-employed which is based on the satellite Self-Employed Persons and the dataset representing self-employed persons and their annual profits from the Systems of Social statistical Datasets (SSD).

The regional labour accounts which serve as the primary data source for the regional accounts, comprise microdata on business level and also provides information on location (municipality) and industry. It contains compensation of employees, jobs, full-time jobs and employers' social

[6] In case of linking to other socio-demographic datasets on person-level, results are anonymized. Also, due to the estimated nature of the commuting data, several quality rules are applicable. For instance, regional accounts publish at nuts 3 level and rounds the aggregated numbers of jobs/employees.

contributions. For the compilation of regional accounts, compensation of employees serves as the main source for estimating the regional distribution since it is used for the majority of industries.

Structural business statistics

The second data source is the structural business statistics (SBS). This data source is only used for a small number of industries. Typically, the relation between labour and output in these industries is less evident, making labour data less suitable for regional distribution. An example of this is the chemical industry in which output may vary without significant changes in compensation of employees.

Dutch business statistics are compiled on the basis of a large-scale survey among all large companies, and an additional sample survey among smaller ones, specified per employee group. Large companies are defined as companies with over 50 employees (in some industries: over 20 or over 100 employees)[7]. For some industries tax records are used for information on companies with fewer than 10 or fewer than 50 employees.

The sample part of the survey is carried out among small companies, specified per Nace Rev.2 activity and per size, i.e. number of employees.

The size of the survey varies strongly between the industries. Overall around 70,000 companies are approached, which is about 7 percent of the total number of companies in the Netherlands. The business statistics of Statistics Netherlands cover Nace Rev.2 sections B to N excluding section K and divisions S95+96 which are the fully market oriented sections of the business economy.

All collected data are checked in terms of consistency and completeness, and whether the year-on-year change is plausible. This is done by comparing the input with the response in previous years and, if possible, with the response of the same companies in other surveys. If data on previous years are not available, a comparison is made with other companies of a similar size in the same industry. Any established inconsistencies are corrected.

Since reporting year 2000, the business statistics for most industries have been compiled according to the approach described above. Before 2000, each industry used different questionnaires, and different methods of registration, estimation and grossing up. With the new approach, the content and processing of questionnaires was standardised and verification and analysis of the microdata was computerised. In addition, a new method was introduced for grossing up data for KAUs not in the sample and for non-response. Lastly, the use of external register data (e.g. from the tax authorities) was introduced in order to reduce the response burden for companies. In addition, these data offer better information on the demography of enterprises and the dynamics of industries.

Supply-and-use tables

Both data from labour accounts and the structural business statistics are used to regionalise the national totals given by the supply-and-use tables of the reporting year t-2 with the final status. The national supply-and-use tables are key input for the regional accounts as they determine the national totals per industry. At the level of 142 industries for the final year estimate, the supply-and-use tables provide detailed information on produced and consumed goods and services. Although the regional accounts are compiled at the level of 135

[7] In the general business register, companies are classified according to the number of employees. This classification is used for the SBS (sample) surveys and the employment survey. Large companies are companies in groups 6-9, or in some industries, in groups 5–9 or 7-9.

subindustries, sometimes a higher level of detail is used. For instance, to estimate the regional distribution of agriculture, the levels of commodities from the supply-and-use tables are combined with surface data from the Agricultural Census (see section 3.2.1).

Method

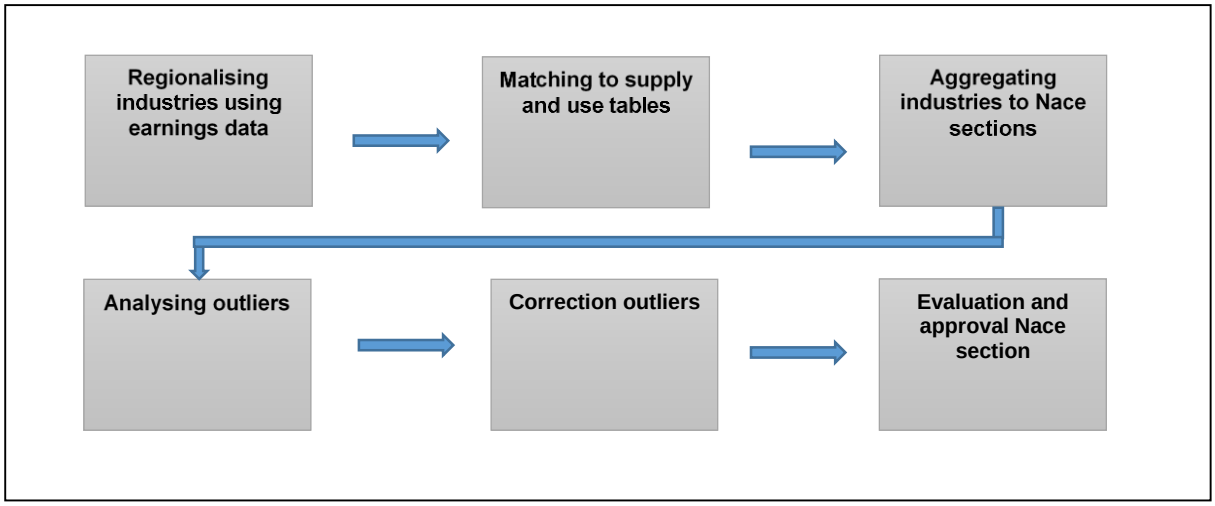
Regional GVA is compiled with several methods. The standard method relies on labour microdata of compensation of employees and is applied to most industries in the Dutch regional accounts. On publication level (Nace rev.2, sections), 13 of 21 industries are estimated using this method. Using data on compensation of employees, the method entails regionalising the components of gross value added, production and intermediate consumption. Some industries are not estimated with this method due to a weaker relationship between compensation of employees and production. For these industries, such as agriculture and the chemical industry, alternative methods are applied which rely on industry-specific source data. These methods are described in the corresponding paragraphs on industries in section 3.2.

The standard method for regionalising GVA can by large be regarded as a top-down method and comprises the following steps for the estimation of a final year in a non-revision year.

1. Firstly, assessment of the main aggregates on industry level. These include production and intermediate consumption and gross value added. The aggregates are derived from the supply-and-use tables of the national accounts and are loaded into the regional accounts compilation system (RACS) which contains 135 industries.
2. Regionalising production and intermediate consumption per industry using compensation of employees. This is done by multiplying production and intermediate consumption of year t-1 with the value index. Subsequently, the results are proportionally adjusted to match the aggregate industry values from the supply-and-use tables.
3. Computing gross value added per region and industry by subtracting intermediate consumption from production. The total of gross value added will match the supply-and-use table since the values of production and intermediate consumption already match.
4. Aggregating the results to section level of Nace rev.2 (broad structure), which contains 21 industries.
5. Determining regional outliers. This is done on section level of Nace rev.2 and COROP-plus with a specifically designed tool which determines the occurrence of regional outliers of gross value added.
6. Evaluating the plausibility of detected outliers. By looking into the microdata, underlying businesses of outliers are examined. Based on company-specific information from other sources, such as the structural business statistics, annual reports and the General Business Register (GBR), the outlier is accepted or rejected.
7. Correction of outliers. If outliers are rejected, corrections on the production, intermediate consumption and value added are transmitted in the RACS. These corrections are based on earlier mentioned sources. Although determination of outliers is performed on section level of Nace rev.2., corrections are made on the industry level as used in the RACS (135 industries).
8. The analysis of an industry and the treatment of the detected outliers are documented in a standardised report. The report describes on which information outliers are accepted or rejected and is evaluated by the head of integration.
9. The head of integration approves the regional distribution of the industry section or recommends (further) adjustments.

Figure 3.3 provides an overview of the main steps of regionalising with the standard method.

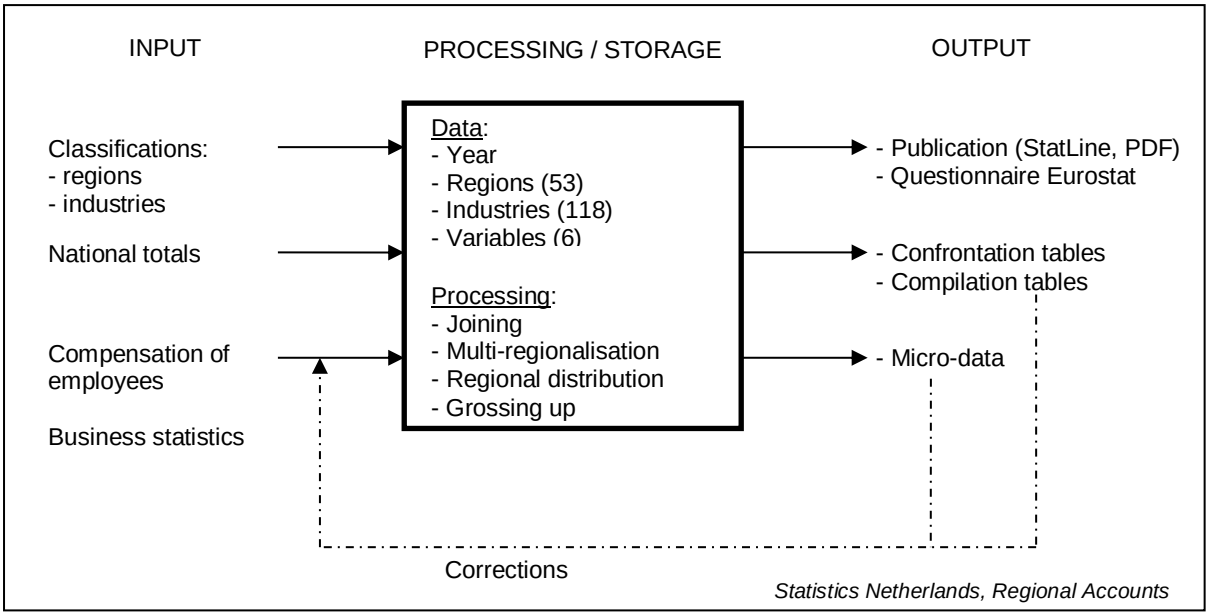
Figure 3.3 – Steps in regionalising process of the standard method



The regional accounts compilation system

A substantial part of the standard method takes place within the regional accounts compilation system (RACS). Because the compilation of GVA is done using the same sources and methods for most industries, a SQL application was built. This application is maintained and managed centrally. About two-thirds of the industries are completely compiled using this system. These include sections E-K, M, N, P-R and T. Other sections are partly estimated with the RACS, these are A-D, L and S. For the remaining industries, which are not regionalised using compensation of employees, the data are analysed and prepared without using the application. The data for these industries are loaded into the application at a later stage to make several calculations (i.e. grossing up), for storage and to produce compilation tables. The latter are used to verify the figures and assess plausibility. Besides output, intermediate consumption and gross value added the system also includes compensation of employees, other taxes on production, other subsidies on production and employment of employees in full-time equivalent jobs. Gross value added and gross operating surplus are calculated as balancing items after regionalisation. The data on employees are combined with data on self-employed persons without the use of the compilation system. The reason for this is that data on self-employed are available at a later stage. A schematic overview of the system is presented below.

Figure 3.4 – Regional accounts compilation system



Input

The classifications of industries and regions form the basic framework for the system. The national totals for each variable and industry are obtained from the supply-and-use tables compiled for the national accounts. Final figures for year t-2 are available for 142 industries, provisional year figures (t-1) for 135 industries. In the RACS the classification of 135 industries is applied for both final and provisional year estimates. Besides compensation of employees from labour accounts, also data from business statistics are loaded into the RACS. These data are used for a limited number of industries which cannot be properly estimated with compensation of employees.

Calculation / storage

The RACS is mainly used to regionalise industries using labour data. For a few industries in manufacturing regionalisation is based on information from business statistics. These industries include manufacture of tobacco products, manufacture of coke and other refined petroleum products, manufacture of chemical products and the manufacture of computers, electronics and optical products. The application compiles the regional figures of these industries in five steps. First, data from the business statistics are linked. Second, output, intermediate consumption, etc. of large KAUs that operate only in one region, are allocated to the regions concerned. Third, the variables of large KAUs that operate in multiple regions are distributed based on compensation of employees per establishment (community). The fourth step is regionalising figures for the small KAUs using compensation of employees in the lower employee groups as an indicator. Lastly, the figures for the large and small KAUs are summed. If the totals do not equal those of the national accounts, the remainder is grossed up proportionally across the regions.

In addition to compiling the regional figures, the application also serves as an interface to open and access the databases it stores.

Output
The output of the system includes confrontation tables which include the regional distribution of several variables in 135 industries. Variables include production, intermediate consumption, gross value added, compensation of employees, other taxes on production, other subsidies on production and employment of employees in full-time equivalent jobs. The regional accounts team uses the output to assess the year-on-year change. If necessary, corrections in the input data of business statistics and labour data are made. These are stored by the system and are taken into account when the steps are repeated.

Assessing the year-on-year change

Generally speaking, the regional accounts team takes the national year-on-year changes as given. The statistics are compiled by various other departments and it is beyond the remit of regional accounts to redo their work. However, when assessing the year-on-year changes per region, some changes might be considered exceptional and constitute a reason for further investigation of the source data. Additional sources, described in section 3.1.1, are important for verification of the regional figures. The issue of assessment of the figures is further elaborated in chapter 4.

3.1.1 Additional sources and information

To analyse specific changes in gross value added which are determined as outliers, company data related to the Dutch general business register is available. The data is presented in a database containing the KAU identification (size class, industry codes, regional codes), date of establishment, date of withdrawal (bankruptcy), and the number of employees. Especially date of establishment and/or withdrawal of company is useful since in many cases it provides an explanation of regional outliers. This also holds for large changes in the number of employees which can be compared with information from annual reports.

Another source of information is an overview of notable changes in the number of jobs of (multi-regional) KAUs. Likewise to the data on compensation of employees which are used for regionalisation, the overview is based on the Statistics on regional Employment and Earnings. These statistics are compiled using an annual survey that covers all multi-regional KAUs with 10 or more employees and provides information on the number of jobs of local KAUs. The overview provides explanations of notable changes in the number of jobs of local KAUs which are derived by research of annual reports and/or consultation of the reporting KAU.

To investigate the national developments in an industry, data of the supply-and-use tables are accessible. With the aid of special software, the composition of the national totals can be analysed at industry level (142 industries). For example, the size of estimations and corrections made by other departments, or the share of wages in the GVA can be examined. The composition of output and intermediate consumption according to groups of products is also available through this software.

3.1.2 Use of benchmarks and extrapolations

For the compilation of reporting year t-2 (final estimation) no use is made of benchmarks and extrapolations. For each industry group, sources are available for bottom-up or top-down compilation of regional figures. In contrast, for the reporting year t-1 (provisional estimation) the availability of regional source data is limited. Therefore, the estimation of t-1 is based on growth rates from the supply-and-use tables for most industries. This entails that the regional

distribution of the preceding year is maintained. For the industry concerned, each region is assigned the same change as the national figures.

3.1.3 Treatment of ancillary activities

The unit of observation for the main source statistics of the regional accounts, the business statistics (SBS) and the statistics on employment and wages, is the kind-of-activity unit (KAU, in Dutch: *bedrijfseenheid*). A KAU may consist of more than one local KAU, located in one or more regions. There is no available industry classification for each separate local KAU, local KAUs are classified in the same industry as the KAU. In the standard method, compensation of employees serve as the main input to distribute gross value added of each (large) KAU over the regions concerned, irrespective of the actual activities executed in each local KAU.

In the current method ancillary activities of KAUs are not separately estimated. There are no suitable data sources available to do this.

3.1.4 Treatment of the Extra-regio

Statistics Netherlands calculates Extra-regio GVA in accordance with ESA guidelines. In the Netherlands, the Extra-regio is primarily of significance for the industries Mining and Quarrying (Nace Rev.2, B). A substantial part of natural gas extraction and almost all of the oil extraction takes place on the continental shelf to which the Netherlands has exclusive rights. In addition, the Extra-regio is used for some parts of public administration (Nace Rev.2, O): Dutch embassies and consulates abroad. The sources and methods in use for these industries are described in section 3.2.15

3.1.5 Approach to exhaustiveness

Exhaustiveness is dealt with only at the national level. Regional allocation of GVA implicitly means regional allocation of the adjustments for exhaustiveness. If the bottom-up method is applied, the difference between the sum of the regional (bottom-up) figures and the national totals is grossed up proportionally over the regions according to GVA per industry. If the top-down method is applied, the adjustments automatically receive the same regional distribution as GVA per industry. According to the national process table of reporting year 2015 (part of the Dutch GNI-inventory) the adjustment for GVA for exhaustiveness was 15.6 billion euro. This is 2.5 percent of total GVA[8].

3.1.6 Calculation of FISIM by user industries

Regional gross value added per industry is calculated by subtracting intermediate consumption from output. The national totals of intermediate consumption include FISIM. The regional estimates of intermediate consumption automatically also include this item. The regional distribution of FISIM follows the regional distribution (per industry) of intermediate consumption.

[8] Gross National Income Inventory, Statistics Netherlands: https://www.cbs.nl/nl-nl/publicatie/2019/07/bruto-nationaal-inkomen-methodologie-volgens-esa-2010, section 7.2.2

3.1.7 Adjustments for commuting

No adjustments are applied for commuting. In general, GVA is allocated to the regions according to information of the regionalised labour accounts. Regionalised labour accounts data are a combination of data from the monthly micro-datasets on job level derived from the integral Employees' Register of the Employee Insurance Agency and the Statistics on regional Employment and Earnings. The information that is used is the number of jobs at the location of the local KAUs. According to the residency principle this is correct, so adjustments are not needed.

In section 3.1 (*Statistics on Employment and Earnings)* more information is given about the regionalisation and the use of an algorithm that takes into account the home address of the employee. The algorithm yields a dataset on person-level, containing a (observed) home address and a (estimated) working address for each employee in December of the reporting year. This dataset is called the 'Commuting dataset'.

3.1.8 Transition from GVA to GDP

The difference between gross value added and gross domestic product consists of:

Taxes on products (D21)

Subsidies on products (-) (D31)

Difference imputed and paid VAT

The difference between the GVA and GDP is small, usually the difference in growth rates is 0,1% or smaller. Therefore, the balance of these items is allocated to the regions according to the regional distribution of GVA (= proportionally).

3.1.9 Method used for the compilation of regional GDP per capita

The regional GDP is compiled by transitioning the GVA for each region to the GDP for each region. The last thing which is needed is the population of each region, so the regional GDP per capita can be compiled. Each citizen is required to be registered in their municipality. So the population is based on registration rather than census. The population for each region is taken from the year which is available on Statline in Dutch.

3.2 Specific methods and sources for compiling regional GVA

This section discusses for each industry the employed method to compile the regional GVA. For each industry, the output, intermediate consumption and gross value added are given in millions of euros for the reporting year 2018. In addition, the share in the total amount of GVA and the number of subindustries are shown. Total GVA of the Netherlands for the reporting year 2018 is 692,632 million euro.

In Annex 5 an attempt is made to classify each industry to an A, B or C method[9]. The used methods (largely income method) are sufficient, but there are possible improvements that can

[9] Manual on Regional Accounts Methods, Eurostat: https://ec.europa.eu/eurostat/documents/3859598/5937641/KS-GQ-13-001-EN.PDF/7114fba9-1a3f-43df-b028-e97232b6bac5, see Section 3.9

be made. Due to the lack of regional microdata on Nace Rev.2 section level none of the industries is estimated using an ideal method. The revised income method has an important limitation (see section 4.2.2). There are in our opinion 4 industries that contain subindustries for which very detailed and reliable sources are used. Therefore these industries can be seen as a mixture of A- and B-methods. The methods in de remaining industries end up being a B-method.
Section 4.2.2 discusses plans for further improvements of the current revised income method

3.2.1 Agriculture, forestry and fishing (A)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
32058	19282	12776	1.8	7

This industry consists of seven (sub)industries:

01109 Farming
01209 Horticulture
01400 Stock breeding
01500 Other agriculture
01600 Agricultural services
0200 Forestry
0300 Fishing

Sources

Supply-and-use tables
For the first three subindustries information about of the total value of commodities from the supply-and-use tables of the national accounts is used. For these industries the national accounts data are based on the Agricultural Census (described below). Regional accounts also use the Agricultural Census in order to make a regionalisation of the specific commodities.

Statistics on employment and wages
For some subindustries, the regionalised labour accounts data are used for regionalisation. This source is described in section 3.1

Agricultural Census
The Agricultural Census is an important source for the regionalisation of agricultural output. This yearly survey is carried out by the Ministry of Agriculture, Nature and Food Quality. It collects annual information on labour and on production of cattle and crops of all agricultural units with significant agricultural activity, around 90,000 units. The ministry checks and corrects for missing values in the response. At Statistics Netherlands, plausibility checks are conducted and where necessary corrections are made.

Land use data
Every three years, a digital map is drawn up of the functional land use in the Netherlands. Overall, 37 functions are distinguished. Each function must be related to a minimum size of 1 hectare or 1 are of land.

Methods

01109 Farming, 01209 Horticulture, 01400 Stock breeding
For these subindustries, regional production according to the Agricultural Census is used as an indicator for the regional distribution of output. National totals per commodity group are obtained from the supply-and-use tables of the national accounts. The Agricultural Census provides production (in units, metric tonnes or hectares) for each municipality and for each

group of commodity. This data is used as an indicator to regionalise the output per group of products. Subsequently, output of the commodities is summed up for each region and regional outcomes are equalled to the national totals.

01500 Other agriculture, 1600 Agricultural services
Output for these subindustries are regionalised using regionalised labour accounts data. The source and method are described in section 3.1.

0200 Forestry
This subindustry is regionalised using land use data of forestry as an indicator. The land use data of Statistics Netherlands provides the size of forested area per municipality in hectares. The assumption that forested area is a suitable indicator for the regionalisation of forestry output is disputable. This method is used due to a lack of detailed regional data on forestry. Given the fact that this subindustry comprises a very small part of national GVA, this method is acceptable.

0300 Fishing
Output for this subindustry is regionalised by using regionalised labour accounts data. The source and method are described in section 3.1.

3.2.2 Mining and quarrying (B)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
11,196	4,031	7,165	1.0	3

This industry is analysed in three (sub)industries:

0600 Production of crude petroleum and natural gas
0800 Other mining and quarrying production
0900 Services for petroleum and natural gas exploitation

The major part of Mining and quarrying (B) is the production of **0600 Production of crude petroleum and natural gas.** Available business statistics are not suitable for the regionalisation of GVA in this subindustry. However, the production of natural gas and oil is recorded quite well in different other sources that make a reliable distribution of the production possible for this industry.

The other industries, **0800 Other mining and quarrying production and 0900 Services for petroleum and natural gasexploitation**, are compiled primarily using the income method, see section 3.1.

Sources
Regionalised labour accounts data, this source is described in section 3.1.

Number of employees on the continental shelf
Available employment data do not specify employees working on the Dutch part of the continental shelf. These offshore workers are registered at KAUs on the mainland. Therefore, figures on the number of employees working on the continental shelf are received annually from the State Supervision of Mines (part of the Ministry of Economic Affairs and Climate). These numbers are available for each company.

Annual review 'Oil and gas in the Netherlands'
This report, compiled at the request of the Ministry of Economic Affairs, Agriculture and Innovation, provides data on the exploration and production of natural gas and oil per licence in Sm3.

Annual report of GasTerra
The report provides data on the production by GasTerra, a major Dutch company operating on the European natural gas market. Information on the output, intermediate consumption, gross value added, number of employees and wages is collected from this source.

Methods
The regionalisation of GVA is done in three steps.

1) For the industries 0800 and 0900 the number of employees per region is determined based on data from the labour accounts. In the labour accounts data employees are not allocated to the Extra-regio. Therefore, a correction is made. For each company, the number of employees working on the continental shelf is subtracted from the region with the highest number of employees and allocated to the Extra-regio.
2) The distribution of employees (result of step 1) is used as an indicator for the top-down distribution of compensation of employees. Subsequently, output is calculated using the distribution of the quantity of oil winning by licence. The quantity of winning by licence is qualified for the distribution of the output per region.
3) For the industry 0600 output and intermediate consumption are distributed top-down using the actual production of oil and gas per region as an indicator. The production per region in Sm3 is derived from the production per licence (available from the *Annual review 'Oil and gas in the Netherlands'*) by linking the licences to the regions[10].

An exception to the procedure described above is the processing of GasTerra. The variables for this company are allocated directly to the region of residence by using the information out of the annual report of GasTerra.

3.2.3 Manufacturing (C)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
345,328	259,747	85,581	12.4	43

For the manufacturing industry (C), regionalised labour account data are used for the calculation of regional GVA. The standard method (see section 3.1) is used for nearly 39 (sub)industries. There are 4 industries for which other or additional sources are used. These are:

12000 Tobacco products,
20140 Petro-chemical production,
20199 Basic chemical production,
26000 Computers, electronic and optical products.

[10] A distinction is made between licences for production on the continental shelf and licences for production on the mainland. The production on the continental shelf is taken together and is allocated to the Extra-regio. The Extra-regio accounts for about 35 percent of the total natural gas production and nearly all oil production.

Sources
The regionalised labour account statistics are available for manufacturing and are suitable for the calculation of regional GVA for most of the subindustries.

Structural Business Statistics are used for three subindustries 20140, 20199 and 26000.

Methods
20140, 20199 and 26000
For the compilation of regional gross value added, the income method is primarily used. Regional GVA is compiled bottom-up as much as possible. For three subindustries business statistics are available for the calculation of regional GVA.

12000 Tobacco products,
For tobacco products(12000) the combination of business statistics and data from the population development statistics are used for the calculation of regional GVA. The subindustry 12000 tobacco industry is divided in two sections. Section one is the production of tobacco and is calculated bottom-up. The GVA was in 2018 231 million euro. Section two, the production of cannabis, has a GVA of 2499 million euro. This amount is divided over the regions by using the number of inhabitants per region by using the population statistics. The reason for using this method is the lack of information.

3.2.4 Energy supply (D)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
17,829	9,738	8,091	1.2	2

The industry energy supply (D) is analysed in two (sub)industries:

35109 Production and trade of energy
35123 Distribution of energy

Sources
Microdata on production and intermediate consumption of individual power plants. This information is gathered through monthly questionnaires sent to the largest power stations, covering around 70 per cent of the yearly production of electricity. The data consist of type of energy source that is used for the production of electricity as well as the energetic values of intermediate use and production. For instance, for each plant the production of electricity is denoted in 1000 kilowatt-hour.

Labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, two different methods are used. The subindustry distribution of energy is estimated with the income method (see section 3.1). However, for the subindustry production and trade of energy this method would result in unrealistic outcomes. This is due to the fact that compensation of employees and production of electricity are largely unrelated. Therefore, this industry is estimated with an alternative method using the microdata on power plants. First, a regional distribution is determined. This is possible since the microdata provides information on production, intermediate consumption and location, the latter allowing to assign each power plant to a NUTS3-COROP-PLUS region. Secondly, the

total production of the subindustry, derived from the supply-and-use table, is divided into trade of energy and production of energy. For trade, the production is set equal to the total compensation of employees of the subindustry. For the production of energy it equals total production minus compensation of employees. Thirdly, the industry production of energy is regionally distributed using the regional distribution of the microdata. Trade of energy is regionally distributed with the compensation of employees. Summing the regional distributions of production and trade results in the total values for the subindustry production and trade of energy.

In the current estimation method for the production and trade of energy the assumption is made that limited value added is created with trade of energy. Therefore, value added in trade of energy is set to zero. In the upcoming revision the validity of this assumption will be re-investigated.

3.2.5 Water supply and waste management (E)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
11,399	6,966	4,433	0.6	3

For all 3 subindustries in the 3.2.5 Water supply and waste management industry (E), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.6 Construction (F)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
108,437	75,893	32,544	4.7	7

For all 7 subindustries within the Construction industry (F), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.7 Wholesale and retail trade; repair (G)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
172,770	77,586	95,184	13.7	7

For all 7 subindustries within the Wholesale and retail trade; repair industry (G), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.8 Transportation and storage (H)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
84,107	51,121	32,986	4.8	11

For all subindustries within the Transportation and storage industry (H), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.9 Accommodation and food service activities (I)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
29,848	15,119	14,729	2.1	2

For the two subindustries within the Accommodation and food service activities industry (I), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.10 Information and communication (J)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
81,453	46,884	34,569	5.0	6

For all 6 subindustries in the Information and communication industry (J), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.11 Financial institutions (K)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
82,671	36,215	46,456	6.7	4

For all 4 subindustries in the Financial institutions industry (K), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.12 Real estate activities, treatment of services of owner-occupied dwellings (L)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
93,220	42,494	50,726	7.3	4

The Real estate activities, treatment of services of owner-occupied dwellings (L) consists of 4 (sub)industries:

68130 Real estate agents
68204 Exploitation of non-residential buildings
68208 Rental of occupied dwellings
68900 Exploitation of owner-occupied dwellings

The regional distribution of the four subindustries are all estimated differently. Furthermore, Rental of occupied dwellings and Exploitation of owner-occupied dwellings have the largest contribution to the GVA of this industry.

The industry Real estate agents (68130) is a subindustry for which the GVA is regionalized using the income method, while the other 3 subindustries have different methods to allocate the GVA to the regions in the Netherlands.

Sources:

Regionalised labour accounts data, this source is described in section 3.1.

Supply-and-use tables
For the second subindustry 68204 information about of the total value of commodities from the supply-and-use tables of the national accounts is used.

WOZ-waarde
This source consists of administrative data provided annually and is used to regionalize the total value of production and intermediate consumption from the supply-and-use tables. Each building in The Netherlands has a WOZ-waarde, this is a value used for the taxation of real estate properties. The WOZ-waarde (taxation value) is closely related to the real value of a building. The taxation values for all buildings are aggregated for each municipality and updated annually.

Methods:
68130 Real estate agents
Output for this subindustry is regionalised by using regionalised labour accounts data. The source and method is described in section 3.1.

68204 Exploitation of non-residential buildings
The regionalisation of output and intermediate consumption of this subindustry is done with a specific method. Exploitation of buildings is a separate commodity group (service) in the supply-and-use tables. The National Accounts Department calculates an output value for this commodity group for each industry. The output value per industry of this commodity is regionalized by using total production per region (per industry). Subsequently, all industries are added up and a table with the distribution of the output of that commodity to regions results. The resulted table on region level is then used to regionalise other variables of this commodity (like intermediate consumption).

68208 Rental of occupied dwellings, 68900 Exploitation of owner-occupied dwellings
The GVA of these 2 subindustries are regionalised with the use of administrative data, the 'WOZ-waarde'. The totals of the production and intermediate consumption are taken from the supply-and-use tables of the national accounts. These totals are distributed proportional to the regions by the total of the 'WOZ-waarde' for each region. This is a value for each property of real estate which is determined by the municipality. This 'WOZ-waarde', is closely related to the value of the property and is used for tax purposes. The totals of this values are available for each municipality and are updated annually.

3.2.13 Other specialised business services (M)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
117,131	61,029	56,102	8.1	11

For all 11 subindustries in the Other specialised business services industry (M), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.14 Renting and other business support (N)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
80,826	31,056	49,770	7.2	8

For all 8 subindustries in the Renting and other business support industry (N), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.15 Public administration and services (O)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
79,713	31,336	48,377	7.0	1

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Labour costs of Dutch embassies, derived from the annual report Ministry of Foreign Affairs.

Number of military on foreign missions, derived from website Ministry of Defence.

Methods
Like mining and quarrying, the regional distribution of the public administration and services includes an additional region, the extra-regio. In the public administration the extra-regio includes economic activities of Dutch embassies and military in foreign missions. These activities are estimated with additional data sources from ministries.
For Dutch embassies, compensation of employees and full-time equivalent jobs are estimated with information from the annual report of the Ministry of foreign affairs. This report provides projected and realised figures for the state budget. For the final year estimate, the employed values are realised figures. For the foreign military missions, the gathering of data sources is more time-consuming. An overview of the current missions can be found on the website of the central government. These missions are typically part of larger missions of United Nations, European Union or NATO. Subsequently, each mission is assigned a number of full-time equivalent jobs, which is frequently derived from the website of Ministry of Defence or based on information from news articles. Finally, given the number of jobs, compensation of employees is estimated with a salary table of military personnel. This table is also originating from the Ministry of Defence and provides salary scales for the different military job functions.
The following step entails the addition of the extra-regio in the microdata on employment and compensation of employees. To avoid double counting, the addition is off set in the region of the central government[11]. Given the adjusted input of the labour data and the input of the supply-and-use table, the regional distribution of production, intermediate consumption and value added are computed. Subsequently, the regular steps of the income method are followed, which includes analysing outcomes and adjustment of implausible outliers.

3.2.16 Education (P)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
44,664	10,735	33,929	4.9	2

For all 4 subindustries in the Education industry (P), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.17 Health and social work activities (Q)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
89,614	26,632	62,982	9.1	3

For all 3 subindustries in the Health and social work activities industry (Q), the standard method as described in section 3.1 is used.

[11] NUTS 3 Coropplus region 32: Agglomeratie 's-Granvenhage exclusief Zoetermeer.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.18 Arts, entertainment and recreation (R)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
15,943	8,231	7,712	1.1	4

For all 3 subindustries in the Arts, entertainment and recreation industry (R), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.19 Other service activities (S)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
15,547	7,753	7,794	1.1	3

For all 3 subindustries in the Arts, entertainment and recreation industry (S), the standard method as described in section 3.1 is used.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.2.20 Activities of households as employers (T)

Output (mln euro)	*Intermediate consumption (mln euro)*	*GVA (mln euro)*	*% of total GVA*	*# subindustries*
726	0	726	0.1	1

For activities of households as employers (T), the standard method as described in section 3.1 is used. A large part of section T consists of households' expenditure that is financed with personal health subsidies. These subsidies are provided by the central government and allow receivers to choose their own health care providers. Typically, services consist of long term health care at home, assistance with daily routine, or day-care.

Sources
Regionalised labour accounts data on employment and compensation of employees, this source is described in section 3.1.

Methods
For the compilation of regional GVA, the income method is used (see section 3.1).

3.3 Methods and sources for regional GVA at current prices for the preliminary year

Publication
Statistics Netherlands annually publishes the first regional estimates for the year t-1 in April. This publication does not contain statistics on GVA but includes regional GDP growth rates on the level NUTS 3 COROP-plus. The estimate is based on the sum of the revised three quarters and the final fourth quarter of year t-1[12] from the supply-and-use tables of the national accounts. The second estimate for year t-1 is not based on quarterly figures but on the first (provisional) year estimate of the national accounts. It provides more statistics including the level of GVA and several labour volume statistics such as hours worked and full-time equivalent jobs.

Estimation GVA at current prices
Since regional source data is scarcely available, both releases of year t-1 are primarily estimated using industry growth rates from the supply-and-use tables of the national accounts. This is done by applying the value index of production and intermediate consumption on the regional structure of t-2 (final estimation consisting of 135 industries) resulting in values at current prices. Subsequently, GVA of t-1 at current prices is computed by subtracting intermediate consumption from production. Since the values of t-2 are matched to the industry totals of national accounts, the regional distribution per industry of t-1 matches industry totals of the national accounts by default.
A small number of industries are estimated with the similar method as the final estimate of t-2 since regional source data are available at the time of estimation of t-1. This holds for agriculture, mining and quarrying and real estate activities. In these industries regional source data are similar for t-1 and t-2, the only differences occur due to adjustments to national industry totals of the national accounts. Furthermore, in a selected number of industries (trade, hotels, restaurants, subsidised education, etc.), the applied national growth rates are adjusted with the development of the population. Since these industries are likely to depend in a higher degree on population growth, such adjustments result in proper regional variation.

3.4 Regional GVA at constant prices and regional growth rates

Publication
Statistics Netherlands publishes regional growth rates for GVA and GDP. For the provisional and final years, growth rates of GDP and GVA are available for regions at NUTS3 COROP-

[12] The sum of the revised three quarters and the final fourth quarter of year t-1 is also referred to as 'update-year' in the Dutch national accounts.

plus. Regional growth rates of GVA on industry level are only released in final year estimates. These growth rates are published on NUTS3 COROP-plus level for 13 industry groups[13]. Regional GDP and GVA at constant prices are not published but only used to compute regional growth rates (volume).

Estimation
The first step to estimate growth rates consist of computing production and intermediate consumption at constant prices. This is done on industry level using national deflators from the supply-and-use tables. For agriculture and mining and quarrying, constant prices are determined differently. For these industries separate regional data on volume changes are available. With production and intermediate consumption at constant prices, GVA at constant prices is calculated by subtracting intermediate consumption from output. Subsequently, volume change is determined as follows :

Volume changes (%) year t-1:

100 x (GVA year t-1 in constant prices/ GVA year t-2 in current prices) - 100

For the estimation of regional GDP also taxes and subsidies on products are required. However, no regional information on taxes and subsidies is available. Therefore, the macroeconomic balance between GDP and GVA is proportionally distributed across regions.

3.5 Differences with the methodology before 2013

Before discussing the differences between the current and the previous methodologies, one should note that there are 3 methods:

- The *old 2001 method* as described in the Inventory of 2008. This method uses the structural business survey and labour data as the most important sources for regionalisation.
- The *income method* uses only regionalised labour accounts data for regionalisation. This method was researched in 2010.
- The *revised income method* is the method that is mainly based on the regionalised labour accounts data but uses some other sources in cases the results of the income method were implausible.

In Annex 7 the differences in the GVA distribution (as percentages) of the old 2001 method and the income method are given. The old 2001 method is based on SBS data, regionalised labour accounts data and other additional sources such as annual reports. At first the differences in the results with the income method were analysed. The outcomes of the income method were investigated to determine whether labour accounts data were more reliable than SBS data for regionalizing GVA. In 2010 already 48% of the data was regionalised with the use of labour accounts data.

There are a few reasons to make more use of labour data:

[13] See Annex 6 for an overview of the industry classification that is used for publication.

- The SBS survey: The large firms (> size class 5) were all included in the survey. However the smaller firms were only partly represented in the sample survey. For these smaller firms labour accounts data was already used.

- The labour accounts data are based on the integral Employees' Register of the Employee Insurance Agency: Until the reporting year 2007-2008 the labour data had some quality issues, therefore in the old 2001 method extensive analyses and corrections were required. Since 2007-2008 the quality of this dataset has improved substantially and is reliable. It is an administrative source from the tax authorities and consists of monthly microdata. The use of the labour accounts data led to far less inconsistencies since the labour accounts are also consistent with the national accounts' supply-and-use tables. For this reason no adjustments are needed in order to be consistent with national totals. Furthermore, working with labour accounts data turned out to be much more efficient and made budget cuts possible.

Table 3.1 – Sources used in the 3 different methods

Sources	Old 2001 method	Income method	Revised Income method
Structural business survey	30,9 %	0 %	1,7 %
Labour data	47,9 %	100 %	88,5 %
Other sources	15,2 %	0 %	9,6 %
Adjustment to National accounts	6 %	0 %	0,2 %

For a couple of industries the results of the income method were less plausible. Therefore in the revised income method some industries are estimated using alternative methods and sources. See Annex 8 for a comparison between the three methods. It is clear that for example the Mining and quarrying industry (B) the income method was insufficient (this industry is especially large in Overig-Groningen). Section 3.2 describes the different sources and methods for each industry of subindustry in the revised income method.

In the current method (the revised income method) Statistics Netherlands analyses the results at the level of 21 industries and 53 regions. The process is more efficient than the 2001 method. A tool for analyses is used in order to identify the inconsistencies that should be examined. In the old method the identification was done by an expert. The analysis and the treatment of the detected outliers are now documented in a standardised report. The report is evaluated each year and has been greatly improved in relation to the older reports prior to 2010.

In table 3.2 the use of the Structural business statistics between the methods of 2001 and the revised income method is given.

Table 3.2 – The use of the SBS, the old 2001 method compared to the new revised income method

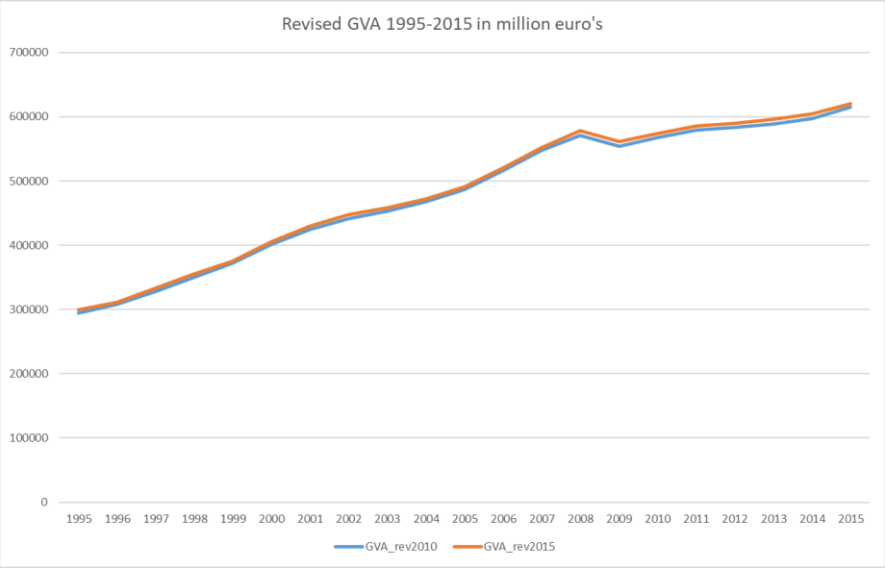
	2001 mono-regional	2001 multi-regional	% based on SBS		2018 mono-regional	2018 multi-regional	% based on SBS
C. Mining and quarrying	47	1167	11				
D. Manufacturing	29540	15918	77	C. Manufacturing	5280	6495	14
E. Electricity, gas and water supply	189	744	17				
F. Construction	3911	5012	39				
G. Wholesale and retail trade, repair etc.	9098	13672	42				
H. Hotels and restaurants	768	1123	24				
I. Transport, storage and communication	5090	13752	66				
K. Real estate, renting and business activities	8234	14632	27				

3.6 Comparing current and previous results

In Annex 7, 8, 9, 10, and 11 the differences in the results of the old 2001 method and the revised income method are given for the reporting year 2010, the year when Regional accounts were compiled with the old 2001 method for the last time. In Annex 9 the difference in the level of GVA between the revised income method and the old 2001 method are given. Note that the level of GVA is adjusted 43.6 billion euro upwards due to the major revision of 2010. Therefore the comparison in percentages of GVA in Annex 6 gives a better insight in the shift of shares of GVA between regions.

In Annex 12,13, and 14 time-series for GVA, compensation of employees and jobs (fte) from the old 2001 method are compared to the revised income method. The shift in percentage points in de GVA distribution between the different NUTS-2 regions is very limited and rather stable in time. In the major revision of the reporting year of 2015 the adjustment of GVA was less substantial than that of the major revision of 2010 (see figure 3.5). The reason is that the revision of 2010 was also a conceptual revision in which new guidelines based on the ESA 2010 were implemented.

Figure 3.5 – Adjustment of GVA during the major revision of 2015



Chapter 4 QUALITY ASSESSMENT AND IMPROVEMENT

4.1 Self-assessment of the methodology for compilation of regional GVA

4.1.1 Link with national accounts figures

Before discussing a self-assessment of the Dutch methodology for the compilation of regional GVA, it is good to emphasize that the regional accounts start with the national figures of national accounts. The sum of the regional figures must equal the national accounts figures. Obviously, imperfections in the national figures have a negative effect on the regional accounts figures. Sometimes regional accountants can provide information to improve the quality of the national accounts, but in most cases the national accounts figures are just a given.

4.1.2 Continuity versus level estimates

The main aim of the national accounts is to produce macro-economic figures that are comparable, both internationally and in time. International comparability is assured by following the international rules and guidelines. Comparability in time means that new concepts and new sources are introduced in periodic revisions. In the Netherlands levels are re-estimated every 5 to 10 years. Data for previous years are then also adjusted in order to retain comparability in time. As stated in the previous section, the regional accounts totals must equal the national accounts figures. Moreover, for the regional accounts figures, too, the basic principle is that the year-on-year changes are estimated as accurately as possible. If, for instance, new sources result in substantial changes in the regional distribution, these new sources are not applied immediately. Year-on-year changes based on the new sources may be introduced, but new levels (regional distribution) are introduced at the next major revision.

4.1.3 Number of industries

For each industry, sources are examined to see whether it is possible to compile regional GVA figures according to the bottom-up (or mixed) method. If this turns out not to be possible, the top-down method is applied. In most cases, compensation of employees by industry per region is used as an indicator for the regional GVA.

National supply-and-use tables for the Netherlands are available for the final year (t-2) at the level of 142 industries. This number would be too high for the regional accounts, as each industry has to be examined. The Dutch regional accounts are currently compiled at the level of 135 industries. This is the same level that is used for the compilation of the provisional Dutch national accounts (yearly figures t-1).

The regional data of t-1 is published with a detail of 13 industries while data of t-2 is subdivided into 21 industries.

4.1.4 Quality assessment and documentation

The Regional accounts compilation system produces automatically so-called confrontation tables and process tables. Confrontation tables show the figures (per industry group) per variable (output, intermediate consumption, gross value added, compensation of employees, operating surplus and employment) for each region, for a number of years. The figures are presented in three ways: as levels, absolute changes and relative changes. Also for the final figures a comparison is made with the provisional figure of the year before. There are some ratio’s too to check quality. In addition to these confrontation tables, process tables are also produced for the industries that are compiled according to the bottom-up method. The process

tables currently used in the Netherlands show values of output, intermediate consumption, etc. per region divided into the following groups:

- Regional (individual units SBS, mono-regional);
- Multi-regional (individual units SBS, broken down by number of jobs);
- Estimate for small companies (aggregated SBS data, regionalised by the number of jobs);
- Alignment to national accounts total;

Lastly, for all industries the following information is automatically calculated per region:

- Value added per employee;
- Compensation of employees per employee;
- Output per employee;
- Intermediate consumption divided by output;
- Revision of gross value added year t-2: final estimate minus provisional estimate.

Plausibility checks applied to this information:

- Is the regional distribution realistic?;
- Size of changes (year-on-year, absolute and relative) compared with changes of national totals;
- Can major (regional) economic events be recognised? (major strikes, break-out of swine fever, etc.);
- Size of the 'gap' between regional estimates and national total (only for the bottom-up method);
- Is gross value added negative? This is only possible in very rare cases. Occurrence of negative figures for output and intermediate consumption is excluded.
- Is the operating surplus negative? This is not impossible but it should be judged.
- Size of deviations in above-mentioned ratios (compared with national accounts ratios, only for bottom-up or mixed methods);
- Consistency: e.g. does production increase while employment decreases;
- What causes big changes between provisional and final estimates?

Of course, the search for errors starts with determining regional outliers. This is done on section level of Nace rev.2 and COROP-plus with a specifically designed tool which determines the occurrence of regional outliers of gross value added. The detected outliers are evaluated/ examined on plausibility by looking to the micro compensation of employees data, underlying businesses of outliers. Based on company-specific information from other sources, such as the structural business statistics, annual reports and the General Business Register (GBR), the outlier is accepted or rejected. When the outliers are rejected correction are made in the RACS system (see section 3.1). The analysis of an industry and the treatment of the detected outliers are documented in a standardised report. The report describes on which information outliers are accepted or rejected and is evaluated by the head of integration. The head of integration approves the regional distribution of the industry section or recommends (further) adjustments.

The corrections are shown in a separate column in process tables. The analysis of an industry and the treatment of the detected outliers are documented in a standardised report. The report describes on which information outliers are accepted or rejected and is evaluated by the head of integration. The head of integration approves the regional distribution of the industry section or recommends (further) adjustments. Detailed documentation ensures the continuity in the case of staff changes.

Additional data of the source statistics are essential to examine the regional accounts results. Major changes per industry and municipality of the number of jobs are checked by the

department concerned. The changes that appeared to be correct (economic reality) are ‘approved’ and listed in separate files. There is a short communication line with industry specialists about the deviating results.

Explanations of deviating figures that turned out to be correct, mostly concern closures or removals of companies or establishments. Corrections are often connected with economic dynamics (mergers, divisions of companies, etc.) that are not recorded (or recorded later) in the sources. Because the national accounts, too, are to an important extent based on SBS data, information on major adjustments is communicated to the national accountants concerned. Often the reporting year of the national accounts has already ‘closed’ at that time. If so, these corrections cannot be incorporated in the national figures. The impact on the national figures is usually limited, but this is not the case for the regional accounts. While a company may have a national share within an industry of only a few percent, at a regional level this may easily be 20 or 30 percent. In spite of this, the regional accounts have to fit the national accounts figures exactly. In practice, this can lead to constraints.

4.1.5 Revision analysis

The revisions of the national figures on economic growth have been monitored systematically. In some years, the difference between the first (flash) estimate (after 45 days) and the final estimate (two and a half years after the reporting year) is more than one percentage point. The revisions are analysed thoroughly every year.

For the regional accounts, it was assumed that the revisions were caused mainly by the national revisions. Revisions of the national economic growth figures are composed of revisions of growth rates by industry. If an industry is concentrated in a limited number of regions, this may lead to extremely large revisions of the regional economic growth figures. Further analysis showed that this was indeed the case, but on top of that, some revisions of regional figures were caused by changes in the regional sources. Especially large companies located in relatively small regions may cause major revisions.

For reporting year t-2, the regional accounts are based for a few industries on the structural business statistics but most industries are based on regionalised labour statistics. For reporting year t-1, SBS data and labour data are not yet available. The regional economic growth rates of year t-1 were almost completely compiled based on the regional production structure of t-2 and the national growth rates per industry.

Data from the short term statistics (STS) are available on individual (large) companies. These monthly or quarterly data, for instance on turnover, can be used for yearly or quarterly estimates. For the preliminary estimate of reporting year t-1, Statistics Netherlands is currently investigating whether the usage STS data on individual large companies will reduce the revisions.

4.2 Plans for further improvement

4.2.1 Automated tool for analysis

For the detection of regional outliers as described in 3.1 the regional accounts of the Netherlands use an automated tool to do a quick analysis of the results. The outliers are detected by changes in the gross value added compared to the previous year. This calculates the standard deviation for each industry for both the absolute change in GVA as the percentage change of the GVA. The automated tool performs the analysis on Nace Rev.2 A21-industries for all regions. If an industry in a region is classified as an outlier, more research is done on a

detailed level. The automated tool selects information of the Local KAUs, the GVA of the current and previous year based on data from the Dutch labour accounts.

The tool can be further improved as it is automatized, still some things require manual adjustments. The project of rebuilding this tool has started. The goal of this rebuilding is to make visualisation more clear to the user. The selection of the sub-industries and the regions will be more visible, so the chance of missing an outlier is smaller.

4.2.2 Regional productivity

The regional accounts publishes, among other things, figures on GVA and labour volume of employees by region and industry. The figures provide the building blocks for calculating labour productivity by region. However, the interpretation of labour productivity based on the current outcomes requires caution. Only in years of a major revision regional GVA and labour are independently determined for all industries and can be used to calculate regional labour productivity. In the years between the major revisions, GVA, production and labour are not determined independently of each other for most of the industries. The regionalisation of GVA is done with the income method and as a result, labour productivity per region will initially hardly deviate from the revision year. Labour productivity differences between regions arise mainly from differences in the presence of industries in regions: a region with a large share of industry simply has a different productivity than a region in which services are predominant; productivity developments within an industry, within a region or between two revision years are missed.

Statistics Netherlands is aware of the limitations of the income method and the published figures. In the next years we will investigate if more SBS data can be used in order to have an independent output and input measure that would improve regional productivity figures.

4.2.3 New processing system

For the estimates of the years 2019-2020 the regional accounts will have a new processing system. In this system it is possible to analyse data on the level of municipality. Due to confidentiality, publication on the level of municipality is sometimes limited. However, in cases it is allowed to publish data, consistent figures on the level on municipality are seen as a great benefit. In the old system the municipals did not add up to the COROP totals which required manual adjustments. In the new processing system the sum of the municipalities is consistent with the COROP total.

4.2.4 Quarterly accounts

Due to the 2020 the outbreak of the Covid-19 virus users demanded more timely statistics to assess the regional impact of the crisis. The Dutch regional accounts decided to start an experiment with quarterly figures of the economic growth of the regions.

To estimate these quarterly figures GVA is taken as a proxy for GDP. This assumption can be justified as GVA and GDP are very closely related. First GVA of 2018 is taken from the Dutch regional accounts. This is the last year regional information is available and analysed on a detailed level of 133 industries and 53 regions. The GVA of each industry is then increased to the level of 2019 with information from the national accounts after which the values of the individual quarters were determined. The result is a quarterly GVA (2019) for 133 industries and 53 COROP-plus regions. The year on year growth for each quarter of 2020 is taken from the national accounts and applied for each of the 133 industries in the 53 regions. Subsequently, a correction is made for large companies in specific regions. If a single company contributes more than 5% of the GVA of a region and has a GVA larger than 50 million it is

selected to be analysed and corrected. This selection resulted in 15 companies. For these companies, the growth figures are obtained from industry-experts from the supply-and-use tables. The regions in which these companies are located are then corrected and also the other regions are adjusted so the numbers stay consistent with the national accounts.

As the last regional data is from 2018, the uncertainty of the economic growth figures is much larger than the regular growth figures. Therefore Statistics Netherlands decided to publish rounded percentages.

The quarterly regional accounts of 2020 have been published as experimental result. In order to decide if the quarterly estimates will be continued in 2021, the following questions have to be answered: Is the quality of the estimate sufficient? Is there enough interest from public, press, public administration or researchers after the pandemic?

4.2.5 Mining and quarrying

The current results of mining and quarrying with the current method require annually adjustments. It appeared that part of the output of this industry was allocated to regions where no actual production took place. On the other hand, data on the production per site (which became available in the end of 2006) proved that no output was allocated to some regions with considerable natural gas production. It was concluded that the (names of the) licences did not always correctly match the location of the actual sites. At this moment, data on the production per site, which will improve the current estimation, are not used. These data will be implemented from the next revision in 2021 onwards.

ANNEX 1 IMPORTANCE OF METHODS, THE OLD 2001 METHOD VERSUS THE REVISED INCOME METHOD (2018)

2001

		% of GVA	Mainly in groups
Bottom-up	(SBS, large KAUs)	30,0	
Top-down	(SBS, small KAUs) closely related indicator	20,0	D, F, G, H, I, K
	Closely related indicator	37,0	A/B, C, J, K, L, M, N, O/P
	Extrapolation/ models	7,0	E, K, L, N
Adjustments to National accounts		6,0	

2018

		% of GVA	Mainly in groups
Bottom-up	(SBS, large KAUs)	1,7	
Top-down	(SBS, small KAUs) closely related indicator	0,4	C
	Closely related indicator	96,4	A, B, C, J, K, L, M, N, O/P
	Extrapolation/ models	1,4	B, C, L
Adjustments to National accounts		0,2	

ANNEX 2 METADATA TABLE

Source	Description
Structural Business Survey	https://ec.europa.eu/eurostat/cache/metadata/EN/sbs_esms_nl.htm
Employment and Earnings Statistics	https://www.cbs.nl/en-gb/onze-diensten/methods/surveys/korte-onderzoeksbeschrijvingen/employment-and-earnings-statistics--swl---wages-and-working-hours
Labour Accounts	Based on the micro-datasets on job level derived from the integral Employees' Register of the Employee Insurance Agency. Data on self-employed and mixed income is based on the satellite Self-Employed Persons and the dataset representing self-employed persons and their annual profits from the Systems of Social statistical Datasets (SSD). https://dsbb.imf.org/SDDSPlus/dqaf-base/country/NLD/category/EMP00#notes
Regionalised Employment and Earnings Statistics	Type of research Combination of registrations and a sample. Observation method Jobs of employees per company are determined from from the integral Employees' Register of the Employee Insurance Agency. For the distribution of jobs over the different establishments of the larger companies, additional surveys are conducted. The information on the location of other smaller companies is obtained from the General Business Register (ABR) of Statistics Netherlands. Sample size The Policy Administration contains the entire target population. In 2015, this involved approximately 433 thousand companies, which together accounted for approximately 7.8 million jobs. The sample for the distribution of jobs over the establishments includes all companies with 10 or more employees that are known or likely to have multiple establishments. The sample size is approximately 14 thousand companies and institutions. Control and correction methods The internal consistency and completeness of the Policy administration is checked. Furthermore, consistency is checked between the survey and the policy administration. It is also examined whether the development with previous years is plausible. Where necessary, the data is edited. Quality of the outcomes There may be non-response, frame, process, and / or measurement errors. Comparability between years Data are made year on year comparable. This is achieved by making the region of establishments of companies in year t-1 the same as in year t.

ANNEX 3 COMPILATION TABLE

Gross Value added by region (subdivision of NUTS3 level)															
Industries A 21	Method for reference period T													Adjustment to National Accounts	Total
2018	**Bottom-up methods**							Sub-total bottom-up	**Top-down methods**				Sub-total top-down		
	Survey data				Administrative data		Data based on extra-polations or models		Survey or census		Administrative data				
	Exhaustive coverage		sample data						Closely related indicators	Data based on extra-polations or models and/or less related indicators	Closely related indicators	Data based on extra-polations or models and/or less related indicators			
	mono-regional	multi-regional	mono-regional	multi-regional	mono-regional	multi-regional									
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9 (=2+3+4+5 +6+7+8)*	*10*	*11*	*12*	*13*	*14 (=10+11 +12+13)*	*15 [=16-(9+14)]*	*16*
A Agriculture, forestry and fishing	0	0	0	0	0	0	0	0	12776	0	0	0	12776	0	12776
B Mining and quarrying	0	0	0	0	0	0	0	0	1426	0	5739	0	7165	0	7165
C Manufacturing	5280	6495	0	0	0	0	0	11775	70203	0	2499	0	72702	1104	85581
D Energy supply	0	0	0	0	0	0	0	0	8091	0	0	0	8091	0	8091
E Water supply and waste management	0	0	0	0	0	0	0	0	4433	0	0	0	4433	0	4433
F Construction	0	0	0	0	0	0	0	0	32544	0	0	0	32544	0	32544
G Wholesale and retail trade	0	0	0	0	0	0	0	0	95184	0	0	0	95184	0	95184
H Transportation and storage	0	0	0	0	0	0	0	0	32986	0	0	0	32986	0	32986
I Accommodation and food serving	0	0	0	0	0	0	0	0	14729	0	0	0	14729	0	14729
J Information and communication	0	0	0	0	0	0	0	0	34569	0	0	0	34569	0	34569
K Financial institutions	0	0	0	0	0	0	0	0	46456	0	0	0	46456	0	46456
L Renting, buying, selling real estate	0	0	0	0	0	0	0	0	5482	9492	35752	0	50726	0	50726
M Other specialised business services	0	0	0	0	0	0	0	0	56102	0	0	0	56102	0	56102
N Renting and other business support	0	0	0	0	0	0	0	0	49770	0	0	0	49770	0	49770
O Public administration and services	0	0	0	0	0	0	0	0	48377	0	0	0	48377	0	48377
P Education	0	0	0	0	0	0	0	0	33929	0	0	0	33929	0	33929
Q Health and social work activities	0	0	0	0	0	0	0	0	62982	0	0	0	62982	0	62982
R Culture, sports and recreation	0	0	0	0	0	0	0	0	7712	0	0	0	7712	0	7712
S Other service activities	0	0	0	0	0	0	0	0	7794	0	0	0	7794	0	7794
T Activities of households	0	0	0	0	0	0	0	0	726	0	0	0	726	0	726
U Extraterritorial organisations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industries A-U	5280	6495	0	0	0	0	0	11775	626271	9492	43990	0	679753	1104	692632
Percentage	0,8	0,9						1,7	90,4	1,4	6,4		98,1	0,2	100,0

ANNEX 4 CLASSIFICATIONS OF COROP-PLUS AND NUTS 3

COROP-plus	NUTS 3	Name region
CP0100	CR01	Oost-Groningen
CP0200	CR02	Delfzijl en omgeving
CP0300	CR03	Overig Groningen
CP0400	CR04	Noord-Friesland
CP0500	CR05	Zuidwest-Friesland
CP0600	CR06	Zuidoost-Friesland
CP0700	CR07	Noord-Drenthe
CP0800	CR08	Zuidoost-Drenthe
CP0900	CR09	Zuidwest-Drenthe
CP1000	CR10	Noord-Overijssel
CP1100	CR11	Zuidwest-Overijssel
CP1200	CR12	Twente
CP1300	CR13	Veluwe
CP1400	CR14	Achterhoek
CP1500	CR15	Arnhem/Nijmegen
CP1600	CR16	Zuidwest-Gelderland
	CR17	Utrecht
CP1701		Utrecht-West
CP1702		Stadsgewest Amersfoort
CP1703		Stadsgewest Utrecht
CP1704		Zuidoost-Utrecht
CP1800	CR18	Kop van Noord-Holland
CP1900	CR19	Alkmaar en omgeving
CP2000	CR20	IJmond
CP2100	CR21	Agglomeratie Haarlem
CP2200	CR22	Zaanstreek
	CR23	Groot-Amsterdam
CP2311		Amsterdam
CP2321		Overig Agglomeratie Amsterdam
CP2322		Edam-Volendam en omgeving
CP2323		Haarlemmermeer en omgeving

COROP-plus	NUTS 3	Name region
CP2400	CR24	Het Gooi en Vechtstreek
CP2500	CR25	Agglomeratie Leiden en Bollenstreek
	CR26	Agglomeratie 's-Gravenhage
CP2601		Aggl.'s-Gravenhage excl. Zoetermeer
CP2602		Zoetermeer
CP2700	CR27	Delft en Westland
CP2800	CR28	Oost-Zuid-Holland
	CR29	Groot-Rijnmond
CP2910		Rijnmond
CP2920		Overig Groot-Rijnmond
	CR30	Zuidoost-Zuid-Holland
CP3001		Drechtsteden
CP3002		Overig Zuidoost-Zuid-Holland
CP3100	CR31	Zeeuwsch-Vlaanderen
CP3200	CR32	Overig Zeeland
CP3300	CR33	West-Noord-Brabant
CP3400	CR34	Midden-Noord-Brabant
	CR35	Noordoost-Noord-Brabant
CP3510		Stadsgewest 's-Hertogenbosch
CP3520		Overig Noordoost-Noord-brabant
CP3600	CR36	Zuidoost-Noord-Brabant
CP3700	CR37	Noord-Limburg
CP3800	CR38	Midden-Limburg
CP3900	CR39	Zuid-Limburg
	CR40	Flevoland
CP4001		Almere
CP4002		Flevoland-Midden
CP4003		Noordoostpolder en Urk

ANNEX 5 A, B, C - METHOD CLASSIFICATION PER INDUSTRY

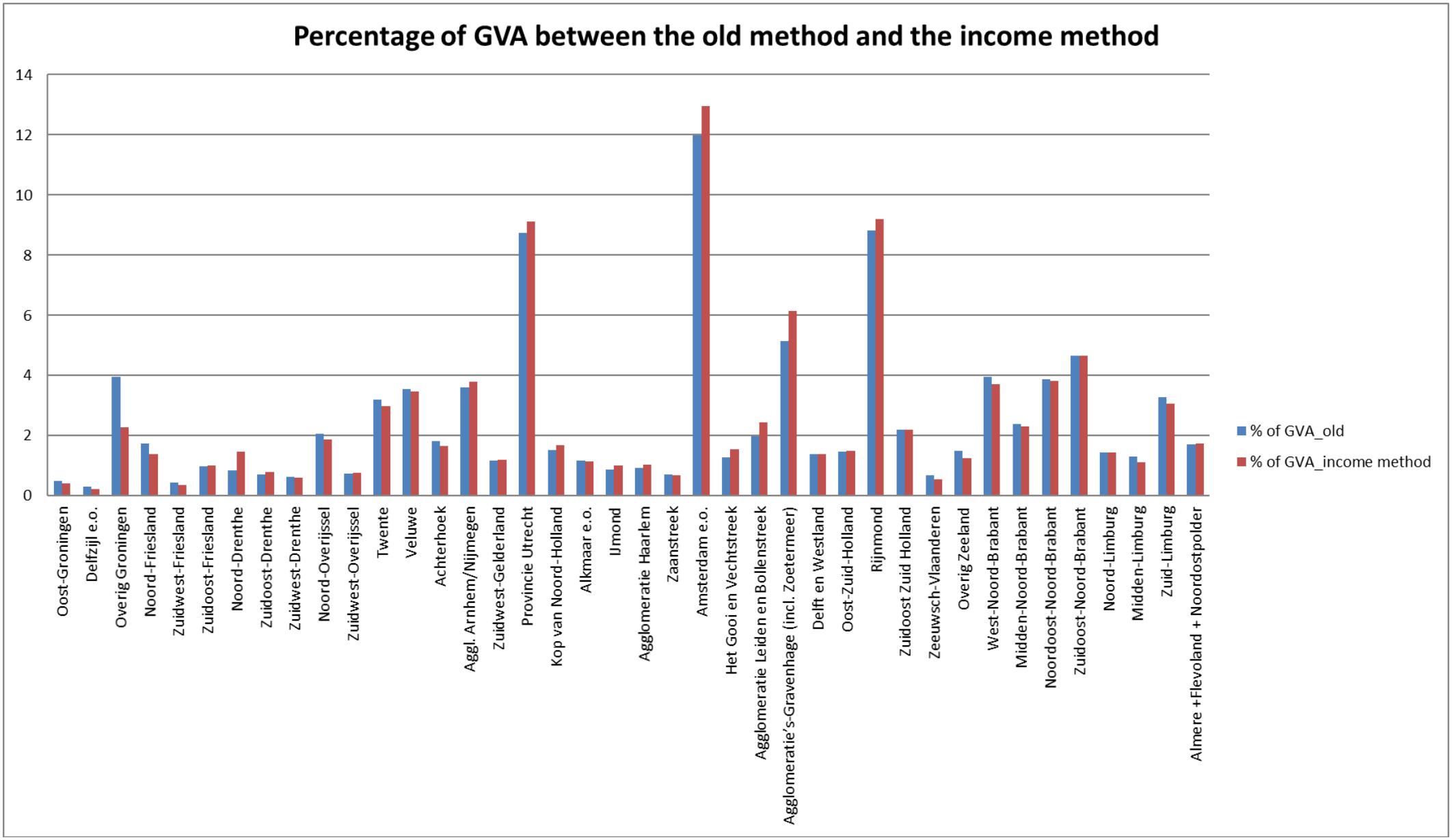
Industry	A-method	B-method	C-method	Description
A Agriculture, forestry and fishing	X	X		This industry consists of a mixture of methods. Commodity totals (national) from the National accounts, additional information from the agricultural census, land use data and the income method are used. The agricultural census is regarded as a very good source. The method for 3 of the 7 subindustries can be regarded as an A-method.
B Mining and quarrying	X	X		Available business statistics are not suitable for the regionalisation of GVA in this industry. However, the production of natural gas and oil is recorded quite well in the annual review 'Oil and gas in the Netherlands'. Furthermore, additional information from the annual report of GasTerra is used (a major Dutch company operating on the European natural gas market). Information on the output, intermediate consumption, gross value added, number of employees and wages is collected from this source. For 2 of the 3 subindustries the income method is used and is regarded as an A-method.
C Manufacturing		X		For a large the income method is used. Regional GVA is compiled bottom-up as much as possible. For three subindustries the production method is used (SBS-data). And for one subindustry (Nace 12000) SBS-data in combination with population development statistics is used.
D Energy supply	X	X		Microdata on production and intermediate consumption of individual power plants is used. This information is gathered through monthly questionnaires sent to the largest power stations, covering around 70 per cent of the yearly production of electricity. The use of information from the powerplants makes the method an A-method. One of the assumptions is that there is no GVA added generated with the trade of energy (due to a lack of information). In the upcomming revision we will investigate this assumption.
E Water supply and waste management		X		The income method is used (see section 3.1).
F Construction		X		The income method is used (see section 3.1).
G Wholesale and retail trade		X		The income method is used (see section 3.1).
H Transportation and storage		X		The income method is used (see section 3.1).
I Accommodation and food serving		X		The income method is used (see section 3.1).
J Information and communication		X		The income method is used (see section 3.1).
K Financial institutions		X		The income method is used (see section 3.1).
L Renting, buying, selling real estate	X	X		One subindustry is estimated with the income method. For another subindustry the total production of a commodity per industry is used (from the S&U tables) and distributed with the regional (total) production for that industry. The last two subindustries use administrative sources (WOZ-waarde). The method that uses the WOZ-waarde is seen as an A-method.
M Other specialised business services		X		The income method is used (see section 3.1).
N Renting and other business support		X		The income method is used (see section 3.1).
O Public administration and services		X		A mixture of the income method, data on labour costs of Dutch embassies (derived from the annual report Ministry of Foreign Affairs), and the number of military on foreign missions (from the Ministry of Defence) is used.
P Education		X		The income method is used (see section 3.1).
Q Health and social work activities		X		The income method is used (see section 3.1).
R Culture, sports and recreation		X		The income method is used (see section 3.1).
S Other service activities		X		The income method is used (see section 3.1).
T Activities of households		X		The income method is used (see section 3.1).

ANNEX 6 AN OVERVIEW OF THE INDUSTRY CLASSIFICATION THAT IS USED FOR PUBLICATION (21 AND 13 INDUSTRY GROUPS)

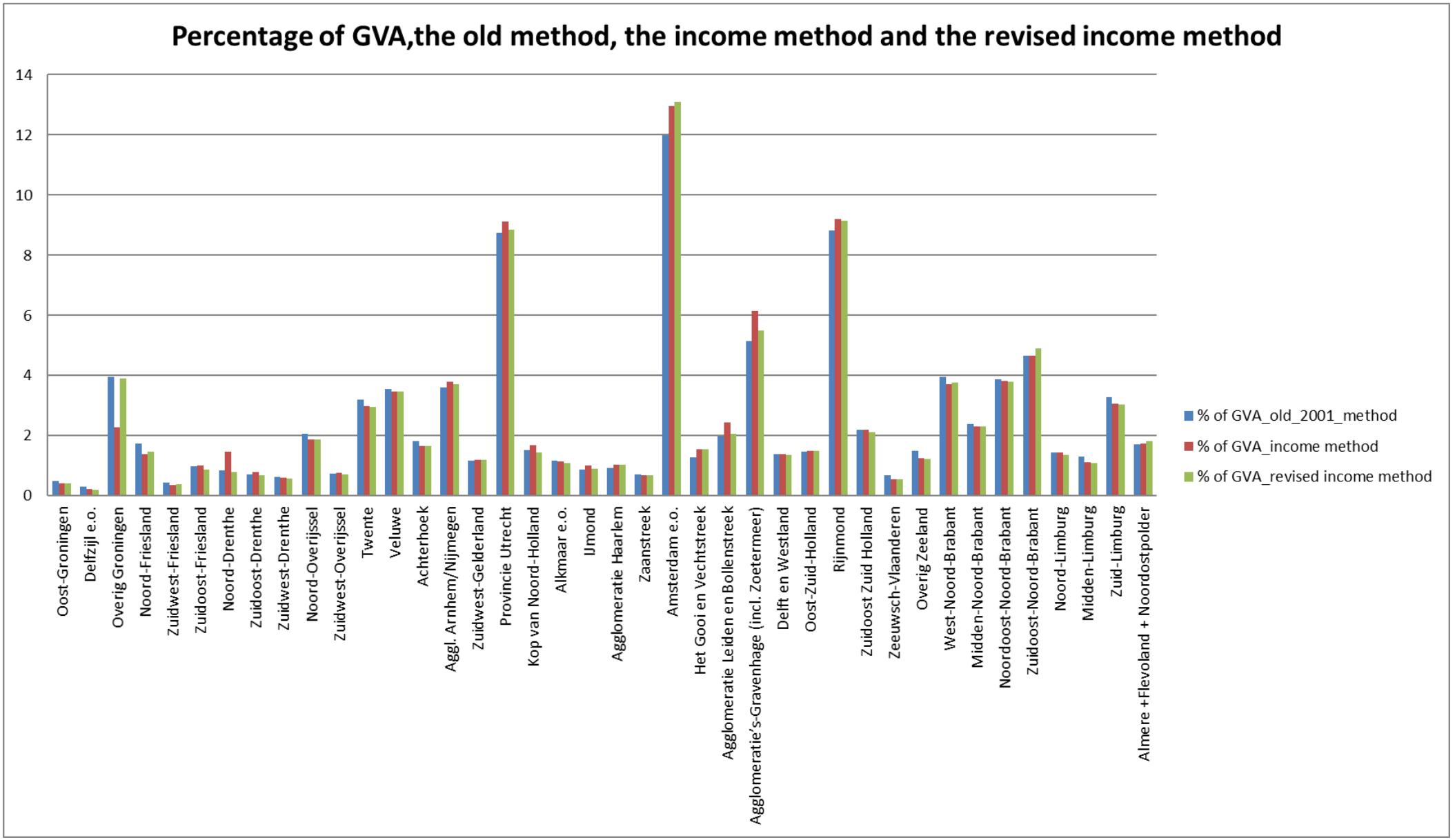
Nace section	Industry
A	Agriculture, forestry and fishing
B	Mining and quarrying
C	Manufacturing
D	Energy supply
E	Water supply and waste management
F	Construction
G	Wholesale and retail trade
H	Transportation and storage
I	Accommodation and food serving
J	Information and communication
K	Financial institutions
L	Renting, buying, selling real estate
M	Other specialised business services
N	Renting and other business support
O	Public administration and services
P	Education
Q	Health and social work activities
R	Culture, sports and recreation
S	Other service activities
T	Activities of households
U	Extraterritorial organisations

Nace section	Industry
A	Agriculture, forestry and fishing
B	Mining and quarrying
C	Manufacturing
D	Energy supply
E	Water supply and waste management
F	Construction
G-I	Trade, transport, hotels, catering
J	Information and communication
K	Financial institutions
L	Renting, buying, selling real estate
M-N	Business services
O-Q	Government and care
R-U	Culture, recreation, other services

ANNEX 7 THE OLD 2001 METHOD VERSUS THE INCOME METHOD



ANNEX 8 THE OLD 2001 METHOD VERSUS THE INCOME METHOD VERSUS THE REVISED INCOME METHOD



ANNEX 9 LEVELS OF GVA 2010, THE OLD 2001 METHOD IN MLN OF EURO, REGION X A21 INDUSTRY

Regions	A-U All economic activities	A Agriculture, forestry and fishing	B-E Industry (no construction), energy	B Mining and quarrying	C Manufacturing	F Construction	G-I Trade, transport, hotels, catering	J Information and communication	K Financial institutions	L Renting, buying, selling real estate	M-N Business services	O-Q Government and care	R-U Culture, recreation, other services
The Netherlands	524120	9367	96966	16109	63879	28021	97586	25205	43679	32222	59867	117784	13423
Oost-Groningen (CR)	2554	73	500	42	419	143	475	17	81	188	236	782	58
Delfzijl e.o. (CR)	1530	39	782	1	271	44	249	6	35	62	65	232	17
Overig Groningen (CR)	20712	224	11543	9640	1085	528	1326	925	561	602	1209	3566	229
Noord-Friesland (CR)	9034	402	1881	689	917	414	1064	322	1032	464	714	2554	188
Zuidwest-Friesland (CR)	2257	154	379	0	362	153	402	32	144	168	199	551	73
Zuidoost-Friesland (CR)	5093	231	931	15	842	413	922	99	237	335	524	1256	144
Noord-Drenthe	4502	129	673	194	360	227	817	75	317	290	408	1438	128
Zuidoost-Drenthe (CR)	3751	156	1155	276	745	279	573	58	126	248	320	749	87
Zuidwest-Drenthe (CR)	3259	89	750	4	552	215	564	53	235	217	282	755	99
Noord-Overijssel (CR)	10756	266	1887	20	1333	830	1916	328	630	626	1098	2950	225
Zuidwest-Overijssel (CR)	3796	96	710	0	647	216	589	252	133	266	482	920	132
Twente (CR)	16695	229	3735	15	3370	1301	2963	498	702	1037	1518	4285	427
Veluwe (CR)	18543	117	2485	5	2262	1321	3473	675	1550	1258	1953	5212	499
Achterhoek (CR)	9502	244	2018	13	1854	732	1873	206	393	718	923	2175	221
Aggl. Arnhem/Nijmegen (CR)	18846	202	2783	55	1949	911	3098	592	1283	1261	2331	5769	616
Zuidwest-Gelderland (CR)	6178	359	846	5	801	491	1602	235	184	449	861	992	159
Utrecht (CR)	45688	299	4124	16	3132	2555	8124	3956	6561	2705	5705	10078	1579
Kop van Noord-Holland (CR)	7998	480	982	49	711	719	1643	106	239	582	648	2401	197
Alkmaar en omgeving (CR)	6096	90	685	39	471	299	1139	301	557	442	597	1802	183
IJmond (CR)	4513	27	1292	30	1057	301	828	61	147	358	479	902	117
Agglomeratie Haarlem (CR)	4888	4	528	1	415	198	821	206	174	510	694	1514	239
Zaanstreek (CR)	3761	21	1043	0	1028	319	687	62	117	278	397	755	81
Groot-Amsterdam (CR)	62815	311	3958	108	2483	1578	14004	4708	13567	3528	9766	10025	1369
Het Gooi en Vechtstreek (CR)	6649	32	546	4	485	224	1441	671	383	678	811	1523	340
Agglomeratie Leiden en Bollenstreek (CR)	10397	222	1520	110	1221	535	2096	289	424	818	1103	3093	297
Agglomeratie 's-Gravenhage (CR)	26949	258	1392	324	767	1079	3266	3992	2535	1564	3805	7953	1106
Delft en Westland (CR)	7243	971	576	0	388	451	1372	263	414	416	1104	1535	142
Oost-Zuid-Holland (CR)	7709	315	907	0	768	635	1727	333	385	546	988	1697	176
Groot-Rijnmond (CR)	46402	621	9283	154	6693	2460	11039	1406	2777	2690	6018	9089	1020
Zuidoost-Zuid-Holland (CR)	11496	117	1977	20	1761	1384	2848	296	397	670	1087	2518	202
Zeeuwsch-Vlaanderen (CR)	3665	122	1550	10	1460	182	615	21	164	180	194	590	45
Overig Zeeland (CR)	7870	284	2344	22	1206	431	1334	110	244	472	574	1892	186
West-Noord-Brabant (CR)	20733	446	5681	36	4503	1175	4448	380	902	1256	1991	4003	452
Midden-Noord-Brabant (CR)	12522	171	2129	5	1960	719	2683	246	854	885	1342	3129	364
Noordoost-Noord-Brabant (CR)	20312	281	4473	13	3237	1428	3744	816	1581	1345	2070	4104	470
Zuidoost-Noord-Brabant (CR)	24435	206	5920	2	5514	1326	4038	1202	1673	1575	3072	4878	544
Noord-Limburg (CR)	7487	434	1422	33	1273	299	1841	110	257	516	734	1687	188
Midden-Limburg (CR)	6788	105	2139	14	1273	389	1135	99	252	409	573	1549	141
Zuid-Limburg (CR)	17173	95	4099	47	3401	708	2825	871	1184	1039	1521	4418	414
Flevoland (CR)	8983	444	1231	0	899	408	1984	326	249	573	1471	2025	270

ANNEX 10 LEVELS OF GVA 2010, THE REVISED INCOME METHOD IN MLN OF EURO, REGION X A21 INDUSTRY

Regions	A-U All economic activities	A Agriculture, forestry and fishing	B-E Industry (no construction), energy	B Mining and quarrying	C Manufacturing	F Construction	G-I Trade, transport, hotels, catering	J Information and communication	K Financial institutions	L Renting, buying, selling real estate	M-N Business services	O-Q Government and care	R-U Culture, recreation, other services
The Netherlands	567757	10828	95149	17283	67024	30531	110472	27843	47722	31599	75234	123746	14633
Oost-Groningen (CR)	2394	105	469	26	415	142	448	11	101	168	245	652	54
Delfzijl en omgeving (CR)	1163	45	359	1	338	40	313	2	37	55	79	219	15
Overig Groningen (CR)	22085	209	12476	10369	1206	601	1344	877	557	560	1299	3893	269
Noord-Friesland (CR)	8367	252	1728	705	807	417	1093	217	900	422	663	2503	172
Zuidwest-Friesland (CR)	2176	89	415	0	409	172	410	24	142	155	231	458	79
Zuidoost-Friesland (CR)	5024	125	909	15	850	368	947	87	235	316	733	1142	162
Noord-Drenthe (CR)	4566	117	649	234	327	246	843	71	256	269	438	1559	117
Zuidoost-Drenthe (CR)	3903	188	1181	304	800	283	575	58	137	225	397	789	71
Zuidwest-Drenthe (CR)	3242	73	635	6	547	240	546	50	226	202	319	879	72
Noord-Overijssel (CR)	10652	242	1637	19	1324	905	1900	290	853	576	1158	2874	216
Zuidwest-Overijssel (CR)	4102	81	776	0	710	261	643	180	179	240	623	1007	113
Twente (CR)	16791	273	3796	12	3569	1365	2958	492	822	977	1874	3837	395
Veluwe (CR)	19728	420	2498	3	2332	1315	3620	786	1669	1214	2328	5364	513
Achterhoek (CR)	9389	283	1994	10	1847	737	1920	201	452	666	881	2067	187
Arnhem/Nijmegen (CR)	21140	200	3324	31	2510	1022	3382	601	1565	1273	2856	6240	677
Zuidwest-Gelderland (CR)	6754	368	845	12	804	528	1740	270	410	440	1094	920	140
Utrecht (CR)	50277	257	3903	17	3384	2724	8995	4522	6274	2813	7907	11212	1670
Kop van Noord-Holland (CR)	8234	505	810	60	706	766	1855	112	506	549	748	2223	159
Alkmaar en omgeving (CR)	6221	86	706	45	470	354	1260	211	610	440	740	1623	190
IJmond (CR)	5107	36	1607	39	1294	336	1014	81	249	345	527	820	93
Agglomeratie Haarlem (CR)	5882	4	662	1	550	208	971	308	446	499	841	1647	295
Zaanstreek (CR)	3887	13	848	0	822	353	851	91	178	276	473	728	76
Groot-Amsterdam (CR)	74315	247	4598	83	3594	1731	18443	6360	12919	3798	12378	11752	2087
Het Gooi en Vechtstreek (CR)	8718	15	771	1	677	256	1697	1527	803	665	1251	1394	340
Agglomeratie Leiden en Bollenstreek (CR)	11684	222	1623	144	1355	567	2283	368	786	780	1575	3199	281
Agglomeratie 's-Gravenhage (CR)	31226	236	1306	293	792	1111	3793	3228	2872	1622	5404	10116	1539
Delft en Westland (CR)	7750	971	762	0	597	457	1575	259	292	412	1302	1570	150
Oost-Zuid-Holland (CR)	8517	379	906	0	754	765	1988	345	534	536	1311	1591	162
Groot-Rijnmond (CR)	51855	730	7154	256	5199	3350	13367	1621	3803	2669	7621	10345	1196
Zuidoost-Zuid-Holland (CR)	12063	74	2187	13	2085	1413	3098	302	574	654	1391	2200	169
Zeeuwsch-Vlaanderen (CR)	3067	162	963	9	926	183	692	22	128	155	201	523	38
Overig Zeeland (CR)	6983	393	1525	9	1005	431	1355	71	311	439	631	1664	163
West-Noord-Brabant (CR)	21422	592	5049	30	4389	1322	4798	437	1174	1176	2421	4046	409
Midden-Noord-Brabant (CR)	13137	294	2169	5	2054	751	3034	166	1144	824	1460	2940	354
Noordoost-Noord-Brabant (CR)	21503	618	4289	13	3809	1597	4113	830	1559	1272	2593	4182	450
Zuidoost-Noord-Brabant (CR)	27877	529	7513	2	7267	1437	4448	1399	1706	1545	3800	4901	598
Noord-Limburg (CR)	7784	639	1565	26	1459	296	1907	122	325	467	752	1526	184
Midden-Limburg (CR)	6198	207	1492	8	1118	382	1194	104	337	372	644	1356	109
Zuid-Limburg (CR)	17187	73	3463	35	3029	678	2878	693	1155	983	2051	4765	447
Flevoland (CR)	10379	478	1142	0	891	418	2181	443	496	549	1994	2456	223

ANNEX 11 DIFFERENCE GVA BETWEEN THE OLD 2001 METHOD AND REVISED INCOME METHOD IN MLN OF EURO (2010), REGION X A21 INDUSTRY [14]

Regions	A-U All economic activities	A Agriculture, forestry and fishing	B-E Industry (no construction), energy	B Mining and quarrying	C Manufacturing	F Construction	G-I Trade, transport, hotels, catering	J Information and communication	K Financial institutions	L Renting, buying, selling real estate	M-N Business services	O-Q Government and care	R-U Culture, recreation, other services
The Netherlands	43637	1461	-1817	1174	3145	2510	12886	2638	4043	-623	15367	5962	1210
Oost-Groningen (CR)	-160	32	-31	-16	-4	-1	-27	-6	20	-20	9	-130	-4
Delfzijl en omgeving (CR)	-367	6	-423	0	67	-4	64	-4	2	-7	14	-13	-2
Overig Groningen (CR)	1373	-15	933	729	121	73	18	-48	-4	-42	90	327	40
Noord-Friesland (CR)	-667	-150	-153	16	-110	3	29	-105	-132	-42	-51	-51	-16
Zuidwest-Friesland (CR)	-81	-65	36	0	47	19	8	-8	-2	-13	32	-93	6
Zuidoost-Friesland (CR)	-69	-106	-22	0	8	-45	25	-12	-2	-19	209	-114	18
Noord-Drenthe (CR)	64	-12	-24	40	-33	19	26	-4	-61	-21	30	121	-11
Zuidoost-Drenthe (CR)	152	32	26	28	55	4	2	0	11	-23	77	40	-16
Zuidwest-Drenthe (CR)	-17	-16	-115	2	-5	25	-18	-3	-9	-15	37	124	-27
Noord-Overijssel (CR)	-104	-24	-250	-1	-9	75	-16	-38	223	-50	60	-76	-9
Zuidwest-Overijssel (CR)	306	-15	66	0	63	45	54	-72	46	-26	141	87	-19
Twente (CR)	96	44	61	-3	199	64	-5	-6	120	-60	356	-448	-32
Veluwe (CR)	1185	303	13	-2	70	-6	147	111	119	-44	375	152	14
Achterhoek (CR)	-113	39	-24	-3	-7	5	47	-5	59	-52	-42	-108	-34
Arnhem/Nijmegen (CR)	2294	-2	541	-24	561	111	284	9	282	12	525	471	61
Zuidwest-Gelderland (CR)	576	9	-1	7	3	37	138	35	226	-9	233	-72	-19
Utrecht (CR)	4589	-42	-221	1	252	169	871	566	-287	108	2202	1134	91
Kop van Noord-Holland (CR)	236	25	-172	11	-5	47	212	6	267	-33	100	-178	-38
Alkmaar en omgeving (CR)	125	-4	21	6	-1	55	121	-90	53	-2	143	-179	7
IJmond (CR)	594	9	315	9	237	35	186	20	102	-13	48	-82	-24
Agglomeratie Haarlem (CR)	994	0	134	0	135	10	150	102	272	-11	147	133	56
Zaanstreek (CR)	126	-8	-195	0	-206	34	164	29	61	-2	76	-27	-5
Groot-Amsterdam (CR)	11500	-64	640	-25	1111	153	4439	1652	-648	270	2612	1727	718
Het Gooi en Vechtstreek (CR)	2069	-17	225	-3	192	32	256	856	420	-13	440	-129	0
Agglomeratie Leiden en Bollenstreek (CR)	1287	0	103	34	134	32	187	79	362	-38	472	106	-16
Agglomeratie 's-Gravenhage (CR)	4277	-22	-86	-31	25	32	527	-764	337	58	1599	2163	433
Delft en Westland (CR)	507	0	186	0	209	6	203	-4	-122	-4	198	35	8
Oost-Zuid-Holland (CR)	808	64	-1	0	-14	130	261	12	149	-10	323	-106	-14
Groot-Rijnmond (CR)	5453	109	-2129	102	-1494	890	2328	215	1026	-21	1603	1256	176
Zuidoost-Zuid-Holland (CR)	567	-43	210	-7	324	29	250	6	177	-16	304	-318	-33
Zeeuwsch-Vlaanderen (CR)	-598	40	-587	-1	-534	1	77	1	-36	-25	7	-67	-7
Overig Zeeland (CR)	-887	109	-819	-13	-201	0	21	-39	67	-33	57	-228	-23
West-Noord-Brabant (CR)	689	146	-632	-6	-114	147	350	57	272	-80	430	43	-43
Midden-Noord-Brabant (CR)	615	123	40	0	94	32	351	-80	290	-61	118	-189	-10
Noordoost-Noord-Brabant (CR)	1191	337	-184	0	572	169	369	14	-22	-73	523	78	-20
Zuidoost-Noord-Brabant (CR)	3442	323	1593	0	1753	111	410	197	33	-30	728	23	54
Noord-Limburg (CR)	297	205	143	-7	186	-3	66	12	68	-49	18	-161	-4
Midden-Limburg (CR)	-590	102	-647	-6	-155	-7	59	5	85	-37	71	-193	-32
Zuid-Limburg (CR)	14	-22	-636	-12	-372	-30	53	-178	-29	-56	530	347	33
Flevoland (CR)	1396	34	-89	0	-8	10	197	117	247	-24	523	431	-47

[14] This includes the effect of the major (benchmark and conceptual) revision of 2010. The total GVA (in basic prices) was adjusted with 43.6 billion euro.

ANNEX 12 DIFFERENCE IN THE PERCENTAGE DISTRIBUTION OF GVA BETWEEN THE REVISED INCOME METHOD AND THE OLD 2001 METHOD, 1995-2011, IN PERCENTAGE POINTS, NUTS2

NUTS2	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Groningen (PV)	-0,4	-0,3	-0,3	-0,2	-0,2	-0,3	-0,2	-0,2	-0,2	-0,2	-0,2	-0,3	-0,3	-0,4	-0,3	-0,2	-0,3
Friesland (PV)	-0,5	-0,4	-0,5	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,3
Drenthe (PV)	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,2
Overijssel (PV)	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,3
Flevoland (PV)	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Gelderland (PV)	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	0,1
Utrecht (PV)	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Noord-Holland (PV)	1,5	1,4	1,5	1,5	1,5	1,5	1,4	1,5	1,4	1,4	1,3	1,4	1,4	1,5	1,4	1,4	1,4
Zuid-Holland (PV)	0,5	0,4	0,4	0,4	0,4	0,4	0,4	0,5	0,5	0,4	0,4	0,5	0,5	0,6	0,7	0,7	0,3
Zeeland (PV)	-0,4	-0,4	-0,4	-0,3	-0,3	-0,3	-0,3	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4
Noord-Brabant (PV)	0,2	0,2	0,1	0,0	0,1	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-0,2	-0,1	0,0
Limburg (PV)	-0,5	-0,5	-0,4	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5	-0,5

ANNEX 13 DIFFERENCE IN THE PERCENTAGE DISTRIBUTION OF COMPENSATION OF EMPLOYEES BETWEEN THE REVISED INCOME METHOD AND THE OLD 2001 METHOD, 1995-2011, IN PERCENTAGE POINTS, NUTS2

NUTS2	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Groningen (PV)	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2	-0,1	-0,1
Friesland (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,2
Drenthe (PV)	0,0	0,0	0,0	0,0	-0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Overijssel (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3
Flevoland (PV)	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Gelderland (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,2
Utrecht (PV)	0,4	0,4	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,2
Noord-Holland (PV)	0,5	0,5	0,5	0,6	0,6	0,6	0,5	0,5	0,5	0,5	0,5	0,4	0,4	0,5	0,4	0,4	0,5
Zuid-Holland (PV)	0,9	0,9	0,9	0,9	0,8	0,8	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,7
Zeeland (PV)	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1
Noord-Brabant (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,2	-0,3	-0,3
Limburg (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,2	-0,2	-0,2	-0,2	-0,2	-0,2

ANNEX 14 DIFFERENCE IN THE PERCENTAGE DISTRIBUTION OF JOBS (FTE) BETWEEN THE REVISED INCOME METHOD AND THE OLD 2001 METHOD, 2001-2011, IN PERCENTAGE POINTS, NUTS2

NUTS2	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Groningen (PV)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Friesland (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,2
Drenthe (PV)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-0,1
Overijssel (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,4	-0,4	-0,3
Flevoland (PV)	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Gelderland (PV)	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,3
Utrecht (PV)	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,2
Noord-Holland (PV)	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,7
Zuid-Holland (PV)	0,8	0,8	0,7	0,7	0,7	0,7	0,8	0,7	0,8	0,7	0,5
Zeeland (PV)	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1
Noord-Brabant (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3
Limburg (PV)	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,3	-0,2	-0,2