

Statistics Sweden  
National Accounts Department

# Regional GVA Inventory Sweden

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# 1 Summary: Overview of the organisation, methodology and sources

Regional accounts are the regional equivalent to a country's national accounts, i.e., national accounts with regional and geographic divisions. Calculations include, aside from Regional Gross Domestic Product (GDPR), Compensation of employees, Gross Fixed Capital Formation and Household's disposable income (all in current prices), and the average number of persons employed. Information about changes in regional volume is compiled and presented as yearly GDPR volume changes at the county level. Employment calculations are an important part of, and support to, the production calculations.

Swedish national and regional accounts are produced according to the EU regulation, ESA 2010 (European System of Accounts), (Council Regulations (EC) No. 549/2013).

## 1.1 Organisation for the statistical process of compiling Regional GVA

The Department of National Accounts at Statistics Sweden consists of five divisions:

- Management
- Coordination of Economic Statistics
- Financial and Sector Accounts
- Product Accounts
- Public Finance and Microsimulations

The Product Accounts unit compile Regional Accounts.

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## **1.2 Overview of the methodology of Regional GVA compilation**

### **1.2.1 Regional territory**

NUTS (Nomenclature des Unités Territoriales Statistiques) is the regional division used by the EU. The NUTS division contains 21 NUTS 3-regions, which correspond to the Swedish counties. The NUTS 2 level is formed by eight regions consisting of aggregates of counties. There are also three NUTS 1 regions consisting of aggregates of NUTS 2. Furthermore, Sweden has 290 municipalities.

Parts of a country's economic territory that cannot be bound to a single region, such as the activities of embassies and consulates, are reported separately under the "Extra-territorial" designation.

### **1.2.2 Statistical unit and residence**

The Swedish economy consists of economic activity undertaken by Swedish units and transactions between Swedish and foreign units.

### **1.2.3 Classifications of industries and sectors**

Regional accounts use the same classification of industry by kind of activity as the National Accounts. The classification is based on SNI 2007 (Swedish Industrial Classification), which is the statistical standard for the classification of production units. The classification is harmonised with NACE Rev. 2 and therefore comparable with the classification applied in the European community. GDP is compiled at the municipal level for 67 industrial aggregates.

The regional accounts are also compiled per type of producer and sector along the following demarcations: total market producers and producers for own final use, general government, households and non-profit institutions serving households.

The regional accounts are reported according to types of transactions in accordance with ESA 2010 (this pertains to households' disposable income).

### **1.2.4 Business register**

The Business Register is a register of enterprises and workplaces in Sweden. Aside from the database containing *all* legal persons, the Business Register also contains the Enterprise Unit (EU), the Kind of activity unit (KAU), the Local Kind of Activity Unit (LKAU) and the Local Unit (LU).

An enterprise in the Business Register is regarded as active if it is VAT registered and/or is an employer with an F-tax registration in an industry with a VAT waiver.

All active enterprises have at least one Local Unit per workplace. Workplace means every address, property or group of properties where enterprises conduct activities.

### **1.2.5 Methods used at the regional level**

*The bottom-up-method* is the most common method for the distribution of value added. The industries that are distributed by this method account for almost 66 percent of the total value added. The bottom-up method is used for calculations of the value added in the industries NACE 05-33 (Mining, quarrying and manufacturing), 38-39 (Waste management and remediation activities), 41-43 (Construction) and the service industries 45-49 (Trade and transportation), 52-63 (Warehousing and support activities for transportation, accommodation and food service activities, communications and information services), 68-96 (Management of real estate, business services, education, health and social work activities et al.). By this method, local kind of activity units will sum up to the regional level, which in next step subsequently sum up to the national total.

*The top-down-method* is used to distribute national figures to regions using some form of indicator. The indicator should be as regionally covariant as possible with the variable to be distributed. The most commonly used indicator is wages and salaries. Those industries, the financial and insurance activities (K64-66), One and two-family houses, secondary homes (L68A) and the industries in the central government and the households and non-profit institutions serving households, that are distributed by this method account for almost 19 percent of the total value added.

Remaining industries are distributed by the *pseudo-top-down-method* or the *pseudo-bottom-up-method*. The pseudo-top-down method is used when regionally distributing national figures based on an indicator from a level other than local kind of activity units. By this method, value added is divided into wages and salaries-dependent and capital-dependent parts. The wages and salaries-dependent part is distributed based on the pattern of regional statistics for wages and salaries. The capital-dependent part is distributed by another indicator that should be as regionally covariant as possible with the capital-dependent part. The pseudo-bottom-up method is applied when local kind of activity unit data is not available but can be estimated based on data from enterprises, local units or kind of activity unit. Estimates can then be calculated by the pure bottom-up-method.

The economic calculations for the industries Agriculture (A01) and Forestry (A02) provide information about value added at the county level from each responsible authority. The capital-dependent and wages and salaries-dependent parts are broken down to obtain

information at the municipal level.

The value added for all industries is compiled at the municipal level. In 2019 there were 290 municipalities in Sweden. For most industries, there is access to statistical information that serves to provide the distribution keys to the lowest regional level (municipality), and it is possible to distribute value added directly to this level. This applies to industries where either a top-down-method or a bottom-up-method is used.

As mentioned earlier, these methods cannot be applied to all industries. The method for Agriculture and Forestry starts at the county level, and this is the level where value added is broken down into the wages and salaries-dependent and capital-dependent parts. Thereafter, a breakdown of both these parts from the county level to the municipal level is done by using wages and salaries figures and agriculture area indicators. Certain activities among the county council authorities are also based on the calculation from the county level, in order to be distributed down the municipal level. The value added for the industries Electricity, Steam and air conditioning and water supply, and Shipping and Air transport companies is broken down into a capital-dependent and wages and salaries-dependent part, which are then distributed municipally by using different indicators.

Regional GVA is reported in four different sectors:

- Total market producers and producers for own final use
- Central government and social security funds
- Local government, i.e. primary municipality and county councils
- Households and non-profit institutions serving households

Total market producers and producers for own final use includes *all* market production. Other sectors are included in non-market production.

For the sectors total market producers and producers for own final use there are activities in all industries. Activity in central government and social security funds, as well as in local government is reported as non-market production, and takes place in nine industrial aggregates. The industrial aggregate Public administration has the greatest value added within the central government and social security funds. The industrial aggregate Health and social work has the greatest value added within the local government sector. The households and non-profit institutions serving households have activities in seven industrial aggregates where Other community, social and personal services activities has the greatest value added.



<b>Table 1. Industrial classification by sector</b>				
	Total market producers and producers for own final use	Central government and social security funds	Local government	Households and non-profit institutions serving households
NACE A01-A03	X	X	X	X
NACE B05-B09	X	X	X	
NACE C10-C33	X	X	X	
NACE D351-E39	X	X		X
NACE F41_43	X	X		X
NACE G45-G47	X			X
NACE H49A-H53	X	X	X	X
NACE I55-I56	X	X	X	X
NACE J58-J63	X	X	X	X
NACE K64-K66	X	X	X	X
NACE L68	X	X		X
NACE M69-M75	X	X	X	X
NACE N78-N82	X	X	X	X
NACE O84		X	X	X
NACE P85	X	X	X	X
NACE Q86-Q88	X	X	X	X
NACE R90-R93	X	X	X	X
NACE S94-S96	X	X	X	X
NACE T97_T98	X			

### 1.3 Main sources used for the compilation of Regional GVA

The sources used in calculating the regional accounts (value added) are collected from several different units within Statistics Sweden. The following main sources are:

- *Gross pay based on income of statements*  
The Income Statement Register is in part used to compile regional wages and salaries figures and in part as an indicator for the distribution of value added for certain industries, mainly service industries. This register is based on administrative material. Income statements are submitted by everyone paying wages and salaries, fees or other compensations or benefits for the taxable income from employment.
- *Structural business statistics*  
The Structural Business Statistics survey is conducted yearly and is a *system* of different statistical surveys. Structural Business Statistics collect information from enterprises in two ways, through questionnaires and through administrative material from the National Tax Board of Sweden.

- *Account summaries*  
Primary municipalities are obligated to submit account summaries that contain a large number of yearly economic information from the primary municipalities' annual reports. All municipalities are included and the information is reported both compiled for the national level and as a key figure for the municipal level.
- *Research and Development statistics*  
In ESA 2010 R&D expenditures are counted as investments, rather than as intermediate consumption, and hence contribute to GDP. This has led to a need for regionalised R&D statistics. For total producers and producers for own final use, statistics are obtained from the business enterprise R&D survey. This survey is based on the Frascati manual and the definition of R&D is considered consistent with the definitions in the national accounts. R&D statistics for the central government is collected from the Swedish National Financial Management Authority (ESV) and expenditures for the local government are found in the account summaries.

The Business Register is a register of enterprises and workplaces in Sweden. Aside from the database containing *all* legal persons, the Business Register also contains the Enterprise Unit (EU), the Kind of activity unit (KAU), the Local Kind of Activity Unit (LKAU) and the Local Unit (LU).

An enterprise in the Business Register is regarded as active if it is VAT registered and/or is an employer with an F-tax registration in an industry with a VAT waiver.

All active enterprises have at least one Local Unit per workplace. Workplace means every address, property or group of properties where enterprises conduct activities.

# 2 Release and publication timetable, revision policy, access for the public

## 2.1 Timetable for release and publication of provisional and final estimates

### 2.1.1 Publication calendar

The regional accounts are disseminated on a yearly basis, usually in December. In year  $t$  the final estimates for year  $t-2$  are compiled and the provisional estimates for year  $t-1$ . Final estimates are hence disseminated with a 24-month time lag and provisional with a lag of 12 months.

Timetables are available at the Statistics Sweden website:

- The date and time for the publication of press releases.
- The date and time when figures will be available in the statistical database.

### 2.1.2 Current revisions

The provisional estimates include Regional Gross Domestic Product (GDPR), the average number of persons employed and wages and salaries figures. In addition to a press release, there is much material in the form of diagrams and graphs in Excel format available at the Statistics Sweden website. Further, figures are published in Statistics Sweden's statistical database, which is available to the public free of charge.

At the time of the publication of the provisional estimates there are many distribution keys available regarding the year  $t$ . On the other hand, there are no definitive annual estimates for national accounts for the year  $t$ , rather the published quarterly figures are used, compiled for the calendar year. Information regarding households' disposable income and gross fixed capital formation are not available from the national accounts at a sufficiently detailed level at that point in time. For this reason, these variables are not included in the provisional publication.

### Publication of final estimates

Aside from information about GDPR, the average number of employed and wages and salaries, there is also published information about GDPR

volume changes at the county level, gross fixed capital information and households' disposable income. The publication of press releases and information on the website and in the database are identical to that of the provisional estimates.

The final estimates are based on figures from the detailed annual estimates for the national accounts that are disseminated in May (t + 17 months).

The provisional estimates are revised upon determining the final estimates for regional accounts by implementing information from the national accounts annual estimates. Revisions of the regional distribution keys can also occur, if new and more accurate regional information is available.

## **2.2 Policy on benchmark revisions**

The revision policy for National Accounts follows the Harmonized European Revision Policy (HERP). In 2020 the National Accounts were thoroughly revised for the full times series 1950-2018 in a benchmark revision. The Regional Accounts were revised accordingly from 2000 onwards.

## **2.3 Comparability over time**

The time series starts in 2000 and it is comparable over time.

## **2.4 Transmission to other international institutions other than Eurostat**

There is no data transmissions to other international organisations.

## **2.5 Accessibility for the public**

A press release and the overview diagrams for the different variables are published at Statistics Sweden's website for regional accounts:

<https://scb.se/en/finding-statistics/statistics-by-subject-area/national-accounts/national-accounts/regional-accounts/>

### **The following tables are published:**

1. Regional Gross Domestic Product by county, change in volume, percent
2. Regional Gross Domestic Product by county, current prices, SEK million(s)
3. Regional Gross Domestic Product per capita and by county, current prices, SEK thousand(s)
4. Regional Gross Domestic Product per employed person by county, current prices, SEK thousand(s)
5. Average population by county, thousands of people
6. Average number of employed by county, thousands of people

7. Wages and salaries figures by county, current prices, SEK million(s)
8. Regional Gross Domestic Product by county and activity, current prices, SEK million(s)
9. Average number of employed by county and activity, thousands of people
10. Wages and salaries figures per county and activity, current prices, SEK million(s)
11. Regional Gross Domestic Product by aggregated counties (NUTS 2) and activity, current prices, SEK million(s)
12. Average number of employed by aggregated counties (NUTS 2) and activity, thousands of people
13. Wages and salaries figures by aggregated counties (NUTS 2) and activity, current prices, SEK million(s)
14. Regional Gross Domestic Product by municipality, current prices, SEK million(s)
15. Regional Gross Domestic Product per capita and by municipality, current prices, SEK thousand(s)
16. Regional Gross Domestic Product per employed person by municipality, current prices, SEK thousand(s)
17. Gross fixed capital formation by aggregated counties (NUTS 2) and activity, current prices, SEK million(s)
18. Disposable income per county, current prices, SEK million(s)
19. Disposable income by county and per capita, current prices, SEK thousand(s)
20. Households' disposable income by county and transaction type, current prices, SEK million(s)
21. Households' disposable income by county, per capita and by transaction type, current prices, SEK thousand(s)

#### **Calculations on a commission basis**

When all calculations, except GDPR volume changes and gross fixed capital formation, are conducted on the municipal level (290 municipalities), statistics are available to be dispensed on a commission basis.

Statistics on the municipal level can be reported for the following variables:

- GDPR divided into aggregated activities
- Total of employed persons and divided by activities
- Total wages and salaries figures and divided by activities
- Total disposable income and per capita

The aggregated activities are:

- Market production, goods (NACE 01-43);
- Market production, services (NACE 45-98);

- Central government authorities and households' non-profit organisations;
- Items not distributed by industry.

These details can be provided for virtually all municipalities. Industrial classifications for a few municipalities cannot be compiled due to reasons of secrecy. We also conduct tailor-made commissions.

## 2.6 Policy for metadata

Metadata describes the content and the technical structure of the data material and is important for the interpretation of its content, possibilities and limitations. There are two kinds of metadata. The formalised (MetaPlus), which can be read simply by various computer programs and the freer method of writing in the form of running text (e.g. Staf), which is meant to be read by people.

Statistics Sweden's metadata system consists of the following.

- *Quality Declaration*

There shall be descriptions of the quality of statistics for all official statistics and these shall be provided for all statistical products in accordance with the Statistics Ordinance. These declarations are accessible at the Statistics Sweden website. The aim is to provide concise information about the quality of the statistics – such as accuracy and relevance - and other basic facts. The declarations serve an important function as a quality declaration when publishing statistics. Documentation is presented in a free-text format, structured by a template common for official statistics.

- *Staf*

A formal description of how statistics is produced – sources and methods.

- *MetaPlus*

MetaPlus is a part of Statistics Sweden's metadata system where mainly variables are listed and described in a structured manner. The variables' value sets and their connections to object type and population are also indicated in MetaPlus.

- *Metadata for aggregated statistics*

The metadata in the diagrams and graphs in Sweden's Statistical Databases (SSD) is another part of the metadata system.

# 3 Methodology for the calculation of regional GVA

## 3.1 Principles applicable to all industries

### 3.1.1 Available sources and information

Statistics Sweden employs administrative data from different agencies and organisations to build up a system of statistical registers. The following registers and sources are important for regional accounts:

- *Gross pay based on income of statements*
- *Structural Business Statistics*
- *Account summaries regarding the economies of primary municipalities*
- *R&D statistics*
- *Business Register*

Aside from these, there are a number of sources dealing with specific industries.

#### **Gross pay based on income of statements**

The Income Statement Register is, in part, used to compile regional wages and salaries figures and, in part, used as an indicator for regional distribution of value added for certain activities, mainly in the service sector. The register is based on administrative data regulated by tax legislation. According to the Law (2001:1227) on self-declaration and income statements, all income statements shall be submitted by those paying wages and salaries, fees and other compensations or benefits that constitute taxable income from employment. Those paying such are also obligated to submit information about the workplace number on the income statement, which means that one can specify amounts to their correct regions. In many respects, the statistics maintain a very high standard of quality because the rate of non-response is so small. The total population for the register for gross wages based on income statements is defined by all income statements submitted to the National Tax Board from employers and income statements regarding payments from public or private insurance systems. The register is further complemented by information from the Structural Business Register about the paying enterprises' institutional sector code and industrial activity and the workplace's industrial activity and municipal code. The statement of income register treats individuals but aggregates information to the enterprise and workplace levels.

### **Structural Business Statistics**

The Structural Business is conducted yearly and is rather t a *system* of various statistical surveys than a separate statistical survey.

Information from many sources, collected at and outside Statistics Sweden, is used together to produce all the statistics reported about Structural Business Statistics target variables.

Because the Structural Business Statistics collect information in two ways, the quality declaration becomes complicated. The variables to be collected through questionnaires can be reviewed for quality and specified. The administrative material from the National Tax board can only be evaluated with regard to plausibility and complemented by the annual reports of enterprises. It is not possible to double-check with the enterprises.

The object of the Structural Business Survey is defined by the enterprise unit, which in most cases coincides with the legal unit or the accounting unit. In exceptional cases, data collection can occur on the corporate group level or through a consolidation of several legal persons. By "enterprise" it is indicated the legal forms of limited company, trading company and limited liability company, sole proprietor, economic association and certain other legal forms that conduct business activities. In cases where an enterprise conducts several business operations, the enterprise is divided into kind of activity units (KAU). If the enterprise conducts operations in many different geographic areas then the enterprise is divided into local kind of activity (LKAU) units according to the geographic distribution. Such a breakdown enables reporting at the institutional (enterprise), functional (activity), and regional (limited geographic) levels. The division of enterprises into kind of activity units and local kind of activity units occurs mainly among enterprises in NACE 10-33 (Manufacturing industry).

The purpose of the Structural Business Statistics is to illuminate the structure of businesses (exclusive of the financial sector), with regard to profitability, growth, development, financing and production. The reporting of the statistics can occur at both the aggregate level and in the form of median and quarterly values. The statistics are shown on a national level, by limited activity level as well as by municipality for certain variables.

### **Account summaries regarding the economies of municipalities**

The primary municipalities are obligated to submit information to the account summary in accordance with statute SCB-FS 2012:2 (Statistics Sweden's guidelines on information for statistics regarding municipalities' annual accounts, Accounts summary). The purpose of the survey is to provide reliable information about municipality economics at the municipal, county council and national levels. The



municipalities' percentage of the Swedish economy is very large. Account summaries are used as a source by national accounts to compile the municipalities percentage of GDP, municipalities financial savings, gross fixed capital formation, transfers and the municipal public service companies operational surplus. Account summaries are a total survey with all primary municipalities, county councils and local government federations included.

Account summaries for municipalities include a large amount of annual economic information from the annual accounts of municipalities. Information is reported both as a national summary and as key figures at the municipal and county council level.

### **Business register**

The Business register functions as a sample framework within economic statistics and also functions as a base register when one collects information about enterprises for other registers or databases at Statistics Sweden. The business register is a register of *all* institutional units (enterprises, organisations, sole proprietorships, trading companies, etc) that conduct some form of economic activity, regardless if they belong to the private or public sector.

### **3.1.2 Use of benchmarks and extrapolation**

Benchmarks and extrapolation are not used for any part of the regional accounts.

### **3.1.3 Treatment of multi-regional enterprises, sources and variables**

The source of multi-regional enterprises is Structural Business Statistics. If the enterprise conducts operations in many different geographic areas then the enterprise is divided into local kind of activity (LKAU) units according to the geographic distribution. Such a breakdown enables reporting at the institutional (enterprise), functional (activity), and regional (limited geographic) levels.

### **3.1.4 Treatment of ancillary activities**

The survey for Structural Business Statistics provides the main source for calculations of regional value added. There is no information on ancillary activities in the Structural Business Statistics delivered to national accounts presented as separate local units, rather it is distributed to the main activity and the region where the enterprise is situated. On the other hand, in the regional accounts, the ancillary activities should contribute to the Gross Value Added (GVA) in the specific region where they are generated. To achieve this, there is a model where ancillary activities are assigned a part of the enterprise's value added. Ancillary activities' percentage of the enterprise's value added is assumed to be the same as the percentage that ancillary activities' wages and salaries have of the enterprises' total gross wages

and salaries. This value added is ascribed to the ancillary activity and subtracted from the rest of local kind of activity units. The subtraction of value added from the local kind of activity units is calculated in proportion to the local kind of activity unit's percentage of the enterprise's total gross wages and salaries.

There is information in the Business Register about whether a unit is an ancillary activity or not. An activity must be regarded as an ancillary activity if it fulfils the following conditions:

- a) It serves only the unit to which it belongs. Goods and services produced may not be sold on the market.
- b) A comparable activity is conducted to a similar extent in similar production units.
- c) It produces services or, in exceptional cases, non-existent goods that are not included in the unit's final product (e.g. minor tools or scaffolds).
- d) It contributes to the unit's running costs, i.e. it generates no gross fixed capital formations.

Statistics Sweden makes no exceptional adaptations regarding ancillary activities for those industries where regional value added is compiled with mixed methods. Value added at the county level is used for Agriculture, forestry and fishing (NACE 01-03). These are distributed to the municipal level by using gross wages and salaries. Statistics Sweden receives figures for value added per county from the Swedish Board of Agriculture and the Swedish Forest Agency. Similar methods are used for industries dealing with Electric power generation, transmission and distribution (NACE 351), Steam and air conditioning supply (NACE 353), Water collection, treatment and supply (NACE E36), Water transport (NACE H50) and Air transport (H51).

### **3.1.5 Treatment of extra-territorial regions**

Sweden's economic territory is unequivocally defined. This consists of:

- The territorial region.
- The extra-territorial regions.

The extra-territorial regions consist of:

1. The national airspace, territorial waters and continental shelf in international water over which the country enjoys exclusive rights.
2. Territorial enclaves, i.e. geographic areas, situated in the rest of the world and used, under international treaties or agreements

- between States, by general government of the country (embassies, consulates, military bases, scientific bases, etc.).
3. Natural resources such as oil, natural gas etc. in international waters outside the continental shelf of the country, worked by resident units.

In Sweden's case, extra-territorial region is defined only by territorial enclaves according to point 2 above, i.e. Sweden's embassies and consulates in other countries.

Sweden's embassies and consulates belong to the industry Public administration (NACE 84) in the Central government sector. When calculating the GDP for extra-territorial region, embassies and consulates achieve a value added in proportion to their percentage of gross wages and salaries in the activity of Public administration in the Central government.

### **3.1.6 Approach to exhaustiveness**

Statistics Sweden's organisation is such that the department for National Accounts, where regional accounts are compiled, do not conduct their own statistical sampling or surveys. The majority of source material and primary statistics for the regional accounts is, thus, produced at other parts of Statistics Sweden and are then delivered to the department for National Accounts. A short description of the main sources and methods used to ensure exhaustiveness follows below.

#### **Gross pay based on income of statements**

The Income Statement Register is based on administrative material as regulated by tax legislation. Income statements *shall* be submitted by those paying an employee's wages and salaries, fee, other compensations or benefits that constitute taxable income from employment in accordance with the Law (2001:1227) on self-declaration and income statements. In many respects the statistics maintain a very high standard of quality because the rate of non-response is so small. The total population for the register for gross pay based on income statements is defined by *all* income statements submitted to the National Tax Board from employers and income statements regarding payments from public or private insurance systems.

#### **Structural Business Statistics**

The part of the survey where information is collected directly from enterprises includes a legal obligation to submit information to Statistics Sweden. The Swedish Code of Statutes (SFS 2001:99 and 2001:100) states that participation in statistical data collection is obligatory.

The other part of the survey is based on administrative material from the National Tax board in the form of tax declaration information from enterprises. Enterprises are obligated to submit information to the National Tax Board for taxation purposes.

- Information is collected directly from the very largest enterprises. These are the biggest enterprises and account for over 35 percent of the total business turnover. Among these enterprises there is no real non-response, because in principle it is possible to recreate the desired information from the enterprises' annual accounts. However, non-response does occur in the material from the National Tax Board. The corresponding rate of non-response amounts to 3.3 percent, weighed by number of employees and turnover. The information source for the common variables is for the majority of enterprises, material submitted to the National Tax Board..
- *Imputation* for the part of the survey conducted through questionnaires is required for only certain variables, since most can be found in the official annual accounts and be collected from there if the completed questionnaire does not arrive. Imputations, primarily from the structure of the enterprises values submitted for the previous year, are primarily used for those variables that cannot be collected in such a way. For example, if the number of employees is missing at the local kind of activity units' level, then information about the number of employees from the Business Register is used instead.

#### **Account summaries regarding the economies of primary municipalities**

The primary municipalities are obligated to submit information to this statistical survey in accordance with statute SCB-FS 2012:2 (Statistics Sweden's guidelines on information for statistics regarding municipalities' annual accounts, Accounts summary). Account summaries are a total survey with all primary municipalities included.

#### **Business Register**

The Business Register is a register of all institutional units (enterprises, organisations, sole proprietors, trading companies etc.) that conduct some form of economic activity, regardless of whether they belong to the private or to the public sector. The register is used for drawing samples.

#### **The hidden economy**

In National Accounts there is an added part for the hidden economy/black market to ensure exhaustiveness. The assessment of the

size of the hidden economy was recently updated in the National Accounts benchmark revision in 2019.

We assume that the percentage of black market production for a given industry is distributed uniformly across the country, thus, the same regional distribution keys are used as for any production.

### **3.1.7 Calculation of Financial Intermediation Services Indirectly Measured (FISIM) by user industries**

Many financial intermediation services are not paid for by fees but rather by keeping interest rates for deposits lower than interest rates for lending. FISIM is calculated as the interest rate for lending minus the interest rate for deposits, or the net interest rate. Presently FISIM are distributed among different users as well as among different activities in market production, household consumption, government consumption and the rest of the world.

The statistics for the loan reserves and deposits are used to determine the distribution of FISIM by different industries. At the regional level there are no such statistics. Instead an assumption is made that the FISIM are proportionally distributed by activity and region. This means that distribution keys are used that apply to each activity's value added *except* FISIM.

### **3.1.8 Adjustments for commuting**

Sweden has no need to, on the basis of commuting, to adjust the number of employed in different regions, nor to adjust the GDP per employed person. There is information in regional reports for Swedish employment statistics about employment grouped by what region the workplace is in (day-time population) as well as what region the employed have their dwellings situated in (night-time population). When calculating the GDP per employed person, one has information about the number of employed persons in the region where production occurs. Thus, no adjustment to the number of employed persons is needed with regard to commuting.

The source for the distribution of the number of employed by activity and municipality is the Register-based labour market statistics. In this survey regional reports can be made for the number of employed persons by workplace location (day-time population), as well as dwelling location (night-time population).

Information for the production of Register-based labour market statistics is collected from the tax administrative income statements and standardised accounting statements. There is a legal obligation to submit information for these registers, in accordance with the Tax procedure and Tax Administration Act. Basic information in the survey is information about individuals' employment and information

associated with such. The survey is based on administrative material and has the advantage of being a total calculation not limited by non-response.

### **3.1.9 Transition from GVA to GDP**

Gross production is valued at base price. Products used for intermediate consumption are valued at recipient prices, i.e. the prices that apply when they are used in the production process. A result of this is that the value added for each industry is valued at the base price.

A product's base price equals the sum of costs for the goods and services used and the compensation for the production factors that are needed to make the product. The base price does *not* include those product taxes and product subsidies that are levied or granted for the products. The reason for this is that the product taxes and product subsidies cannot be distributed by industry. However, the base price does include those other taxes and subsidies that are connected to the product, as production unit, and so they can be distributed by industry.

Gross Regional Product (GDPR) is the regional equivalent of Gross Domestic Product (GDP). The value added at base price for each industry is the starting point when compiling GDPR. Net product taxes, i.e. the difference between product taxes and product subsidies, are distributed regionally in relation to the size of value added for market producers for each region. The total of a region's value added at base price and that region's percentage of net product taxes defines the region's GDPR at market price. Sweden's GDP is equal to the total of GDPR at market price for all regions in Sweden (including extra-territorial region).

### **3.1.10 Method used for the compilation of regional GDP per capita**

There is no explicit compilation of regional GDP per capita.

## **3.2 Specific methods for compiling regional GVA**

Regional value added is compiled for the sectors Total market producers and producers for own final use, Central government, Local government and Households and non-profit institutions serving households. Compilations are done by activity, for the 67 industrial aggregates in those sectors where they occur. All compilations are conducted with regard to the most detailed regional level, which is the municipal level.

Sweden's total value added amounted to SEK 4 101 billion in 2017, distributed over Total market producers and producers for own final use with 78 percent, Central government (including social security funds) 6 percent, Local governments 14 percent, and Households and non-profit institutions serving households 1 percent.

The largest industrial aggregates in Total market producers are Manufacturing (NACE 10-33) followed by Trade (NACE 45-47), with approximately 15 percent and 11 percent each of the total Swedish value added for 2017. Public administration and defence (NACE 84), within Central government, accounts for 3 percent of the total value added. Health and social work (NACE 86-88) makes up the largest industry among Local government, with 8 percent of the total value added.

**Table 2. Gross value added (GVA) per sector and activity 2017, million SEK**

<i>Sector, activity</i>	<i>GVA</i>	
	<i>Million SEK</i>	<i>Percent</i>
<b>Total market producers and producers for own final use</b>	<b>3215117</b>	<b>78</b>
A, 01-03	66728	2
B, 05-09	25535	1
C, 10-33	603368	15
D, 351-353	91806	2
E, 36-39	25404	1
F, 41-43	277343	7
G, 45-47	444909	11
H, 49-53	172830	4
I, 55-56	73356	2
J, 58-63	289939	7
K, 64-66	167794	4
L, 68	341302	8
M, 69-75	266170	6
N, 77-82	149846	4
P, 85	42040	1
Q, 86-88	111982	3
R, 90-93	28662	1
S, 94-96	34083	1
T, 97-98	2020	0
<b>Central government incl. social security funds</b>	<b>247606</b>	<b>6</b>
H, 49-53	29079	1
K, 64-66	134	0
M, 69-75	52718	1
O, 84	126043	3
P, 85	27669	1
Q, 86-88	9247	0
R, 90-93	2707	0
S, 94-96	9	0
<b>Local government</b>	<b>583921</b>	<b>14</b>
H, 49-53	11836	0
M, 69-75	6013	0

N, 77-82	234	0
O, 84	75115	2
P, 85	152549	4
Q, 86-88	323593	8
R, 90-93	14581	0
<b>Households and non-profit institutions serving households</b>	<b>54002</b>	<b>1</b>
L, 68	810	0
M, 69-75	476	0
P, 85	8339	0
Q, 86-88	4223	0
R, 90-93	8015	0
S, 94-96	32139	1
<b>Gross value added, total</b>	<b>4100646</b>	
		<b>100</b>

Table 3 offers a summary of the sources used for the compilation of value added for industry level A21, a one letter code according to Swedish Standard Industrial Classification 2007, SNI 2007 (21 industries). The majority of industry levels use the same source for compiling value added at both the county and municipal levels.

**Table 3. Sources by sector and activity**

<i>Sector, activity</i>	<i>Region</i>	<i>Source</i>
<b>Total market producers and producers for own final use</b>		
Section A, NACE 01	NUTS 3, County	Economic compilations for agricultural sector
	Municipality	Gross pay based on income statements
	Municipality	Agriculture statistics, arable area
	NUTS 3, County	R&D statistics
Section A, NACE 02	NUTS 3, County	Economic compilation for forestry sector
	Municipality	Gross pay based on income statements
	NUTS 3, County	R&D statistics
Section A, NACE 03	NUTS 3, County	Fisherie statistics
	Municipality	Register-based labor statistics
	NUTS 3, County	R&D statistics
	Municipality	Structural Business statistics
Section B-C, NACE 05-33	NUTS 3, County	R&D statistics
	Municipality	Energy statistics
Section D, NACE 351, 353	Municipality	Gross pay based on income statements
	Municipality	Power grid enterprises' earning statements
	NUTS 3, County	R&D statistics
	Municipality	Energy statistics
Section D, NACE 352	Municipality	Energy statistics



	NUTS 3, County	R&D statistics
Section E, NACE 36	Municipality	Water and sewage statistics
	Municipality	Municipal accounts summary
	Municipality	Gross pay based on income statements
Section E, NACE 37-39	NUTS 3, County	R&D statistics
	Municipality	Structural Business statistics
Section F, NACE 41-43	NUTS 3, County	R&D statistics
	Municipality	Structural Business statistics
Section G, NACE 45-47	NUTS 3, County	R&D statistics
	Municipality	Structural Business statistics
Section H, NACE 49, 52-53	NUTS 3, County	R&D statistics
	Municipality	Structural Business statistics
Section H, NACE 50	NUTS 3, County	R&D statistics
	Municipality	Water transport statistics
	Municipality	Gross pay based on income statements
Section H, NACE 51	NUTS 3, County	R&D statistics
	Municipality	Air traffic statistics
	Municipality	Gross pay based on income statements
Section I, NACE 55-56	NUTS 3, County	R&D statistics
	Municipality	Structural Business statistics
Section J, NACE 58-63	NUTS 3, County	R&D statistics
	Municipality	Structural Business statistics
Section K, NACE 64-66	NUTS 3, County	R&D statistics
Section L, NACE part of 68.2	Municipality	Gross pay based on income statements
Section L, NACE 68.1, 68.3 and part of 68.2	Municipality	Taxation value
Section M, NACE 69-75	Municipality	Structural Business statistics
	NUTS 3, County	R&D statistics
Section N, NACE 77-82	Municipality	Structural Business statistics
	NUTS 3, County	R&D statistics
Section P, NACE 85	Municipality	Structural Business statistics
	NUTS 3, County	R&D statistics
Section Q, NACE 86-88	Municipality	Structural Business statistics
	NUTS 3, County	R&D statistics
Section R, NACE 90-93	Municipality	Structural Business statistics
	NUTS 3, County	R&D statistics
Section S, NACE 94-96	Municipality	Structural Business statistics
	NUTS 3, County	R&D statistics
Section T, NACE 97-98	Municipality	Assistance allowance from social insurance

**Central government incl. social security funds**

Section H, NACE 49-53	Municipality	Gross pay based on income statements
Section K, NACE 64-66	Municipality	Gross pay based on income statements
Section M, NACE 69-75	Municipality	Gross pay based on income statements
Section O, NACE 84	Municipality	Gross pay based on income statements
Section P, NACE 85	Municipality	Gross pay based on income statements
Section Q, NACE 86-88	Municipality	Gross pay based on income statements
Section R, NACE 90-93	Municipality	Gross pay based on income statements
Section S, NACE 94-96	Municipality	Gross pay based on income statements

**Local government**

Section H, NACE 49-53	Municipality	Primary municipality accounts summary
	Municipality	County council accounts summary
	Municipality	Economic reports from municipal organisations
	Municipality	Gross pay based on income statements
Section M, NACE 69-75	Municipality	Primary municipality accounts summary
	Municipality	County council accounts summary
	Municipality	Economic reports from municipal organisations
	Municipality	Gross pay based on income statements
Section N, NACE 77-82	Municipality	Primary municipality accounts summary
	Municipality	County council accounts summary
	Municipality	Economic reports from municipal organisations
	Municipality	Gross pay based on income statements
Section O, NACE 84	Municipality	Primary municipality accounts summary
	Municipality	County council accounts summary
	Municipality	Economic reports from municipal organisations
	Municipality	Gross pay based on income statements
Section P, NACE 85	Municipality	Primary municipality accounts summary
	Municipality	County council accounts summary
	Municipality	Economic reports from municipal organisations
	Municipality	Gross pay based on income statements
Section Q, NACE 86-88	Municipality	Primary municipality accounts summary
	Municipality	County council accounts summary
	Municipality	Economic reports from municipal organisations
	Municipality	Gross pay based on income statements
Section R, 90-93	Municipality	Primary municipality accounts summary
	Municipality	County council accounts summary
	Municipality	Economic reports from municipal organisations
	Municipality	Gross pay based on income statements

**Households and non-profit institutions serving households**

Section L, NACE 68	Municipality	Gross pay based on income statements
Section M, NACE 69-75	Municipality	Gross pay based on income statements
Section P, NACE 85	Municipality	Gross pay based on income statements
Section Q, NACE 86-88	Municipality	Gross pay based on income statements
Section R, NACE 90-93	Municipality	Gross pay based on income statements
Section S, NACE 94-96	Municipality	Gross pay based on income statements

### **3.2.1. Agriculture, forestry and fishing (A)**

Compilations for the industries Agriculture and Forestry are quite similar. Information regarding value added at the county level is collected from the Swedish Board of Agriculture and the Swedish Forest Agency. The so-called pseudo-top-down method is used for both Agriculture and Forestry, where the distribution at the municipal level occurs by means of arable acreage (capital-dependent part) and gross pay (wages and salaries-dependent part) for each industry.

#### **Agriculture, hunting (A01)**

Value added at base price is compiled at the county level by the Swedish Board of Agriculture, in accordance with an agreement with the EU. The breakdown to the municipal level is achieved by dividing the county-level value added into a capital-dependent part and a wages and salaries-dependent part.

The wages and salaries dependent part is defined, in accordance with the national accounts, as wages and salaries and collective fees and the national account's total information for the national level is distributed across municipalities by using the statement of income register as a distribution key. The statement of income register is produced by Statistics Sweden by commission from the National Mediation Office.

The distribution of the capital-dependent part at the county level is primarily based on statistics from the Board of Agriculture and is then distributed to the municipal level by using statistics for arable and grazing acreage as an indicator. The municipal-level total for the wages and salaries-dependent and capital-dependent-parts gives the value added per municipality.

#### **Forestry (A02)**

Forestry gross value added is distributed according to the same principle as agriculture. County-level value added is collected from the Swedish Forest Agency. The breakdown to the municipal level is then done by dividing the county-level value added into a capital-dependent part and a wages and salaries-dependent part.

The wages and salaries dependent part is defined as wages and salaries and collective fees in accordance with national accounts, and the national account's total information for the national level is distributed at the municipalities by using the statement of wages and salaries register as a distribution key.

The distribution of the capital-dependent part at the county level is primarily based on statistics from the Swedish Forest Agency and is then distributed to the municipal level by using statistics for forest acreage as an indicator. The municipal-level total for the wages and salaries-dependent and capital-dependent-parts gives the value added per municipality.

### **Fishing and aquaculture (A03)**

Fishing and aquaculture (NACE 03) is, presently, a very small industry in Sweden and is also fairly difficult to distribute regionally, hence the pseudo-top-down method is used. The regional compilations for the fishing industry are primarily based on source material from the National Board of Fisheries and Statistics Sweden's employment statistics.

The compilation is divided into three areas: sea fisheries, freshwater fisheries, and aquaculture. The National Board of Fisheries provides information for sea fisheries as well as for freshwater fisheries, about value, in current prices, and quantities (in tonnes) for fish brought to market (landed catches), with a detailed division of types of fish and a rough distribution over geographic areas. Statistics for aquaculture come from the Board of Fisheries about the number of fish farms per county and the national figures for production's sale value.

Production value at the county level for sea fisheries, freshwater fisheries and aquaculture can be calculated by using the National Board of Fisheries information. These three categories are totalled at the county level so that production figures for the total fishing industry divided into counties can be obtained. By combining this information with statistics about employment in fisheries per municipality the production value at the municipal level can be calculated. It is assumed that the value added has the same regional (municipal) distribution as the production value.

### **3.2.2 Mining and quarrying, Section B, (NACE 05-09) and Manufacturing, Section C, (NACE 10-33)**

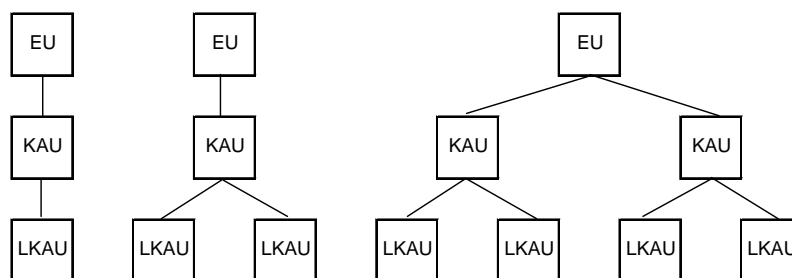
A bottom-up method is applied for the Mining and quarrying (NACE 05-09) industries and Manufacturing (NACE 10-33) and the Structural Business Statistics survey is used as a source for compiling regional value added.

The Structural Business Statistics survey is conducted annually and is rather a *system* of different statistical surveys than as a separate statistical survey. Information from many sources, collected at and outside Statistics Sweden, is used together to produce all the statistics reported about Structural Business Statistics target variables. The target population includes all enterprises that have conducted business activities during the reference year, except for financial enterprises. The main source for base variables is the national Tax Board' standardised accounting statements. This material consists of tax declaration information from enterprises that are legally obligated to submit to the National Tax Board for taxation purposes. Information is collected directly from the approximately 500 largest enterprises and here as well there is a legal obligation to submit information to Statistics Sweden.

Structural Business Statistics are the main source for the statistics that are regulated in the EU regulation "Council Regulation No 58/97 Concerning Structural Business Statistics" and they therefore conform to that regulation.

The starting point for compiling regional values is the kind of activity unit. Many enterprises (or enterprise units) have only one activity, but there are a number of enterprises that are distributed over many kind of activity units. These, in turn, can consist of many local kind of activity units. An overview of the different types of enterprise structures are summarised here.

**Diagram 1. Overview of different enterprise structures**



EU= Enterprise unit  
 KAU= Kind of activity unit  
 LKAU= Local kind of activity unit

The value of the kind of activity unit is the starting point for compiling the values for the, or those, local kind of activity units. The method of compilation is the following.

- Step 1. For the industries' kind of activity units, in those cases where all local kind of activity units belong to the same industry, a distribution of workplaces is done by using the number of employees from the Business Register.
- Step 2. Turnover per employee is calculated for every three-digit NACE industry for enterprises with kind of activity units with more than one industry. Then the number of employees per local kind of activity unit is multiplied by the industry average regarding turnover per employee for the relevant industry of the local kind of activity unit. In such a manner we can derive a fictional turnover for each local kind of activity unit.
- Step 3. All fictional turnover figures for local kind of activity units are totalled at the kind of activity unit level.
- Step 4. Every local kind of activity unit's percentage of fictional turnover is calculated from the entire kind of activity

unit's fictional turnover. This percentage is multiplied by the kind of activity unit's actual turnover.

### **3.2.3 Electricity, gas, steam and air conditioning supply, Section D**

Electric power generation, transmission and distribution (*NACE 35.1*), Steam and air conditioning supply (*NACE 35.3*)

Electric power generation, transmission and distribution (*NACE 35.1*) and Steam and air conditioning supply (*NACE 35.3*) are capital-intensive industries. Regional compilations of these industries have a division of value added into a capital-dependent part and a wages and salaries-dependent part. The wages and salaries-dependent part is defined as wages and salaries and collective fees in accordance with national accounts. The capital-dependent part is compiled residually, i.e. compiled as the difference between the value added (as base price) and the wages and salaries-dependent part. At the national level the capital-dependent part is significantly larger than the wages and salaries-dependent part for both industries.

The purpose of dividing value added into capital-dependent and wages and salaries-dependent parts is that these parts will be regionally distributed according to different patterns. A regional division, down to the municipal level, is done for both of these parts. The wages and salaries-dependent part of value added is distributed at the municipal level by using the statement of income register. The national figure in national accounts for wages and salaries and collective fees is distributed to the country's municipalities by using the statement of income register as a distribution key.

The distribution of the capital-dependent part at the municipal level is mostly based on energy statistics from Statistics Sweden. The statistical source contains information about electricity production, including electricity trading and power grid activities, and steam and hot water supply production expressed in monetary terms. These production figures are distributed at the municipal level, a distribution done with the municipalities that local kind of activity units belong to as a starting point. The wages and salaries-dependent part of the value added is then subtracted from these production figures for each municipality. This is how we obtain a distribution key for the capital-dependent part of the value added. The distribution key is then applied to the value added's capital-dependent part *at the national level*, this is the difference at the national level between the value added at base price and the wages and salaries-dependent part. Thus we can express the capital-dependent part per municipality.

The municipal distribution key for value added is then obtained by simply, municipality by municipality, adding together the capital-dependent part to municipality wages and salaries-dependent part.

*Manufacture of gas; distribution of gaseous fuels through mains (NACE 35.2)*

The Manufacture of gas; distribution of gaseous fuels through mains (NACE 35.2) industry is of limited dimensions in Sweden. The industry primarily comprises natural gas and gasworks' gas. The source material is the Structural business statistics.

#### **3.2.4 Water supply; sewerage, waste management and remediation activities, Section E**

*Water collection, treatment and supply (NACE 36)*

The source material of Water supply and sewerage is, in part, made up of account summaries of the primary municipalities and, in part, the Structural Business Statistics survey from Statistics Sweden.

The account summary provides information about gross income for each municipality for the part of this industry managed under municipal authority, whether as a municipal business activity or a municipal company.

Statistics Sweden's Structural Business Statistics survey covers the part of the industry managed as a private company. This concerns statistics about turnover at the enterprise level. This turnover is then distributed to the enterprises' different workplaces in proportion to the number of employees at these workplaces. Because the workplaces are part of municipalities, a municipal distribution is obtained for private enterprises.

A regional and municipal distribution key for gross income and turnover is produced by adding up each municipality's municipal part's gross income and the private enterprises' turnover. The distribution key is assumed to be applicable for value added also.

*Sewerage, waste collection, treatment and disposal activities; materials recovery, remediation activities and other waste management services (NACE 37\_39)*

The source material is the Structural business statistics.

#### **3.2.5 Transportation and storage, (NACE H)**

Industries NACE 50 and NACE 51 use the Statement of income register as a distribution variable. NACE 50 and NACE 51 are divided into capital-dependent and wages and salaries-dependent parts and are

distributed by means of information about goods and passengers transported as well as income statements.

#### *Water transport (NACE 50)*

Regional compilations of the Water transport industry (NACE 50) use a pseudo-top-down-method. The value added is divided into a capital-dependent part and a wages and salaries-dependent part. The wages and salaries-dependent part is defined as wages and salaries and collective fees in accordance with national accounts. The capital-dependent part is calculated residually, which means that the difference between an industry's total value added, at base price, and the wages and salaries-dependent part. The division of value added into capital-dependent and wages and salaries-dependent parts is done so that these two parts can be regionally distributed in accordance with different patterns. The regional distribution is continued on to the municipal level.

The wages and salaries-dependent part of the value added is distributed among the country's municipalities by using Statement of income register as a distribution key. This means that the wages and salaries-dependent part of the value added is allocated to the municipalities where people are employed.

The municipal distribution of the capital-dependent part of the value added is considerably more complicated. The first step is to divide the industry's *production value* into two parts – the transport of goods and the transport of passengers. Such a division is not possible for the value added, which means that we instead begin with production value.

The next step is to municipally distribute the production value of the transport of goods and the transport of passengers each separately. That these parts are kept separate from one another is due to their being municipally distributed according to different patterns. The municipal distribution key for transport of goods consists of statistics from the Ports of Sweden, about the amount of goods handled, expressed in tonnes, from different ports around the country. The transport of passengers' part gets a municipal distribution from statistics about the number of arriving and departing passengers from the country's different ports. These statistics are also provided by Ports of Sweden.

A weighted municipal distribution key for the industry's entire production is produced by having each municipality total the production value for the transport of goods and the transport of passengers.

We then assume that the municipal distribution key for the production value of the transport of goods and passengers can also be used for the



capital-dependent part of the *value added*. The national figure for value added of the capital-dependent part is, thus, distributed to the municipalities according to this distribution key.

Finally, the municipal distribution key is created for the *entire* value added, i.e. the wages and salaries-dependent part and the capital-dependent part, by quite simply totalling the value added for the capital-dependent part and the wages and salaries-dependent part of each municipality.

#### *Air transport (NACE 51)*

As was the case with Water transport, the Air transport industry will be compiled using the Pseudo-top-down-method. During the compilations for the Air transport (NACE 51) industry a division of value added is made into capital-dependent and wages and salaries-dependent parts. The wages and salaries-dependent part is defined as wages and salaries and collective fees in accordance with national accounts. The capital-dependent part is calculated residually, which means that the difference between an industry's total value added, at base price, and the wages and salaries-dependent part. The division of value added into capital-dependent and wages and salaries-dependent parts is done so that these two parts can be regionally distributed in accordance with different patterns. The regional distribution is continued on to the municipal level.

The wages and salaries-dependent part of the value added is distributed among the country's municipalities by using Statement of income register as a distribution key. This means that the wages and salaries-dependent part of the value added is allocated to the municipalities where people are employed.

The municipal distribution of the capital-dependent part of the value added is considerably more complicated. The first step is to divide the industry's *production value* into three parts – the transport of goods, the transport of passengers, and "other". Such a division is not possible for the value added, which means that we instead begin with production value.

The next step is to municipally distribute each of the production value's three parts separately. These parts are held separate from one another, the transport of goods, transport of passengers, and "other", due to the municipal distributions following different patterns. The municipal distribution key for the transport of goods part consists of statistics from the State enterprise and the Swedish Civil Aviation Authority regarding the amount of freighted goods and post, expressed in tonnes, handled at different airports in the country. The distribution at the municipal level for the transport of passengers is done using information about the number of arriving and departing passengers

from the country's airports. These statistics are also provided by the State enterprise and the Swedish Civil Aviation Authority. The municipal distribution of "other" is based on statistics on landing frequency, or the number of landings, at the country's different airports. These statistics are also provided by State enterprise and the Swedish Civil Aviation Authority.

A weighted municipal distribution key results from having each municipality total from the three parts of the production value (transport of goods, transport of passengers and "other").

We then assume that the municipal distribution key for the production value can be used for the capital-dependent part of the *value added*. The national figure for value added of the capital-dependent part is, thus, distributed to the municipalities according to this distribution key.

Finally, the municipal distribution key is created for the *entire* value added, i.e. the wages and salaries-dependent part and the capital-dependent part, by quite simply totalling the value added for the capital-dependent part and the wages and salaries-dependent part of each municipality.

### **3.2.6 Financial and insurance activities, Section K, (NACE 64-66)**

The Statement of income register is used as an indicator for the distribution of value added, using a top-down-method. These statistics provide information about all wages and salaries amounts by industry, sector and region.

### **3.2.7 Real estate activities, Section L, (NACE L68)**

All these industries except Own homes and secondary residences (part of NACE L68.2) are distributed using the Structural Business Statistics. The industry One and two-family houses and leisure houses is distributed using the taxation value as an indicator.

#### *Own homes and secondary residences (part of NACE L68.2)*

The taxation values on real estate are used as an indicator for the distribution of the "Own homes and secondary residences" industry at the regional level, using a top-down-method. Public real estate tax assessment is conducted at a six year interval for each form of real estate. The real estate form "One and two family houses" is especially relevant for these purposes. This real estate form further distinguishes between year-round residences and leisure homes. Real estate assessment has certain value factors as a starting point. Value factors are qualities associated with the real estate of significance for market value. The basis for public real estate assessment is in part tax declarations regarding the real estate's size and quality and in part value areas so determined that relative values in a given area are similar to one another. The entire country is divided into value areas

for buildings and types of ownership that shall be assessed according to target value indicators. Every value area has a defined value level that is dependent on the market value level in the area.

A system was introduced in 2003 to simplify real estate assessments every sixth year in between the public real estate assessments. This means that a new assessment is determined every third year. Special real estate assessments are done each year and are determined by last year's assessment as long as no new taxes are enacted. A new assessment shall, for example, occur in the event of new construction or remodelling of the property or a change in the type of assessment unit.

Statistics Sweden is tasked with developing and publishing results from the public, simplified and special real estate assessments. A real estate tax register is produced at Statistics Sweden for these purposes. No later than 31 October during a given tax year, the National Tax Board sends the information needed to Statistics Sweden. The information is processed by Statistics Sweden and stored in a database, the Real estate tax assessment register, which contains information about the all of the country's taxation and assessment units.

*Other real estate management (NACE 68.1 and 68.3 and part of NACE L68.2)*

A bottom-up method is applied for other real estate management and the Structural Business Statistics is used as a source for compiling regional value added.

### **3.2.8 Education, Section P (NACE 85)**

The Statement of income register is used as an indicator for the distribution of value added, using the top-down-method. These statistics provide information about all wages and salaries amounts by industry, sector and region.

### **3.2.9 Human health and social work activities, Section Q, (NACE 86)**

The Statement of income register is used as an indicator for the distribution of value added, using the top-down-method. These statistics provide information about all wages and salaries amounts by industry, sector and region.

### **3.2.10 Arts, entertainment and recreation, Section R, (NACE 90-93)**

The Statement of income register is used as an indicator for the distribution of value added, using the top-down-method. These statistics provide information about all wages and salaries amounts by industry, sector and region.

### 3.2.11 Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use, Section T, (NACE 97-98)

Information about assistance allowances from the Social Insurance Agency is used as an indicator of the industry Activities of households as employers of domestic staff's distribution according to the bottom-up method. The majority of this industry is made up of persons working with personal assistance. Assistance allowances are compensation for paying personal assistants for those, who due to grave and actual disability, need help with basic needs for on average more than 20 hours weekly. The law on assistance allowances was enacted in 1994.

Assistance allowances are managed through the Social Insurance Agency and the costs are shared by municipalities and the central government. Municipalities have financial responsibility for 20 hours weekly for persons granted an assistance allowance, the remainder is paid by the central government. The assistance allowance is paid at a fixed rate per hour of assistance, as defined by the central government. Statistics Sweden receives information from the Social Insurance Agency about the costs for personal assistants for each municipality (the number of personal assistants, hourly pay and the number of hours worked).

### 3.2.12 Activities of extraterritorial organisations and bodies, Section U, (NACE 99)

There Sweden's embassies and consulates belong to the industry Public administration (NACE 84) in the Central government sector. When calculating the GDP for extra-territorial region, embassies and consulates achieve a value added in proportion to their percentage of gross wages and salaries in the activity of Public administration in the Central government.

### 3.2.2 Central government incl. social security funds

The Statement of income register is used as an indicator for the distribution of value added in Central government authorities, using the top-down-method.

Table 4. Value added for industries in Central government incl. social security funds. Compilation level. Million SEK			
NACE 2007	Description	Value added 2017	Percent
52	Warehousing and support activities for transportation	29 079	11,7
65-66	Insurance, reinsurance and pension funding, except compulsory social security	134	0,1
	Activities auxiliary to financial services and insurance activities		
72	Scientific research and development	52 718	21,3
84	Public administration and defence; compulsory social security	126 043	50,9
85	Education	27 669	11,2
86	Human health activities	2 594	1,0
87-88	Residential care and social work activities	6 653	2,7
90-93	Arts, entertainment and recreation	2 707	1,1
94-96	Other service activities	9	0,0
Total		247 606	100,0

Activities concern the following industries:

*Warehousing and support activities for transportation, NACE 52.*

*Insurance, reinsurance and pension funding, except compulsory social security, Activities auxiliary to financial services and insurance activities, NACE 65-66.*

*Scientific research and development, NACE 72.*

*Public administration and defence; compulsory social security, NACE 84.*

*Education, NACE 85.*

*Human health activities, NACE 86.*

*Residential care and social work activities, NACE 87-88.*

*Arts, entertainment and recreation, NACE 90-93.*

*Other service activities, NACE 94-96.*

All industries are compiled using the Statement of income register as an indicator, using the top-down-method. These statistics provide information about all wages and salaries amounts by industry.

### 3.2.3 Local government

Local government is divided into the Primary municipal sector and the County council sector. Calculations are conducted for each primary municipality and county council, but the results are compiled upon input into our database. For a specific region it is only possible to report the information for these sectors in a combined manner.

<b>Table 5. Value added for industries in Local government. Compilation. Million SEK</b>			
NACE 2007	Description	Value added 2017	Percent
52	Warehousing and support activities for transportation	11 836	2,0
72	Scientific research and development	6 013	1,0
78-82	Administrative and support service activities	234	0,0
84	Public administration and defence; compulsory social s	75 115	12,9
85	Education	152 549	26,1
86	Human health activities	162 225	27,8
87-88	Residential care and social work activities	161 368	27,6
90-93	Arts, entertainment and recreation	14 581	2,5
Total		583 921	100,0

### **3.2.3.1 Primary municipal sector**

There are account summaries for every municipality in the Primary municipality sector. These account summaries contain information about gross pay distributed over the relevant industries and these are used as distribution keys for the regional level, using the top-down-method. Industries with activities in the Primary municipal sector are as follows.

*Warehousing and support activities for transportation, NACE 52.*

*Scientific research and development, NACE 72.*

*Administrative and support service activities, NACE 78-82.*

*Public administration and defence; compulsory social security, NACE 84.*

*Education, NACE 85.*

*Human health activities, NACE 86.*

*Residential care and social work activities, NACE 87-88.*

*Arts, entertainment and recreation, NACE 90-93.*

### **3.2.3.2 County council sector**

Information about County council activities comes from the County council's own statistics regarding their activities and economy. There is information about net costs at the county level for industries. The distribution to the municipal level is done using gross pay regarding the county council sector of each municipality.

Those industries with activities in the County council sector are as follows.

*Warehousing and support activities for transportation, NACE 52.*

*Scientific research and development, NACE 72.*

*Public administration and defence; compulsory social security, NACE 84.*

*Education, NACE 85.*

*Human health activities, NACE 86.*

*Residential care and social work activities, NACE 87-88.*

*Arts, entertainment and recreation, NACE 90-93.*

### **3.2.4 Households' non-profit organisations**

The Statement of income register is used as an indicator for the distribution of value added, using the top-down-method. These

statistics provide information about all wages and salaries amounts by industry, sector and region.

### **3.3 Methods and sources for compiling regional GVA at current prices for the most recent year (preliminary data)**

Regional GVA at current prices for the most recent year (preliminary data) are based on preliminary sources, but in some cases also on final data. The methods used for calculating preliminary data are not different from the previous methods. The bottom-up method is used for calculations of the value added in the industries NACE 05-33 (Mining, quarrying and manufacturing), 38-39 (Waste management and remediation activities), 41-43 (Construction) and the service industries 45-49 (Trade and transportation), 52-63 (Warehousing and support activities for transportation, accommodation and food service activities, communications and information services), 68-96 (Management of real estate, business services, education, health and social work activities et al.)

The top-down method is used for distributing the preliminary national value added of financial and insurance activities and the industries in the central government and the households and non-profit institutions serving household.

Agriculture (A01) and Forestry (A02) provide information about value added at the county level from each responsible authority. The capital-dependent and wages and salaries-dependent parts are broken down to obtain information at the municipal level.

### **3.4 Regional GVA at constant prices and regional growth**

Statistics Sweden compiles statistics about the change in volume at the regional level. These statistics are published in the form of yearly change in volume, expressed in percentages, for GDP at the county level (NUTS 3) and national area level (NUTS 2). On the other hand, Statistics Sweden does *not* publish regional information about GDP, expressed in *constant prices* or nominal terms.

The first time Statistics Sweden published information about regional volume development was in December 2006. Before then, Statistics Sweden only provided statistics in *current prices* available to study GDP changes over time. Comparisons in current prices over time include price changes as well as volume changes affecting the figures. When calculating volume changes, single price changes are assumed into the refined volume change. Volume change is a traditional and accepted measure of economic growth.

The basic calculation for producing yearly regional figures for volume change is done at the NUTS 3-level (21 counties). NUTS 3 is, thus, the most detailed level at which volume information can be produced. When volume calculations have been conducted at the county level the figure for volume change can be simply produced, on the contrary, for coarser regional levels, i.e. NUTS 2 (8 national areas) and NUTS 1 (3 national regions).

Deflation is done county by county and with an industry breakdown of roughly fifty industries. There are no regional price statistics available, all price indexes are, thus, national. The calculations, therefore, rely on an underlying assumption that the price development for a given industry is uniform across the country. The differences in figures for volume change between different counties for a given year are a direct reflection of counties' having different industrial structures.

Regional volume change statistics include the entire period of 1993-2017. Individual counties figures for volume change show fairly large fluctuations from one year to another. A county's figures for volume change should, thus, be interpreted with due caution. Rather, we should study the county's volume development seen over a little longer time period.

## 4 Quality assessment and improvement

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

As for National Accounts in general, the Regional Accounts are based on several data sources. The accuracy hence depends on the quality of the data sources and of models used. Model assumptions and measurement are the two most important sources of uncertainty.

Register data contributes to enhancing accuracy. Statistics Sweden has built up large registers that are useful from a regional perspective. Both the *Business register* and the *Statement of income register* contain information regarding the lowest regional level - municipalities.

The Business register is a register of all institutional units. The register functions as a *sample framework* in economic statistics and also as a



base register where information about enterprises is collected for other registers and databases at Statistics Sweden.

Gross pay is based on Statistics Sweden's Statements of income register, which is based on administrative material from statements of income. According to the law, statements of income shall be submitted by those paying an employee's wages and salaries, fee, other compensations or benefits that constitute taxable income. Gross pay statistics contain information about gross pay at the regional level, which are used for those industries where top-down-method is used. Gross pay statistics are also used for the distribution of the wages and salaries-dependent part of the value added in those industries where the capital-dependent and wages and salaries-dependent parts are compiled individually.

The *Structural business statistics* is used for regional calculations mainly regarding the industries Mining and quarrying (NACE 05-09) and Manufacturing (NACE 10-33). The bottom-up-method is used as the the *Structural business statistics* provides regional information available concerning value added.

## **4.2 Plans for further improvement**

Last years work has focused on implementing the 2019 National Accounts benchmark revision into the Regional Accounts time series from 2000 onwards. Also, Statistics Sweden aims to develop multi-regional input-output tables.

## **4.3 Coherence and comparability of data**

The time series perspective is very important in the regional accounts and the calculations must show both the right level and development over time. Lack of relevant and reliable data is often a limitation in that context and models therefore applied largely. The simplest example of such a model is to existing levels adjusted proportionally as much as the earliest year for which the data could be used.

Regarding comparability with statistics published across different sub-areas of the Swedish economy, it is rarely possible to find exactly the same information in the national accounts system. When the national and regional accounts are compiled, a variety of primary statistical data used. The data used often have coverage and definitions that do not fully correspond to the national account system's requirements, which is why additions and corrections are made. In the national account system, the data is checked and consistency tested. If the available data do not provide a consistent picture of economic developments, this means that adjustments made in national accounts. In addition, in

some cases there are definite differences between the primary statistics and national accounts.

## Appendix 1

### The NUTS 2016 regional classification in Sweden

NUTS1	NUTS2	NUTS3	County	
SE1 Östra Sverige	SE11 Stockholm	SE110	Stockholm county	
	SE12 Östra Mellansverige	SE121	Uppsala county	
		SE122	Södermanland county	
		SE123	Östergötland county	
		SE124	Örebro county	
		SE125	Västmanland county	
SE2 Södra Sverige	SE21 Småland med öarna	SE211	Jönköping county	
		SE212	Kronoberg county	
		SE213	Kalmar county	
		SE214	Gotland county	
	SE22 Sydsverige	SE221	Blekinge county	
		SE224	Skåne county	
	SE23 Västsverige	SE231	Halland county	
		SE232	Västra Götaland county	
	SE3 Norra Sverige	SE31 Norra Mellansverige	SE311	Värmland county
			SE312	Dalarna county
SE313			Gävleborg county	
SE32 Mellersta Norrland		SE321	Västernorrland county	
		SE322	Jämtland county	
SE33 Övre Norrland		SE331	Västerbotten county	
	SE332	Norbotten county		
SEZ	SEZZ	SEZZZ		
EXTRA-REGIO NUTS 1	EXTRA-REGIO NUTS 2	EXTRA-REGIO NUTS 3		

# Appendix 2

## **Industry sectors (NACE Rev. 2)**

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Standard industrial classification

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A	Agriculture, forestry and fishing
B	Mining and quarrying
C	Manufacturing
D	Electricity, gas, steam and air conditioning supply
E	Water supply; sewerage, waste management and remediation activities
F	Construction
G	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	Transportation and storage
I	Accommodation and food service activities
J	Information and communication
K	Financial and insurance activities
L	Real estate activities
M	Professional, scientific and technical activities
N	Administrative and support service activities
O	Public administration and defence; compulsory social security

- P Education
- Q Human health and social work activities
- R Arts, entertainment and recreation
- S Other service activities
- T Activities of households as employers;  
undifferentiated goods- and services-producing  
activities of households for own use
- U Activities of extraterritorial organisations and bodies

## Appendix 3

### Industry sectors (NACE Rev. 2). Compilation level

Standard industrial classification	
A01	Crop and animal production, hunting and related service activities
A02	Forestry and logging
A03	Fishing and aquaculture
B05_09	Mining and quarrying
C10_12	Manufacture of food products, beverages and tobacco products
C13_15	Manufacture of textiles, apparel, leather and related products
C161	Sawmilling and planing of wood
C162	Manufacture of products of wood, cork, straw and plaiting materials
C171	Manufacture of pulp, paper and paperboard
C172	Manufacture of articles of paper and paperboard
C18	Printing and reproduction of recorded media
C19	Manufacture of coke and refined petroleum products
C20	Manufacture of chemicals and chemical products
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
C22	Manufacture of rubber and plastic products
C23	Manufacture of other non-metallic mineral products
C24	Manufacture of basic metals
C25	Manufacture of fabricated metal products, except machinery and equipment
C26A	Manufacture of computer and electronic
C26B	Manufacture of optical products

C27	Manufacture of electrical equipment
C28	Manufacture of machinery and equipment n.e.c.
C29	Manufacture of motor vehicles, trailers and semi-trailers
C30	Manufacture of other transport equipment
C31	Manufacture of furniture
C32	Other manufacturing
C33	Repair and installation of machinery and equipment
D351	Electric power generation, transmission and distribution
D352	Manufacture of gas; distribution of gaseous fuels through mains
D353	Steam and air conditioning supply
E36	Water collection, treatment and supply
E37_39	Sewerage, waste collection, treatment and disposal activities; materials recovery, remediation activities and other waste management services
F41_43	Construction
G45	Wholesale and retail trade and repair of motor vehicles and motorcycles
G46	Wholesale trade, except of motor vehicles and motorcycles
G47	Retail trade, except of motor vehicles and motorcycles
H49A	Railway transports
H49B	Public transports
H49C	Taxi transport
H49D	Road transports and pipelines
H50	Water transport
H51	Air transport
H52	Warehousing and support activities for transportation
H53	Postal and courier activities
I55	Accommodation
I56	Food and beverage service activities
J58	Publishing activities
J59_60	motion picture, video and TV-programme, sound recording, programming and broadcasting activities
J61	Telecommunications
J62_63	Computer programming, consultancy and related activities and information services
K64	Financial service activities, except insurance and pension funding
K65_66	Insurance, reinsurance, pension funding, except compulsory social security, activities auxiliary to financial services and insurance activities
L68A	Own homes and secondary residences
L68B	Other real estate management
M69_71	Legal and accounting activities, activities of head offices and architectural and engineering activities
M72	Scientific research and development
M73_75	Advertising and market research, other professional, scientific and technical activities and veterinary activities
	Administrative and support service activities
N77	Rental and leasing activities
N78_82	Employment activities, travel agency, tour operator reservation service and related activities, security and

O84	investigation activities, services to buildings and landscape activities, office administrative, office support and other business support activities
P85	Public administration and defence; compulsory social security
Q86	Education
Q87_88	Human health activities
R90_93	Residential care and social work activities
S94_96	Arts, entertainment and recreation
T97_98	Other services
U99	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
	Activities of extraterritorial organisations and bodies

## Appendix 4

### Regional GVA, compilation table (overview)

Gross Value added (and other variables if applicable) by NUTS2 region														Adjustment to National Accounts	Total	
Industries A 17	Method for reference period 2018															
	Bottom-up methods							Sub-total bottom-up	Top-down methods				Sub-total top-down			
	Survey data				Administrative data		Data based on extrapolations or models		Survey or census data		Administrative data					
	Exhaustive coverage		sample data		mono-regional	multi-regional			Closely related indicators	Data based on extrapolations or models and/or less related indicators	Closely related indicators	Data based on extrapolations or models and/or less related indicators				
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	
Market producers and Producers for own final use																
NACE 01								14510								
NACE 02								24052							15395	29905
NACE 03								1016							11961	36013
NACE B05_09								27832							271	1287
															-49	27783



