



INVENTORY OF METHODS

FOR

REGIONAL ACCOUNTS (GROSS VALUE ADDED)

IN AUSTRIA

ACCORDING TO ESA 2010

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Introduction

This document is an inventory of the statistical methods and sources used for the reporting year 2017 to calculate gross value added, a variable covered by the regional accounts (RA).

This publication was produced as part of an EU funded project (Grant 2021-AT-NA) and is harmonized across the EU in terms of its structure. The document first provides a rough overview of the organization of regional accounts, methods and main data sources (chapter 1). Chapter 2 then refers in detail to publication dates and publication media and provides general information on the revision policy relevant for the regional accounts. After that, chapter 3 first explains the general basic principles and methods (chapter 3.1) and then the specific methods used in the individual economic sections (chapter 3.2) to estimate regional gross value added. The calculations of the most recent year ("t+12") and the determination of gross value added at constant prices (real growth rates) are also highlighted. The following chapter 4 provides a brief overview of the general quality aspects and also a short preview of future revisions affecting this important aggregate.

In addition to a presentation of the regional accounts calculation methods, this report also contains an annex with additional information ("Compilation table" and "Metadata table") for the reporting year 2017.

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1. Summary

1.1. Organisation of the Austrian Regional Accounts

Official statistics in Austria are mainly organised centrally. With effect from 1 January 2000 the Federal Statistics Act¹ 2000² outsourced the Austrian Central Statistics Office³ from the Federal Government Service⁴ of the Republic of Austria and established the Austrian Statistics Office as an independent, non-profit federal office in public law under the name of STATISTICS AUSTRIA.

Since the early 1970s Statistics Austria has been responsible for producing the National Accounts (NA). The regional calculations, which were originally the responsibility of the Austrian Institute of Economic Research⁵ (NUTS 2) and the Austrian Institute for Spatial Planning⁶ (NUTS 3), were gradually integrated in Statistics Austria in the context of accession to the EU and the resulting coordination of national statistics offices at European level. Since 1996 NUTS 2 data have therefore been published by Statistics Austria, as have NUTS 3 data since 2001.

All the work relating to the annual regional accounts with the exception of the calculations on agriculture, forestry and fishing (OENACE Section A) is carried out by the directorate macro-economic statistics (Figure 2: Organisational Chart Directorate Macro-Economic Statistics). The data for the agriculture and forestry accounts are produced by the Directorate spatial statistics of Statistics Austria (Figure 1: Organisational structure of STATISTICS AUSTRIA).

Approximately 35 persons are employed in the area of national accounts (as of July 2023), some of them part-time. In the area of regional accounts, 6 persons are employed.

¹ Bundesstatistikgesetz (BstatG)

² Federal Act on Federal Statistics (Federal Statistics Act 2000) BGBl I Nr.163/1999, last amended by BGBl I No. 205/2021

³ Österreichisches Statistisches Zentralamt

⁴ Bundesdienst

⁵ Österreichisches Institut für Wirtschaftsforschung

⁶ Österreichisches Institut für Raumplanung

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Figure 1: Organisational structure of STATISTICS AUSTRIA

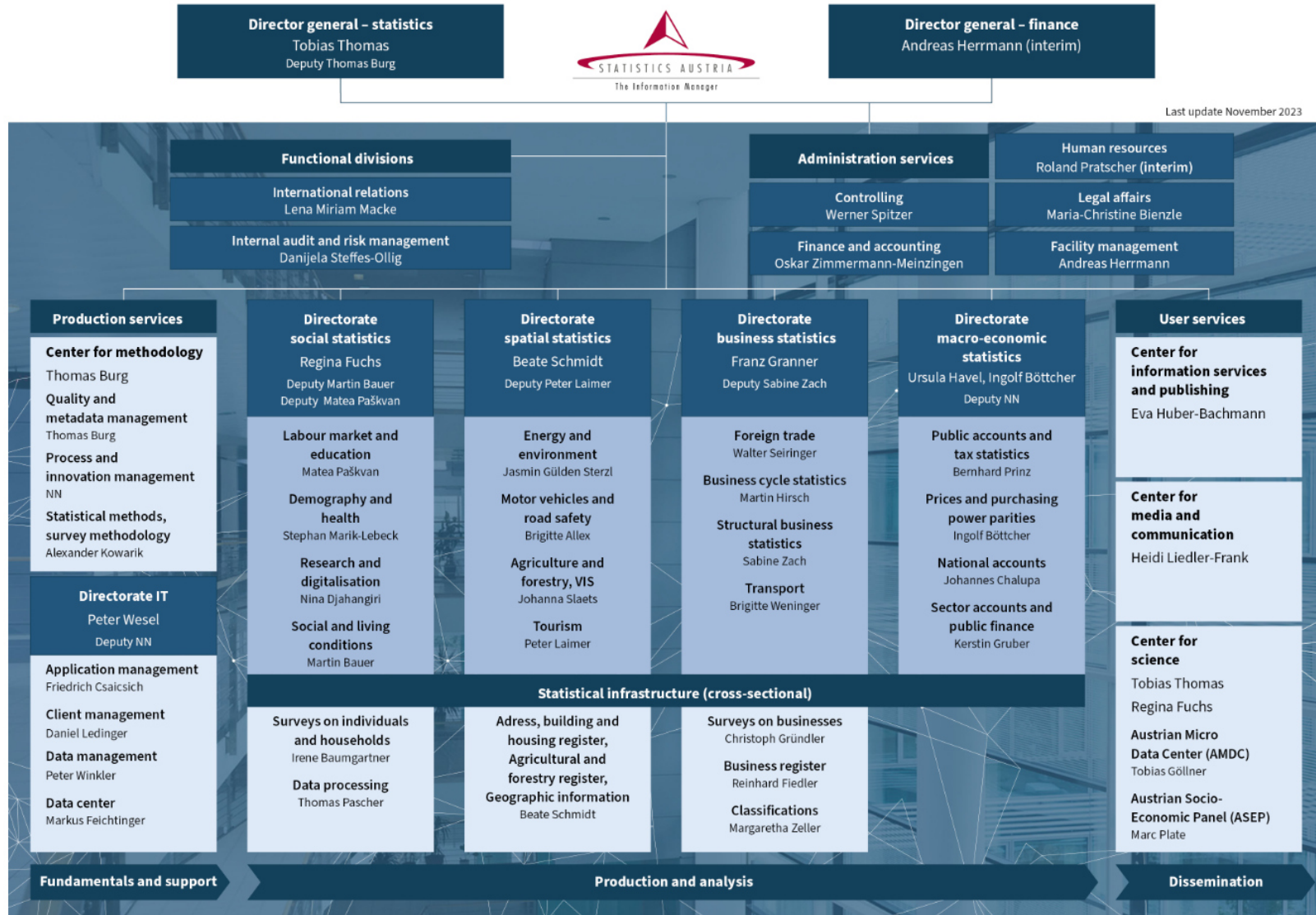
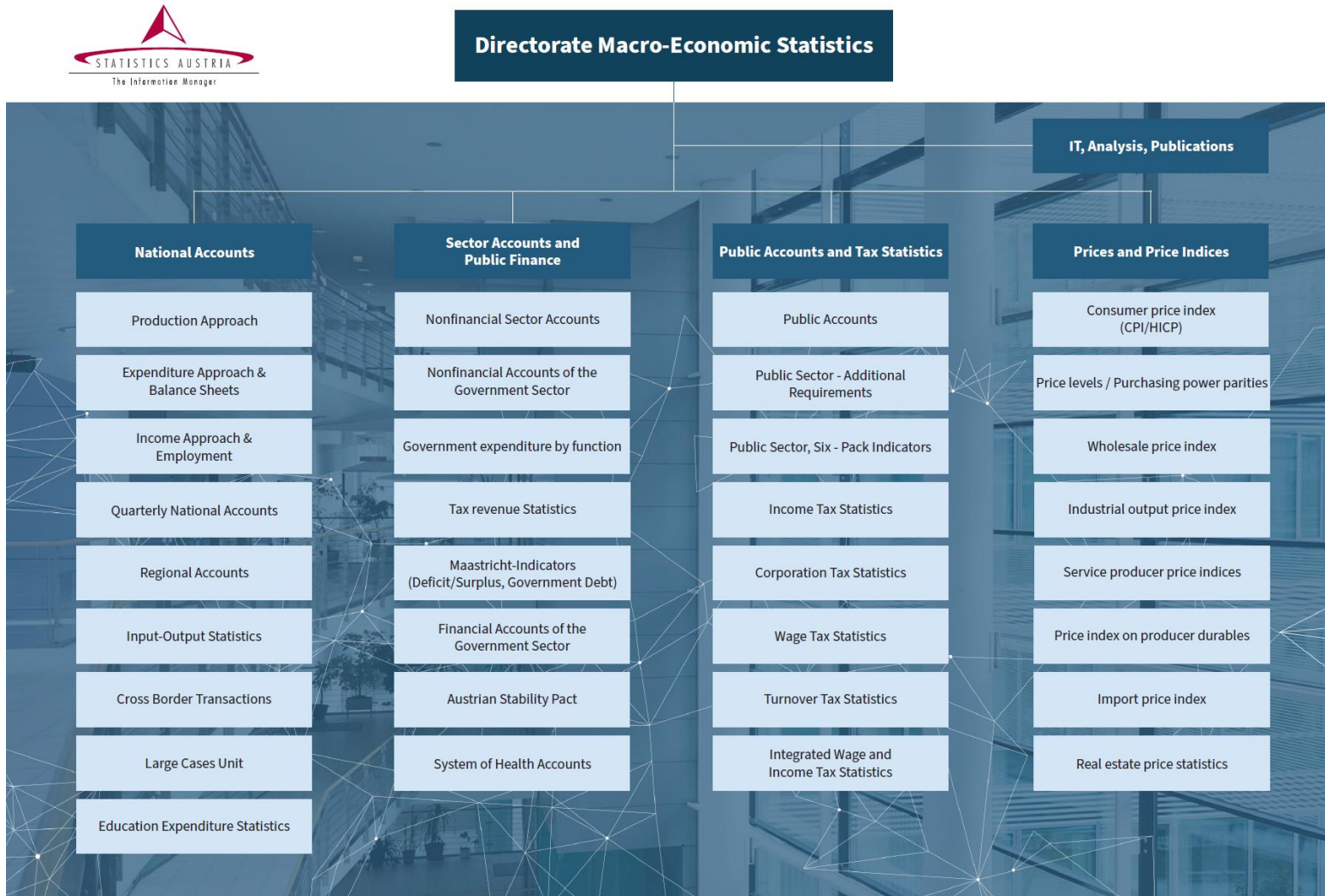


Figure 2: Organisational Chart Directorate Macro-Economic Statistics



1.2. Overview of the methodology of regional gross value added (GVA) compilation

The Regional Accounts (RA) calculate, independently of National Accounts, production and employment levels for 9 federal provinces (NUTS 2 regions) and 35 NUTS 3 regions, each of which represents a separate economy.

The basis for the calculations of economic aggregates at regional level is the European System of Accounts (ESA) – in the currently valid version [ESA 2010](#). It contains the basic concepts and definitions as well as accounting rules for the compilation of national accounts. Their application is intended to enable a coherent and comparable quantitative description of the economies of the European Union. Regional accounts are dealt with in chapter 13.

Based on this ESA chapter, Eurostat (the statistical authority of the European Union) published manuals clarifying the practical application of the ESA recommendations. The "[Manual on regional accounts methods](#)", published in 2013, is currently relevant for the calculation of regional accounts by economic activity and NUTS 2. Among other things, it deals with concepts and methods for calculating GDP and GVA per region.

1.2.1. Regional territory

The economic territory of a country comprises the geographical area administered by a government (including duty-free areas) and is precisely defined in ESA 2010, paragraph 2.05. For the purposes of regional accounts, it is subdivided into the **areas of the regions** and the **extra-regions**. The demarcation of the areas of the regions is based on the "NUTS breakdown"; the maps below provide an overview of the NUTS regions in Austria. NUTS is the abbreviation for the hierarchical, uniform territorial division used to compile regional statistics in the EU and stands for "Nomenclature des unités territoriales statistiques" or Nomenclature of Territorial Units for Statistics. Accordingly, the Austrian federal provinces⁷ correspond to the NUTS 2 regions and groups of districts and judicial districts to the NUTS 3 regions.⁸

⁷ Bundesländer

⁸ Detailed information can be found at <https://www.statistik.at/en/services/tools/services/regional-information/regional-divisions> under the sub-item "Further data".

Figure 3: NUTS 2 regions (federal provinces)

Federal Provinces in Austria
as of 01.01.2023



Figure 4: NUTS 3 regions

NUTS3 regions in Austria
as of 01.01.2023



The extra-regio comprises the parts of the economic territory of a country that cannot be attributed to a single region. Extra-regio calculations are only carried out in economic sector O (public administration and defence; compulsory social security) and in Austria only concern embassies abroad (see also chapter 3.1.5).

1.2.2. Statistical unit and residence

The economy of a country is a system whereby institutions and people interact through exchanges and transfers of goods, services and means of payment (e.g. money) for the production and consumption of goods and services. In the economy, the units interacting are economic entities that are capable of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities. They are known as institutional units (ESA chapter 2.01). This leads to the definition of institutional units according to ESA (chapter 2.12): an institutional unit is an economic entity characterised by decision-making autonomy in the exercise of its principal function. A resident unit is regarded as constituting an institutional unit in the economic territory where it has its centre of predominant economic interest if it has decision-making autonomy and either keeps a complete set of accounts, or is able to compile a complete set of accounts.

Most institutional units producing goods and services are engaged in a combination of activities at the same time. They may be engaged in a principal activity, some secondary activities and some ancillary activities (ESA chapter 2.144). In order to analyse flows occurring in the process of production and in the use of goods and services, it is necessary to choose units which emphasise relationships of a technico-economic kind. This requirement means that institutional units must be partitioned into smaller and more homogeneous units with regard to the kind of production. Local kind-of-activity units are intended to meet this requirement as an operational approach (ESA chapter 2.147).

In Austria, this concept is widely implemented. Since the regional accounts are a set of accounts, data collected in other statistics are used and fed into the overall accounting system. Depending on the data source, the units surveyed are legal units (enterprises), kind-of-activity units or local units (places of work). Further information and details on the **local kind-of-activity unit (LKAU)** as the relevant observation unit in the regional accounts can be found in Chapter 3.1.3.

In addition to a fixed location, a local unit or an LKAU must also have a minimum labour input – according to ESA paragraph 13.21 the equivalent of at least one half-day worker per year; sites without labour input can only be local units in special cases (e.g. wind power plants, oil and gas extraction, fully automatic petrol stations, etc.).

In the case of units with locations in more than one region ("multi-regional enterprises") or in different economic industries, the activity must be allocated as precisely and correctly as possible to the local kind-of-activity units. How exactly this allocation can be made depends on the data situation. At best, the enterprise would be able to provide complete data for the LKAU. However, complete data are often only available for the enterprise level, while they have to be estimated for the kind-of-activity units or the local kind-of-activity units using the existing data (see chapter 3.1.3).

In order to be able to consistently regionalise interregional production activities, such as transport services, a rule for regional allocation is necessary. In principle, GVA in the regional accounts is to be allocated to the region in which the **producing unit is resident**. In the case of multi-regional enterprises with fixed locations in several regions, the activity is to be allocated to their individual units (local KAUs).⁹ This so-called **residence principle** is to be applied as the primary concept in regional accounts and is also applied in the Austrian regional accounts.

An alternative concept for regionalisation would be the territorial principle. Here, production activities would be allocated to the region where they are actually carried out, regardless of where the producing units are resident.

1.2.3. Classifications of industries and sectors

In principle, the calculations of gross value added are carried out separately by economic activities and by institutional sectors.

The classification by economic activity (industry) is currently based on [OENACE 2008](#) (classification of economic activities).

The ESA distinguishes between the following institutional sectors:

- “Non-financial corporations“ (S.11) comprise stock corporations, limited companies, cooperatives and also partnerships as well as enterprises / kind-of-activity units outsourced from general government with market activities.
- “Financial corporations“ (S.12) comprise the National Bank, credit and other financial institutions, insurance companies and pension funds, as well as financial auxiliaries and insurance auxiliaries. The definition is identical to the economic activity “financial and insurance activities“ (OENACE K).
- General government (S.13) comprises S.1311 (Federal government, federal funds, federal chambers, outsourced federal enterprises), S.1312 (federal provinces, federal province funds, federal province chambers, outsourced federal province enterprises), S.1313 (Municipalities, Vienna as a municipality, municipal funds, outsourced municipal enterprises), S.1314 (Social security funds).
- Private Households (S.14) comprise market producers (such as sole proprietors), as well as households that are not producers in the sense of the system (employees, recipients of assets or transfer income).
- Sector 15 (Non-Profit Institutions serving Households – NPIsH), includes, among others, churches, political parties, the Austrian Trade Union Federation (ÖGB) and associations active in welfare, environmental protection, adult education and the like.

⁹ For example, a construction site of a construction company is to be allocated to the region in which the construction company is located – unless the construction site is so large and has existed for so long that it constitutes a separate local unit.

In the Austrian regional accounts, no distinction is made between S.11 and S.14. The two sectors are shown as a total (with the exception of imputed rents) and are referred to as Sector I¹⁰ (S.I) in the inventory.

1.2.4. Business Register

See chapter 3.1.1.2.

1.2.5. Methods used at the regional level

The statistical estimation methods used in the Austrian national accounts to calculate gross value added depend on the respective institutional sectors (or producers) and economic activities. In general, it can be stated that the aggregates to be calculated are compiled as disaggregated as possible, in particular broken down by institutional sector and economic activity. In principle, the **bottom-up** method prevails for the calculation of gross value added at market prices. This method is preferable if complete and reliable micro data are available at the LKAU level (ESA 13.29)¹¹. For detailed and further information, please refer to chapter 3.1.3.

The ratio of bottom-up to top-down approaches has improved steadily over the years in the direction of the bottom-up approach and is already 84:16 in the 2017 reporting year. How this distribution breaks down in detail (i.e. for the economic activities) can be seen in the compilation table attached in the annex (chapter 5).

As a rule, the federal provinces accounts (NUTS 2 regions) are derived from the summed NUTS 3 values. The plausibility check and any corrections are usually performed at the lowest possible level, i.e. at the individual data or LKAUs. In the end the sum of the regional estimates has to add up to the corresponding national accounts total. The difference to the national gross value added levels is distributed proportionally on the basis of the regional values. This is performed at the lowest available working classification in the respective economic activities. Before the final checks, the partial results of the regional table are merged according to NUTS 2 at the level of economic sections (A 20).

The calculations of regional gross value added are performed at both current and constant prices. Real gross value added is published in the form of growth rates; details on the calculation methodology and further information can be found in chapter 3.4.

¹⁰ I stands here for industry

¹¹ See also Eurostat: [Manual on regional accounts methods](#) – 2013 edition, chapter 3.5 (p. 38).

1.3. Main sources used for the compilation of regional gross value added

Regional accounts use a wide range of data sources in their calculations. Basically, a distinction has to be made between the sources of economic statistics, which are conducted as **surveys** by Statistics Austria (STAT), and **administrative data** (incl. secondary statistics from tax administration data).

In the case of the surveys, a problem may lie in their **regional representativeness**, since they are mostly conducted as questionnaire surveys among the units concerned and, in the interests of a low respondent burden and for reasons of cost efficiency, the aim is to minimize the **number of units to be surveyed**. In contrast, the problem with administrative data, which usually ensure (approximately) complete coverage of the statistical units concerned, lies in **conceptual differences** from the overall statistical requirements. For example, different definitions, differences in classificatory (OENACE) and regional allocations etc. are applied in different statistics due to different tasks.

An overview of the main sources is shown in Table 1: Most important data sources for regional accounts. Detailed information and descriptions of the data sources can be found in chapter 3.1.1. The table presents the following characteristics of the individual sources:

- Origin (STAT or external),
- Type of statistics (full or sample survey, administrative data, etc.),
- coverage by OENACE activities and completeness,
- applied unit concepts,
- regional concept (location of unit vs. location of production, vs. location of residence),
- most detailed available regional breakdown, and
- periodicity of statistics.

Abbreviations:

ZR ... enterprises (legal units); K ... kind-of-activity units (KAUs); S ... local units;¹²

STAT ... Statistics Austria;

DV ... Umbrella Organisation of Austrian Social Security Institutions [Dachverband der Sozialversicherungsträger]

¹² The abbreviations refer to the terms of the Austrian Business Register. For details see chapter 3.1.3.

Table 1: Most important data sources for regional accounts

Data source (statistics)	Origin	Type of statistics	Coverage	Unit concept ¹³	Regional breakdown	Periodicity
Structural business statistics	STAT	Until 2001: Rotating sample; from 2002: Cut-off sample	For-profit units. Until 2001: survey according to OENACE 2003 C-K; from 2008: OENACE 2008 B-N as well as S95	ZR, K, S	NUTS 2 / 3	annually
Financial Market Supervision in Austria (FMA)	FMA	Comprehensive survey by FMA	All insurance companies (all units of OENACE K65)	ZR (there are no kind-of-activity units)	NUTS 2 / 3	annually
Short-term business statistics	STAT	Cut-off sample	OENACE 2008 B-F	ZR, K	NUTS 2 / 3	annually, monthly
Statistical Business Register	STAT	statist. Register	OENACE 2008 A-S	ZR, K, S	NUTS 2 / 3	currently
Public finance of regional authorities	Regional authorities/STAT	Administrative data	OENACE 2008 A-S (Sectors S.11+S.13); complete	Government departments	NUTS 0 (fed. Gov.), NUTS 2 (fed. Prov.), NUTS 3 (municipality)	annually
Federal Personnel Information System (PIS) / Management Information System (MIS)	Federal government	Administrative data	OENACE 2008 A-S (Sectors S.11+S.13); complete	Government departments	NUTS 2 / 3	monthly
Regional economic accounts for agriculture respectively forestry	STAT	System of accounts	OENACE A	Agricultural & forestry K	NUTS 2 / 3	annually
Turnover tax statistics	STAT/ tax authorities	Administrative data	Market units; complete	ZR	NUTS 3	annually
Advance turnover tax return statistics	STAT/ tax authorities	Administrative data	Units from 30.000€ previous year sales	ZR	NUTS 3	monthly, quarterly
Wage tax statistics	STAT/ tax authorities	Administrative data	complete	ZR; subject to payroll tax	NUTS 3	annually
Microcensus (housing survey)	STAT	Random sample	Total sample approx. 1% of apartments	households	NUTS 2 / 3	annually
Employment data from social security	DV / social securities	Administrative data	complete	ZR	NUTS 2	monthly, annually
Company reports	Enterprises	-	Individual units	ZR	-	annually
R&D survey in the business enterprise and cooperative sector	STAT	Primary data collection	All R&D performing companies	ZR, but results by fed. provinces	NUTS 2 / 3	every 2nd year
Price statistics	Various data sources – For details, see data sources for price and volume measurement in chapter 3.1.1.10.					

¹³ The (exclusive) indication "ZR" means, for example, that the respective source only contains information for the legal entity (enterprise), but not for KAUs (K) and local units (S)

1.4. *Compilation table and metadata table*

See annex (chapters 5 and 6).

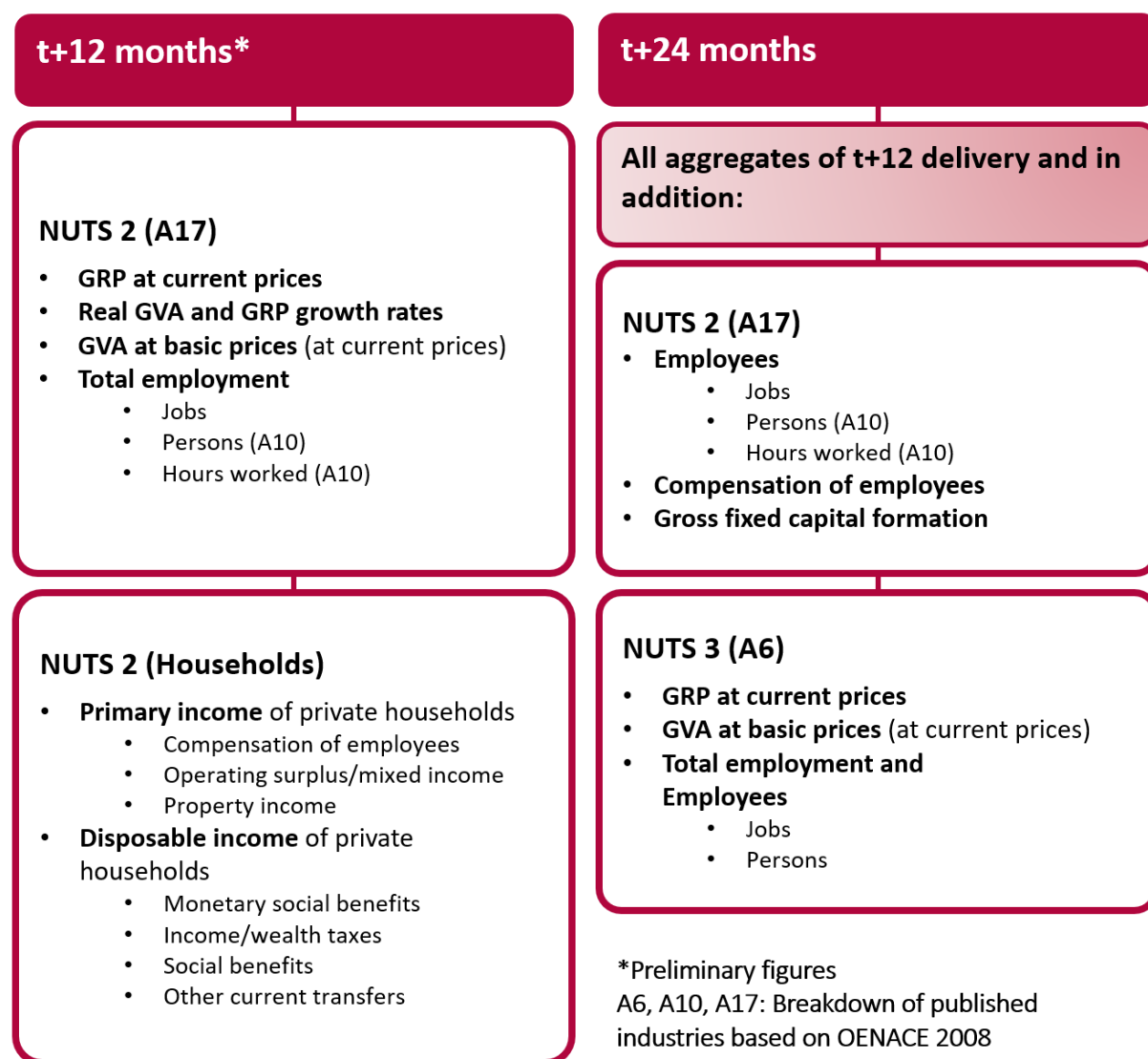
2. Release and publication timetable, revision policy, access for the public

2.1. Timetable for release and publication of the calculations

2.1.1. Publication Calendar

According to the ESA transmission program, the regional accounts results are transmitted to Eurostat annually in December at t+12, t+24, t+36 and t+48 months (see also Figure 6). The data of the t+12 accounts are preliminary and are also referred to as "first estimates" because some detailed data sources (especially the structural business statistics) are not yet available to the regional accounts (but also to the national accounts) at this early date. Results delivered t+48 months are usually final and can only be changed in the context of a major (benchmark) revision (see chapter 2.2). The aggregates published at the respective points in time can be seen in Figure 5: Publication spectrum of the regional accounts. The publication on the internet takes place at the same time as the data delivery to Eurostat. The published time series extend back to 2000 – with the exception of the calculation of private household accounts, for which the time series starts in 2012 – and are essentially based on the ESA transmission program.

Figure 5: Publication spectrum of the regional accounts



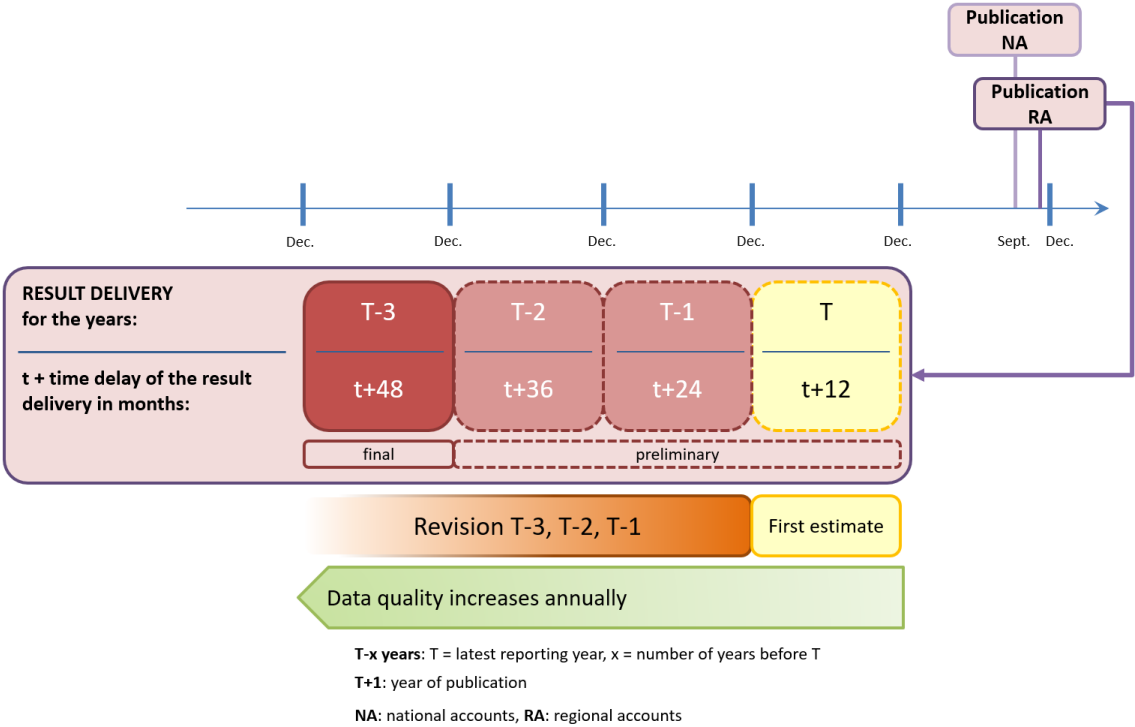
2.1.2. Current revisions

Since currently available data are continuously incorporated into the calculation system, reporting years that have already been completed are also subject to revisions. Revisions at the national level also require a corresponding adjustment of the regional values. Basically, a distinction must be made between ongoing revisions, which are made due to the varying temporal availability of data sources, and major revisions, which entail a back-calculation of the entire time series. For a more detailed description of the revision policy, please also refer to an article in *Statistische Nachrichten*¹⁴ or to the [Standard-Documentation of National Accounts](#) (pp. 69ff.).

¹⁴ See *Statistische Nachrichten* 03/2019: Hauptergebnisse der Regionalen Gesamtrechnungen 2017 (German only)

A graphical representation of this revision policy is shown in the following Figure 6: Revision policy. It should be noted that revisions are usually higher in the more recent reporting years than in the years further back in time. This is symbolized in the figure by the color gradient in the "Revisions" box. The revision policy of national accounts and regional accounts is closely related to the delivery dates according to the ESA transmission program. The regional accounts are first delivered at $t+12$ months and are consistent with the national accounts [$t+9$ months]. Statistical revisions are usually made in national and regional accounts for the three years preceding the most recent reporting year¹⁵. Here an illustration with an example: In December 2021, 2020 was published as the most current reporting year (T). The 2020 results (T) are an initial estimate. As data quality improves over time, the results for recent years are revised using additional and more accurate data sources: Revisions are made for 2019 (T-1), 2018 (T-2), and 2017 (T-3) in this example. The year 2017 (T-3) is finalized simultaneously in the national and regional accounts.

Figure 6: Revision policy



Chapter 2.3 shows the connection between revisions and comparability over time and explains the need for revisions.

¹⁵ The aggregates employment (jobs, persons, hours worked) and compensation of employees are generally only revised back two years.

2.2. Policy on benchmark revisions

Major revisions covering the entire time series back to 2000 are not carried out on an ongoing basis, but only when new concepts and methods need to be implemented (e.g. new ESA), underlying classifications are changed (e.g. revised OENACE classification) or comprehensive new data sources are available, such as the structural business statistics when the survey methodology was changed in the reporting year 2002 (see chapter 3.1.1.2). The last two major revisions took place in 2014 (introduction of ESA 2010) and 2017 (integration of new estimates for non-profit organizations, treatment of public broadcasting as a non-market producer in the general government sector, among others)¹⁶.

During the next major revision, which will take place in 2024, the implementation of FRIBS/EBS (Framework regulation integrating business statistics) will also make [SBS data](#) available for the economic sections P, Q, R and S96 (OENACE 2008 classification) as of the reporting year 2021.

2.3. Comparability over time

The comparability of regional accounts data can be influenced by two main aspects:

- the comparability of the applied concepts and definitions, and
- the comparability of the methods used for measurement or estimation.

In regional accounts, the methods used for measurement or estimation include using data sources in such a way, that the concepts and definitions (of ESA 2010) are correctly implemented. This implies, that concept changes in data sources have to be taken into account. This is a challenging endeavour, since the concepts of statistical data sources are frequently subject to changes, such as changes of the random sample concepts, changes of the definition of the statistical unit, changes of the definition of the variables, etc.

Whenever new data sources are used or new methods are developed, the aim is to implement these changes in the course of major revisions. This ensures the comparability within the current time series, but also implies the need to clearly communicate and explain the changes versus the former time series to the data users.

Whenever ESA requires a change in the accounting for a specific economic fact (e.g. in the case of a change in sector classification of a public sector unit), this may lead to a break in the time series. In such a case, temporal comparability of regional accounts data can be affected. This, too, requires transparent communication of the changes to the data users.

The standard revision cycle of national and regional accounts (as described above in chapter 2.1.2) also touches the temporal comparability of regional accounts data. This concerns especially the results regarding the most recent year and their publication at t+12 months. Since preliminary data usually have to be compiled from different or less exhaustive data sources than final data, there inevitably is a need

¹⁶ For more details see the [inventory of National Accounts](#) (chapters 2.1.1.2. and 2.1.1.3.).

for adjustment in the following years. For example, the results of SBS are only available at t+18 months, and estimates for the most recent year have to be based on STS data. However, the methods and processes in regional accounts are adjusted to meet this issue as well as possible. The use of preliminary data is complemented by thorough data analysis including additional data sources such as business reports.

The current regional accounts data series are not directly comparable with earlier data series that were compiled in accordance with older sets of rules such as ESA 95 or ESA 79, as these were based on different concepts and definitions.

Bearing in mind the limited comparability with the current time series, interested users can access regional accounts data based on ESA 95 via Statistics Austria's STATcube database. On request, Statistics Austria can also provide users with regional accounts data based on ESA 79 (regional GDP and GVA 1988-1995 for both NUTS 2 and NUTS 3), and with regional GDP data at NUTS 2 level for the years 1961 to 1992, which are based on SNA 68 and on calculations of GVA by WIFO.¹⁷

2.4. Transmission to international institutions other than Eurostat

No.

2.5. Accessibility for the public

As already mentioned in chapter 2.1, all results transmitted to Eurostat as part of the annual data reporting are published simultaneously on the **internet**.

2.5.1. Statistics Austria Web – Regional Accounts

The [internet](#) is the central publication medium of the RA. Here, all tables published by the RA can be found in a separate download area, supplemented by the latest press releases, further (derived) tables, central graphs and cartograms, as well as a glossary that provides users with metadata (especially definitions of the individual variables) for better understanding and correct use of the data. A standard documentation (full version only in German) is also available for the users, which provides metadata for a better understanding and the correct use of the data. On this page there is also a reference to the current articles in the "Statistische Nachrichten". In order to make a broad public aware of the newly available data, the online publications are usually accompanied by a press release.

¹⁷ Austrian institute of economic research, <https://wifo.at/en>

2.5.2. Web Eurostat

Here you will find all economic indicators transmitted to Eurostat by the [Regional Accounts](#) of the individual member states as part of the fulfilment of the ESA 2010 delivery obligations. These are made available to all users free of charge and without restriction.

2.5.3. Database STATcube

STATcube is the statistical database system of Statistics Austria and is available online at [statcube.at](#). With the STATcube database, users can create evaluations online according to their needs and have these output in various formats. All data transmitted by the RA to Eurostat, and in some cases more detailed data, are available free of charge. In addition, meta-information, especially on the definition of the individual variables, is included in the comments.

2.5.4. Open Data

The [portal data.statistik.gv.at](#) offers a range of data sets from Austrian official statistics. The data offered comply with the open data principles, i.e. they are in particular machine-readable. These data can be used freely – for personal information and also for commercial purposes such as applications or visualizations. The RA make all data available on Open Data that are also offered on STATcube.

2.5.5. WirtschaftsAtlas Österreich

The [Economic Atlas of Austria](#) (German only) provides an easy, quick and clear overview of the structure of the Austrian economy as a whole so that numerous questions about national and European economic activity can be answered. This database is divided into 13 thematic blocks and includes more than 270 features. In addition, the data used in the Economic Atlas can be accessed interactively and free of charge via the statistical database STATcube. Furthermore, individual tables can be compiled and simple graphical representations can be made.

2.5.6. STATatlas

The [STATatlas](#) is an online atlas system of Statistics Austria. It is the central collection for Statistics Austria's online map products and offers a broad overview of a wide range of statistical products. A wide variety of topics can be comprehensively explored here in one place. The digital thematic maps are designed to visualize complex topics in a simple way and to illustrate regional differences at a glance.

2.5.7. Print publications

[Statistical Yearbook of Austria](#): The main results of the RA are published annually in the Statistical Yearbook of Austria.

[Statistische Nachrichten](#): Current results, but also newly created variables, were and are presented in detail in articles of the Statistische Nachrichten with – as far as this medium allows – an extensive methodological explanation, as well as tabular and graphic presentation of the results.

[Österreichischer Zahlenspiegel](#): The monthly folder is intended to provide an insight into all areas of official statistics. On five pages, the latest results of Statistics Austria are presented – each briefly summarised and graphically presented. An article by the RA is also published once a year.

[Austria.Data.Figures.Facts](#): Here it gives an insight into the living conditions of people in Austria. The statistical results and indicators from the economy and society provide precise information on a wide range of topics, such as population, education, employment and the labour market, the economy, science and technology, tourism, the environment, transport, etc. and, in a separate section, on characteristics of the nine federal provinces.

2.6. Policy for metadata

Statistics Austria provides information in a standardized form on the underlying concepts, definitions and explanations, including information on the methods used and on the quality of the statistics (meta-information).

The meta-information provided enables users to correctly interpret the statistical information offered, to fully exploit its information content and to assess its quality.

In cooperation with the Statistics Council's "Quality Assurance" committee, "feedback discussions" on the quality of the various statistical products are held on an ongoing basis as part of Statistics Austria's quality management on the basis of "standard documentations".

The content and objectives of the "feedback discussions" are to critically analyse the quality aspects of the statistics, paying particular attention to the methods and procedures used, to identify potential for quality improvement and to develop recommendations for improvement measures, as well as to improve the "standard documentation" of the statistics discussed in each case, taking into account in particular the views of users and external experts.

In 2019, a revised standard documentation for regional accounts by economic sector and NUTS 2 (federal provinces) was prepared and published on the Internet¹⁸.

¹⁸ The English summary can be found here:

https://www.statistik.at/fileadmin/shared/QM/Standarddokumentationen/VW_en/engl_std_v_rgr.pdf

3. Methodology for the calculation of regional GVA

3.1. *Basic principles for all economic sectors*

3.1.1. Data sources and information available

3.1.1.1. Statistical business register for statistical purposes (SBR)

Information from the Statistical Business Register is partly used directly for the compilation of data in the Regional Accounts (calculation of the self-employed) and on the other hand for plausibility checks. First and foremost, however, the SBR is important for the RA because of its function as the basic population for sampling (and – until the reporting year 2001 – extrapolation) of the SBS and the STS. For both uses, both the completeness and the topicality of the SBR (with regard to enterprise structures, activity allocations, etc.) are of great importance. Both properties are ensured by the ongoing inclusion of information from external sources (Austrian Economic Chamber, umbrella organisation of social security institutions, tax register, company register, etc.).

In recent years, public and private non-profit units as well as agricultural and forestry enterprises have also been successively included in the SBR. Problems remain, however, as the units in the SBR often do not correspond to the computational depth of the National Accounts or Regional Accounts, especially in sectors 13 (general government) and 15 (non-profit institutions serving households).

With the year 2020, the Statistical Enterprise was implemented in the SBR as a new unit concept. A statistical enterprise corresponds to the smallest combination of legal units that forms an organisational unit and has a certain degree of decision-making freedom with regard to the use of its incoming resources. A statistical enterprise may consist of one or more legal units, carrying out one or more activities at one or more locations. Since the legal enterprise remains the central surveyed unit for all economic statistics surveys, this extension of the unit concept has no direct impact on National or Regional Accounts.

3.1.1.2. Structural business statistics survey (SBS)¹⁹

The SBS is a survey that has been carried out annually since 1997 in accordance with EU requirements, in which enterprises (legal units) located in Austria are recorded together with their kind-of-activity units (until 2020) and places of work (local units). The results of the SBS are available one and a half years (t+18 months) after the end of the reporting year.

Before 2002, however, there were restrictions in the range of characteristics, especially at the level of kind-of-activity unit, which primarily affected their intermediate input. The SBS was also conducted in the form of a rotating sample, i.e. with the exception of the fully surveyed areas, there was an annual

¹⁹ For further informations have a look at [Standard-Dokumentation LSE \(German only\)](#).

exchange of the enterprises surveyed. The resulting imprecision also had an impact on the results of the regional accounts.

Since the 2002 reporting year, the SBS has been conducted in the form of a cut-off sample. This means that when a certain threshold value is reached, enterprises are surveyed primarily. In the manufacturing sector, this is generally 20 employees²⁰, although in some economic sectors, companies with fewer employees are also included in the survey if they exceed certain turnover thresholds. In the service sector, there are both turnover and employment thresholds, whereby the respective thresholds depend on the activity. In the 2017 reporting year, they ranged from €0.45 million to €3.15 million, or between 10 and 20 employees.²¹ The estimation of the required variables for the enterprises below these thresholds is carried out with the help of statistical models using employment data from the umbrella organisation of the social security institutions, turnover, corporation and income tax data from the tax authorities, as well as wage tax data from the tax authorities.

Until the reporting year 2020, the SBS covered OENACE 2008 sections B to N²² and division S95. The primary survey includes a good 10% of the enterprises in the population and thus achieves a high degree of coverage of the relevant variables: In the reporting year 2017, for example, about 33,700 enterprises were surveyed (10% of the population), which covered about 81% of the turnover and 72% of the employed persons.²³

The data collected within the framework of the SBS refer to the business year. This circumstance must be taken into account in the calculations of the National and Regional Accounts with corresponding corrections (see Chapter 3.1.11).

With the 2018 Structural business statistics survey, the statistical enterprise was used in economic statistics for the first time (see 3.1.1.1). Since the central surveyed unit for the SBS continues to be the legal enterprise and the survey data are still available at this level, this extension of the unit concept has no direct impact on National or Regional Accounts.

Surveys by the Oesterreichische Nationalbank

For the financial service activities (division 64 of OENACE 2008), detailed data at the enterprise level are collected by the Oesterreichische Nationalbank (Austrian central bank) within the framework of the SBS and made available to Statistics Austria. They come from the banking statistics, whereby the National Bank also collects further data required for the SBS from the approximately 100 largest credit institutions. For the regional breakdown of the enterprise data, the Directorate business statistics of

²⁰ The number of employees as of 30 September of the reporting year is used.

²¹ The current threshold values per activity can be viewed at <https://www.statistik.at/en/about-us/surveys/enterprises/structural-business-statistics-survey>

²² However, the data on financial and insurance services (OENACE K64 and K65) still come from secondary sources (data from the Oesterreichische Nationalbank or the Financial Market Authority).

²³ See Statistische Nachrichten 08/2019: Leistungs- und Strukturstatistik 2017 (German only)

Statistics Austria uses information on the place of work from the wage tax statistics. There is no kind-of-activity unit level in division 64.

Data from the supervisory authority on pension funds and insurance companies

The economic division insurance (OENACE 65, incl. pension funds) is calculated entirely from secondary sources. These are data from the supervisory authority for pension funds and insurance companies, the Financial Market Authority (FMA). Insurance companies and pension funds are recorded in full, but the relevant variables are only available from this source at the enterprise level. A breakdown of the enterprise data at local unit level is carried out in the Directorate business statistics of Statistics Austria on the basis of sub-variables (number of employees from the statistical business register, which in turn are based on information on the place of work from the wage tax statistics). A kind-of-activity unit level does not exist in this area.

Due to a change in the reporting system in the course of the implementation of Solvency 2, there was a shortfall of individual reporting data for the reporting years 2020 and 2021. These had to be estimated by Regional Accounts in order to enable a plausible separation of direct and indirect insurance business.

3.1.1.3. **Short-term Business Statistics (STS)²⁴**

The Short-term business survey in the manufacturing sector covers the OENACE 2008 Sections B to F and was conducted for the first time in 1996. Preliminary results (sum of the monthly surveys Jan. to Dec. of the reporting year) are available in April of the following year, the final results are available in autumn of the following year. The survey form of the STS is a cut-off sample, whereby enterprises with 20 and more employees²⁵ as well as their kind-of-activity units are fully surveyed. Enterprises in the smaller employee size classes are surveyed for those OENACE divisions where this is necessary to achieve the 90% turnover criterion (EU quality criterion under the Goods Production Regulation – PRODCOM). However, for reasons of respondent relief, enterprises with less than ten employees are not surveyed, even if the quality criterion is not yet met.

The survey is carried out at enterprise and kind-of-activity unit level. Data on KAU level of multi-regional enterprises is delimited regionally at the federal province level ("Bundesländerbetriebe") by the Directorate business statistics in bilateral cooperation with the enterprises.²⁶ Since the 2002 reporting year, the information obtained in the STS for the manufacturing sector has been included in the SBS.

On the one hand, the data from the short-term business statistics can be used to obtain information on the regional output (production sold and goods sent for processing) at the activity level (OENACE classification). However, the regional output can also be presented in even greater detail, namely broken down by individual goods (ÖPRODCOM classification). The goods level of the STS is particularly important for regional price and volume measurement in the manufacturing sector (see chapter 3.4).

²⁴ For further information see [Standard-Dokumentation KJE](#) (German only).

²⁵ The number of employees on 30 September of the year preceding the reporting year is used.

²⁶ More details (German only): Statistische Nachrichten 07/2004: Konjunkturerhebung im Produzierenden Bereich 2003

3.1.1.4. **Microcensus** ²⁷

The Austrian Microcensus serves as the data source for the calculation of the regional indicators on housing rentals and imputed rents. The sample of the microcensus is stratified according to the federal provinces and includes about 22,500 dwellings per quarter throughout Austria (definition of occupied dwelling = main residence). The dwelling survey of the microcensus covers all essential dwelling-specific questions relevant for the calculation of dwelling rentals and imputed rents (usable floor space, legal relationship to the dwelling, dwelling expenses, operating costs, etc.). The Labour Force Survey (LFS) conducted as part of the Microcensus is the main source of data in determining the regional hours actually worked (for the aggregate total hours worked).

3.1.1.5. **Data basis for the general government sector**

A main source of data for the general government sector is the Public Accounts and Tax Statistics of Statistics Austria, whose task is to collect and process administrative data of public legal entities. Complete financial statement data are available for the federal government (sector 1311), but without regional allocations. Therefore, regional information on employees or on wages and salaries between 2000 and 2005 is obtained from the data of the personnel information system provided by the Ministry of Finance and, from 2006 onwards, from the federal management information system (MIS) provided by the Federal Chancellery. Here, a regional allocation of compensation of employees (the main component of gross value added, as this is calculated in the general government sector by cost convention = sum of costs) can be made on the basis of the regional information of the wage-paying departments.

For the federal provinces (sector 1312) and also for Vienna, the information from the financial statements prepared by the national accounts is used directly. At least the federal province identification is available for these legal entities from the Public Accounts and Tax Statistics.

Statistics Austria also has access to the municipal financial statements (S.1313). These are also used in the regional accounts.

The social insurance sub-sector (S.1314) is covered by data from the financial statistics of the umbrella organisation of social security institutions (for details see Chapter 3.1.1.7).

For the other legal entities of the general government sector (outsourced units, chambers, funds, universities, etc.), the information processed by the Public Accounts and Tax Statistics is used. In the case of outsourced federal units (S.1311), for which there is usually no regional identification in the Public Accounts and Tax Statistics, regionalisation is carried out using information from the Statistical Business Register or from the wage tax statistics. The same applies to those (rare) other provincial and municipal units (S.1312 and S.1313) that have a federal province designation but have local units in other provinces.

²⁷ For further information see <https://www.statistik.at/en/about-us/surveys/individual-and-household-surveys/microcensus>

3.1.1.6. Data from the tax authorities

The RA primarily use regional evaluations of the turnover tax statistics and the wage tax statistics from the tax authorities. Turnover tax data are of particular importance for those sections of the economy that are not covered by the structural business survey (SBS). The sectors non-financial corporations (S.11) and private households (S.14) are largely fully covered by the turnover tax statistics. This advantage is reduced by the unit concept, which differs from the national accounts. On the one hand, an "enterprise" in the sense of tax can be something different than for national accounts (e.g. in the case of tax units) and on the other hand, the objects of the turnover tax statistics are enterprises instead of kind-of-activity units. A weak point in this context is the activity classification. Although the OENACE is largely taken over from the statistical business register (and is thus national accounts compliant), the activity allocation is only made for the enterprise and not for the individual kind-of-activity units of the enterprise. This is problematic if a kind-of-activity unit belongs to a different activity than the parent enterprise. The aforementioned limitations can affect regional accuracy and lead to distortions between activities.

Since the (final) results of the turnover tax statistics – due to the deadlines granted by the tax authorities – are only available very late (approx. t+27 months), they cannot be taken into account for the latest 2 years in the regional accounts (t+12 and t+24). Instead, data from the advance turnover tax returns are used for these reporting years.²⁸

A very important data source for the regional accounts is the wage tax statistics.²⁹ Wage tax is a special form of income tax: for income from employment. The advantage of this data set is that it can be regarded as largely complete. It is of particular importance in the non-profit institutions serving households (NPISHs) sector (S.15), for whose calculation no turnover tax data are available. From the perspective of regional accounts, the following points currently need to be taken into account:

- Only since the reporting year 2010 have results also been available at the places of work level; previously, reporting was only at the enterprise level.
- The unit problem mentioned above applies especially to the wage tax data. In the general government sector (S.13) they can therefore only be used to a very limited extent.
- The OENACE allocation may differ from the SBR.
- The wage tax statistics contain data on employees and compensation of employees, but no revenue or turnover data.
- The wage tax data are usually available at time t+12 months. Therefore, these data can only be used to a very limited extent for the calculation of the most current year in the regional accounts.

²⁸ More detailed information on the statistics of the advance turnover tax returns with regard to the collection period and threshold values can be found in the standard documentation on turnover tax statistics.

²⁹ For further information see e.g. [Publikation: Statistik der Lohnsteuer 2021 \(German only\)](#).

3.1.1.7. **Data from the umbrella organisation of Austrian social security institutions³⁰ (DV)**

DV employment statistics:

According to the umbrella organisation of the social security institutions, all those persons who are in an employment relationship subject to social insurance or who are self-employed subject to social insurance are referred to as employed. Insurance relationships are counted, i.e. a person who is simultaneously employed by several employers is counted several times, which corresponds to the ESA concept of jobs. Persons commuting in from abroad without residence in Austria are included. Conversely, persons commuting abroad who are insured abroad are not included; thus the domestic concept is maintained. The DV data include employment (blue-collar workers, white-collar workers, contractual employees in the public sector, civil servants, apprentices, marginally employed persons, soldiers, military and civilian conscripts) and employment from self-employment (agriculture and forestry, commercial economy, liberal professions, small entrepreneurs, independent service contracts).

By means of a qualification characteristic, it is possible to evaluate the occupational status. This makes it possible to distinguish self-employed persons from non-self-employed persons and to form a dominance criterion for determining the main occupation. The DV thus proves to be an important data source not only for the number of jobs but also for the calculation of persons.

According to the ESA 2010, all military personnel (professional soldiers, temporary soldiers and conscripts, including conscripts used for civilian purposes) must also be recorded under employees. The information on the number of conscripted military and civilian servants of the DV cannot be used regionally. Information from the Civilian Service Agency³¹ and other data sources are used to estimate the number of military and civilian conscripts.

DV data have some imprecision in the recording of the exact place of work. Enterprises with locations in several federal provinces generally have different “employer accounts”, which are separated according to federal province. However, this only applies to a limited extent to multi-regional units in the general government sector. Furthermore, some special social insurance institutions (health care institutions) are not sufficiently recorded in the group of the self-employed on the one hand, and freelancers or unpaid family workers in the group of the self-employed on the other hand. There is also no information on the hours worked, only a distinction between marginal and non-marginal employment is possible.

The activity allocations largely correspond to the concepts of the national accounts, as the DV has already been taking over the OENACE from the SBR for several years. However, restructuring of enterprises can lead to misallocations due to the unit problem (DV employer accounts vs. legal units

³⁰ The Main Association of Austrian Social Insurance Institutions (HV) was renamed to “Dachverband der Sozialversicherungsträger” (Umbrella Organisation of Social Security Institutions) as of 1 January 2020 in the course of the organisational reform of the social insurance system.

³¹ Zivildienstserviceagentur

according to SBR). In this case, updating the link between the enterprise code (SBR) and the employer account (DV) may take some time and lead to allocation errors in the meantime due to this delay (time lag).

The advantages of data by the DV are, above all, the very rapid availability and the largely given completeness within the recorded areas. The data are available as average values (for the year, quarter, month...) that can be calculated over insurance periods. For some activities in the national accounts, such as house care-taking (in OENACE section L) and in the t+12 year also for the NPISH sector (S.15), the (regional) data of the DV are also an essential source for the calculation of gross value added.

DV financial statistics:

As already mentioned above, the financial statistics of the DV are used in the calculations for the social insurance sector. For the market area ("own facilities" of the social insurances in the economic sector health care), regional data on the individual facilities are also available from the publications of the social insurance institutions. For the non-market part of the social insurance (section O: public administration and defence; compulsory social insurance), however, only values of the individual insurance institutions are available, which are then assigned regionally by means of suitable indicators.

3.1.1.8. Non-agricultural business census 1995

Until the SBS 2021, the 1995 non-agricultural business census was the last full economic statistics survey that covered all sectors of the business economy, with the exception of agriculture and forestry and the so-called non-market producers (public service, non-profit institutions serving households). Freelance professions (doctors, lawyers, civil engineers, management consultants, etc., except freelance artists) were also surveyed. The business census 95 contains detailed information on turnover, intermediate consumption, employees, compensation of employees and gross investments. The survey units of the census 95 were the enterprise, the establishment (the kind-of-activity unit) and the place of work (local unit). In a few activities that are not covered by the SBS (before 2021), information on intermediate consumption still serves as a benchmark (see also Chapter 3.1.2 or in detail Chapter 3.2).

3.1.1.9. R&D statistics

The R&D statistics are a primary statistical survey of institutions and enterprises that carry out R&D, which has been conducted every two years since 2002. Due to the necessity of a legal change in 2007, a survey was exceptionally conducted in both 2006 and 2007, so that since then it has been conducted in the odd-numbered calendar years. The methodological basis for R&D statistics is the OECD's Frascati Manual, which is the globally valid methodological manual for the statistical recording of R&D. The R&D performing institutions are divided into four "performing sectors"³²: the "business enterprise sector", the "higher education sector", the "government sector" and the "private non-profit sector". The business enterprise sector in turn includes the "profit-oriented enterprises (company R&D sub-sector)" and the

³² The sector classification according to R&D statistics does not correspond to that of the ESA.

"cooperative sector".³³ The main variables surveyed are: R&D employees, R&D expenditures, the financing of these expenditures as well as the type (basic research, applied research, experimental development) and objective of the R&D activities. The deepest regional breakdown published is the federal provinces level. Detailed information on the use of this source for calculating regional investment in R&D can be found in Chapter 3.1.11.3.

3.1.1.10. **Data sources for price and volume measurement**

For price and volume measurement at the regional level, different data sources have to be used depending on the economic activity and the availability of price or volume information.

In principle, the various price statistics from Statistics Austria are mainly used as data sources for price and volume measurement in the national accounts (see also standard documentation National Accounts p. 47). The following price indices are also available at the regional level and are used for deflation in the regional accounts:

- Regional evaluations of the consumer price index
- Regional construction price index for building construction
- Regional index of agreed minimum wages
- Real estate price index of the Austrian Economic Chamber

National price index with regional, annually varying weighting of goods from the short term business statistics survey

Due to the lack of regional producer prices, import prices and wholesale prices, national price indices are combined with regional data from the short term business statistics survey for the manufacturing sector. The indices are taken from the price database of the national accounts. This contains annual price indices for all revenue and input categories for each industry (at national accounts level). These price indices are in turn composed of several price indices for specific goods, weighted on the basis of supply-use information. For the purposes of regional price and volume measurement, the regionally assigned output from the short term business statistics is deflated at the goods level with the corresponding national price indices (further information can be found in chapter 3.4).

Other data sources for the calculation of indices for regional price and volume measurement

In some activities, output and/or intermediate consumption are deflated using other regionally available data:

- Microcensus housing survey to calculate regional price indices.
- Regional data from the material input statistics in combination with national price indices (OENACE E)
- Overnight stays statistics in combination with national price indices

³³ Detailed information can be found in the respective [website](#) (standard documentation in German only).

Volume Indicators

In some activities, volume indicators are used for the calculation at constant prices:

- DRG system (procedure-oriented hospital financing) as a volume indicator in the health sector
- Number of children, pupils and students looked after as volume indicators in the economic sector of education

3.1.1.11. Other data sources

[Aquaculture production statistics](#)

[Statistics on day care](#)

[School statistics](#)

Survey of residential buildings' construction costs

Data on [building permits](#) and [building completions](#)

[Data on buildings under construction](#)

[Data on overnight stays](#)

[Annual average population data](#)

[Census of local units of employment](#)

[Health statistics](#)

[Civilian service statistics](#)

Enterprises' annual reports

3.1.2. Use of benchmarks and extrapolations

In principle, for each industry and each reporting year, an original calculation of gross value added is carried out in regional accounts. However, the SBS data for the years 2000 and 2001 do not allow reliable estimates of regional GVA in some industries, due to the rotating sample used in these years. In these cases, the regional structure of the 2002 SBS data is used as a benchmark for estimating GVA for 2000 and 2001 (see chapter 3.2).

In some industries that are not covered by the SBS, information from the non-agricultural business survey 1995 is still being used for estimating intermediate consumption (see chapter 3.2).

Data on intermediate consumption is not yet available at the time of compiling regional accounts for the most recent reporting year either – apart from business reports. Therefore, the previous year's ratio of intermediate consumption to output (based on SBS data) is generally used to extrapolate GVA (see chapter 3.3).

3.1.3. Treatment of multiregional units

For the purposes of regional accounts, both the region and the industry must be accurately defined. Since the kind-of-activity unit (KAU) can cover one activity in several regions, and the local unit may comprise several activities in one spatially defined place, neither of them is suitable for regional accounts. Therefore, in accordance with ESA 2010, the local kind-of-activity unit (local KAU) is used for calculations and analyses (see chapter 1.2.2). It takes both dimensions into account at the same time and is most suitable for measuring flows in the production process at the regional level.³⁴

The economic activity of a local KAU is determined by the kind-of-activity unit, while its regional classification is determined by the local unit. In other words, the local KAU is the part of a kind-of-activity unit that is resident at a certain location. In the Austrian regional accounts, local KAUs are generated by assigning the **economic activity classification of the kind-of-activity unit** to all its local units. The calculation of gross value added for each local KAU provides the basis for the **correct allocation of uniregional and multiregional units** to NUTS regions and economic activities.³⁵

However, neither business surveys nor administrative data are based on the local KAU. In addition, the implementation of FRIBS/EBS in the reporting year 2021 has led to extensive changes in Austrian business statistics. These changes include the elimination of the KAU for the scope of SBS. At the same time, the local unit level is now receiving more attention in SBS. For selected units, local turnover data are being collected from the reporting year 2021 on. In STS, on the other hand, the KAU was retained.

Up to the reporting year 2020, however, and therefore for the scope of this inventory, Austrian SBS comprised resident enterprises (legal entities, “ZR” in terms of Statistics Austria’s business register) as well as their corresponding establishments (kind-of-activity units, “K”) and places of work (local units, “S”). Three types of enterprises could be distinguished:

- Type “ZRKS”: In this case, enterprise equals KAU equals local unit. There is only one location, so these enterprises are “uniregional” and correspond to a local KAU.
- Type “ZRK”: The enterprise is comprised of only one KAU. There are several local units, which may either be located all in one region (“uniregional”) or in different regions (“multiregional”). The local units are assigned the economic activity of the KAU.
- Type „ZR“: The enterprise consists of more than one KAU. Individual KAUs may not only be located in a different region than the enterprise headquarters, they may also operate in a different industry. These KAUs can be structured as follows:
 - Type „KS“: The KAU and local unit are identical. Such a KAU corresponds to a local KAU.
 - Type „K“: The KAU consists of more than one local unit. These local units may either be located all in one region (“uniregional”) or in different regions (“multiregional”). The local units are assigned the economic activity of their superordinate KAU.

³⁴ see [ESA 2010](#), 13.13 ff. and Eurostat: [Manual on regional accounts methods](#) – 2013 edition, p. 24ff.

³⁵ Regarding this section see: Council Regulation (EEC) No 696/93 of 15 March 1993

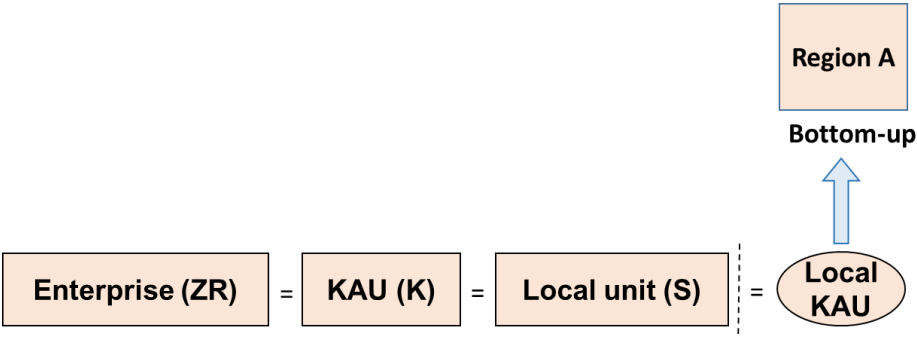
As of the reporting year 2021, the KAU level has been eliminated from SBS, and only two types can be distinguished from the SBS data:

- Type "ZRS": Here, the enterprise is the same as the local unit. There is only one location, so these enterprises are "uniregional" and correspond to a local KAU.
- Type "ZR": The enterprise has more than one local unit, which may either be located all in one region ("uniregional") or in different regions ("multiregional"). Local units are assigned the economic activity of the enterprise.

A central task of regional accounts is to calculate or estimate the GVA of the local KAUs, and then to aggregate GVA by industry and region. For this task, regional accountants use information available at the levels of the enterprise, the local unit, and, if applicable, the KAU.

In this context, a distinction must be made between bottom-up and top-down approaches. If the GVA of the individual local KAUs can be aggregated directly "from the bottom up", this is referred to as a **bottom-up method**. This is the case, wenn GVA at the local KAU level can be calculated originally from revenue and intermediate consumption data. This is the case if an enterprise or a KAU consists of only one local unit, i.e. for the above-mentioned types ZRKS and KS (up to reporting year 2020) or ZRS (as of reporting year 2021). Figure 7 shows the structure of an enterprise for which the calculation of gross value added can be carried out using the bottom-up method.

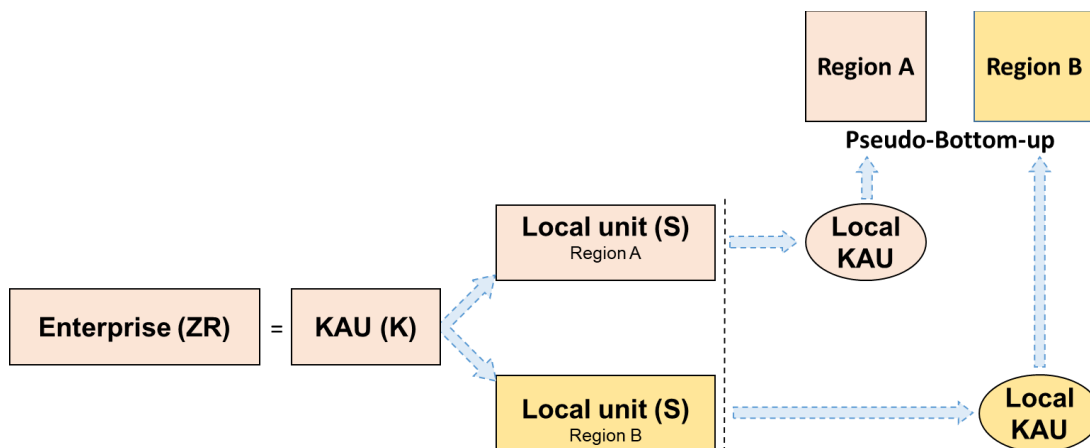
Figure 7: Bottom-up method in case of enterprises with one local unit (ZRKS)



However, if an enterprise (or a KAU) consists of more than one local unit, i.e. in the case of types ZRK and K (up to reporting year 2020) or ZR (as of reporting year 2021), GVA needs to be estimated for the local KAUs, since the variables required to calculate GVA are not available at local KAU level. This estimate can be made, for example, using the gross wages and salaries known for each local unit. This is referred to as a pseudo-bottom-up method.³⁶ Figure 8 schematically shows the structure of an enterprise with several local units in different regions for which a pseudo-bottom-up method is used.

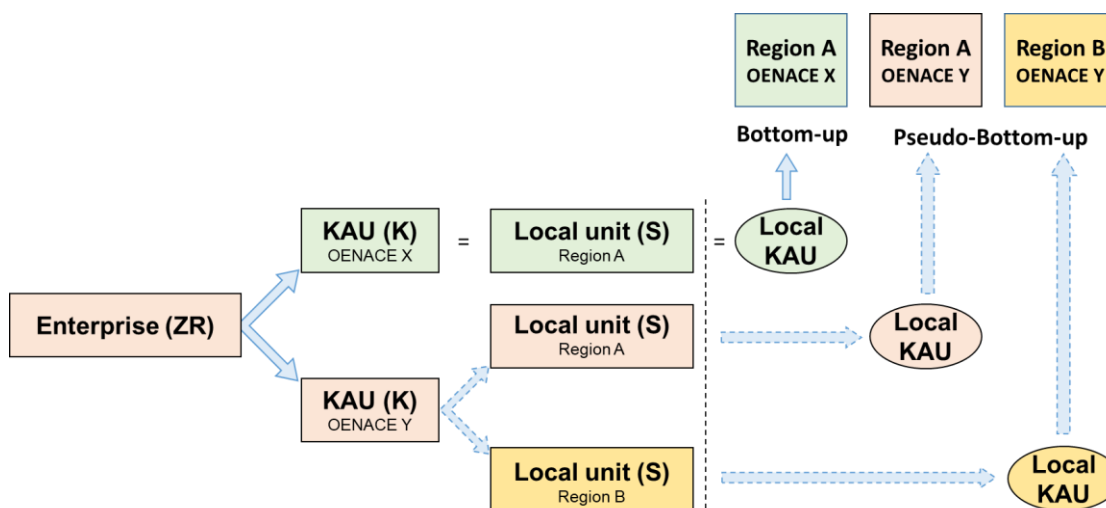
³⁶ In the case of uniregional enterprises (or KAUs) with multiple local units, the pseudo-bottom-up method will lead to the same end result as a hypothetical bottom-up method.

Figure 8: Pseudo-bottom-up method in case of multiregional enterprises with one KAU (ZRK)



The most complex case is that of multi-regional enterprises with more than one KAU. As Figure 9 illustrates, bottom-up and pseudo-bottom-up methods may need to be applied side by side in such cases. In this example, the enterprise is made up of two KAUs, one of which consists of only one local unit (green). As mentioned above, the GVA of the local KAU can be directly calculated in this case, since the main revenue and intermediate consumption components are available at KAU level from SBS. This is therefore a bottom-up method. The second KAU of this enterprise, however, consists of two local units in different regions (red and yellow). In this case, it is necessary to estimate the local KAUs' GVA analogously to Figure 8 (pseudo-bottom-up method).

Figure 9: Bottom-up and pseudo-bottom-up method in case of multiregional enterprises with more than one KAU (ZR)



As mentioned in chapter 1.2.5, Eurostat generally recommends the use of a bottom-up method. If there is insufficient information available to estimate the GVA for the local KAUs, a **top-down method** has to be applied. In this case, the national GVA value of an industry is allocated “top down” to the regions on the basis of an indicator. This indicator should be as strongly correlated to the industry's GVA as

possible. It may very well be based on (aggregated) individual data, such as the number of employees in a certain industry. The decisive difference to bottom-up methods is that the calculated GVA numbers are only linked to a region, they do not relate to single local KAUs.

For a detailed presentation of the standard methods used to calculate GVA in the Austrian regional accounts, please refer to chapter 3.1.11.

3.1.4. Treatment of ancillary activities

„*Definition:* an ancillary activity is an activity whose output is intended for use within an enterprise.“ (ESA 3.12).

„If an establishment undertaking only ancillary activities is statistically observable, in that separate accounts for the production it undertakes are readily available, or if it is in a geographically different location from the establishments it serves, it is recorded as a separate unit and allocated to the industrial classification corresponding to its principal activity, in both national and regional accounts. In the absence of suitable basic data being available, the output of the ancillary activity is estimated by summing costs.“ (ESA 13.23).

Establishments that carry out ancillary activities are mainly found in the manufacturing sector and here above all in the sections "manufacturing" and "electricity, gas, steam and air conditioning supply" (OENACE C and D). The information on whether a kind-of-activity unit (KAU) carries out an ancillary activity is available in the business register. The business register, in turn, is fed on the one hand by the economic statistics surveys and on the other hand by independent allocation if the unit can be identified as a central office, for example.

The ancillary units are analysed by the RA on an ongoing basis using SBS data. Only those enterprises that did not report revenues for the ancillary KAU and that are the most relevant for the regional accounts in terms of "costs" are treated specifically.

The calculation of the gross value added of these ancillary units by the RA is based on the ESA and the RA manual and sets the revenues of the ancillary KAU equal to its "costs".³⁷ These are estimated on the basis of their gross wages and salaries plus their purchases of goods and services. The estimation of the gross value added of the ancillary units is thus carried out using an approximation, namely implicitly by correcting the ratio of the revenues of the ancillary units, which in turn is used to allocate the output at the enterprise level to the establishment level.

³⁷ See [Manual on regional accounts methods](#), chapter 4.3. (S. 49): "If output of an ancillary unit is recorded, the main rule in national accounts is that 'output of the ancillary unit may be estimated by summing costs' (ESA 2010, par. 1.31 and 13.23)." The calculation of the GVA of the ancillary units is dealt with in great detail in the manual, including example tables.

3.1.5. Treatment of the Extra-regio

Calculations for the extra-regio territory are only carried out in section O (public administration and defence; compulsory social security) and concern embassies abroad. This region is treated as a tenth NUTS 2 region alongside the nine federal provinces and is shown separately.

3.1.6. Approach to exhaustiveness

This topic is given great attention in the national accounts in order to achieve the highest possible exhaustiveness level for the gross domestic / gross national income calculation.³⁸

The regional coverage varies from industry to industry and also depends on the data sources used. In national accounts, a difference is made here between statistical incompleteness (VAT test, conceptual differences in business accounting vs. national accounts, FISIM and market making as intermediate consumption) and shadow incompleteness (without invoice transactions, tips, own-account and undeclared work as well as illegal activities). For the former, no separate calculations are carried out in regional accounts, but the national adjustments are adopted within the regional balancing to the national totals by means of proportional distribution to the regions. In principle, the additions in the area of shadow economic incompleteness are also made via the regional proportional balancing to the national totals. However, if regional data are available, additional regional calculation models are applied. Particularly in recent years, RA have paid special attention to developing methods in this area in order to regionally reproduce certain supplements of the national accounts for the exhaustiveness of the data and thus to improve regional accounts calculations.

In particular, regional indicators could be developed for the following relevant shadow economic components:

3.1.6.1. Renting out of private rooms – revenues off the books (including VAT evasion without mutual agreement)

The contribution of renting out of private rooms is allocated to the individual federal provinces on the basis of regional overnight stays. The estimate for private overnight stays arranged via online portals is based on a calculation of the national accounts for the 25 largest Austrian municipalities (by number of inhabitants) and is therefore available in regional breakdown.

3.1.6.2. Own-account production and undeclared work

Own-account production in private housing construction

Here, the labour input of building owners, relatives, neighbours and undeclared workers for investment activities (new construction, housing improvement, renovation of old buildings) is valued and added to the output and the GVA of the construction industry. Worth mentioning here are the own-account

³⁸ More details can be found in the [National Accounts – Inventory of Methods](#) (chapter 7).

productions in non-agricultural housing construction (above all the own-account production in one- and two-family houses built by private persons and the own-account production in the area of housing improvement, renovation). The corresponding national values are regionalised by RA on the basis of regional data from the microcensus and the building completions.

Cleaning services in households

The majority of cleaning services performed for private households is done by persons who are not officially employed. The national accounts estimate the extent of undeclared work with the help of the consumption surveys. Since the persons providing these shadow economic services usually work for several households at the same time and thereby essentially act like self-employed persons, the estimate is attributed to the sub-section OENACE 81.2 (cleaning activities) as mixed income. It is regionalised by RA on the basis of the distribution of the number of households from the microcensus.

3.1.6.3. **Illegal activities**

Estimates for drug dealing and cigarette smuggling

The national accounts provide estimates on the volume of drug dealing and cigarette smuggling. Estimates are also conducted in the regional accounts for the entire time series. The main difficulty is to gain regional information on drug dealing and cigarette smuggling. Therefore, with the help of the 2008 Drug Report, regional structures were created for a base year split according to different types of drugs. For cigarette smuggling, regional structures for a base year were estimated with the help of the 2014 health survey. As this survey was only conducted at the level of the federal provinces, a regional distribution to the NUTS 3 regions was made on the basis of the population aged 12 years and older.

Prostitution

In the national accounts, illegal prostitution is estimated using a supply-side approach. Information from police and aid organisations is used as sources for the approximate number of illegal sex workers and their presumed average income. The basis for the regional estimate is primarily figures on registered prostitutes from the reports of the Working Group on Prostitution within the Task Force on Human Trafficking.

3.1.7. **Calculation of FISIM**

The idea of FISIM (Financial Intermediation Services Indirectly Measured) is that financial intermediaries do not only provide services that are directly remunerated (e.g. through commissions), but also provide services related to lending and deposit-taking. These services are remunerated indirectly – financial institutions charge for them by charging a higher interest rate for loans and paying a lower interest rate for deposits than they could. Accordingly, FISIM is part of the output of banks in OENACE K / S.12 ("service charge concept"). In the other sectors or economic activities, FISIM is allocated as intermediate consumption – which reduces the gross value added in each economic activity. It is also recorded as part of consumption expenditure, exports and imports.

With the ESA 2010, the calculation of the FISIM has been refined. The two most important changes are that different reference interest rates can now be used for different currencies and that the way in which the internal reference interest rate is calculated has been changed.³⁹

The calculation of the regional FISIM cannot be conducted in the same way as for the national accounts since the necessary data (such as loan and deposit stocks) are not available at the regional level. Instead, the FISIM output at national level is allocated to the NUTS 3 regions using a top-down method. The distribution key used is the balance of interest income and interest expense of the local KAUs.

From the expenditure approach perspective, FISIM can be regionalised at the respective level of economic activities. Depending on the OENACE section, calculations are made at the level of divisions, groups, classes or even subclasses (see chapter 3.2). The regional breakdown is in each case proportional to the gross value added.

3.1.8. Adjustments for commuting

In line with the residence principle, gross value added is reported in the region in which the respective local KAU is located. No adjustments are made for commuting flows.

3.1.9. Transition from GVA to GDP

Gross value added is the total value of goods and services produced by resident units in the production process (output), diminished by goods and services consumed, processed or transformed in the production process (input = intermediate consumption). In the Austrian national and regional accounts, gross value added is in principle initially calculated at market prices. In order to be comparable at the European level, GVA at market prices is converted to basic prices in the individual activities in accordance with the European transmission program. The allocation of other taxes on products and other subsidies on products is basically done at OENACE division level or, if possible, even more precisely (regionalisation indicator = GVA at market prices).

Like GDP, gross regional product (GRP) is valued at market prices. The transition from regional gross value added, which is valued at basic prices, to GRP (at market prices) is carried out by allocating national GDP to the individual regions on the basis of regional GVA at basic prices in accordance with ESA (13.43).

3.1.10. Method used for the compilation of regional GDP per capita

In order to make regional GDP (GRP) of different-sized regions comparable with each other, it is divided by the number of inhabitants (resident population) or by the number of employed persons (at the place of work). The regional resident population (NUTS 2 and NUTS 3) is a mandatory aggregate to be

³⁹ For a detailed description of methods, see [National Accounts – Inventory of Methods](#) and Statistische Nachrichten 02/2018, pp. 179ff: „Die unterstellte Bankgebühr (FISIM) im ESVG 2010“ (German only).

reported according to the ESA transmission program. However, the population data are not calculated by the RA themselves, but are taken over from the Directorate Social Statistics of Statistics Austria. They are annual averages.⁴⁰

When considering the indicator "regional GDP per inhabitant," commuting effects have to be taken into account. For example, a person from Burgenland working in Vienna contributes to Vienna's GRP with his or her labour output, but counts as part of Burgenland's resident population. Conceptually coherent per capita data are provided by the GRP per person employed, as both are measured at the place of work.

3.1.11. Standard method for calculating regional gross value added

This chapter presents the main standard methods of the Austrian regional accounts, which are used in most industries. Deviating calculation methods are referred to in the descriptions of the individual OENACE sections (see chapter 3.2).

3.1.11.1. Standard method for market producers covered by the SBS

Due to significant changes in the SBS from the reporting year 2021 (especially the elimination of the establishment/KAU level) in the course of the implementation of FRIBS/EBS, the following standard method only applies until the reporting year 2020. As explained in chapter 3.1.3, in the Austrian RA the gross value added of the local kind-of-activity units is calculated in the industries covered by the SBS using a bottom-up or a pseudo-bottom-up method.

For this purpose, output and intermediate consumption are first calculated for each enterprise⁴¹ on the basis of detailed data from the structural business statistics (SBS, see 3.1.1.2) in accordance with the requirements of the ESA 2010 (see Table 2 and Table 3). The balance results in gross value added.

Table 2: Calculation of output at enterprise level

Output (P.1)	
	Turnover
+	Own-account production
+	Other revenues
+	Changes in inventories (of goods for resale, finished products and semi-finished products)
-	Purchases of goods for resale
=	Output

⁴⁰ For further information see: <https://www.statistik.at/en/statistics/population-and-society/population/population-stock/annual-average-population>

⁴¹ The term "enterprise" always refers to the legal unit.

Table 3: Calculation of intermediate consumption at enterprise level

Intermediate consumption (P.2)	
	Purchases of goods and services
-	Changes in inventories (energy, material for treatment and processing)
-	Purchases of goods for resale
=	Intermediate consumption

If an enterprise has several establishments (KAUs), output and intermediate consumption of the enterprise are subsequently broken down to the establishments. The following items collected in the SBS at KAU level are used for this purpose:

- Total revenues of the KAU
- Total purchases of goods and services
 - of which: Purchases of goods and services for resale
- Total stock of inventories at the end of the previous year and at the end of the reporting year

The output (excluding changes in inventories) calculated at the enterprise level is distributed to the KAU level in proportion to the revenues of the KAU. The intermediate consumption (excluding changes in inventories) calculated at the enterprise level is distributed to the KAU level in proportion to the total purchases of goods and services. The different kind of stocks of inventories at the end of previous year and at the end of the reporting year at the enterprise level are distributed to the KAU level in proportion to the total stocks of inventories of the KAUs. The balance of the output and of the intermediate consumption calculated in this way results in the GVA at KAU level.

According to the trade margin concept, the purchase of goods for resale is to be deducted from turnover (and thus from output) and is not to be included in the calculation of intermediate consumption. The situation is different for the purchase of services for resale: here no trade margin calculation is done in most industries. Therefore, the sub-item "purchase of goods and services for resale in the same condition as received" is only deducted from output or intermediate consumption of the KAUs in a few industries; specifically, in those industries in which the purchase of goods for resale (at enterprise level) predominates or in which there is a margin calculation for the purchase of services for resale anyway.⁴²

For those establishments (KAUs) that consist of several local units, the results at KAU level are allocated to them in a further step. No turnover or revenue items were collected at local level in the SBS until the 2020 reporting year.⁴³ For this reason, the gross wages and salaries surveyed per local unit were used

⁴² These are the industries Trade (OENACE G), Food and beverage service activities (OENACE 56), Veterinary activities (OENACE 75), Rental and leasing activities (OENACE 77), Freight transport by road and removal services (OENACE 49.4), Transport via pipeline (OENACE 49.5) and Other transportation support activities (OENACE 52.290).

⁴³ From the reporting year 2021 onwards, the turnover at local unit level will be primarily surveyed for those enterprises that have local units in different federal provinces or in different OENACE sections. In order to cover the NUTS 3 level, the turnover of the local units of the approx. 150 most important enterprises, which have local units within a federal province but in different NUTS 3 regions, is also surveyed.

for the breakdown of GVA to the local level in the reporting year 2017, which is relevant for the present method inventory. The gross operating surplus (GOS) was allocated to the headquarters of the establishment (KAU) in most industries. The remaining GVA, consisting mainly of compensation of employees, was allocated to the local units in proportion to gross wages and salaries. Deviating from this, the gross operating surplus in retail trade and in credit institutions and insurance companies (industries with a pronounced branch network) was broken down to all local units on the basis of gross wages and salaries, just like compensation of employees.

The gross value added levels of the local kind-of-activity units calculated in this way are subsequently aggregated at NUTS 3 level and subjected to in-depth analyses and plausibility checks. In the course of this, necessary corrections and adjustments are made in close coordination with the national accounts.

A significant standard correction in the manufacturing sector is the adjustment for units with business years that differ from the calendar year. As mentioned in chapter 3.1.1.2, the data collected in the SBS always refer to the business year of the units. If this does not correspond to the calendar year for a unit, the data for this unit from the monthly short-term statistics (STS, see chapter 3.1.1.3) are used. The revenue data of the calendar year from the STS are compared with the revenue data of the business year from the STS. With the quota thus determined, the revenues and expenses reported in the SBS are adjusted.

When using bottom-up and pseudo-bottom-up methods, there may be differences between the regional and national levels due to the different data availability at the regional and national levels and the resulting use of different data sources and methods. These are balanced (simultaneously with the already mentioned adaptations for exhaustiveness, see chapter 3.1.6) to the national totals, which means that the difference between the national value and the sum of the regional values is divided proportionally (on the basis of GVA) among the regions. When using a top-down method, the sums of the regional value added automatically result in the national target value; a balancing to the national totals is therefore not necessary here.

3.1.11.2. Standard method for non-market producers

Non-market output is output that is provided to other units for free, or at prices that are not economically significant. (ESA 3.23). Their output takes place only in the sectors of general government (S.13) and non-profit institutions serving households (S.15). Their valuation is cost-based and results as the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production less other subsidies on production (ESA 3.49).

Table 4: Calculation of gross value added of non-market producers

Gross value added of non-market producers	
+	compensation of employees (D.1)
+	consumption of fixed capital (P.51c)
+	other taxes on production (D.29)
-	other subsidies on production (D.39)

= gross value added of non-market producers

Whether an institutional unit is a market or non-market producer depends on whether it sells its output (mostly) at economically significant prices or gives it away (almost) for free. Non-market producers do not finance their production primarily through sales revenues, but through levies (government sector) or membership fees, donations, etc. (S. 15).

The SNA basic rule of "economically significant prices" is supplemented by several criteria in ESA 2010. The so-called 50% criterion serves as a quantitative rule:⁴⁴ It is simply postulated that an institutional unit is a market producer or its output is only sold at economically significant prices if the sales revenue covers more than half of the production costs. In accordance with ESA 2010, production costs now also include capital costs (net interest charge). In recent decades, there has been an increase in outsourcings (i.e. tasks that were previously the responsibility of the federal government, the federal provinces or the municipalities are transferred from the public sector to the private sector and transformed into Ltds, corporations or other legal forms). As a result, public budget expenditures and revenues are reduced. If the degree of self-financing of these outsourced units is below 50% – i.e. if more than half of the current expenditure is not covered by current revenue (without transfers from the federal government, the federal province or the municipality) – they are new "units" that are to be added to the general government sector as non-market producers and are to be surveyed separately. Those units that are above the 50% criterion are classified as market producers in the general government sector or in the "non-financial corporations" sector (S. 11).

As already mentioned in chapter 1.2.3, the general government sector⁴⁵ at the central government level (S.1311) includes the federal government („Bund“), extra-budgetary federal units (including higher education) and the federal chambers. The state government level (S.1312) is composed of data for the federal provinces, the extra-budgetary federal province units and the federal province chambers. Similar applies to the municipal level (S.1313); This includes the municipalities including Vienna, municipal associations and extra-budgetary municipal units. For the social security funds sector (S.1314), the umbrella organisation of the social security institutions (DV), the health insurance institutions, the accident insurance institutions and the pension insurance institutions are taken into account, including their own institutions, extrabudgetary social insurance units, special funds and health care institutions.

In addition to the general government sector, the information on other public units under government control of the respective subsectors is also integrated. An annually updated list is available on the internet.⁴⁶

In regional accounts, as in national accounts, the processed data of the public accounts statistics are taken over, processed according to regional requirements and calculated separately by legal entity. As already described in chapter 3.1.1.5, no regional information is available from the public accounts

⁴⁴ See [Standard-Dokumentation Nichtfinanzielle Sektorkonten](#) p. 30ff. (German only)

⁴⁵ See [Standard-Dokumentation Gebarungstatistik](#) (German only)

⁴⁶ See [Einheitenliste des öffentlichen Sektors](#) (list of government and government-controlled units, German only).

statistics for the legal entity federal government („Bund“). The regionalisation of multiregional units of this sub-sector is done using the wages and salaries from the PIS and MIS system described above.

Table 5: Sector 13: Non-market producers by sub-sector and legal entity

Sub-sector	Legal entity	GVA 2017 of non-market producers in Mio. EUR
S.1311	Total	20.887
	Federal Government	11.377
	Federal Fund	718
	Outsourced Federal Units	1.145
	New Federal Units per ESA 2010	3.330
	Federal Chambers	252
	Higher Education Sector	4066
S.1312	Total	13.803
	Federal Provinces	8.715
	Funds of the Federal Provinces	139
	Outsourced Federal Provinces Units	218
	New Federal Units per ESA 2010	4.041
	Federal Chambers	676
	Higher Education Sector	14
S.1313	Total	11.813
	Municipalities without Vienna	4.895
	Vienna	2.759
	Municipal Fund	168
	Outsourced Municipal Units	149
	New Municipal Units per 2010	3.694
	Municipal Associations	150
S.1314	Total	2.255
	Social Insurance	2.236
	New Social Insurance units (Hospitals) per ESA 2010	19
	Funds of the Federal Provinces	1
S.13	Total Non-market-Production	48.759
S.13	Total Market Production	1.556

Separate accounts must be prepared for outsourced units (hospitals, former municipal establishments, museums, ...) from the time of their outsourcing. If necessary, information from annual reports and the business register is also used. This concerns all transactions to be calculated. Since many units are active in only one region, the calculation is largely done using a bottom-up or, in the case of multiregional units, a pseudo-bottom-up approach (here using PIS, MIS or wage tax data, depending on availability).

No information from the economic statistics surveys is available for the "non-profit institutions serving households" sector (S.15). Top-down methods are used here, with regional information from a wide variety of sources (school statistics, kindergarten statistics, health statistics, bed statistics, financial statistics from the umbrella organisation of social security institutions, structures from turnover tax statistics, wage tax statistics, ...).

3.1.11.3. Calculation of investment in research and development (R&D)

Expenditure on research and development (R&D) has counted as investment rather than intermediate consumption since the introduction of the ESA 2010.⁴⁷ This re-treatment had a GDP-increasing effect and made a detailed calculation of investments in R&D necessary. The conceptual basis and definitions of R&D were developed in the Frascati Manual⁴⁸ and adopted from SNA 2008 and ESA 2010.

The starting point for the calculations are the so-called intramural expenditures on R&D according to research statistics. These comprise the units' total internal R&D expenditure, regardless of how it is financed. Since there is no information on R&D production at market prices, the R&D output is determined on the **cost side**. Costs are interpreted as the sum of the following cost items: Intermediate consumption, compensation of employees, consumption of fixed capital, other taxes on production minus other subsidies, net operating surplus (only for market producers). Basically, a distinction must be made between self-produced (in-house, intramural) R&D and purchased (extramural) R&D.

Own-account R&D of market producers

The basis for the calculations of own-account R&D are the unit data from the R&D survey that takes place every two years (see also chapter 3.1.1.9). This source provides data on most of the R&D cost items mentioned above, namely wages and salaries, other current R&D expenditure and other subsidies. In addition, at the national level, the surveyed investments in construction and fixed capital formation (capital expenditure) are used to calculate consumption of fixed capital. Finally, in order to arrive at the R&D investment desired in the ESA, the R&D that is sold or exported must be deducted from the R&D output.

Since the R&D survey is conducted at the unit level, the calculations of the R&D output can be easily compiled regionally. An exception are the items consumption of fixed capital and net operating surplus, as these are not collected directly – they are broken down to the unit level and estimated regionally using national accounts ratios available per OENACE division.

The R&D investments determined in this way at unit level are then subjected to **regionalisation**. The basis for this is again the R&D survey, which contains the feature "location(s) of the company's R&D activity" in the questionnaire. Here, the company should first report whether R&D was conducted exclusively at the main site. If the company had R&D locations in two or more federal provinces, it should

⁴⁷ Details and conceptual background can be found in the article „Investitionen in Forschung und Entwicklung – Darstellung eines neuen Bestandteils des Bruttoinlandsprodukts laut ESVG 2010“ (Statistische Nachrichten issue 10/2014, German only).

⁴⁸ [OECD Frascati Manual](#) (2002): "The Measurement of Scientific and Technological Activities: Proposed Standard Practice for Surveys on Research and Experimental Development"

also be stated how the R&D employees were distributed among these locations (in %). Based on this primarily surveyed regional structure, the R&D investments of multiregional units are distributed to the federal provinces in a first step. Finally, in order to ensure that the allocation is as plausible as possible at the NUTS 3 level, the R&D survey is additionally linked with the LKAU data from the structural business statistics.

Purchased R&D of market producers Purchased (extramural) R&D is estimated nationally through a balancing at the goods and services accounts level on the part of input-output statistics (IO) for the respective year. The IO uses data on R&D imports and purchases from the international trade in goods statistics (ITGS) and the R&D survey. The basis for the regional breakdown is then the unit data set prepared by the IO. However, for lack of more precise information, no further regionalisation to research locations within a company takes place, in contrast to intramural R&D. The unit data also cover only a part of the purchased R&D; a large remainder is determined by the global IO balancing and distributed regionally proportionally per OENACE division.

R&D of non-market producers

The calculation of R&D of non-market producers is done for units of the general government sector (S.13) analogous to the regionalisation of the other aggregates. The data are collected by the public accounts statistics and, depending on the sectoral breakdown, regional figures are already available (provincial and municipal level) or have to be extra regionalised (federal level). The same regionalisation indicators are used here as for the calculation of the value added.

3.2. Specific methods and sources for compiling regional GVA

3.2.1. Agriculture, forestry and fishing (OENACE A)

OENACE Section A "Agriculture, forestry and fishing" is composed of OENACE Divisions 01 to 03. With a share of 1.4% (reporting year 2017) of the total Austrian gross value added at basic prices, it is one of the smaller OENACE sections. The calculation is made separately for all divisions.

Table 6: National accounts and regional accounts working classification for OENACE A - Agriculture, forestry and fishing

OENACE divisions	National accounts / Regional accounts
01	Crop and animal production, hunting and related service activities
02	Forestry and logging
03	Fishing and aquaculture

The data source for calculating gross value added by federal province (NUTS 2) is the regional economic accounts for agriculture respectively forestry (REAA/REAF). These are satellite accounts to the national accounts, whose structure is closely interlinked with the framework of the national accounts, but which

contain supplementary information on agriculture and forestry and are adapted to the special conditions of these economic sectors. The regional economic accounts for agriculture respectively forestry are compiled by the Directorate spatial statistics of Statistics Austria.

The methodology and concepts of the REAA are set in Regulation (EC) No 138/2004 on the Economic Accounts for Agriculture in the Community and are harmonised with those of the EAA at federal level. The basic unit of the economic sector agriculture – as is generally the case in the national accounts – is the LKAU⁴⁹. For this purpose, the agricultural kind-of-activity unit is used. The application of the LKAU concept has the consequence that, in addition to the main agricultural activity, non-agricultural secondary activities are also recorded if they are not separable from the main activity, such as farm holidays. Due to certain deviations from the general set of rules of the ESA 2010, corresponding reconciliations (bridging tables⁵⁰) are made for the implementation of the national EAA data in the national accounts. The results of the REAA are taken over directly – already at basic prices – by the regional accounts. Content analysis and plausibility checks are carried out by the Directorate spatial statistics; however, the regional accounts are informed about the causes of conspicuous developments, changes in the methodology, etc. The balancing to the national totals is carried out by the regional accounts, i.e. the difference between the REAA and the national accounts is distributed regionally on the basis of the value added of the federal provinces from the REAA.

The economic accounts for forestry are compiled according to the table templates of the European Forest Accounts (EFA). As part of the environmental accounts, the EFAs are basically compliant with the ESA 2010. The annual reporting to Eurostat is done on a voluntary basis. The economic sector is delimited by the sector-specific activities according to the OENACE classification. Accordingly, the economic sector "Forestry and logging" includes man-controlled increment and felling of wood as well as the primary production of wood and non-timber products in commercially exploited productive forest, products of forest nurseries as well as forestry services and inseparable secondary activities. For national purposes, regional calculations are also carried out at the NUTS 2 level. The REAF was compiled in Austria for the first time in 2003 and is now available in the form of a consistent time series from 1995 onwards. The results of the REAF are taken over directly by the regional accounts. Finally, the balancing to the national accounts totals is carried out. Since only minimal taxes on products and no (other) subsidies on products are incurred here, the GVA at market prices in this economic sector is almost identical to the GVA at basic prices.

With regard to revision policy, it should be emphasised that revisions occur more frequently in the EAA and EAF than in the national accounts, which can also affect the entire time series back to the 1995 reference year.

The gross value added of OENACE 03 (fishing and aquaculture) is calculated with the help of the turnover tax or the advance turnover tax return (for the most recent two years).

⁴⁹ For detailed information see [Standard-Dokumentation der RLGR \(German only\)](#)

⁵⁰ For detailed information see [Methodeninventar National Accounts \(Chapter 3.7\)](#)

After balancing the regional accounts working levels to the national accounts totals, the timelines are checked again with regard to the plausibility of the levels and the developments.

3.2.2. Mining and quarrying (OENACE B)

The OENACE section mining and quarrying (B) is composed of OENACE divisions 05 to 09. With a share of only 0.4% (reporting year 2017) in total Austrian gross value added at basic prices, it is the second smallest of all OENACE sections. Gross value added is calculated in national accounts and national accounts aggregated for Divisions 05, 06 and 07 as well as 08 and 09, whereby Division 05 Mining of coal and lignite has not been occupied in Austria since the reporting year 2006. In OENACE Section B there are no units of sectors 13 (general government) and 15 (NPISHs).

Table 7: National accounts and regional accounts working classification for OENACE B – Mining and quarrying

OENACE divisions	National accounts / Regional accounts
05+06+07	Mining of coal and lignite; Extraction of crude petroleum and natural gas; Mining of metal ores
08+09	Other mining and quarrying; Mining support service activities

The data source for the calculation of gross value added by federal provinces (NUTS 2) for the reporting year 2017 was the structural business statistics survey (SBS). The standard method described in Chapter 3.1.11 is used. The distribution of uniregional and mutiregional units in OENACE B is as follows: Based on the SBS, 31% of the gross value added was generated by uniregional units, and 69% by multiregional units.⁵¹

After processing the SBS data according to the standard method described above, the GVA estimates were subjected to in-depth analyses and plausibility checks, and corrections were made where necessary. This concerns in particular the oil and gas companies, whose SBS data are cross-checked against their annual reports. In addition, for the calculation of volume growth rates (based on previous year's prices), oil and gas data (production volumes) of the Geologische Bundesanstalt⁵² are also included in the analysis.

After balancing the results to the national accounts totals on OENACE division level, the time series were checked again for plausibility of levels and growth rates of GVA.

⁵¹ "Unit" here means the legal entity, i.e. the enterprise. „Region" means the federal province (NUTS 2), i.e. "multiregional units" are enterprises (legal units) with locations in at least two federal provinces. "Uniregional units" are enterprises with one or even several locations, but all of which are in one federal province.

⁵² See <https://www.geologie.ac.at/forschung-entwicklung/kartierung-landesaufnahme/energie/erdoel-und-erdgas/erdoel-erdgasdaten> (German only)

3.2.3. Manufacturing (OENACE C)

The OENACE section manufacturing (C) is composed of OENACE divisions 10 to 33. Its share of total Austrian gross value added at basic prices was around 19% in 2017. Among the NUTS 2 regions, this share ranges from 8% in Vienna to 30% in Upper Austria. Manufacturing is the largest OENACE section in terms of gross value added in all federal provinces except Vienna.

The main data source for calculating regional gross value added for 2017 was the structural business statistics survey (SBS). Regional gross value added is calculated at a detailed level of 24 OENACE divisions.⁵³

Table 8: National accounts and regional accounts working classification for OENACE C – Manufacturing

OENACE divisions	National accounts / Regional accounts
10	Manufacture of food products
11	Manufacture of beverages
12	Manufacture of tobacco products
13	Manufacture of textiles
14	Manufacture of wearing apparel
15	Manufacture of leather and related products
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
19	Manufacture of coke and refined petroleum products
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
22	Manufacture of rubber and plastic products
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products

⁵³ In OENACE division C12, manufacture of tobacco products, there have not been any resident units in Austria since 2012.

27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
31	Manufacture of furniture
32	Other manufacturing
33	Repair and installation of machinery and equipment

The standard method described above is used to calculate regional gross value added. The distribution of uniregional and multiregional units in manufacturing is as follows: Based on the SBS, 64% of the gross value added was generated by uniregional units, and 36% by multiregional units.

After processing the SBS data according to the standard method described above, the GVA estimates were subjected to in-depth analyses and plausibility checks, and corrections were made where necessary. After balancing the results to the national accounts totals on OENACE division level, the time series were checked again for plausibility of levels and growth rates of GVA.

The contribution of R&D to gross value added is of particular importance in manufacturing. R&D accounts for around 9% of gross value added in this OENACE section. In absolute terms, this amounted to around EUR 6 billion in 2017 and thus around 80% of total R&D in Austria in that year.

3.2.4. Electricity, gas, steam and air conditioning supply (OENACE D)

OENACE Section D "electricity, gas, steam and air conditioning supply" is composed of OENACE Division 35. This OENACE section is one of the rather smaller ones, with a share of 1.8% (reporting year 2017) in total Austrian gross value added at basic prices. It is calculated in more detail, both nationally and regionally, namely at the OENACE 3-digit level, and thus covers 3 OENACE groups. The exact level of detail can be found in table 7. In OENACE Section D, there are no units of sectors 13 (general government) and 15 (non-profit institutions serving households).

Table 9: National accounts and regional accounts working classification for OENACE D – electricity, gas, steam and air conditioning supply

OENACE divisions	National accounts / regional accounts	
35	35.1	Electric power generation, transmission and distribution
	35.2	Manufacture of gas; distribution of gaseous fuels through mains
	35.3	Steam and air conditioning supply

The data source for calculating gross value added by federal province (NUTS 2) for the 2017 reporting year was the structural business statistics survey. In principle, the standard method described in chapter 3.1.11.1 is used. The distribution of uniregional and multiregional units in OENACE D behaves as follows: 64% of the gross value added was generated by uniregional units in 2017, 36% by multiregional units.

After the Structural business statistics survey has been processed and evaluated using the standard method described, the estimated value added levels are in the next step subjected to in-depth analyses and plausibility checks and, if necessary, corrections are made. In this section, especially in the most current year (t+12 months), in-depth analyses must be performed using existing business reports and, with the help of this information, the STS data or net ratios must be corrected if necessary.

After balancing the results to the national accounts totals, the time series are checked again with regard to the plausibility of the levels and the developments.

3.2.5. Water supply, sewerage, waste management and remediation activities (OENACE E)

Table 10: National accounts and regional accounts working classification for OENACE E – Water supply, sewerage, waste management and remediation activities

OENACE divisions	National accounts / Regional accounts	
36	36	Water collection, treatment and supply
37	37a	Sewerage, waste collection, treatment and disposal activities; materials recovery, remediation activities and other waste management services.
38		
39		

In order to calculate regional gross value added, the standard method described above is used for part of the activities of 36 and 37a, with the 2017 structural business statistics survey as data basis. A distinctive feature of OENACE E is that several establishments are controlled by government units (mostly at the municipal level), but are accounted for as quasi-corporations under sector 11.

These units are not recorded via the structural business statistics survey, but via the public accounts and tax statistics (e.g. closing of accounts from companies). The share on GVA from the structural business statistics survey in sector 11 was about 65% at activity 36 and about 68% at activity 37a. About 77% of the GVA was generated by uniregional units and 23% by multiregional units in 2017. The GVA processed and evaluated according to the standard method were subjected to analysis at the level of individual subsectors. In the case of implausible levels or developments in the time series, corrections were made and documented where necessary. In a further step, the existing differences to the national value added levels were balanced and the plausibility of the result was checked again.

The general government sector (S13), calculated according to the sum of cost method, plays a minor role in OENACE E. It accounts for only about 2% of OENACE E's GVA.

3.2.6. Construction (OENACE F)

Construction comprises seven activities in the national and regional accounts:

Table 11: National accounts and regional accounts working classification for OENACE F – Construction

OENACE divisions	National accounts / Regional accounts	
41	41a	Construction of buildings
	41b	Own-account construction and underground production of dwellings
42	42a	Civil engineering
	42b	Interest groups
43	431	Demolition and site preparation
	432	Electrical, plumbing and other construction installation activities
	433a	Building completion and finishing, other specialised construction activities

41b and 42b (own account services) have been added to the OENACE classification within national accounts to ensure completeness of the construction sector.

3.2.6.1. OENACE 41 bis 43 excluding own-account services

To calculate regional value added for OENACE 41 to 43 (excluding own-account services 41b and 42b), the standard method described above is used, with the 2017 structural business statistics survey as data base.

Approximately 70% of the gross value added was generated by uniregional units and 30% by multiregional units in 2017. The value added levels processed and evaluated according to the standard method were subjected to analysis at the level of the individual subsectors. In the case of implausible levels or developments in the time series, necessary adjustments were made and documented. In a further step, the existing differences to the national value added levels for the areas concerned were balanced to the national totals and the plausibility of the result was checked again.

3.2.6.2. Own-account construction and underground production of dwellings (OENACE 41b)

The national accounts concept requires that labour input in housing construction (by the building owners, relatives, neighbors and undeclared workers) for investment activities (new construction, housing improvement, renovation of old buildings) be valued and included in the value added of the construction

industry. This also applies to own-account services in agricultural housing construction, which are not included in the value added of agriculture and forestry, but in that of the construction industry. In 2017, own-account services accounted for around 40% of value added in construction of buildings (41).

In National Accounts, this item comprises two separately estimated components, namely (a) the original production of houses as own-account work by private individuals and (b) all own-account work performed in the field of housing maintenance and improvement. In the National Accounts, therefore, these two areas are also regionalised separately.

a) Own-account for one- and two-family houses built by private persons:

The regional distribution is estimated using the federal provinces distribution of own-account residential construction or gross fixed capital formation from OENACE 68 (L).

b) Own-account in the field of housing improvement, repair:

The data source for the regional indicator is the microcensus. The regional distribution corresponds to the housing stock according to the housing survey of the microcensus.

3.2.6.3. Interest groups (OENACE 42b)

In addition to the state, there are other institutions that perform tasks typically handled by the government. The term „interest group“ stands for such institutions. The interest groups included in the civil engineering sector are mainly active within the framework of improving agricultural and forestry production bases. In 2017, the interest groups had a share of about 2% in the value added of civil engineering.

The construction activities in question are as follows:

- water engineering (irrigation and drainage)
- improving transport infrastructure in rural areas (construction of goods transport roads and forestry service roads)
- electrification of rural areas
- land consolidation
- torrent and avalanche control
- river engineering.

Interest groups are not included in public sector statistics (financial statistics) or in agriculture and forestry (functionally defined). Legally they are considered as non-profit organisations (NPISH), however, they are controlled by the public sector.

3.2.7. Wholesale and retail trade; repair of motor vehicles and motorcycles (OENACE G)

OENACE Section G "Wholesale and retail trade; repair of motor vehicles and motorcycles" is composed of OENACE Divisions 45 to 47. With a share of 11.5% (reporting year 2017) in total Austrian gross value added at basic prices, it is the second largest of all OENACE sections. Gross value added is calculated

both nationally and regionally at a deeper level and is composed of the 21 OENACE groups listed in table 10. There were no units in sectors 13 (general government) and 15 (non-profit institutions serving households) in OENACE section G in 2017.

Table 12: National accounts and regional accounts working classification for OENACE G – Wholesale and retail trade; repair of motor vehicles and motorcycles

OENACE divisions	National accounts / Regional accounts	
45	45.1	Sale of motor vehicles
	45.2	Maintenance and repair of motor vehicles
	45.3	Sale of motor vehicle parts and accessories
	45.4	Sale, maintenance and repair of motorcycles and related parts and accessories
46	46.1	Wholesale on a fee or contract basis
	46.2	Wholesale of agricultural raw materials and live animals
	46.3	Wholesale of food, beverages and tobacco
	46.4	Wholesale of household goods
	46.5	Wholesale of information and communication equipment
	46.6	Wholesale of other machinery, equipment and supplies
	46.7	Other specialised wholesale
	46.9	Non-specialised wholesale trade
47	47.1	Retail sale in non-specialised stores
	47.2	Retail sale of food, beverages and tobacco in specialised stores
	47.3	Retail sale of automotive fuel in specialised stores
	47.4	Retail sale of information and communication equipment in specialised stores
	47.5	Retail sale of other household equipment in specialised stores
	47.6	Retail sale of cultural and recreation goods in specialised stores
	47.7	Retail sale of other goods in specialised stores
	47.8	Retail sale via stalls and markets
	47.9	Retail trade not in stores, stalls or markets

The data source used to calculate gross value added by federal province (NUTS 2) for the reporting year 2017 is the Structural business statistics survey. In principle, the standard method described in chapter 3.1.11.1 is used. The distribution of uniregional and multiregional units in OENACE G behaves as follows: 56% of the gross value added was generated by uniregional units in 2017, 44% by multiregional units.

A deviation from the standard method relates to the calculation of gross value added in the retail trade (this is an activity with a distinctive network of retail shops), as here the gross operating surplus (GOS) is also allocated to the local units.

Then, in a further step, the estimated value added levels are subjected to in-depth analyses and plausibility checks, and corrections are made where necessary. This applies in particular to the OENACE groups wholesale of food, beverages and tobacco (46.3), wholesale of household goods (46.4) and other specialised wholesale (46.7), as these activities include many internationally active merchanting enterprises whose data of the Structural business statistics survey are cross-checked using their business reports. In addition, for the calculation at constant prices (real growth rates) of some of these merchanting enterprises, the development of prices from their international business reports is included.

In the economic activity OENACE 47.2 (Retail sale of food, beverages and tobacco in specialized stores) and OENACE 47.7 (Retail sale of other goods in specialized stores), estimates are also made for illegal activities. For more information (including on regionalisation), see chapter 3.1.6.

After balancing the results to the national accounts totals, the time series are checked again with regard to the plausibility of the levels and the developments.

3.2.8. Transportation and storage (OENACE H)

OENACE Section H "Transportation and storage" is composed of OENACE Divisions 49 to 53. In the 2017 reporting year, this section accounted for 5.2% of total Austrian gross value added at basic prices. Gross value added is calculated at the same level of detail for OENACE divisions 50, 51 and 53, both nationally and regionally. A different working classification exists in OENACE divisions 49 and 52, which are calculated in greater detail nationally. The level of detail of the national and regional calculation of gross value added can be seen in table 11. In OENACE Section H, there are also quite a few government units, which accounted for approximately 19% of the gross value added of this section in 2017.

Table 13: National accounts and regional accounts working classification for OENACE H – Transportation and storage

OENACE divisions	National accounts		Regional accounts	
49	49.1+2	Passenger rail transport, interurban; Freight rail transport	49.1+2	Passenger rail transport, interurban; Freight rail transport
	49.31-1	Passanger land transport by tramways, trolley buses,	49.3	

		undergrounds and suburban railways		
	49.31-2 +49.39-9	Urban and suburban passenger land transport services by buses (without trolley buses) + Other passenger land transport n.e.c. (except transport by cable railways, funiculars and ski-lifts)		Other passenger land transport
	49.32	Taxi operation		
	49.39-1	Transport by cable railways, funiculars and ski-lifts		
	49.4	Freight transport by road and removal services	49.4	Freight transport by road and removal services
	49.5	Transport via pipeline	49.5	Transport via pipeline
50	50	Water transport	50	Water transport
51	51	Air transport	51	Air transport
52	52.1+52.24	Warehousing and storage + Cargo handling	52 except 52.21-2	Warehousing and support activities for transportation (except operation of toll roads)
	52.21-1	Operation of car parks and garages		
	52.21-9 +52.22	Service activities incidental to land transportation n.e.c. + Service activities incidental to water transportation		
	52.23	Service activities incidental to air transportation		
	52.29	Other transportation support activities bringung von sonstigen Dienstleistungen für den Verkehr a.n.g.		
	52.21-2	Operation of toll roads	52.21-2	Operation of toll roads
53	53	Postal and courier activities	53	Postal and courier activities

The main data source for calculating gross value added by federal provinces (NUTS 2) for the reporting year 2017 was the Structural business statistics survey. In principle, the standard method described in chapter 3.1.11 is used. The distribution of uniregional and multiregional units in OENACE H behaves as follows: 46% of the gross value added was generated by uniregional units in 2017, 54% by multiregional units.

However, there are two exceptions to the GVA calculation. In the OENACE division passenger rail transport, interurban, the regionalisation is based on the employment structure, and in the OENACE subclass operation of toll roads, the regionalisation is based on revenue data at the federal provinces level from the annual report. In both cases, the aim was to estimate a regional value added structure that is more plausible in the regions than the results of the standard method, in which the gross operating surplus (GOS) remains at the headquarters, would have shown.

After the Structural business statistics survey has been processed and evaluated according to the standard method described, in a further step the estimated value added levels are analyzed in depth and plausibility checks are made, and corrections are made if necessary.

3.2.9. Accommodation and food service activities (OENACE I)

OENACE Section I consists of OENACE Divisions 55 (accommodation) and 56 (food services). The National Accounts use a working classification at OENACE group level, while the Regional Accounts calculate this section at OENACE Divisions. Only renting out of private rooms not on farms (a part of OENACE Division 55.9) is calculated separately.

Table 14: National accounts and regional accounts working classification for OENACE I – Accommodation and food service activities

OENACE divisions	National accounts		Regional accounts	
55	55.1	Hotels and similar accommodation	55 without 55p	Accommodation
	55q	Holiday and other short-stay accommodation, camping grounds, recreational vehicle parks and trailer parks, other accommodation (excluding Renting out of private rooms not on farms)		
	55p	Renting out of private rooms not on farms *)	55p	Renting out of private rooms not on farms
56	56.1	Restaurants and mobile food service activities.	56	Food and beverage service activities
	56.2	Event catering and other food service activities.		
	56.3	Beverage serving activities.		

*) Renting out of private rooms on farms is part of the gross value added in agriculture.

The calculation of regional GVA for accommodation and food services – with the exception of renting out of private rooms not on farms – is carried out using the standard method already mentioned above. The data basis is the structural business statistics survey 2017. The share of the contribution of uniregional enterprises to the GVA is particularly high in this activity with 90%, only 10% of the GVA is generated by multiregional enterprises. The predominant enterprise type of accommodation and food services corresponds to "ZRKS", which means enterprise equals establishment equals local unit. Plausibility checks and, if necessary, corrections are made when incorporating the data from the structural business statistics survey.

Since no economic statistics survey data are available for renting out of private rooms, other data sources must be used to determine GVA. The GVA of private room rentals is calculated top-down; the number of overnight stays from tourism statistics in the federal provinces, inflated by regional price indices, yields the regional indicator. The National Accounts make considerable supplementary estimates for private room rentals: on the one hand, they assume significant under-reporting, on the other hand, in connection with "no-bill transactions" and untaxed tips. By applying the top-down method, the national estimates are distributed among the NUTS 2 regions in analogy to the regional indicator.

After balancing the results to the National Accounts totals, the time series are finally checked with regard to the plausibility of the levels and the developments; if necessary, adjustments are made.

3.2.10. Information and Communication (OENACE J)

The OENACE section Information and Communication (J) is composed of OENACE divisions 58 to 63, with divisions 62 and 63 combined. Its share in Austria's total gross value added at basic prices was around 4% in the 2017 reporting year. In the federal provinces (NUTS 2), this share ranges from around 1% (Vorarlberg) to 9% (Vienna). 47% of GVA is generated by uniregional enterprises and 53% by multiregional enterprises. There are also a few government units that accounted for about 5% of GVA in OENACE J in 2017 – the largest unit was the Austrian public broadcaster headquartered in Vienna (ORF) in OENACE 60.

The calculation of regional gross value added is almost identical to the national accounts.

Table 15: National accounts and regional accounts working classification for OENACE J – Information and Communication

OENACE divisions	National accounts		Regional accounts	
58	58.11+ 58.12	Book publishing; Publishing of directories and mailing lists	58	Publishing activities
	58.13+58.14	Publishing of newspapers; Publishing of journals and periodicals		
	58.19	Other publishing activities (without Software)		

	58.2	Software publishing		
59	59	Motion picture, video and television programme production, sound recording and music publishing activities	59	Motion picture, video and television programme production, sound recording and music publishing activities
60	60	Programming and broadcasting activities	60	Programming and broadcasting activities
61	61	Telecommunications	61	Telecommunications
62+63	62+63	Computer programming, consultancy and related activities; Information service activities	62+63	Computer programming, consultancy and related activities; Information service activities

In the market sector, data from the Structural business statistics survey are used for all divisions of the regional accounts in Section J in the 2017 reporting year. The value added of the federal provinces is calculated using the standard method described at the beginning. The gross operating surplus (GOS) is assigned by default to the headquarter of the kind of activity unit, so that the gross value added of the other places of work corresponds to the compensation of employees. The calculated regional value added for the local units is analysed and corrected at the individual data level if necessary. After balancing the results to the national accounts totals on OENACE division level, the gross value added levels for Austria's NUTS 2 regions are analysed again both at the level of the OENACE divisions and at the level of the OENACE section.

3.2.11. Financial and insurance activities (OENACE K)

The OENACE section financial and insurance activities (K) is composed of OENACE divisions 64 "Financial service activities, except insurance and pension funding", 65 "Insurance, reinsurance and pension funding, except compulsory social security" and 66 "Activities auxiliary to financial services and insurance activities", all calculated according to different concepts and using different data sources. Another peculiarity in this economic section is the fact that there is no kind-of-activity level. Since enterprise and kind-of-activity thus coincide, there are only enterprises of types ZRK or ZRKS (up to reporting year 2020) or ZR (from reporting year 2021).

The gross value added of financial institutions and insurance enterprises is regionalised / split proportionally by gross wages and salaries at the local unit level. In deviation from the standard method, the gross operating surplus (GOS) is thus also allocated to the places of work in these two divisions (activities with a pronounced branch network).

Table 16: National accounts and regional accounts working classification for OENACE K – Financial and insurance activities

OENACE divisions	National accounts / Regional accounts	
64	64.11	Central banking
	64.19	Other monetary intermediation
	64.2	Activities of holding companies
	64.3	Trusts, funds and similar financial entities
	64.9	Other financial service activities, except insurance and pension funding
65	65.11	Life insurance
	65.12	Non-life insurance
	65.2	Reinsurance
	65.3	Pension funding
66	66.1	Activities auxiliary to financial services, except insurance and pension funding
	66.2	Activities auxiliary to insurance and pension funding
	66.3	Fund management activities

3.2.11.1. **Financial service activities, except insurance and pension funding (OENACE 64)**

Financial intermediation is subdivided in the RA into the following units: 64.11 'Central banking', 64.19 'Other monetary intermediation', 64.2 'Activities of holding companies', 64.3 'Trusts, funds and similar financial entities' and 64.9 'Other financial service activities, except insurance and pension funding'. The units in OENACE 64 are not direct respondents of the SBS. The data are provided by the OeNB. GVA is regionalised on the basis of compensation of employees.

A significant part of the output of 'other monetary intermediation' (64.19) is the Financial Intermediation Services Indirectly Measured (FISIM). The basic idea is that credit institutions lend at higher interest rates than would theoretically be possible and take deposits at lower interest rates than would theoretically be possible – the respective difference is recorded as FISIM. FISIM data are not available at the regional level. Therefore, the FISIM output of credit institutions calculated at the national level is allocated to NUTS 3 regions using a top-down method. The balance of interest income and interest expense of the local kind-of-activity units is used as allocation key. For more information, see chapter 3.1.7 FISIM.

The output of central banks (64.11) is recorded as intermediate consumption of financial institutions (64.19) in the national accounts. The divisions 64.2 and 64.3 are of very minor importance in Austria – they account for only about 1% of value added within the banking sector K64.

3.2.11.2. Insurance, reinsurance and pension funding, except compulsory social security (OENACE 65)

OENACE division 65 covers private insurance enterprises and is calculated nationally and regionally separately according to the OENACE classes "life insurance" (65.11), "non-life insurance" (65.12), "reinsurance" (65.2) and "pension funding" (65.3). Ancillary activities related to private insurance (e.g. insurance brokers, insurance agents) are classified under OENACE 66.

The output of the insurance business corresponds to the service charge and is – in deviation from the standard method described above – to be determined using the so-called "technical insurance account" and taking into account "investment income" and "other non-technical income". Since the implementation of the ESA 2010, the output of life insurance has been calculated according to sum of cost concept rather than the service charge concept. The reason for this was that changes in (private) accounting rules relating to actuarial reserves led to increasingly inexplicable fluctuations in gross value added. In addition, the calculation was changed from incurred losses to adjusted losses. Adjusted losses result in a smoothing of gross incurred losses over time. Technically adjusted losses are the geometric mean of incurred losses over the last five years, adjusted for inflation. For major events such as natural catastrophes, the difference between incurred and adjusted losses is recorded as a capital transfer from insurance companies to insurant. For more detailed information, please refer to the [national accounts - inventory of methods](#).

Since the reporting year 2016, a separate calculation of life insurance, non-life insurance and reinsurance has been possible thanks to a more detailed data delivery by the Austrian Financial Market Authority (FMA). Prior to 2016, insurance was still calculated as a whole – at the OENACE division level – in the regional accounts.

Like life insurance, the gross value added of pension funds (OENACE 65.3) is also calculated using sum of costs concept.

3.2.11.3. Activities auxiliary to financial services and insurance activities (OENACE 66)

This division is recorded in the SBS. OENACE 66 is calculated at OENACE group level (3 groups) using the standard method. However, by definition, no output inventories are taken into account.

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

Section L consists of OENACE 68 and comprises around 10% of total Austrian gross value added at basic prices in the reporting year 2017. It is thus the third largest economic section, after manufacturing

and wholesale and retail trade, and is calculated with a correspondingly deep breakdown. The general government sector (S.13) plays a small but not insignificant role with a share of just under 3% of the GVA in this section.

Table 17: National accounts and regional accounts working classification for OENACE L – Real Estate Activities

OENACE divisions	National accounts / Regional accounts	
68	68.1a	Imputed Rents
	68.1b	Actual Rents
	68.1c (68.10+ 68.20-9)	Buying and selling of own real estate, and other renting and operating of own or leased real estate
	68.20-1	Leasing of real estate
	68.31	Real estate agencies
	68.32	Management of real estate on a fee or contract basis
	68.99	Real Estate Transfer Tax from commissions

Real estate activities is defined functionally in the Austrian national accounts. At the national and regional level, the internal labour classification for this section is as follows:

3.2.12.1. Actual Rents and imputed rents

As in the Austrian national accounts, the Austrian microcensus serves as the data source for the calculation of the regional indicators for actual rents and imputed rents. On a quarterly basis, 22,500 households are selected and surveyed across Austria at the federal provinces level. The sample of the microcensus is stratified by federal province. At the regional level, the total stock of occupied dwellings is then broken down into rented dwellings and other dwellings (house ownership, condominium, service dwelling, rent-free, free of charge). The two data sets are subdivided according to the following two stratification characteristics:

- a) region and
- b) size of municipality

Vienna is a special case, as the characteristic of municipality size does not apply and instead the building period is used as a secondary stratification characteristic.

The breakdown of the rental flats according to these two stratification characteristics results in average market rents per m² and stratum, which are then used to evaluate the m² prices of the other flats in the analogous strata.

3.2.12.2. Other areas

The data source for calculating gross value added by federal province (NUTS 2) for the 2017 reporting year of this internal work area, which, as already mentioned in the table above, is composed of business renting (68.1c), leasing of real estate (68.20-1), real estate brokerage (68.31) and management (68.32) of land, buildings and dwellings for third parties, was the structural business statistics survey. Basically, the standard method described in Chapter 3.1.11 is used. However, by definition, no output inventories are taken into account in OENACE classes 68.31 and 68.32.

The Real Estate Transfer Tax from commissions (internal classification 68.99) is a tax on products and thus part of gross value added at market prices. It is estimated at the federal provinces level using real estate brokerage (OENACE 68.31) as a top-down indicator. However, the real estate transfer tax has no influence on the level of the GRP, as the GRP is distributed among the federal provinces in proportion to the GVA at basic prices (see Chapter 3.1.9).

The distribution of uniregional and multiregional units in 2017 is as follows: 89% of the gross value added was generated by uniregional units, 11% by multiregional units.

After the structural business statistics survey has been processed and evaluated according to the described standard method, the estimated value added levels are subjected to in-depth analyses and plausibility checks in a further step and corrections are made if necessary.

3.2.13. Professional, scientific and technical activities (OENACE M) and administrative and support service activities (OENACE N)

The OENACE sections M and N are composed of OENACE divisions 69 to 75 (OENACE M) and 77 to 82 (OENACE N) and can be described as „business-related services“. Its share of total Austrian gross value added at basic prices was 5,4% (OENACE M) and 4,4% (OENACE N) in 2017. OENACE M and N are the economic sectors with the highest growth since the beginning of the regional time series in 2000. Value added tripled in these sections in many federal provinces in the period 2000-2021. The working level of the calculation of GVA can be found in Table 18 and Table 19. There are also quite a few government units in sections M and N, which accounted for about 4% of the gross value added of these sections in 2017.

Table 18: National accounts and regional accounts working classification for OENACE M – Professional, scientific and technical activities

OENACE divisions	National accounts / Regional accounts
69	Legal and accounting activities
70	Activities of head offices; management consultancy activities
71	Architectural and engineering activities; technical testing and analysis
72	Scientific research and development

73	Advertising and market research
74	Other professional, scientific and technical activities
75	Veterinary activities

Table 19: NA and RA working classification for OENACE N – administrative and support service activities

OENACE divisions	National accounts / Regional accounts	
77	77.1	Renting and leasing of motor vehicles
	77.2+77.3+77.4	Renting and leasing of personal and household goods and other machinery, equipment and tangible goods; Leasing of intellectual property and similar products, except copyrighted works
78	78	Employment activities
79	79	Travel agency, tour operator and other reservation service and related activities
80+82	80+82	Security and investigation activities; Office administrative, office support and other business support activities
81	81.1	Combined facilities support activities
	81.2	Cleaning activities
	81.3	Landscape service activities

Main data source for the calculation of gross value added by federal provinces (NUTS 2) for the reporting year 2017 was the structural business statistics survey (SBS). The standard method described in Chapter 3.1.11 is used. The distribution of uniregional and mutiregional units in OENACE M and N is as follows: Based on the SBS, 71% of the gross value added was generated by uniregional units, and 29% by multiregional units.

After processing the SBS data according to the standard method described above, the GVA estimates were subjected to in-depth analyses and plausibility checks, and corrections were made where necessary. This concerns in particular OENACE 77.1 (leasing of motor vehicles) and 77.3 (leasing of mobile goods). The different concepts of business accounting and the ESA make two adjustments necessary for leasing companies:

- 1) On the one hand, the reported intermediate consumptions contain the residual book value which does not constitute intermediate consumption according to ESA 2010. The deductions are mainly done on the basis of explicit inquiries carried out by the Business Directorate.
- 2) On the other hand, since the 2014 Rechnungslegungsänderungsgesetz („accounting law amendment act“) the revenues reported in the SBS sometimes include sales of fixed assets, which are not part of output.

In OENACE 81.2, a good 30% of GVA consists of non-observed (hidden) cleaning services. Details (also regarding regionalisation) can be found in chapter 3.1.6.2.

The division „Scientific research and development“ (OENACE 72) also includes non-profit organisations (NPOs). These are classified in sector 11 (non-financial corporations) as their revenues are more than 50% of their expenditures. However, since NPO units were by definition not surveyed in the SBS (at least before 2021), turnover tax statistics must be used as a source: Taxable turnover serves as a bottom-up regional indicator for determining gross value added.

After balancing the results to the national accounts totals on OENACE division level, the time series were checked again for plausibility of levels and growth rates of GVA.

3.2.14. Public administration and defence; compulsory social security (OENACE O)

The sources and methods used to calculate the "general government sector" (S.13) differ substantially from those used to calculate other institutional sectors. The units of the economic activity OENACE O are exclusively non-market producers of the general government sector. Gross value added is calculated according to sum of cost method (see 3.1.11.2 Calculation of gross value added of non-market producers in the general government sector). The processing is carried out for OENACE Section O at the OENACE Divisions of 84.1, 84.2 and 84.3 and further at the level of legal entities.

Table 20: National accounts and regional accounts working classification for OENACE O – Public administration and defence; compulsory social security

OENACE divisions	National accounts		Regional accounts	
84	84	Public administration and defence; compulsory social security	84.1	Administration of the State and the economic and social policy of the community
			84.2	Provision of services to the community as a whole
			84.3	Compulsory social security activities

- Uniregional units comprise public authorities in all subsectors of the general government sector:
 - Sector 1311 central government with other public authorities such as parts of federal funds, outsourced federal units or new federal units according to ESA 2010.
 - Sector 1312 comprises federal provinces, outsourced federal province units, new federal province units according to ESA 2010 or federal province funds.
 - Sector 1313 local government (with Vienna as a local government unit rather than a federal province government unit), outsourced local government units, new local government units per ESA 2010 and local government funds.

- S.1314, social security administration.

For these units, data are taken directly from the results dataset of the general government sector and aggregated at the NUTS 2 level.

- Multiregional units are found in sector 1311 with the central government, parts of the outsourced federal units and new federal units per ESA 2010, as well as in sector 1314 with the federal funds and parts of social security funds. For the legal entity of the federal government, a top-down method is used for regionalisation. The values for GVA are available according to OENACE activity breakdown. Using additional information from the federal government's Management Information System (MIS), wages and salaries are used to make a regional assignment based on the regional identifier of the entity making the payment. Multiregional outsourced and new federal entities which are not covered by the federal management information system are regionalised using wages and salaries from the wage tax statistics.

3.2.15. Education (OENACE P)

The calculations in this economic section are done separately for the following activities:

Table 21: National accounts and regional accounts working classification for OENACE P – Education

OENACE divisions	National accounts		Regional accounts	
85	85.1	Pre-primary education	85A	Pre-primary education
	85.2	Primary education	85B	Primary and secondary education; Post-secondary non tertiary education
	85.3a	Secondary education; Post-secondary non-tertiary education		
	85.42	Tertiary education	85C	Tertiary education
	85.5a	Other education (without driving school activities)	85D	Other education
	85.53	Driving school activities		

3.2.15.1. Pre-primary education (85A)

The OENACE Division 85A Kindergartens and preschools are calculated completely within the general government sector (S.13) and in the non-profit institutions serving households (S.15). Since the general government sector comprises only units operating at the federal province and municipal levels, no additional regionalisation of the values from the accounting of public authorities is necessary and they can be aggregated using the bottom-up approach. In contrast, a top-down approach is used for the non-profit sector. Here, the national value added is regionalised by the number of kindergarten teachers working in kindergartens of the non-profit institution serving households sector.

3.2.15.2. Secondary education, post-secondary non-tertiary education (85B)

Also OENACE Division 85B, secondary education, post-secondary non-tertiary education, is calculated completely within the sectors of general government and non-profit institutions serving households. In contrast to the activity 85A, the regionalisation of S.13-values is not based on a pure bottom-up approach. Approximately 60% of gross value added is generated within the municipal and federal province levels and is therefore based on a bottom-up approach. The remaining 40% of GVA is accounted for at the central government level and is allocated to regions via salary information from the federal government's Management Information System (MIS), as described above.

3.2.15.3. Tertiary education (85C)

Most of the GVA of OENACE Division 85C (tertiary education) is accounted for by the general government sector. Non-financial corporations (S.11) account for only about 2% of GVA. Although much of GVA occurs at the central government level, the data obtained from public accounts and tax statistics can be assigned to individual universities and thus regionalised using the bottom-up approach (about 96%).

The calculation of non-financial corporations (S.11) and private universities is based on the national accounts and calculated bottom-up on the basis of the location of each private university.

3.2.15.4. Other education (85D)

Other education (85D) differs from former parts of education in its high share of non-financial corporations (sector 11). About 53% of gross value added was generated by non-financial corporations in 2017. Even the NPISH sector is in 85D more important than in primary, secondary and tertiary education. About 25% of GVA is generated within S.15.

The general government sector is calculated on the basis of public accounts and tax statistics and can, for the most part, be clearly assigned to the municipal and federal province levels. Only a small share is regionalised using salary information from the federal government's management information system. The central data source for calculating the gross value added of sectors 11 and 15 by federal province for the 2017 reporting year was the turnover tax statistics. Since turnover tax data are not yet available for the most recent years, data from the advance turnover tax return statistics are used.

3.2.16. Human health and social work activities (OENACE Q)

This section consists of the OENACE divisions from 86 to 88. In regional accounts, the section is calculated at four activities. Here, human health activities are divided into three groups, while OENACE 87 (residential care activities) and 88 (social work activities without accommodation) are calculated together.

Table 22: National accounts and regional accounts working classification for OENACE Q – Human health and social work activities

OENACE divisions	National accounts		Regional accounts	
86	86.1	Hospital activities	86.1	Hospital activities
	86.21a	General and specialist medical practice activities	86.2	Medical and dental practice activities
	86.23	Dental practice activities		
	86.9	Other human health activities	86.9	Other human health activities
87+88	87a	Residential care and social work activities without accommodation	87a	Residential care and social work activities without accommodation

3.2.16.1. Hospital activities (86.1)

Most of the gross value added of hospitals in the general government sector is generated by non-market producers (80%). The most important data source used are the results of the public accounts and tax statistics. Most hospitals are already classified at the municipal or federal province level and can thus be directly assigned to individual regions and included in the accounts on a bottom-up basis. The majority of social insurance data are also provided in the public accounts and tax statistics at the regional level. A small amount that cannot be allocated to a single region (5% of social security GVA, or 0.5% of sector 13) is allocated through the regional structure of compensation of employees from social security units.

Since the human healthcare sector is not covered by any direct business survey, secondary sources such as turnover tax statistics and, for the two most recent years, the advance turnover tax return statistics is used to calculate the GVA of non-financial corporations. Thus, at the working classification of hospitals, turnover tax statistics are incorporated and updated using advance turnover tax returns. Due to the lack of regional intermediate consumption information, the national net quota, the ratio between output and intermediate consumption, is used.

To calculate the regional output of NPISHs, the output from the national accounts is regionalised using a top-down approach. The health statistics available at NUTS 2 level on the number of beds in hospitals belonging to religious orders, denominations and associations serve as a regionalisation indicator. Subsequently, GVA is calculated using the national net quota.

3.2.16.2. Medical and dentist practice activities (86.2)

OENACE 86.2 is characterized by a large share of non-financial corporation units (about 96% of GVA).

Due to the lack of other primary sources, turnover tax statistics in combination with advance turnover tax returns statistics are used to calculate regional output. Again, the national net quota is used to determine intermediate consumption and, subsequently, gross value added.

The general government sector for non-market producers is again calculated using the sum of cost approach with data from the public accounts and tax statistics. The available data can clearly be assigned to individual regions. Therefore S.13 GVA is calculated entirely by a bottom-up approach.

3.2.16.3. Other human health activities (86.9)

In other human health activities, too, the general government sector plays a subordinate role, accounting for around 7% of GVA. Again, the data from public accounts and tax statistics can clearly be assigned to individual regions (bottom-up).

Non-financial corporations and NPISH are both regionalised using turnover tax statistics and advance turnover tax return statistics.

3.2.16.4. Residential care and social work activities without accommodation (87 und 88)

The OENACE divisions residential care (87) and social work activities (88) are characterized by a relatively small general government sector (approximately 13% of GVA in 2017). While around 20% of GVA is generated within non-financial corporation units, non-profit private organizations account for the lion's share with around two-thirds of GVA.

The general government sector is dominated by local units at the municipal and federal province levels. Additionally, most outsourced federal units can clearly be assigned to individual regions. In sum, about 96% of the S.13 GVA can thus be allocated bottom-up. Only the small remainder is regionalised via salary information from the federal government's management information system.

3.2.17. Arts, entertainment and recreation (OENACE R) and other service activities (OENACE S)

OENACE Sections R and S are composed of OENACE Divisions 90 to 93 (OENACE R) and 94 to 96 (OENACE S) and can be described as "personal services". In the reporting year 2017, they reached a share of 1.3% (OENACE R) and 1.5% (OENACE S) of total Austrian gross value added at basic prices. OENACE R and S are thus among the smaller economic sections. The detailed calculation of gross value added can be found in Table 23 and Table 24. In OENACE sections R and S, there are also quite a few government units, which accounted for about 23% (OENACE R) and 19% (OENACE S) of the gross value added of these sections in 2017. In the federal provinces (NUTS 2), this share ranges from 0.6% to 2.3%.

Regional gross value added is calculated at a detailed level of 4 OENACE divisions (R) and 3 OENACE divisions (S).

Table 23: National accounts and regional accounts working classification for OENACE R – Arts, entertainment and recreation

OENACE divisions	National accounts / Regional accounts	
90	90	Creative, arts and entertainment activities
91	91	Libraries, archives, museums and other cultural activities
92	92.00-1	Lottery and other betting activities
	92.00-2	Casinos
	92.00-3	Operation of gambling machines
93	93	Sports activities and amusement and recreation activities

Table 24: National accounts and regional accounts working classification for OENACE S - Other service activities

OENACE divisions	National accounts / Regional accounts	
94	94	Activities of membership organisations
95	95	Repair of computers and personal and household goods
96	96.04-2	Operation of spas
	96 without 96.04-2	Other personal service activities

In all sections, the calculations are carried out separately by sector.

3.2.17.1. Sectors 11 and 14

The data source for calculating gross value added by federal provinces for the reporting year 2017 was turnover tax. Since no turnover tax data is available for the two most recent years, data from the advance turnover tax return is used. The only exception to this is OENACE 95, as data from the SBS is available for this area.

A special calculation is carried out for OENACE 92.00-2 – Casinos. In Austria, only Casinos Austria AG is authorised to operate casinos. The value added is calculated by means of the Casinos Austria AG annual report, whereby the output is brought to the span concept. The regionalisation of the output is carried out with the help of gross gaming revenues.

For the remaining areas, the update is carried out with the help of the taxable turnover from the turnover tax statistics (output). This is balanced to the national accounts totals and then added up with the R&D to a section-wide GVA estimate.

3.2.17.2. **Sector 13**

The calculation of the gross value added of non-market producers in the general government sector is described in section 3.1.11.2.

The general government sector in this section is not present in all OENACE divisions. OENACE 92 as well as OENACE 95 have no general government units and in OENACE 96 the only general government units are found in OENACE 96.03 Funeral services.

3.2.17.3. **Sector 15**

Units in this sector can be found in every division of section R, with the exception of OENACE 92. However, with 3.6% of the total GVA of section R, the share is low. This is in contrast to section S, which has S.15 units only in OENACE 94, but their share in the GVA of OENACE 94 is quite large at almost 62% and 31% of total section S respectively.

The GVA of the S.15 units is calculated in both sections using a top-down indicator. For regionalisation, the national accounts totals are allocated to the regions with the help of the wage tax data.

After the data had been processed and evaluated, the estimated value added levels were subjected to in-depth analyses and plausibility checks in a further step, and corrections were made where necessary. After balancing the results to the national accounts totals, the time series were checked again with regard to the plausibility of the levels and the developments.

3.2.18. Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (OENACE T)

A distinction is made between activities of households as employers of domestic personnel (OENACE 97) and undifferentiated goods- and services-producing activities of private households for own use (OENACE 98). In this section, only the value added of households as employers of domestic personnel is reported in Austria (OENACE 97). The share in total GVA is only a marginal 0.05%, making this section by far the smallest. The output consists, by definition, only of the gross compensation for employed labour and at the same time corresponds to the gross value added. The regional breakdown is based on employment data from the umbrella organisation of Austrian social security institutions.

3.2.19. Extra-territorial organisations and bodies (OENACE U)

The units belonging to OENACE U (e.g. the Vienna-based international organisations UN and OPEC) do not count as part of the economic territory of a country according to ESA (2.06). Therefore, OENACE U is not calculated.

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

The calculations of the aggregates gross regional product, gross value added at basic prices and employment (including total hours worked) at the level of the federal provinces (NUTS 2) were considerably accelerated in accordance with the strategic measure of Statistics Austria and the requirements of the ESA 2010 and published for the first time in 2014 at t+12 months. This necessitated both the use of new data sources and the development of new methods. In principle, the aim was to act as consistently as possible to the standard calculation at time t+24 months and also to use the same data sources and estimation methods as in the national (NA) calculation.

The calculations are made in a detailed level of approximately 110 industries. In addition, the estimates are generally carried out separately by institutional sector. The preliminary result of the accelerated calculation is a technical result which, as with the t+24 calculation, requires further plausibility checks and analyses. To increase the quality of the estimate, special attention is paid to industries with volatile net ratios and industries with single large, market-dominating companies. Structurally formative companies are analysed separately. If necessary, adjustments are made in the calculation models.⁵⁴

Consistent calculation methods at t+12 and t+24 months

In some industries, the same data sources can be used to calculate GVA at time t+12 months as at time t+24 months. In addition to a large part of the GVA calculations of the general government sector and – with imputed rents and housing rentals – a significant part of real estate activities (OENACE L), this also applies to insurance (OENACE K65) and agriculture and forestry (OENACE A).

Estimation methods for extrapolating the output at time t+12 months

For a large part of the gross value added (for the entire manufacturing sector and a large part of the service sector), other data sources and methods must be used for the calculation at t+12 months than at t+24 months. The calculations are mainly made by extrapolating the output using appropriate output indicators. In the manufacturing sector, indicators from the short-term statistics (STS: production sold and goods sent for processing) are used. In the service sector data from the advance turnover tax return (taxable turnover) are used. The central challenges in estimating GVA are, on the one hand, that – as is also the case for the national accounts – no timely information is available on intermediate consumption. On the other hand, the data from the advance turnover tax return are not collected at the statistical unit level prescribed by ESA 2010 (STS is available on KAU level and tax statistics only on enterprise (legal unit) level).⁵⁵ Both variables (intermediate consumption and LKAU data) are surveyed

⁵⁴ Further information on the methodology can also be found in the article: „Hauptergebnisse der Regionalen Gesamtrechnungen 2000-2013 nach ESVG 2010“ (Statistische Nachrichten issue 05/2015, German only)

⁵⁵ According to the ESA, as already mentioned several times, the local kind-of-activity unit (LKAU) is prescribed for the analysis and description of the production processes.

by the SBS, the final results of which are usually not available until t+18 months. Therefore, intermediate consumption must be estimated and a regionalisation must be carried out.

Intermediate consumption in the accounts of the manufacturing sector and in most branches of the service sector is estimated with the help of net ratios from the previous year in order to subsequently determine GVA residually. In addition, a regionalisation is done in order to obtain LKAU data.

This newly developed calculation approach is accompanied by an intensive analysis process in which conspicuous developments and breaks are already identified at NUTS 3 level and compared with other data sources (for example with annual reports, if these are already available). If necessary, corrections are made at unit level.

Top-down methods

For a small part of GVA, no indicators are yet available at time t+12 months for the calculation of regional gross value added according to the bottom-up method. Worth mentioning here are the R&D expenditures and a large part of the results of sector 15 (non-profit institutions), which is why it is necessary to rely on structures from the previous year or top-down methods. An example of the top-down method is the calculation of the GVA of hospitals in the non-profit sector, which is allocated to the regions on the basis of the number of beds.

3.4. Regional GVA at constant prices and regional growth rates

The ESA Transmission Programme provides the delivery of real growth rates of gross value added at basic prices at NUTS 2 level at t+24 months on a mandatory basis and on a voluntary basis for t+12 months from 2017 onwards. The criteria according to which a calculation at constant prices is to be made in the regions can be found in the **Manual on regional accounts methods**. The starting point for the methodological and conceptual calculation framework were the specifications of the [Handbook on prices and volume measures in national accounts](#), which, however, had to be partially adapted for regional needs. The calculation of regional GVA at previous year's prices by industry is carried out using the production approach at the deepest OENACE level available in the nominal calculation. Double deflation is possible in most industries. This is followed by balancing with the national levels. Regional research and development (R&D) expenditure is converted into real values at the deepest possible OENACE level using the nominal regional R&D structure.

Due to the lack of regional producer prices, import prices and wholesale prices, additional methodological considerations were made for the manufacturing sector to measure real output flows. When deflating regional output and regional intermediate consumption in an industry with a nationally uniform price index, the underlying assumption is that the composition of goods and services produced in that industry is the same for all regions. To refine this rough assumption, the short-term business statistics (STS) survey is broken down by regional goods dimensions. From the STS data in the manufacturing sector (see chapters 3.1.1.3 and 3.1.1.10) regional levels at the establishment level (headquarters of the kind-of-activity unit), i.e. data on output (production sold, goods sent for processing and other services of the establishment) can also be displayed at the **goods level**. A specific national

price index is now assigned to the specific good produced by an establishment in the respective region. This method offers the possibility of mapping regional production processes as accurately as possible at previous year prices. The calculation of regional intermediate consumption at previous year's prices is usually carried out using the national price index without goods weighting. After deflation, the regional levels are balanced with the national levels. This results in real GVA. Finally, regionalisation is carried out at the local level with the help of regional quotas from the nominal calculation.

In the service sector, national price indices and double deflation are used. With a few exceptions, no regional price indices are available in the service sector either. In contrast to the manufacturing sector, there is also little information on goods structures and quantities. Therefore, the level of detail is particularly important. As with the nominal calculation of GVA, this is usually at the deepest possible level of industries – with a few exceptions, these are at least OENACE divisions. In addition, double deflation is applied for market producers as already mentioned. If regional indices are available, they are used for deflation. This is followed by balancing with the national levels. This results in real GVA. Finally, regionalisation is carried out at the local level with the help of regional quotas from the nominal calculation. In the non-market sector, the calculation of real values is mostly based on the "input method". According to the cost convention, compensation of employees is the essential component of GVA. This is deflated using the index of agreed minimum wages, which is also available regionally for some industries.⁵⁶

⁵⁶ Further information on the methodology can be found in the article „Preis- und Volumenmessung in den Regionalen Gesamtrechnungen“ (Statistische Nachrichten issue 04/2018, German only).

4. Quality assessment and improvement

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

The quality of the calculations is directly determined by how well the chosen methods succeed in showing the regional gross value added in its actual amount. This accuracy in the regional accounts depends on two factors:

- on the one hand, the quality of the distribution of gross value added among the NUTS 2 regions (federal provinces)
- on the other hand, the quality of the national accounts calculations of Austrian value added, which represents the target value for the regional calculations.

These two factors add up to the deviation of the RA values from the „true“ regional values. Only the first factor can be directly influenced by the RA and will be discussed in more detail below. The second point concerns the accuracy of the national accounts.⁵⁷ The deviation from the national totals per economic section can be taken from the compilation table (annex, chapter 5). In any case, the aim is to keep this difference as small as possible; therefore, systematic analyses are carried out to see whether there is a regional dimension to the deviations and whether this can be reduced with the help of individual data. This work is carried out in close coordination with the national accounts. This procedure corresponds to an A-method according to the Manual on regional accounts methods.⁵⁸

Apart from inaccuracies that (may) result from the RA methodology and calculation itself, the RA are mainly dependent on the accuracy of their data sources. The central problem here is that the national and regional accounts generally use a large number of data sources, each of which can be subjected to a certain (quantitative) accuracy check. But they are practically impossible to estimate quantitatively in their entirety and especially in their respective contribution to the overall result of the national accounts.

However, the Manual on regional accounts methods published in 2013 provides a guideline for the quality of RA calculations, e.g. by classifying them into A, B and C methods:⁵⁹

- **Level of industrial detail:** A deep level of industrial detail brings with it many advantages, which will be explained in more detail below. A finer OENACE breakdown facilitates the analysis in the case of time series breaks and the identification of outliers. Furthermore, with the same calculation depth at national and regional level, the advantage lies in the exchange of information and the possibility of discussion in the case of, for example, implausible reports from

⁵⁷ See e.g. [VGR-Standard-Dokumentation](#) chapter 3 (German only)

⁵⁸ See [Manual on regional accounts methods](#) chapter 3.9.2.1.

⁵⁹ See [Manual on regional accounts methods](#) chapter 3.9.

individual units and, if necessary, consistent procedures for correcting these. Another positive effect from the perspective of RA lies in the possibility of having an influence on the level of value added at the national level. If, in terms of industrial detail (OENACE), for RA the same working classification exists as at the national level, the reported information from the economic statistics surveys can additionally be analysed in great detail by means of the regional dimension (in most cases, the data plausibility checks take place by 35 NUTS 3 regions) and implausible developments can be forwarded to the experts at the national level. In a further step, consistent corrections of individual units can be made in the national and regional accounts. Especially for the calculations at constant prices, the depth of the working level is crucial, as is also emphasised in chapter 6 of the manual (from page 70). **The level of detail A*64 (NACE Rev. 2) required for an A-method is clearly exceeded in the Austrian regional accounts.** In recent years and decades, the number of regional accounts has increased continuously, so that in most OENACE sections the working levels of NA and RA are now congruent (cf. chapter 3.2). Thus, currently (2023) the level of detail is 125 industries in real terms and 130 industries in nominal terms.

- As recommended in the manual⁶⁰, (pseudo) **bottom-up methods** are used for the most part in the Austrian RA (e.g. throughout the SBS areas), but hardly any top-down methods. Compensation of employees serves as a key indicator for the allocation of gross value added to local units in multiregional enterprises (resp. gross wages and salaries, see chapter 3.1.11.1). This corresponds to an acceptable B-method (income approach). However, the A-method described in the manual (differentiation of local KAUs in terms of labour input and capital intensity) is not feasible for all branches for resource reasons.
- In the **general government sector** (S.13), the quality can be rated as very good, as the data are obtained directly from the Closed Accounts of the individual legal entities. Only sector 1311 (central government) must undergo a regionalisation procedure. However, since a large part of the central government operates in the public non-market sector and the calculation of GVA is done according to cost convention, the use of pseudo-bottom-up methods (information on wages and salaries to local units is available) is quite appropriate. This information is requested directly from the Federal Chancellery.

In addition, the following quality assurance measures of the RA can be considered decisive or significant:

- **Extensive quality and plausibility checks of the data sources:** In particular, the data sources for the calculation of gross value added are subjected to intensive analyses and checks at unit level. This includes especially multiregional enterprises and their SBS data at local unit level, as well as breaks in the time series and outliers. If corrections are necessary, they are usually made at unit level.
- **Detailed revision analysis:** Much time and resources are spent on the systematic analysis of revisions. This applies in particular to the calculations of the most current year (t+12 months),

⁶⁰ See [Manual on regional accounts methods](#) chapter 3.5.

for which no SBS is yet available. The aim is to constantly improve the calculations and thereby keep revisions as low as possible. This is increasingly being achieved by taking into account the annual reports of large or regionally significant companies that are already available for the most recent year. Initial SBS raw data is also still included in the calculations at unit level on a case-by-case basis (t+12).

- **Ongoing media monitoring:** Public reporting on large companies is continuously monitored and documented. It can provide valuable informations and explanations for the RA. In addition, systematic attention is paid to publications and analyses on RA topics.⁶¹
- **Consistency between the aggregates:** Increased attention is paid to the relationships between the RA aggregates. For example, labour productivity (real gross regional product or real gross value added per person in employment or per labour-hour) is systematically examined by means of comprehensive analysis tables.

Quality of calculations at constant prices

A separate chapter in the manual is dedicated to quality in calculation at constant prices.⁶² A catalogue of criteria is used to make a classification into A-, B- and C-methods. Accordingly, an A-method exists if the following criteria are met:

- The correct formula is used, i.e. basically the same formulas nationally and regionally on the one hand and the Paasche formula for price indices and the Laspeyres formula for volume indices on the other.
- The level of compilation of regional GVA in prices of the previous year is as deep as possible and at least based at the industry detail of A*64 of NACE Rev. 2.
- Regional price indices should be used if they are appropriate, e.g. for agricultural products or real estate activities (rents and imputed rents of owner-occupied dwellings). The national price indices used should be appropriate and deeply disaggregated (at least A*64).
- Double deflation is applied.
- Regional price indices are to be used for deflating compensation of employees (in non-market areas).
- Regional GVA in prices of the previous year add up to the corresponding national GVA.

The Austrian RA fulfill all conditions.

⁶¹ E.g. the yearly publication of the [Wirtschaftsforschungsinstitut WIFO](#) „The economy in the Austrian Länder“ (German only).

⁶² See [Manual on regional accounts methods](#) chapter 6 resp. 6.4. for the A-, B- and C-classification.

4.2. Plans for further improvement

4.2.1. Processing of the SBS – improvement of the regionalisation concept

As already explained (cf. chapters 3.1.3 and 3.1.11.1), FRIBS/EBS will result in a comprehensive changeover of the SBS from the reporting year 2021 onwards. The most significant changes are:

- Use of a central statistical unit, namely the enterprise (legal unit), with simultaneous omission of the KAU level and an upgrading of the local KAU level (partly primary surveyed turnover).
- The expansion of the content of the system, specifically the expansion and more detailed presentation of the service sections, but also the recording of units with a turnover of less than 10,000 euros.
- Implementation of the „structured list of balances“ („strukturierte Saldenliste“, i.e. direct interface between the variables of the SBS and the account balances of the companies) with the aim of an automated reporting process.
- Adaptation of the catalogue of variables:
 - Conceptually, only items that are not relevant for the calculation of GVA should be included in „other revenues“, so that this variable is no longer used to calculate output and thus GVA.
 - Taxes on products are no longer surveyed and should also no longer be part of turnover.
 - Change from purchase to use (now: use of material and use of goods for resale instead of purchase).

In the course of the major revision in 2024 (benchmark revision), the elimination of the KAU level and the upgrading of the local KAU level will be processed. In this context, the regionalisation methodology of multiregional enterprises will be evaluated in principle. Specifically, the issue is the distribution of the gross operating surplus (GOS) among the local units. Previous practice in most SBS branches (with the exception of retail trade, credit institutions and insurance companies) is to leave this entirely at the KAU headquarters and to allocate only the compensation of employees as gross value added to the other local units. The turnover at local KAU level, which will in part be primarily collected from the SBS 2021 onwards, is to be included in the evaluation, as are the contents and recommendations of the manual.

4.2.2. Calculation of OENACE division J61 – Telecommunication

As described in chapter 3.2.10, the gross value added of the J61 Telecommunications division is calculated using the standard method. In the course of the major revision in 2024, the calculation is to be changed to the so-called A-method of the "[Manual on regional accounts methods](#)" (chapter 5.5.5).

Telecommunication companies are typically large multiregional enterprises consisting of a central office and auxiliary units. These retail stores in OENACE G47.42 can be considered as ancillary activities of the telecommunications enterprise – they sell cell phones and take out cell phone subscriptions in different regions.

According to the manual, the assumption is made that the retail stores have a trade margin and are therefore also likely to generate a net operating surplus. This means that the GVA of the telecom companies at the local unit level should be corrected by the factor "GVA / compensation of employees", which can be determined by independent comparable retail stores. The trade margin determined in this way is applied to the compensation of employees of the regionally widespread retail stores of the telecom company, which automatically results in a correction of the GVA of the head office. The resulting corrected GVA provides a more plausible regional structure than the standard method used so far.

4.2.3. Calculation of OENACE P to S

In the course of the changeover of the SBS within the framework of FRIBS/EBS, the service sectors OENACE P to R as well as S96 will be included in the survey from the reporting year 2021 for the first time since 1995. Thus, after a long time, information on local units and intermediate consumption is available again. This expansion of the survey system certainly represents a **quality gain**. These data will be evaluated and processed as part of the major revision in 2024, which will presumably revise GVA in these sections over the entire time series. The regional wage tax data, which has been available since 2010, is also included in the evaluation.

4.3. Outlook

At the current point in time, regional accounts fulfil all delivery obligations arising from the ESA framework for NUTS 2 and NUTS 3 levels. Significant changes or innovations are to be expected above all through the next revision of the European System of Accounts. Currently the System of National Accounts (SNA) is being updated. The new SNA is to be adopted in 2025 and an ESA based on it could be implemented in 2029. Central substantive aspects of the discussions and work at the European level are globalisation (e.g. multinational enterprise groups) and the expansion of the concept of capital (e.g. human capital). New challenges for the system also arise from the increasing digitalisation of economic activity (e.g. increasing cases of local KAUs without labour input).

Apart from the ESA itself, further developments in other statistical systems, e.g. business statistics (FRIBS/EBS) and the business register, will also have an impact in the near future, as explained in detail in the previous chapter. The analysis and regional integration of the SBS, which has undergone major conceptual changes in the course of FRIBS/EBS from 2021 onwards, are the focus of the major revision taking place in **2024 (benchmark revision)**. This will be an extensive focus of work and will tie up considerable resources, especially the back-calculation of the time series back to the year 2000.

In 2017, Eurostat again introduced a Task Force ("Expert Group") on Regional Accounts. At these meetings, which have taken place once a year since then, the methods used in the individual member states are presented and discussed. In addition, improving the quality of regional accounts is given the highest priority.

5. Annex 1: Regional GVA Compilation Table for Austria

consistent with National Accounts September 2022 (in Mio. Euro)

Industries A 21	Method for reference period 2017																Adjustment to National Accounts	Total GVA at market prices	Taxes on products less subsidies on products	Total GVA at basic prices		
	Bottom-up methods										Subtotal bottom-up	Top-down methods				Subtotal top-down						
	Survey data				Administrative data		Combined Data		Data based on extrapolations or models	Corrections, imputations, and conceptual adjustments		Survey or census data		Administrative data								
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional				uniregional	multiregional	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
	uniregional	multiregional	uniregional	multiregional																		
1	2	3	4	5	6	7	8	9	10	11	12 (=2+3+4+5+6+7+8+9+10+11)	13	14	15	16	17 (=13+14+15+16)	18 [=19-(12+17)]	19	20	21 (= 19-20)		
G																						
GVA - I	189	57					24 045	19 223					216									
Σ G GVA	189	57					24 045	19 223			-155	43 357	216			216	-848	42 725	4 858	37 867		
H																						
GVA - I	6	0					6 442	7 574														
GVA - G	21						830	2 622														
Σ H GVA	27	0					7 272	10 196			-300	17 196	0			828	18 024	-557	18 581			
I																						
GVA - I							9 269	1 068								434						
GVA - G						3																
Σ I GVA						3	9 269	1 068			10 340				434	6 585	17 360	135	17 225			
J																						
GVA - I	356	81					4 831	5 481			498											
GVA - G						53									579							
Σ J GVA	356	81				53	4 831	5 481		498	11 299			579	-105	11 773	50	11 723				
K																						
GVA - I	13	0					211	42		112	-47					7 599						
		178					1 206	272														
	203	4 314													251							
GVA - G						3																
Σ K GVA	217	4 493				3	1 417	314	112	-47	6 509			251	7 599	7 850	772	15 130	1 386	13 744		

5. Annex 1: Regional GVA Compilation Table for Austria

consistent with National Accounts September 2022 (in Mio. Euro)

Industries A 21	Method for reference period 2017															Adjustment to National Accounts	Total GVA at market prices	Taxes on products less subsidies on products	Total GVA at basic prices			
	Bottom-up methods										Subtotal bottom-up	Top-down methods								Subtotal top-down		
	Survey data				Administrative data		Combined Data		Data based on extrapolation s or models	Corrections, imputations, and conceptual adjustments		Survey or census data		Administrative data								
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional				uniregional	multiregional	Closely related indicators	Data based on extrapolation s or models and/or less related indicators						Closely related indicators	Data based on extrapolation s or models and/or less related indicators
	uniregional	multiregional	uniregional	multiregional																		
1	2	3	4	5	6	7	8	9	10	11	12 <small>(=2+3+4+5+6+7 +8+9+10+11)</small>	13	14	15	16	17 <small>(=13+14+15+16)</small>	18 <small>[=19-(12+17)]</small>	19	20	21 <small>(= 19-20)</small>		
L																						
GVA - I	2		5 498				8 528	1 010	19 133	-1 562			-1 272		1 105							
GVA - G					194									767								
Σ L GVA	2		5 498		194		8 528	1 010	19 133	-1 562	32 802		-1 272	767	1 105	599	400	33 801	1 110		32 691	
M																						
GVA - I	301	26					12 928	2 755		187												
GVA - G					432									420								
GVA - P ***)														19								
Σ M GVA	301	26			432		12 928	2 755		187	16 629			439	439	639	17 707	58		17 650		
N																						
GVA - I	9	2					7 460	5 735		1					950							
GVA - G					377									9								
GVA - P																						
Σ N GVA	9	2			377		7 460	5 735		1	13 584			9	950	959	72	14 614	4		14 610	
O																						
GVA - G					7 840									8 870								
Σ O GVA					7 840						7 840			8 870	8 870	8 870	-66	16 644	0		16 644	
P																						
GVA - I	1														785							
GVA - G					11 025									4 453								
GVA - P														335	1 197							
Σ P GVA	1				11 025						11 026			5 573	1 197	6 770	3	17 799	0		17 798	
Q																						
GVA - I	3														7 385							
GVA - G					8 744									1 035								
GVA - P														4 468	1 568							
Σ Q GVA	3				8 744						8 747			12 887	1 568	14 455	-3	23 199	3		23 196	
R																						
GVA - I	2	4							1 122	39					2 367							

5. Annex 1: Regional GVA Compilation Table for Austria

consistent with National Accounts September 2022 (in Mio. Euro)

Industries A 21	Method for reference period 2017																Adjustment to National Accounts	Total GVA at market prices	Taxes on products less subsidies on products	Total GVA at basic prices		
	Bottom-up methods										Subtotal bottom-up	Top-down methods				Subtotal top-down						
	Survey data				Administrative data		Combined Data		Data based on extrapolations or models	Corrections, imputations, and conceptual adjustments		Survey or census data		Administrative data								
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional				uniregional	multiregional	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
	uniregional	multiregional	uniregional	multiregional																		
1	2	3	4	5	6	7	8	9	10	11	12 (=2+3+4+5+6+7+8+9+10+11)	13	14	15	16	17 (=13+14+15+16)	18 [=19-(12+17)]	19	20	21 (= 19-20)		
GVA - G					1 066									34								
GVA - P														173								
Σ R GVA	2	4			1 066				1 122	39	2 233			2 573			-18	4 789	605	4 184		
S							100	32	1 661	1				37	220							
GVA - I	1	0			689									246								
GVA - G														1 569								
GVA - P																						
Σ S GVA	1	0			689		100	32	1 661	1	2 482			1 852	220	2 072	443	4 997	1	4 996		
T																						
GVA - I									173													
Σ T GVA									173		173					0	0	173	0	173		
A to T	4 512	5 624	2 602	0	31 598	0	135 767	76 526	22 468	964	280 062	1 705	2 436	35 421	12 637	52 199	8 029	340 289	10 872	329 417		

*) GVA - I: industry (GVA sectors 11, 12, and 14)

**) GVA - G: general government (sector 13)

***) GVA - P: NPISH (sector 15)

6. Annex 2: Regional GVA Metadata Table for Austria

Industries A 21	Method for reference period 2017														
	Bottom-up methods										Top-down methods				
	Survey data				Administrative data		Combined Data		Data based on extrapolations or models	Corrections, imputations, and conceptual adjustments	Survey or census data		Administrative data		
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional			uniregional	multiregional	Closely related indicators	Data based on extrapolations or models and/or less related indicators	Closely related indicators
	uniregional	multiregional	uniregional	multiregional					uniregional	multiregional					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A															
P.1			Test operating network of voluntarily accounting agricultural and forestry kind-of-activity units				agricultural statistics		Calculations and extrapolations based on contribution margin calculations, expert calculation etc.			agricultural statistics, logging report, forest inventory	forest inventory	cattle database, quality poultry association-data, consumer health information system-data	
P.2			Test operating network of voluntarily accounting agricultural and forestry kind-of-activity units						Calculations based on contribution margin calculations			Test operating network of voluntarily accounting agricultural and forestry kind-of-activity units, logging report, forest inventory	forest inventory		
GVA - I *) GVA - G **)	own-account R&D	own-account R&D													
B															
GVA - I	own-account R&D	own-account R&D					SBS	SBS		purchased R&D, other corrections					
C															
GVA - I	own-account R&D	own-account R&D					SBS	SBS		purchased R&D, adjustment for business year deviating from economic year, other corrections					
GVA - G						government data									
D															
GVA - I	own-account R&D	own-account R&D					SBS	SBS		purchased R&D, adjustment for business year deviating from economic year, other corrections					

6. Annex 2: Regional GVA Metadata Table for Austria

Industries A 21	Method for reference period 2017														
	Bottom-up methods										Top-down methods				
	Survey data				Administrative data		Combined Data		Data based on extrapolations or models	Corrections, imputations, and conceptual adjustments	Survey or census data		Administrative data		
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional			uniregional	multiregional	Closely related indicators	Data based on extrapolations or models and/or less related indicators	Closely related indicators
	uniregional	multiregional	uniregional	multiregional											
1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	
E GVA - I GVA-G	own-account R&D	own-account R&D			government data government data		SBS	SBS							
F GVA - I	own-account R&D	own-account R&D					SBS	SBS				GFCF NACE 68 + housing stock micro-census			

6. Annex 2: Regional GVA Metadata Table for Austria

Industries A 21	Method for reference period 2017														
	Bottom-up methods										Top-down methods				
	Survey data				Administrative data		Combined Data		Data based on extrapolations or models	Corrections, imputations, and conceptual adjustments	Survey or census data		Administrative data		
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional			uniregional	multiregional	Closely related indicators	Data based on extrapolations or models and/or less related indicators	Closely related indicators
	uniregional	multiregional	uniregional	multiregional					uniregional	multiregional					
1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	
G GVA - I	own-account R&D	own-account R&D					SBS	SBS		purchased R&D, other corrections			estimate illegal production		
H GVA - I GVA - G	own-account R&D government data	own-account R&D					SBS government data	SBS government data		purchased R&D, other corrections					
I GVA - I GVA - G							SBS	SBS					overnight stays		
J GVA - I GVA - G	own-account R&D	own-account R&D					SBS	SBS		purchased R&D, other corrections			government data		
K GVA - I GVA - G	own-account R&D FMA data	own-account R&D OeNB data FMA data					OeNB data SBS	OeNB data SBS	extrapolations	purchased R&D, other corrections			vehicle registration fee	FISIM	

6. Annex 2: Regional GVA Metadata Table for Austria

Industries A 21	Method for reference period 2017														
	Bottom-up methods										Top-down methods				
	Survey data				Administrative data		Combined Data		Data based on extrapolations or models	Corrections, imputations, and conceptual adjustments	Survey or census data		Administrative data		
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional			uniregional	multiregional	Closely related indicators	Data based on extrapolations or models and/or less related indicators	Closely related indicators
	uniregional	multiregional	uniregional	multiregional					uniregional	multiregional					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L GVA - I GVA - G	own-account R&D		rents		government data		SBS	SBS	imputed rents	corrections		FISIM	government data	tax on property transfer	
M GVA - I GVA - G GVA - P ***)	own-account R&D	own-account R&D			government data		SBS	SBS		purchased R&D, other corrections			government data NPISH R&D: VAT		
N GVA - I GVA - G GVA - P	own-account R&D	own-account R&D			government data		SBS	SBS		purchased R&D, other corrections			government data	undeclared work	
O GVA - G					government data								government data		
P GVA - I GVA - G GVA - P	own-account R&D				government data								VAT data government data VAT data	day-care and school staff-statistics	
Q GVA - I GVA - G GVA - P	own-account R&D				government data								VAT data government data VAT data	hospital bed statistics	
R															

6. Annex 2: Regional GVA Metadata Table for Austria

Industries A 21	Method for reference period 2017														
	Bottom-up methods										Top-down methods				
	Survey data				Administrative data		Combined Data		Data based on extrapolations or models	Corrections, imputations, and conceptual adjustments	Survey or census data		Administrative data		
	Exhaustive coverage		sample data		uniregional	multiregional	uniregional	multiregional			uniregional	multiregional	Closely related indicators	Data based on extrapolations or models and/or less related indicators	Closely related indicators
	uniregional	multiregional	uniregional	multiregional					uniregional	multiregional					
1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	
GVA - I GVA - G GVA - P	own-account R&D	own-account R&D			government data				output * net quota	purchased R&D, other corrections				VAT data government data pay-slip data	
S GVA - I GVA - G GVA - P	own-account R&D	own-account R&D			government data		SBS	SBS	output * net quota	purchased R&D				VAT data government data pay-slip data	illegal production
T GVA - I									DV data						

*) GVA - I: industry (GVA sectors 11, 12, and 14)
 **) GVA - G: general government (sector 13)
 ***) GVA - P: NPISH (sector 15)

7. Annex 3: List of Abbreviations

BStatG	Federal Statistics Act
DRG	diagnosis-related groups (procedure-oriented hospital financing)
DV	Umbrella Organisation of Austrian Social Security Institutions
EAA	Economic Accounts for Agriculture
EAf	Economic Accounts for Forestry
EBS	European Business Statistics
EC	European Commission
ESA	European System of Accounts
EU	European Union
FISIM	Financial Intermediation Services Indirectly Measured
FMA	Financial Market supervisory Authority
FRIBS	Framework Regulation Integrating Business Statistics
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GOS	Gross operating surplus
GRP	Gross Regional Product (=Regional GDP)
GVA	Gross Value Added
HV	Main Association of Austrian Social Insurance Institutions (now DV)
IO	Input-Output statistics
ITGS	International Trade in Goods Statistics
K	Kind-of-Activity Unit (KAU)
KAU	Kind-of-Activity Unit
LFS	Labour Force Survey
LKAU	Local Kind-of-Activity Unit
MIS	Management Information System (of the Federal Government)
NACE	Statistical Classification of Economic Activities in the European Community
NA	National Accounts
n.e.c.	not elsewhere classified
NPISH	Non-Profit Institutions Serving Households
NPO	Non-Profit Organisation
NUTS	Nomenclature des Unités Territoriales Statistiques
OECD	Organisation for Economic Cooperation and Development
OENACE	Austrian version of NACE
OeNB	Austrian National Bank
ÖGB	Österreichischer Gewerkschaftsbund (Austrian Trade Union Federation)
OPEC	Organization of the Petroleum Exporting Countries
ÖPRODCOM	Austrian Version of PRODCOM
ORF	Austrian Broadcasting Corporation

P.1	Output
P.2	Intermediate Consumption
PIS	Personnel Information System (of the Federal Government)
PRODCOM	Production Communautaire
R&D	Research & Development
RA	Regional Accounts
REAA	Regional Economic Accounts for Agriculture
REAF	Regional Economic Accounts for Forestry
S	Local unit
S.	Sector
S.11	Non-financial corporations
S.12	Financial corporations
S.13	General government
S.1311	Central government
S.1312	State government
S.1313	Local government
S.1314	Social security funds
S.14	Households
S.15	Non-profit institutions serving households
S.2	Rest of the world
SNA	System of National Accounts
SBR	Statistical business register for statistical purposes
SBS	Structural Business Statistics
STAT	Statistics Austria
STS	Short Term Statistics
UN	United Nations
VAT	Value Added Tax
WIFO	Austrian Institute of Economic Research
ZR	Enterprise (legal unit)
ZRKS	enterprise with only one local unit; enterprise = local unit
ZRK	multiregional enterprises with one Kind-of-Activity Unit