

QUARTERLY NATIONAL ACCOUNTS INVENTORY AUSTRIA

Vienna, March 2021

www.statistik.at

Information on National Accounts

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Table of Contents

1. Overview of the system of quarterly accounts	5
1.1 Organisation and institutional arrangements	5
1.2 Publication timetable, revisions policy and dissemination of QNA	5
1.3 QNA compilation approach.....	5
1.4 Balancing, benchmarking and other reconciliation procedures	6
1.5 Volume estimates	7
1.6 Seasonal adjustment and working day correction.....	7
1.7 Additional information.....	7
2. Publication timetable, revisions policy and dissemination of QNA	9
2.1 Release Policy.....	9
2.2 Contents published	9
2.3 Special transmissions	12
2.4 Policy for metadata.....	12
3. Overall QNA compilation approach.....	13
3.1 Overall compilation approach.....	13
3.2 Balancing, benchmarking and other reconciliation procedures	13
3.2.1 Quarterly GDP balancing procedure.....	13
3.2.2 Benchmarking of QNA and ANA	14
3.2.3 Other reconciliations of QNA different from balancing and benchmarking	14
3.2.4 Amount of estimations in various releases	14
3.3 Volume estimates	15
3.3.1 General volume policy	15
3.3.2 Chain-linking and benchmarking	16
3.3.3 Chain-linking and seasonal adjustment.....	16
3.4 Seasonal adjustment and working day correction.....	16
3.4.1 Policy for seasonal adjustment.....	16
3.4.2 Policy for working-day correction	17
4. GDP components: The production approach.....	18
4.1 Gross value added, including industry breakdowns.....	18
4.1.1 Agriculture, forestry and fishing (NACE A)	19
4.1.2 Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities (NACE B to E)	20
4.1.3 Construction (NACE F)	20
4.1.4 Wholesale and retail trade, Repair of motor vehicles and motorcycles; Transportation and storage, Accommodation and food service activities (NACE G to I).....	20
4.1.5 Information and communication (NACE J)	21
4.1.6 Financial and insurance activities (NACE K).....	21
4.1.7 Real estate activities (NACE L)	21

4.1.8 Professional, scientific and technical activities; Administrative and support service activities (NACE M and N)	22
4.1.9 Public administration and defence; Education; Human health and social work activities (NACE O to Q).....	22
4.1.10 Arts, entertainment and recreation; Other service activities; Activities of households as employers; Activities of extraterritorial organisations (NACE R to U).....	23
4.2 FISIM	23
4.3 Taxes less subsidies on products.....	23
5. GDP components: The expenditure approach.....	25
5.1 Household final consumption	25
5.2 Government final consumption, incl. split individual/collective consumption.....	29
5.3 NPISH final consumption.....	29
5.4 Gross capital formation	29
5.4.1 Gross fixed capital formation (GFCF) in dwellings (N111G) and other buildings and structures (N112G).....	29
5.4.2 GFCF in transport (N1131G), ICT (N1132G), other machinery and equipment, including weapon systems (N110G) and acquisitions less disposables of valuables (N13G)	30
5.4.3 Cultivated biological resources (N115G).....	30
5.4.4 Intellectual property products (N117G)	31
5.4.5 Changes in inventories (N12G).....	31
5.5 Imports, exports.....	31
6. GDP components: The income approach	33
6.1 Compensation of employees, including components (wages and salaries)	33
6.2 Taxes less subsidies on production	34
6.3 Gross operating surplus and mixed income	34
7. Population and Employment	35
7.1 Population.....	36
7.2 Employment.....	36
7.2.1 Persons and number of jobs: domestic concept.....	36
7.2.2 Persons: national concept.....	37
7.2.3 Employment: Total hours worked.....	38
8. Main data sources used	40
APPENDIX.....	44
List of Abbreviations.....	44
Classification of industries according to ÖNACE 2008	45
Literature and further information	46

1. Overview of the system of quarterly accounts

1.1 Organisation and institutional arrangements

Since September 2020 Austrian Quarterly National Accounts (QNA) are compiled by the directorate Macroeconomic Statistics of Statistics Austria. As part of the National Accounts division, a QNA team consisting of three full-time core members is responsible for compiling QNA aggregates. Main support comes from the Income Accounts Team, which is responsible for the quarterly Income Tables and the Unit of quality management, methods and classifications, which provides support for seasonal and working day adjustment. The QNA team closely collaborates with colleagues from Annual National Accounts (ANA), who support the verification of input data and final aggregates for validity and plausibility.

Austria's QNA follow the European Statistics Code of Practice¹.

1.2 Publication timetable, revisions policy and dissemination of QNA

QNA are published by Statistics Austria five times a year. Following the ESA 2010 transmission programme (2014 edition), QNA aggregates are published 2 months after the end of the reference quarter and, for reasons of consistency, in September concurrent to the ANA tables. Revision policy is coordinated with the compilation of ANA, i.e. quarterly aggregates are revised, as long as there is no final aggregate from ANA available. When a new year is published by ANA, three preliminary years are revised. Subsequently QNA are adjusted to sum up to the annual totals. In all other cases only quarters where no ANA benchmark value is available are subject to revisions. The published time series start with the first quarter of 1995 and will not be revised unless there is a major revision of ANA. This again ensures consistency, in particular with sector accounts. According to the European Statistics Code of Practice, Statistics Austria disseminates QNA on its [website](#) to guarantee unlimited availability for the public.

1.3 QNA compilation approach

¹ The Code of Practice is based on 16 key principles concerning the institutional environment, the statistical processes and the outputs. It aims to ensure that statistics within the European Statistical System (ESS) are timely, accurate and comply with the principles of professional independence, impartiality and objectivity. For further details see <https://ec.europa.eu/eurostat/web/products-catalogues/-/KS-02-18-142> (January 2021).

All compilations are based on concepts according to ESA 2010 and on recommendations from the [Handbook on quarterly national accounts](#) (2013 edition) from Eurostat. The estimates of production and expenditure side are to a great extent compiled independently, which makes detailed balancing necessary. The remaining difference is for reasons of transparency disclosed as statistical discrepancy on the expenditure side. Income side is automatically balanced by using gross operating surplus as residual due to a lack of adequate indicators. This procedure follows ANA to ensure high consistency from scratch.

The data basis for estimating QNA is very extensive and aggregate-specific. Main data sources are short-term business statistics (STS), turnover and wage tax statistics, foreign trade statistics (FTS), administrative data from the Federation of Austrian Social Insurance Institutions and the Labour Force Survey (LFS).

The estimates for the most recent quarters as well as benchmarking to ANA aggregates are based on appropriate indicators, i.e. annual figures are broken down and reference quarters are extrapolated with indicators. Annual aggregates are directly derived from quarterly aggregates only for the first release at t+2 months in February, since ANA compilation approaches rely on more detailed input data. However, quarterly information is used as an additional source in ANA.

1.4 Balancing, benchmarking and other reconciliation procedures

For QNA aggregates two consistencies must be ensured. First, Gross Domestic Product (GDP) must be the same on production, expenditure and income side. Second, the sum of the quarterly values of each aggregate must give the respective ANA aggregate.

For the first consistency to be met, a balancing procedure must be set. Balancing is a multilevel procedure, starting as soon as first aggregates are estimated. Aggregates with strong economic coherence between production and expenditure side (e.g. construction and gross fixed capital formation of dwellings and other buildings) are immediately checked for consistency. Macro-economic balancing is subsequently based on a variety of plausibility checks and indicators (e.g. productivity, contribution to growth, implicit deflators, information from newsletters and media observation). It is also based on the knowledge and assessment of experienced colleagues from ANA, who know about the specific characteristics of industries and expenditure side aggregates.

For the second (i.e. temporal) consistency a process of benchmarking is set. Methods for benchmarking differ according to the availability of indicators. In most cases Statistics Austria uses the Chow-Lin method (Chow and Lin, 1971), which is a regression-based approach. In some other cases, particularly on the income side, where input data for ANA and QNA coincides, the Denton-Cholette method (Dagum and Cholette, 2006) is applied. In cases where no sub-annual information is available benchmarking follows the procedure proposed by Boot et al (1967).

1.5 Volume estimates

Volume estimates in Austrian QNA are derived as recommended by the Eurostat QNA Manual², i.e. in order to derive quarterly chain Laspeyres-type volume estimates, estimates in the prices of the previous year are linked with the annual overlap method. Aggregates at prices of the previous year are based on a very detailed structure of weighted quarterly price indices according to the latest supply and use tables (SUT). This ensures methodical consistency with ANA.

1.6 Seasonal adjustment and working day correction

Compilation of QNA estimates is based on non-seasonally adjusted source data (in current prices or in terms of volume). After balancing, all series are seasonally and working day adjusted using the software package “persephone”, developed by the Unit of quality management, methods and classifications of Statistics Austria³. The starting point in seasonal adjustment are volume and price index time series. They form the basis for adjusted time series in nominal values. Seasonal adjusted data are not benchmarked, so their sum does not necessarily give the according annual aggregate. Working day correction is done within the framework of seasonal adjustment.

1.7 Additional information

² Eurostat (2013): Handbook on quarterly national accounts, p.208.

³ <https://github.com/statistikat/persephone> (January 2021)

This inventory of methods deals with the estimation of quarterly national accounts. For detailed information on the compilation of annual benchmark values, reference is made to the [Inventory of Methods for ANA](#). Latest QNA data are published on the [website of Statistics Austria](#). QNA time series starting in 1995 can be found in the database of Statistics Austria ([STAT Cube](#)).

2. Publication timetable, revisions policy and dissemination of QNA

2.1 Release Policy

QNA are published by Statistics Austria five times a year. Following the ESA 2010 transmission programme (2014 edition), QNA aggregates are published two months after the end of the reference quarter and, for reasons of consistency, in September concurrent to the ANA tables and in line with Quarterly Sector Accounts (QSA) at t+85. A timetable of upcoming QNA releases can be found on [STATISTIC AUSTRIA'S release calendar](#).

Revision policy is coordinated with the compilation of ANA, i.e. quarterly aggregates are revised, as long as there is no final aggregate from ANA available. When a new year is compiled by ANA, three preliminary years are revised. QNA are then adjusted to sum up to the annual totals. The subsequent estimations of QNA take these updated figures as starting point. The published time series start with the first quarter of 1995 and are not revised unless there is a major revision of ANA. This again ensures consistency, in particular with sector accounts.

According to the European Statistics Code of Practice, Statistics Austria publishes QNA on its [website](#) to guaranty unlimited availability.

2.2 Contents published

QNA results are published at the same time when data are transmitted to EUROSTAT (t+2 months) on the [webpage of STATISTICS AUSTRIA](#) and on [STAT Cube](#), which is the database of Statistics Austria. Data are available for free for all users. The scope of published aggregates complies with the [transmission programme of ESA 2010](#). On the webpage of Statistics Austria separate data for industries G (trade), H (transportation) and I (accommodation and food services) is additionally provided. An overview of published QNA tables can be found in *Table 1*.

TABLE 1 – QNA Main aggregates published

CODE	VARIABLE	BREAKDOWN	CURRENT PRICES	PREVIOUS YEAR'S PRICES	CHAIN-LINKED VOLUMES	SEASONAL ADJUSTMENT
<i>Gross value added and gross domestic product</i>						
B.1g	Gross value added at basic prices	A*10 ⁴	X	X	X	X
D.21	Taxes on products		X	X	X	X
D.31	Subsidies on products		X	X	X	X
B.1*g	Gross domestic product at market prices		X	X	X	X
<i>Expenditure side of gross domestic product</i>						
P.3	Total final consumption expenditure		X	X	X	X
P.3	Household final consumption expenditure (domestic concept)	Durability (non-durable, semi-durable and non-durable goods and services)	X	X	X	X
P.3	Household final consumption expenditure (national concept)		X	X	X	X
P.3	Final consumption expenditure of NPISHs		X	X	X	X
P.3	Government final consumption expenditure		X	X	X	X
P.31	Government individual consumption expenditure		X	X	X	X
P.32	Government collective consumption expenditure		X	X	X	X
P.4	Actual final consumption		X	X	X	X
P.41	Actual individual consumption		X	X	X	X
P.5	Gross capital formation		X	X	X	X
P.51g	Gross fixed capital formation	Dwellings, other	X	X	X	X

⁴ Industries A, B to E, C, F, G to I, J, K, L, M to N, O to Q, R to U. Additional information for G, H, I. For further details see *Appendix*.

		buildings, transport, IC, other machinery including weapon systems, cultivated biological resources, intellectual property products				
P.52	Changes in inventories		X	X		X (current prices)
P.53	Acquisitions less disposals of valuables		X	X		X (current prices)
P.6	Exports of goods and services		X	X	X	X
P.61	Exports of goods		X	X	X	X
P.62	Exports of services		X	X	X	X
P.7	Imports of goods and services		X	X	X	X
P.71	Imports of goods		X	X	X	X
P.72	Imports of services		X	X	X	X
B.11	External balance of goods and services		X	X		X (current prices)
<i>Gross Operating Surplus and gross mixed income, compensation of employees taxes on production and imports, subsidies</i>						
B.2g+ B.3g	Gross operating surplus and gross mixed income		X	X	X	X
D.1	Compensation of employees working in resident production units and compensation of resident employees	A*10				X
D.11	Wages and salaries	A*10				X
D.12	Employer's social contributions	A*10				X
D.2	Taxes on production and imports		X	X	X	X
D.3	Subsidies		X	X	X	X
<i>Population, employment – domestic concept</i>						
POP	Total population					
EMP	Employment in resident production units (persons, hours worked, number of jobs) and employment of residents (persons)	A*10				X

ESE	Self-employed in resident production units (persons, number of jobs, hours worked)	A*10				X
EEM	Employees in resident production units (persons, number of jobs, hours worked)	A*10				X
<i>Employment – national concept</i>						
EMP	Employment of residents(persons)					X
ESE	Self-employed of residents (persons)					X
EEM	Employees of residents (persons)					X

2.3 Special transmissions

According to Eurostat's Code of Practice all public users get access at the same time on the day of publication.

2.4 Policy for metadata

Austria's QNA subscribe to the IMF's Special Data Dissemination Standard Plus (SDDS Plus)⁵. As a subscriber to the SDDS Plus we submit information about the data, its production process and dissemination practices to the IMF, we certify the accuracy of all metadata posted on the Dissemination Standards Bulletin Board (DSBB) and we provide transparency in the compilation and dissemination of our QNA statistics.

⁵ For details see <https://dsbb.imf.org/sddsplus/dqaf-base/country/AUT/category/NAG00> (January 2021).

3. Overall QNA compilation approach

3.1 Overall compilation approach

QNA compilation is strongly linked with ANA, as both are based on the same definitions and concepts. When values from ANA are published at t+9 months, QNA are also revised to guarantee full consistency. Also, main data sources in QNA are strongly oriented towards ANA. However, due to earlier compilation and dissemination of QNA, basic data are usually only available in a preliminary version and are to be revised later. The limited data availability in the short term also increases the need for estimation.

In QNA, as well as in ANA, GDP is compiled in two largely independent approaches, namely production and expenditure approach. Since there is no solid information on gross operating surplus available, GDP cannot be derived independently for the income approach. GDP is derived bottom-up, i.e. it is the result of summing up sub-aggregates. As data sources on the production side are usually more reliable, GDP from production side is the starting point for balancing. The remaining statistical discrepancy is shown on the expenditure side.

The compilation of sub-aggregates is based on several methods, depending on the availability of source data. Usually sub-annual indicators are used to disaggregate corresponding annual values and to extrapolate beyond the time horizon of most recent annual data. This benchmarking process is based on the Chow-Lin (1971) method. In a few cases, particularly on the income side, the Denton-Cholette (2006) method, where an indicator series is used for purely mathematical distributing annual totals, is applied.

Most aggregates are estimated in terms of current prices and then deflated. Seasonal adjustment forms the last step after balancing.

3.2 Balancing, benchmarking and other reconciliation procedures

3.2.1 Quarterly GDP balancing procedure

The quarterly GDP balancing procedure starts immediately after the estimation of aggregates by comparing the development of economically closely related aggregates (e.g. construction on production side and gross fixed capital formation of dwellings and other buildings on expenditure side). Only when single aggregates are checked for plausibility, they are

integrated in the production and expenditure framework to compile GDP. The plausibility checks range from double checks with labour productivity, implicit deflators and employment key figures to observing relevant economic news and evaluations of experts from ANA. The actual balancing process takes the form of a meeting with experts from ANA and source data statisticians, where the results are discussed together. It starts with assessing the statistical discrepancy, which, as a rule of thumb should not exceed 0,3% of quarterly GDP. In this case aggregates and indicators are searched for errors or implausible developments and are adjusted accordingly. The adjustments are based on growth rates as well as on absolute values in current prices and on implicit deflators. For an efficient and flexible balancing procedure, a balancing and a plausibility check tool, based on the QNA database, has been developed. Balanced data are directly implemented during the meeting to see the overall modified results. Balancing is an iterative process until the most plausible result in line with participating experts is reached. Results are then discussed with experts from the Austrian Institute of Economic Research (WIFO), who bring in their experience and expertise from forecasting and compiling flash estimates.

3.2.2 Benchmarking of QNA and ANA

To ensure that the sum of the quarters gives the value of the corresponding annual aggregate, benchmarking techniques are applied. Usually indicators are used to subdivide annual data into quarters. To additionally allow for extrapolation in most cases the Chow-Lin (1971) method is used. Aggregates in terms of volume are benchmarked by using the annual overlap method. Seasonally and working day adjusted quarterly time series are not benchmarked to annual data. On the income side most aggregates are benchmarked and extrapolated using Denton-Cholette (2006).

3.2.3 Other reconciliations of QNA different from balancing and benchmarking

No other reconciliations are applied.

3.2.4 Amount of estimations in various releases

In some cases (e.g. NACE G to I), the last month of the indicator series is missing for the reference quarter. The missing month is then estimated based on univariate time series forecast or - if available - different data sources (e.g. turnover tax advance return data). In

minor cases (e.g. household private consumption of railway services) no information is available for the reference quarter at t+2 months. The lack of data is solved by estimating these values based on purely mathematical approaches. The first revision at t+5 months usually covers the whole indicator set.

3.3 Volume estimates

3.3.1 *General volume policy*

According to international conventions and ESA 2010, volume measures are based on chain-linking previous year's price based data⁶. QNA chain-linked volume series are quarterly volume changes using annual averages of prices of the previous year. To ensure temporal additivity, Statistics Austria uses the annual overlap method for annually chain linking quarterly volume indices.

Aggregates on previous years' prices are obtained by disaggregating annual implicit deflators with quarterly price indices based on average prices of the previous year. They are weighted aggregate specifically based on structures of latest results from annual supply and use tables. Prices cover a wide range of index series, such as consumer price indices, wholesale price indices, industrial output price indices, import price indices and price indices on consumer durables. Previous years' price based aggregates are then chain-linked using the annual overlap technique. On production side, production and intermediate consumption are usually deflated separately (double deflation). Volume estimates of GVA are then derived indirectly, by subtracting intermediate consumption from production.

Major restrictions of chain-linking are non-additivity of sub-aggregates and accounting balances (e.g. changes in inventories, external balance of goods and services), for they cannot be reasonably chain-linked. However, since aggregates at previous year's prices don't form a consistent time series, chain-linked, instead of previous year's price based aggregates are published in absolute terms. To avoid irritations or wrong interpretations by users, Statistics Austria limits publication on its website to current price aggregates and growth rates.

⁶ For more information see Statistics Austria (2007): Inventory of Methods for Price and Volume Measures in the Austrian National Accounts, available online http://www.statistik.at/wcm/idc/idcplg?IdcService=GET_PDF_FILE&RevisionSelectionMethod=LatestReleased&dDocName=02713 (January 2021).

3.3.2 Chain-linking and benchmarking

The starting point for benchmarking is aggregates at current prices. Annual overlap then ensures coherence with annual aggregates in terms of volumes.

3.3.3 Chain-linking and seasonal adjustment

Seasonal and calendar adjustment is based on an indirect approach. Chain-linked and price series are adjusted at the aggregation level published on our homepage (see 2.2) to ensure transparency. Adjusted time series at current prices are obtained through adjusted chain-linked volume and price series. Adjusted aggregates at previous year's prices are derived via seasonal factors of the chain-linked series following the Eurostat Handbook on quarterly national accounts⁷ (Eurostat, 2013, 7.93): As chain-linked series are not additive, higher-level aggregates and sums are compiled by chain-linking the sums of adjusted current price and previous year price series, respectively.

3.4 Seasonal adjustment and working day correction

3.4.1 Policy for seasonal adjustment

Seasonal adjustment forms the last compilation step and follows benchmarking and reconciliation. Adjusted time series are not benchmarked to corresponding ANA values. Once a year, with the updated ANA information seasonal adjustment models are revised. During the rest of the year, only the parameters of the model are re-estimated and outliers may be set for the quarters subject to revision (see 1.2). Whenever an outlier appears in the most recent quarter it is treated as an additive outlier, that affects only one point in time. As more data is available and the effect of the outlier becomes clearer, the outlier may be changed to a level shift, that affects the series permanently or a transitory change where the series returns to the initial trajectory over time.

In Austrian QNA, volume aggregates and implicit deflators are seasonally adjusted. Adjusted time series at current prices are derived from these adjusted series. As sums of aggregates are compiled via an indirect approach an additional step is necessary due to the non-additivity of volume series. Following the QNA Manual⁸, seasonally adjusted series at previous year's

⁷ Eurostat (2013): Handbook on quarterly national accounts, 7.93.

⁸ Eurostat (2013): Handbook on quarterly national accounts, p.228.

prices are derived by applying the seasonal factors to unadjusted data at previous year's prices. This is possible whenever the underlying series has been log-transformed to get a multiplicative model. Series at previous year's prices are additive. Together with the sums of the nominal series, higher level aggregates in volume terms can be derived by chain-linking the series.

All series are seasonally adjusted using the software package "persephone", developed by the Unit of quality management, methods and classifications of Statistics Austria.

3.4.2 Policy for working-day correction

Working day correction is part of the so-called "pre-treatment", which is the first step in the seasonal adjustment process. The calendar used is Austrian specific. All calendar effects are tested for their significance and plausibility before they are considered in the final adjustment process.

For working day adjustment, the software package "persephone", developed by the Unit of quality management, methods and classifications of Statistics Austria, is used.

4. GDP components: The production approach

4.1 Gross value added, including industry breakdowns

Gross value added (GVA) on production side is defined as output minus intermediate consumption. The sum of GVA for all industries then gives quarterly GDP at basic prices. By adding taxes on products and deducting subsidies on products, one can get to GDP at market prices.

For most industries in QNA output is benchmarked and extrapolated with an appropriate sub-annually available indicator. However, for estimating quarterly intermediate consumption no such indicators are available. Statistics Austria therefore uses information on industry-specific input-output relations from ANA. GVA is thus the result of output minus intermediate consumption. This is the so-called indirect approach as it is recommended by the QNA manual of the International Monetary Fund (IMF)⁹. Only in a few cases GVA is derived directly. The steps for estimating GVA on production side are shown schematically in *Figure 1*.

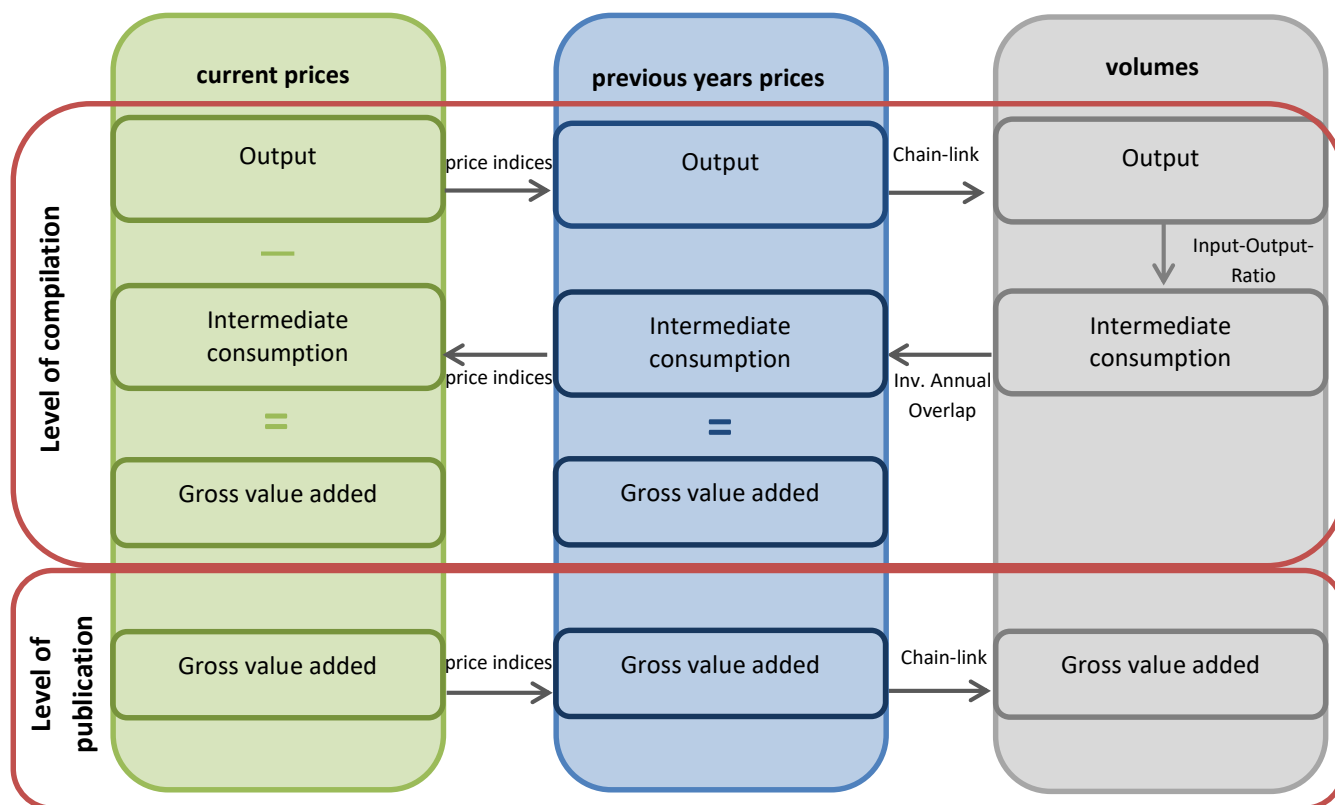
The first step is to estimate quarterly output at current prices with an appropriate monthly or quarterly indicator. Estimation is usually based on the Chow-Lin (1971) method. Output is then deflated with an aggregate-specific price index¹⁰ to get to production at previous years' prices. For quarters where an ANA value is available, price indices are used for benchmarking implicit annual deflators.

Chain-linking output at previous years' prices gives output in terms of volume. In a next step chain-linked intermediate consumption is derived from the chain-linked input-output ratio from ANA. The inverse annual overlap method gives intermediate consumption at previous years' prices. Intermediate consumption is then inflated to get to its value at current prices. Again, if annual values are available, quarterly price indices are used to allocate implicit annual deflators. GVA at current and previous years' prices is the result of deducting intermediate consumption from output, respectively. Chain-linking finally gives GVA in terms of volume. For publication on A*10 GVA sub-aggregates at current and previous years' prices are summed up accordingly. Chain-linking then gives published aggregates in terms of volume.

⁹ International Monetary Fund (IMF) (2017): Quarterly National Accounts Manual, available online <https://www.imf.org/external/pubs/ft/qna/pdf/2017/QNAManual2017text.pdf> (January 2021).

¹⁰ Aggregate-specific prices result from monthly price indices, weighted with recent supply-use tables' goods structures. Monthly price indices range from consumer price index and industrial output price index to import price index and wholesale price index.

FIGURE 1- Derivation of GVA on production side



4.1.1 Agriculture, forestry and fishing (NACE A)

According to ESA 2010 3.54, the output of agriculture is to be recorded continuously over the entire growing period and not at the time of harvesting or slaughtering. Apart from a few exceptions (e.g. milk and eggs), all production processes in agriculture extend to more than one quarter. In these cases, it is recommended to distribute production in proportion to the costs occurred in each quarter¹¹.

GVA for agriculture, forestry and fishing is derived directly. Disaggregation of annual GVA and quarterly extrapolation is based on indicators from agricultural statistics. For livestock products monthly production information of milk, eggs, veal, pork, beef and poultry is used. Plant production is distributed to quarters according to sub-annual expenditure on intermediate consumption derived from a publication of the Austrian Chamber of Agriculture

¹¹ Eurostat (2013): Handbook on quarterly national accounts, p.36.

and Forestry. GVA is deflated with agricultural prices, mainly the producer price index for agricultural products and food.

4.1.2 Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities (NACE B to E)

The estimation of output of industries B to E is based on the corresponding turnover indices from STS. All indicators are available at the time of estimating the reference quarter.

Regression is based on the method proposed by Chow-Lin (1971). Annual input-output relations are disaggregated by the mathematical Boot-Feibes-Lisman (BFL) technique. GVA is derived as shown in *Figure 1* and described in *section 4.1*. Compiled quarterly GVA is cross-checked with employment figures in order to analyse the development of productivity.

4.1.3 Construction (NACE F)

The estimation of output of industry F is based on the corresponding turnover indices from STS. The indicator is available at the time of estimating the reference quarter. Regression is based on the method proposed by Chow-Lin (1971). Annual input-output relations are disaggregated by the mathematical BFL technique. GVA is derived as shown in *Figure 1* and described in *section 4.1*. Compiled quarterly GVA is cross-checked with employment figures in order to analyse the development of productivity.

4.1.4 Wholesale and retail trade, Repair of motor vehicles and motorcycles; Transportation and storage, Accommodation and food service activities (NACE G to I)

Output of NACE G to I is estimated separately, mostly at divisions (2-digit) level, except for NACE I which is compiled at section (1-digit) level. Turnover indices from STS are used to disaggregate output. Typically, only two months are available for the most recent quarter (except for division 47 – retail trade – where a flash estimate is available). The missing month is estimated with turnover tax advance return data. Temporal disaggregation and extrapolation is based on the method proposed by Chow-Lin (1971). Annual input-output

relations are disaggregated by the mathematical BFL technique. GVA is derived as shown in *Figure 1* and described in *section 4.1*.

4.1.5 Information and communication (NACE J)

The output of NACE J is derived in a two-step procedure. The majority of annual output is in divisions 61 to 63. Output of division 61 is disaggregated using the Chow-Lin (1971) method and turnover data from the Austrian Regulatory Authority for Broadcasting and Telecommunications (RTR). Output of divisions 62 and 63 is disaggregated using the Chow-Lin (1971) method and the respective turnover indices from STS. The last month of the most recent quarter is estimated as described in *section 4.1.4*. The trajectory of output in these three divisions is used as indicator for output of NACE J. The compilation of intermediate consumption and GVA is equivalent to the procedure described in *section 4.1*.

4.1.6 Financial and insurance activities (NACE K)

The indicators to estimate output of Financial service activities (NACE 64) are FISIM¹² (financial intermediation services indirectly measured) as well as data on bank profitability, both based on data from the Austrian National Bank (OeNB). To estimate output in NACE 65 (Insurance, re-insurance and pension funding) data on insurance companies from the Austrian financial market supervision (FMA) are used. Output is based on the development of earnings of investment, intermediate consumption is mainly based on payments made for insurance claims. The approach is similar to the compilation in ANA to reduce potential later revisions. Regression is for both industries based on the method proposed by Chow-Lin (1971). Annual input-output relations are disaggregated by the mathematical (BFL) technique. GVA is derived as shown in *Figure 1* and described in *section 4.1*.

GVA of NACE 66 is estimated directly using BFL method as no sub-annual data is available.

4.1.7 Real estate activities (NACE L)

As with NACE K, the compilation of NACE L in QNA is very similar to ANA. Actual rents come from the microcensus housing survey. This data also gives detailed information on the structure of housing to estimate imputed rents and intermediate consumption for actual and

¹² For further details on FISIM see *section 4.2*.

imputed rents. As FISIM from private loans is a significant part of intermediate consumption for imputed rents it is considered as well.

The Chow-Lin (1971) method is used to benchmark and extrapolate to GVA in basic prices.

4.1.8 Professional, scientific and technical activities; Administrative and support service activities (NACE M and N)

Turnover indices from STS in services and turnover tax advance return data for the last month of the recent quarter form the data base to estimate output of NACE M and N. The procedure is equivalent to the estimation of Wholesale and retail trade, Repair of motor vehicles and motorcycles; Transportation and storage, Accommodation and food service activities. GVA is derived as shown in *Figure 1* and described in *section 4.1*.

4.1.9 Public administration and defence; Education; Human health and social work activities (NACE O to Q)

Due to the high share of non-market output in this industries, estimation is split according to sectors. Data for the general government sector is provided by the division Sector Accounts and public finance, which is part of the directorate Macroeconomic statistics. GVA in current prices is taken from public finance statistics.

GVA of non-profit institutions serving households (NPISH, S.15) is based on data on compensation of employees (according to income tax) in the respective sector and industries. Latest quarters are extrapolated using compensation of employees over all sectors in the respective industries.

For non-financial corporations (S.11) no appropriate indicator is available. The BFL technique is used to distribute annual GVA over the quarters. For the year without an ANA benchmark the annual GVA growth of S.13 is used to estimate GVA in S.11.

Volume measurement is not sector specific and not based on price indices. The number of jobs is used as volume indicator for NACE O to Q. Benchmarking is done with the Denton-Cholette (2006) method. Through this approach an implicit deflator for GVA is derived.

4.1.10 Arts, entertainment and recreation; Other service activities; Activities of households as employers; Activities of extraterritorial organisations (NACE R to U)

As non-market output dominates NACE R to U, the same procedure as for NACE O to Q is applied (see 4.1.9). In the case of NACE R to U, however, GVA in current prices of S.11 entities is disaggregated using the Chow-Lin (1971) method. The indicator is turnover from turnover tax advance return.

Working hours are used as indicator for measuring volumes. Benchmarking for GVA in volumes is done with the Denton-Cholette (2006) method.

4.2 FISIM

The notion of financial intermediation services indirectly measured (FISIM) has been an integral part of national accounts since their inception. The idea behind the concept is that besides producing services that are remunerated directly for example via commissions, financial intermediaries produce output by providing a mechanism to allow units to lend to each other and borrow from each other, respectively. These services are paid for indirectly – the financial institutions charge for them by demanding a higher interest rate on loans and paying out a lower interest on deposits than they could.

In the national accounts framework FISIM is regarded as intermediate consumption for industries, and on expenditure side either as final consumption expenditure (for private households) or as exports and imports. Main source data to compile quarterly FISIM are taken from the financial accounts and the statistics on interest and exchange rates of the Austrian national bank (OeNB). The theoretical interest flow is based on the interbank interest rate. FISIM at constant prices results from extrapolation with a volume index. The volume index is stocks of loans and deposits deflated with the GDP deflator.

All data are available for estimating quarterly FISIM up to most recent quarter. FISIM is mainly used to estimate GVA for NACE K and intermediate consumption of NACE L. In all other cases there is no explicit allocation of FISIM to industries' intermediate consumption.

4.3 Taxes less subsidies on products

In order to obtain consistency between QNA and the sector accounts “General Government” (S.13), the QNA values for taxes and subsidies are based on sector accounts data up to the quarter prior to the reference quarter. For the most recent quarter, estimates are based on time adjusted cash tax revenues provided by the division Sector Accounts and public finance of Statistics Austria. They also provide data on subsidies from public accounts. Volumes are obtained by using consumer price index (CPI) as price index.

5. GDP components: The expenditure approach

Aggregates on the expenditure side can roughly be divided into consumption, capital formation, changes of inventory and foreign trade. Since these aggregates are more heterogeneous than the aggregates on production side, source data and methods vary to a greater extent. Provided that according indicators were available sub-annual and in time, methods similar to ANA were used to minimise potential later revisions.

5.1 Household final consumption

The starting point of our estimation is domestic final consumption at a detailed product level based on ÖCPA classification. As in ANA, the indicators depend on the goods and services to be estimated. Most of the goods are estimated based on the according categories of STS in trade¹³. So, e.g. all goods which are usually offered in drugstores (like body care and cosmetic products) are estimated with the STS trade index for drugstores. There are a few exceptions, like private consumption of vehicles (which are estimated based on administrative data on vehicle registration). The exceptions are due to the availability of more specific indicators and the according compilation methods in ANA. A separate estimation is also made for e-commerce with information of business register and foreign trade statistics, following the according method in ANA. The estimation of household final consumption is based on 24 sub-groups of goods. Main sub-groups and indicators are listed in *Table 2*.

TABLE 2 - Main sub-groups of consumption goods and according indicators

<i>Goods</i>	<i>Main Indicator</i>
Food and beverages	STS (Retail sale in non-specialised stores with food, beverages or tobacco predominating)
Hardware (for do-it-yourselfers)	STS (Retail sale of hardware, paints and glass in specialised stores)
Home textiles	STS (Retail sale of carpets, rugs, wall and floor coverings in specialised stores)

¹³ Missing data for the last month of the most recent quarter are estimated based on turnover tax advance return data.

Furniture	STS (Retail sale of household furniture in specialised stores)
Stationery	STS (Retail sale of books in specialised stores)
Books	STS (Retail sale of newspapers and stationery in specialised stores)
Sporting equipment	STS (Retail sale of sporting equipment in specialised stores)
Games and toys	STS (Retail sale of games and toys in specialised stores)
Clothing	STS (Retail sale of clothing in specialised stores)
Footwear	STS (Retail sale of footwear and leather goods in specialised stores)
Pharmaceutics	STS (Dispensing chemist in specialised stores)
Medical or therapeutic aids	STS (Retail sale of medical and orthopaedic goods in specialised stores)
Cosmetic and toilet articles	STS (Retail sale of cosmetic and toilet articles in specialised stores)
Flowers and plants	STS (Retail sale of flowers, plants, seeds and fertilisers)
Pets and pet food	STS (Retail sale of pet animals and pet food in specialised stores)
Jewellery and watches	STS (Retail sale of watches and jewellery in specialised stores)
Photographic and optical equipment	STS (Retail sale of photographic, optical and precision equipment in specialised stores)
Electrical and electronic devices	Quarterly commodity flow of corresponding CPA 6-digit goods
Heating material	Heating degree days
Motor fuels (petrol and diesel)	Monthly consumption of petrol and diesel according to statistics from the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology

Vehicles	Monthly administrative data on vehicle registration
E-commerce	STS, foreign trade statistics, business register

Consumption of services is estimated in a detailed process with specific indicators. *Table 3* gives an overview of the main aggregates and the according source data. In some cases, the indicators are not available for the most recent quarters. In this cases ARIMA forecast models are used. Private consumption of cross-border e-commerce of services (e.g. streaming and online games) is estimated based on data from Mini one-stop-shop for VAT data (MOSS-data). Total household final consumption of services consists of 17 sub-groups. The listed groups account for about 92% of total household consumption (domestic concept), the remaining 8% are extrapolated.

TABLE 3- Indicators to estimate main components of quarterly consumption of services

Service	Main Indicator
Passenger rail transport services, interurban (CPA 49100)	Persons transported according to data from Austrian Federal Railways (ÖBB)
Interurban and special-purpose scheduled passenger land transport services (CPA 492910)	Turnover indices from STS in services for the according industry
Urban and suburban passenger land transport services (CPA 493100)	Turnover data from Vienna Public Transport (Wiener Linien)
Passenger air transport services (CPA 511010)	Number of passengers departing from Vienna Airport
Accommodation and food services (CPA 551010, 552000, 559000, 561010, 563000)	GVA NACE I from production account
Telecommunication services (CPA 611000)	Turnover indices from STS in services for the according industry
Deposit services (CPA 641910)	FISIM
Insurance services (CPA 651000)	Production NACE 65 from production account

Renting and leasing services of cars and light motor vehicles (CPA 771110)	Turnover tax advance return data for the according industry
Travel agency and tour operator services (CPA 791000)	International tourism data (receipts and expenditures) according to data from the Austrian National (OeNB) Balance of Payment Statistics (BoP)
Human health services (CPA 860000)	Insurance data from the Austrian financial market supervision (FMA)
Residential care services and Social work services without accommodation (CPA 87000, 88000)	Care allowance, provided by Austrian Social Security (from 2012, before Turnover tax advance return data for the according industry)
Creative, arts and entertainment services (CPA 900000)	Turnover tax advance return data for the according industry
Gambling and betting services (CPA 92000)	Turnover tax advance return data for the according industry
Sporting services and amusement and recreation services (CPA 93000)	Turnover tax advance return data for the according industry
Hairdressing and other beauty treatment services (CPA 960200)	Turnover tax advance return data for the according industry
Cross-border e-commerce of services (e.g. streaming and online games)	Mini-one-stop-shop VAT Data

To get from domestic consumption to the national concept, i.e. consumption of resident private households nationally and abroad, data on receipts and expenditure of international tourism from Balance of Payments (BoP) are used. Since these data are not available for the most recent quarter, consumption of non-residents is estimated based on monthly overnight stays, surveyed by Statistics Austria. Consumption of residents abroad is extrapolated with an ARIMA model.

Each consumption bundle is inflated with quarterly price indices based on average prices of the previous year and weighted according to ANA structures. Benchmarking of indicators to

ANA is done with the Chow-Lin (1971) method whenever appropriate, in some cases the method by Denton-Cholette (2006) is applied.

5.2 Government final consumption, incl. split individual/collective consumption

The data for the ESA 2010 transactions of the government sector are derived from the economic breakdown of the closed accounts or are the result of processing of public accounts statistics of other units of general government. In QNA the availability of this data is limited, particularly concerning the reference quarter. The division Sector Accounts and public finance of Statistics Austria provides preliminary estimates of government final consumption, including the split between individual and collective consumption. For prior quarters the corresponding values from sector accounts are taken to maintain consistency. Values at current prices are deflated using implicit deflators from NACE O to Q on production side.

5.3 NPISH final consumption

Final consumption of NPISH is defined in ESA 3.97. In QNA final consumption of NPISH at current prices is estimated with GVA of S.15 in NACE OTQ and NACE RTU. Consumption of NPISH in terms of volumes is estimated with the number of pay slips from income tax statistics. However, for the most recent quarters job growth rates are used as indicator, since pay slip data is not available in time. Benchmarking and extrapolating is done with the Chow-Lin (1971) approach for aggregates at current prices and with Denton-Cholette (2006) for aggregates in terms of volume.

5.4 Gross capital formation

5.4.1 Gross fixed capital formation (GFCF) in dwellings (N111G) and other buildings and structures (N112G)

Quarterly GFCF in dwellings and other buildings are estimated with the corresponding STS turnover indices. Deflation is based on the price index for production in NACE F (Construction). This also ensures consistency between the two approaches. The Chow-Lin (1971) method is used for disaggregating annual values and for extrapolating.

5.4.2 GFCF in transport (N1131G), ICT (N1132G), other machinery and equipment, including weapon systems (N110G) and acquisitions less disposables of valuables (N13G)

The indicators for estimating GFCF in total machinery and equipment are derived from quarterly commodity flows. Commodity flows show domestic supply on ÖCPA-6-digit level by adding imports and subtracting exports from domestic production for each good. Data for monthly domestic production is provided by STS PRODCOM, data for exports and imports are available from foreign trade statistics. The missing last month of the most recent quarter is estimated by transferring the structure of the first two months and benchmarking the resulting value to the quarterly sum of exports and imports obtained from the Austrian National Bank (OeNB). The allocation of goods to categories of use, such as GFCF in transport or GFCF in ICT is based on the corresponding annual structure. For GFCF in transport administrative data on vehicle registration are additionally used.

The resulting values are subsequently used as indicators for estimating GFCF with the Chow-Lin (1971) method. For aggregates at previous year's prices aggregate-specific weighted quarterly price indices, mainly consisting of price indices on producer durables are used. For methodical reasons acquisitions less disposables of valuables are not published in terms of chained volumes.

5.4.3 Cultivated biological resources (N115G)

According to ESA 2010 3.129 cultivated biological resources consist of changes in livestock used in production year after year (such as breeding stock, dairy cattle, sheep reared for wool and draught animals) and of changes in trees that are cultivated year after year, such as fruit trees, vines, rubber trees, palm trees, etc. QNA separates between planting, purchase of livestock and growing. Sub-annual growing is based on the according structure of intermediate consumption. For livestock purchases monthly data on breeding pigs and cattle are used. Since these data are not available for the most recent quarter, constant patterns compared to the previous year are assumed. The resulting data are used as indicator for

estimating cultivated biological resources with Denton-Cholette (2006). Aggregates at previous year's prices are derived in the same way as for GFCF (see 5.4.2).

5.4.4 Intellectual property products (N117G)

Intellectual property products mainly contain research and development, computer software and databases and copyrights. Research and development as well as computer software are estimated with STS in services for the according industry and with data from the global estimate of gross domestic expenditure on R&D respectively. The global estimate is not available on a sub-annual level, so the value for the most recent year is allocated to quarters using BFL. Due to the quarterly availability of STS data, Chow-Lin (1971) method for estimating software is used. Copyrights are compiled residually, since their share of intellectual property rights is minor. Volume measurement is based on weighted price indices from the quarterly price indices database.

5.4.5 Changes in inventories (N12G)

As there is no indicator available to compile quarterly changes in inventories, the difference between production and expenditure side is derived together with the statistical discrepancy. In order to separate the quarterly series of changes in inventories at current prices from the statistical discrepancy, the seasonal component is extracted from the aggregate and assigned to changes in inventory. The idea behind this is, that only changes in inventories should show a seasonal variation but not the remaining statistical discrepancy. The difference from summing up this seasonal pattern to annual totals of inventories is distributed according to the mathematical Denton benchmarking method. Changes in inventories are not published in terms of chained volumes.

5.5 Imports, exports

For the most recent quarter, data on exports and imports of goods and services are provided by the Austrian National Bank (OeNB). They also include geographical breakdowns, e.g. exports and imports by member states of the EU and third countries. For quarters other than the most recent one, data from quarterly balance of payments (BoP) statistics are used. Data

sources for BoP are mainly foreign trade statistics, accommodation statistics and a company survey about business services¹⁴. Volume aggregates are derived from quarterly price indices, which are weighted according to annual structures.

¹⁴ For further information see <https://www.oenb.at/en/Statistics/Standardized-Tables/external-sector/services.html> (December 2020).

6. GDP components: The income approach

The income approach is linked to the types of income. It examines how the income, generated by production, is distributed between the two production factors capital and labour. As in ANA, no original approach is chosen here, since gross operating surplus and mixed income is determined by the residual of the value added in the quarterly production approach and the quarterly compensation of employees.

6.1 Compensation of employees, including components (wages and salaries)

Quarterly compensation of employees is calculated based on eleven economic activities (A*10 plus manufacturing) and is defined by ESA 2010 4.02¹⁵. It consists of the following components:

Wages and salaries (D.11)

Gross wages and salaries, which are the largest component of employee remuneration, include not only basic wages and salaries, but also supplements for difficult working conditions (enhanced payments, such as payments for overtime, night work, weekend work disagreeable or hazardous circumstances), additional monthly salaries, remuneration for vacation days, commissions, tips, bonuses and similar. They also include social contributions, income taxes, and other payments by the employee, including those withheld by the employer and paid directly to social insurance schemes, tax authorities, etc. on behalf of the employee.

Employers' actual contributions (D.12)

Employers' social contributions are social contributions payable by employers to social security schemes or other employment-related social insurance schemes to secure social benefits for their employees.

In QNA the following indicators are used to determine the quarterly values of the above mentioned components:

¹⁵ Compensation of employees (D.1) is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during an accounting period.

- For the period for which values from the annual accounts are already available, compensation of employees is estimated using information from the wage tax statistics¹⁶. It contains quarterly information on basic wages and salaries and special payments and the associated pay slips. The associated pay slips are weighted for the duration of employment in the quarter of reference. An average wage calculated according to A*10 is multiplied by the number of jobs for the employees, which have to be estimated in advance (*see chapter 7*).
- The indicator for more recent quarters is calculated at A*10 level with the average wage, updated by the Index of Agreed Minimum Wages and multiplied by the estimated number of jobs for the employees.

The Denton-Cholette (2006) method is used, since the indicators and the quarterly or annual values are based on similar data and aggregates.

6.2 Taxes less subsidies on production

According to ESA 2010 4.15, taxes on production and imports (D.2) are defined as taxes on products (D.21) plus other taxes on production (D.29). In the same way (ESA 2010, 4.32) subsidies (D.3) are defined as sum of subsidies on products (D.31) and other subsidies on production (D.39). The procedure to obtain quarterly values for D.29 and D.3 is the same as described in *section 4.3*.

6.3 Gross operating surplus and mixed income

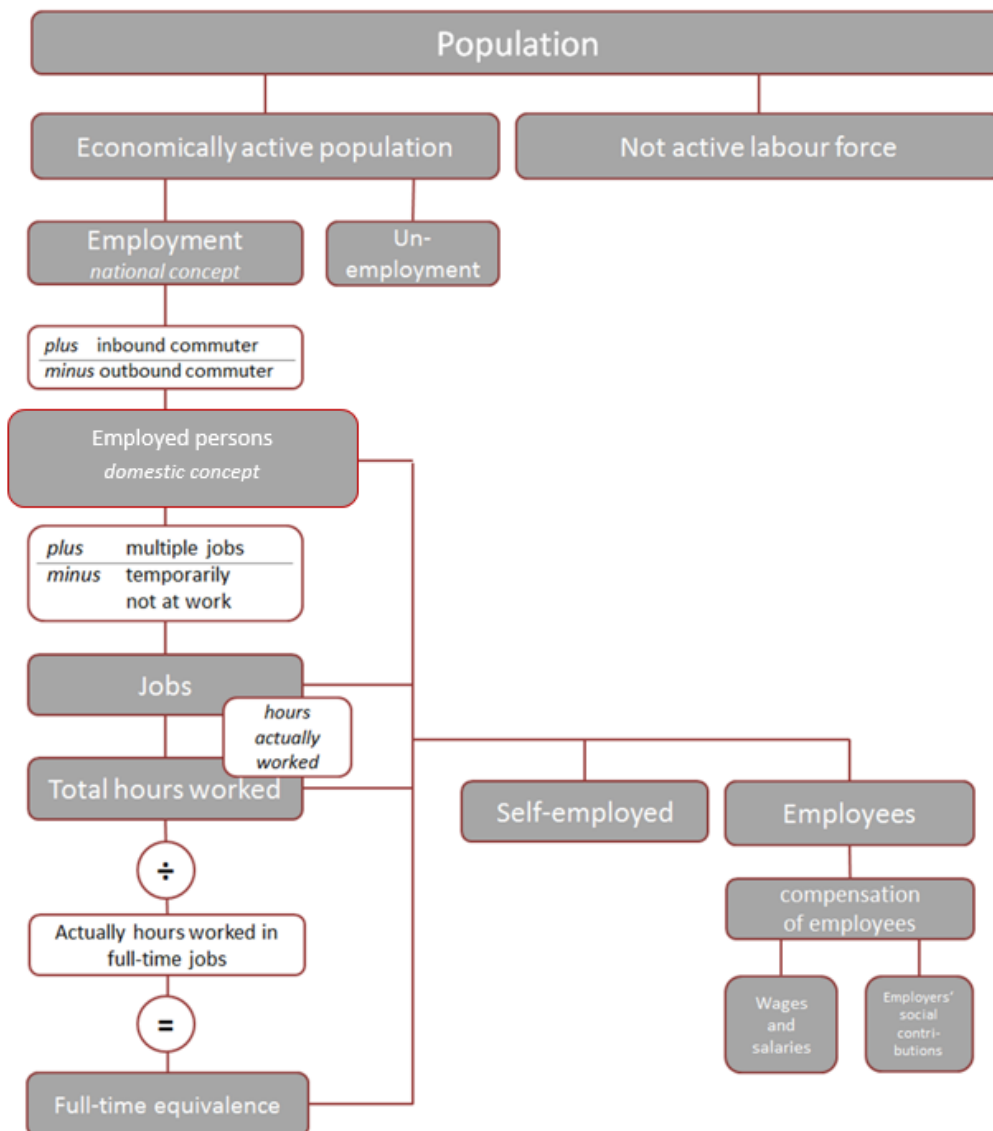
Gross operating surplus and mixed income is derived residually, i.e. it is the difference between GDP and the sum of compensation of employees (D.1) and taxes on production less subsidies (D.2 less D.3).

¹⁶ The Wage Tax Statistics is available at T+9 months (T means Year)

7. Population and Employment

The European System of National Accounts (ESA) has different concepts for employment: persons, jobs, full-time equivalents and total hours worked. An overview of the concepts to be used in quarterly accounts is provided in *Figure 2*. In addition to the concepts used in QNA, there are a number of other statistics that represent employment. Different concepts, definitions and data sources can lead to differences between the various employment statistics.

FIGURE 2- Concepts for employment



7.1 Population

Quarterly data on total population at the beginning of the quarter are available from Central Residence Register (CRR) processed by Statistics Austria. The quarterly population statistics reports all persons with a registered main residence in Austria at the beginning of the quarter (first day of January, April, July and October). Only persons with a minimum period of stay in Austria of more than 90 days are covered in the statistics. Conversely, also persons with short interruptions or registration (up to a maximum of 90 days), are part of the population, provided a minimum main residence registration of more than 90 days before and after the interruption. The quarterly population statistics are an essential component of the register-based population statistics system (POPREG) of Statistics Austria, which has replaced the method of population estimations since January 1, 2002. In order to ensure the consistency between continuous population statistics and the census results, periodic revisions of the quarterly population statistics follow the register-based census years. This data is used to compile quarterly average population.

7.2 Employment

In Austria only for the domestic concept the numbers of employment are broken down by industries.

7.2.1 Persons and number of jobs: domestic concept

The data from the Main Association of Austrian Social Security Organisations (HV) form the basis for calculations in terms of persons and number of jobs. HV data comprise end-of-month figures and breakdowns of periods with starting and final dates for all insurance relationships in Austria, hence also jobs (including those of commuters, seasonal workers and persons in institutional households) according to domestic concept. The number of individuals is determined using the available periodic structure with a starting and final date. The results are monthly average values, which are taken to estimate quarterly averages. To break down employment by industry for employees, the ÖNACE classification in accordance with the structure of the HV data is linked with business register. Since much better data quality can be achieved by linking HV data with the business register of Statistics

Austria, the employer's number is used as a unique identifier. However, in some industries adjustments are still necessary. With regard to self-employed, Statistics Austria uses the boundary value from evaluating the HV data stock as it is for employees. The HV data source offers no classification for industries other than agriculture, forestry and fishing (ÖNACE A) and therefore data are linked with the business register. This procedure can be applied for the majority of the self-employed. For the unpaid family workers, both the boundary values and the ÖNACE classification of the labour force survey are used. In addition to splitting data according to occupational status, the results are also allocated to economic activities (breakdown level A*10).

Insurance relationships which do not exist for the entire quarter are taken into account according to their duration of employment.

As mentioned above, HV data are based on employment according to the person and follow domestic concept, too. A person employed in Austria is registered exactly once and no multiple employment is taken into account. Thus, one of the main tasks is to specify criteria for assigning characteristics of the so-called main activity in the case of multiple occupations of a person.

In contrast, for the calculation of number of jobs, if a person has more than one job – multiple employment - each job is counted. For the calculation of the number of jobs, persons on parental leave and other absences are not taken into account.

The quarterly indicators determined in this way (persons, number of jobs) are included as indicators in the quarterly accounts. Since almost the same data sources are used for the calculation for both the annual and quarterly accounts, only the Denton-Cholette (2006) method is used.

7.2.2 Persons: national concept

In Austria the first step is to compile employment according to the domestic concept (*see chapter 7.2.1*). For the transition from domestic to national concept, the out-commuters from Austria to foreign countries (border workers and seasonal workers) are added, and the border workers from abroad to Austria (including employment of international organisations situated in Austria) are deducted. Relevant information can be obtained from BoP statistics. The values for the current quarter are extrapolated with the development of employment (persons)

according to the domestic concept. Since almost the same data sources are used for the calculation for both the annual and quarterly accounts, only the Denton-Cholette (2006) method is used

7.2.3 Employment: Total hours worked

Hours worked include the hours actually worked, whether paid or non-paid, in any employment status (employees or self-employed), provided that their output is within the production boundary. According to ESA 2010, total hours worked is the preferred measure of labour inputs in National Accounts. In addition, they represent the indicator most suitable for analysing labour productivity. To obtain total hours worked, an estimate of per-capita average hours is multiplied by the corresponding number of jobs positions.

In a first step, the average working hours per capita must be calculated. Working hours according to the respective survey are divided by the number of employees according to the same survey. Data from the STS and the labour force survey (LFS) are used for industries B to F, while only LFS data are used for the other industries. The calculation of the data of employees for industries B to F using the STS monthly values, formally expressed is

$${}_{EE}h_w = \frac{\sum_{m=1}^3 t_m}{\sum_{m=1}^3 X_m} * 3 * \frac{7}{d_q}$$

EE ... *Employee*

h_w ... *hours worked per capita – weekly*

m ... *month*

X ... *number of jobs*

t ... *hours worked total*

d ... *number of days in the quarter*

For the self-employed and for employees in industries A and G to T, the working time data from the LFS are divided by the LFS employment figures. The working hours are weekly working hours in the quarter. Formally expressed:

$$a_w = \frac{t_w}{X}$$

a_w ... *hours worked per capita per week*

t_w ... *hours worked in a week - total*

X ... *number of jobs*

Since absences from work are mostly underestimated in the LFS, the STS data are compared with the LFS data for the hours worked by employees in industries B to F. This results in an excessive number of working hours in the LFS on a quarterly average. The working time data from the LFS by industry are not covered by the STS. They are therefore corrected accordingly with appropriate correction factors, both for employees and for the self-employed. To get the total hours worked in a quarter, these values must be multiplied by number of jobs and by the number of weeks in the respective quarter.

Since almost the same data sources are used for the calculation for both the annual and quarterly accounts, only the Denton-Cholette (2006) method is used.

8. Main data sources used

Table 4 gives an overview of the main data sources used in QNA. Besides, other data sources for estimating sub-aggregates are used. They are listed in Table 5.

TABLE 4 – Main data sources

DATA	PERIODICITY	AVAILABILITY ¹⁷	VARIABLES USED IN QNA	COMMENTS	FURTHER INFORMATION
Short term statistics in industry and production (STS)	monthly	t+55 (preliminary) first month of current quarter: t+102 days (rather final) second month of current quarter: t+72 days (preliminary) last month of current quarter: t+42 (pretty preliminary)	Production and turnover indices for NACE B to F Employment: Hours worked	-	http://www.statistik.at/web_en/statistics/Economy/industry_and_construction/short_term_statistics/index.html
Short term statistics trade and services (STS)	Trade: monthly Services: preliminary monthly	Trade: t+30 (preliminary for main aggregates in retail trade), t+60 Services: t+2months	Turnover indices, employment indicators for NACE G, H, I, J, M and N	-	http://www.statistik.at/web_en/statistics/Economy/trade_services/index.html
Turnover tax advance return	monthly (for QNA)	t+20	Tax data covering NACE G, H, I, J, M and N	Mainly used to estimated missing months from STS in trade and services for the most recent quarter as well as for sub-aggregates of private consumption	http://www.statistik.at/web_en/statistics/Economy/Public_finance_taxes/tax_statistics/turnover_tax_statistics/index.html
PRODCOM Statistics	monthly	t+90	Domestic goods	Mainly used for compiling	http://www.statistik.at/web

¹⁷ Availability according to official publication timetables. In some cases, preliminary data are available earlier for QNA purposes. T means whole year and t means month.

			production according to CPA	quarterly commodity flows to estimate sub-aggregates of GFCF	_en/intern/Redirect/index.html?dDocName=117198
Foreign trade statistics	monthly	t+70 (preliminary)	Import and export of goods	INTRASTAT: cross-border movements within EU EXTRASTAT: cross-border movements with third countries	http://www.statistik.at/web_en/statistics/Economy/foreign_trade/index.html
Microcensus housing survey	quarterly	t+80 (final results)	Size and structure of Austrian dwellings including housing-related costs	Used to estimate GVA of NACE L and housing related private consumption	http://www.statistik.at/web_en/statistics/PeopleSociety/housing/index.html
Labour force survey (LFS)	quarterly	Previous quarter (final results) Current quarter: t+45 (preliminary results) and t+80 (final results)	People engaged in gainful employment (including marginal employment) Hours worked per capita a week	Used to estimate helping family members for employment estimates, and hours worked	http://www.statistik.at/web_en/statistics/PeopleSociety/labour_market/index.html
Austrian Social Security data	monthly	Previous quarter (final) Current quarter: Third month of the current quarter: t+20 (preliminary)	Social insurance relations (jobs according to domestic concept)	Used to estimate employment (jobs, persons)	https://www.sozialversicherung.at/cdscontent/?contentid=10007.821628&portal=svportal
Price statistics	monthly and quarterly	Dependent on type of price statistics, but (except from output price index for business services) all available in time for reference quarter	Consumer price index, wholesale price index, industrial output price index, price index on producer durables, output price index for business services,	Used to estimate volume aggregates	http://www.statistik.at/web_en/statistics/Economy/Prices/index.html

			import price index		
Wage tax statistics	quarterly	T+9 months	Basic wages and salaries and special payments and the associated pay slips	Used to estimate compensation of employees	http://www.statistik.at/web_en/statistics/Economy/Public_finance_taxes/tax_statistics/wage_tax_statistics/index.html
Index of agreed Minimum Wages	monthly	t+15	The Index of Agreed Minimum Wages 16 (measures the minimum wage trend in Austria.	Compensation of Employees	http://www.statistik.at/web_en/statistics/PeopleSociety/social_statistics/index_of_agreed_minimum_wages/index.html

TABLE 5 – Other data sources

DATA	ESTIMATED QNA AGGREGATE	COMMENTS
Slaughtering data from government meat inspection authorities (pork, beef, veal)	GVA NACE A	Monthly report on examined slaughtering
Data on milk from the Austrian paying agency for agriculture and rural development (AMA)	GVA NACE A	Monthly data on milk supply to dairies from Austrian producers
Register on laying hens from Austrian Poultry Health Service	GVA NACE A (Estimation of quarterly egg production)	Monthly data on laying hens
Data on telecommunication by the Austrian Regulatory Authority for Broadcasting and Telecommunications (RTR)	GVA of parts of NACE J (except for reference quarter)	Monthly market data on telecommunication services
Data on insurance companies from the Austrian financial market supervision (FMA)	GVA of parts of NACE K	Monthly data on revenues and expenses from insurance companies
Heating degree days from the Central Institute for Meteorology	Consumption of private households (heating fuels)	-

and Geodynamics (ZAMG)		
Data on motor fuels from the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology	Consumption of private households (motor fuels), except for reference quarter	Monthly data on consumed quantities
Administrative data on vehicle registration	Consumption of private households (cars) and on GFCF in transport	-
International tourism data (receipts and expenditures) according to data from the Austrian National Bank (OeNB) and BoP Statistics	Consumption of private households (tourism)	-
Passenger data from the Austrian Federal Railways (ÖBB), Vienna Public transport (Wiener Linien) and Vienna Airport	Consumption of private households (transport), except for the reference quarter	-
Data on care allowance from Austrian Social Security	Consumption of private households (residential care and social work)	-

APPENDIX

List of Abbreviations

AMA	...	Austrian paying agency for agriculture and rural development
ANA	...	Annual national accounts
BFL	...	Boot-Feibes-Lisman Method
BOP	...	Balance of payments
CPI	...	Consumer Price Index
CRR	...	Central Residence Register
ESA	...	European System of national accounts
FISIM	...	financial intermediation services indirectly measured
FMA	...	Austrian financial market supervision
FTS	...	Foreign trade statistics
GDP	...	Gross domestic product
GFCF	...	Gross fixed capital formation
GVA	...	Gross value added
HV	...	Main Association of Austrian Social Security Organisations
IMF	...	International Monetary Fund
LFS	...	Labour force survey
MOSS	...	Mini one-stop-shop
NPISH	...	non-profit institutions serving households
ÖBB	...	Austrian Federal Railways
OeNB	...	Austrian National Bank
POPREG	...	register-based population statistics system
QNA	...	Quarterly national accounts
QSA	...	Quarterly sector accounts
RTR	...	Austrian Regulatory Authority for Broadcasting and Telecommunications
STS	...	Short-term statistics
SUT	...	Supply-Use-Tables
WIFO	...	Austrian Institute of Economic Research
ZAMG	...	Central Institute for Meteorology and Geodynamics

Classification of industries according to ÖNACE 2008

Code	Level of Publication (A*10)	Element
A	A	Agriculture, forestry and fishing
B	BCDE, of which C	Mining and quarrying
C		Manufacturing
D		Electricity, gas, steam and air conditioning supply
E		Water supply; Sewerage, waste management and remediation activities
F	F	Construction
G	GHI ¹⁸	Wholesale and retail trade; Repair of motor vehicles and motorcycles
H		Transportation and storage
I		Accommodation and food service activities
J	J	Information and communication
K	K	Financial and insurance activities
L	L	Real estate activities
M	MN	Professional, scientific and technical activities
N		Administrative and support service activities
O	OPQ	Public administration and defence; Compulsory social security
P		Education
Q		Human health and social work activities
R	RSTU	Arts, entertainment and recreation
S		Other service activities
T		Activities of households as employers; Undifferentiated goods- and service-producing activities of households for own use
U		Activities of extraterritorial organisations and bodies

¹⁸ Published separately on [website of Statistics Austria](#).

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