Statistiska centralbyrån Statistics Sweden

Quarterly National Accounts Inventory

Sources and methods in the Swedish National Accounts

November 2025

www.scb.se

Co-funded by the
European Union

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Chapter 1 Overview of the system of quarterly accounts

1.1 Organisation and institutional arrangements

Statistics Sweden has the overall responsibility for the coordination and supervision of official statistics and for the development of statistical nomenclature and classifications. In addition, Statistics Sweden is responsible for coordinating international statistical reporting and is an active participant in the international cooperation that occurs in the field.

Statistics Sweden has direct responsibility for official statistics pertaining to certain general areas of society. This applies, for example, to the labour market, the economy, industry and prices, the population and welfare as well as to housing and construction. For other areas, the formal responsibility rests with specialized agencies but in many cases Statistics Sweden is nonetheless involved in the production process.

Sweden's National Accounts are organized within the unit Current Accounts, Financial Markets and National Accounts, altogether six sections at Statistics Sweden. National Accounts are compiled by the three sections in the organisation chart below. The number of co-workers in the chart are persons involved with the compilation of quarterly National Accounts, leaving out staff for Financial Accounts. Most of the co-workers also work on annual National Accounts.

Table 1.1 National accounts, sections at Statistics Sweden

- Product Accounts (14 co-workers)
- Financial and Sector Accounts (6 co-workers)
- Public Finance (6 co-workers)

Both the quarterly and the annual GDP calculations are primarily produced by the Product Accounts and Public Finance sections. A separate section is responsible for the financial and sector accounts, including the sector accounts that are part of the QNA delivery according to the ESA2010 Transmission Programme, i.e. the net lending/borrowing as well as household disposal income.1

Please contact National Accounts for questions: nrinfo@scb.se

[1] For a description of the sources and methods used in the sector accounts, please consult the QSA documentation on https://www.scb.se/contentassets/c89bb85e14184e92a4d5e4eec5ce4b98/sweden-qsa-inventory-esa2010-nov-2016.pdf

1.2 Publication timetable, revisions policy and dissemination of QNA

The quarterly accounts are published four times per calendar year and within 60 days after the end of the reference quarter. Ordinary quarterly releases are preceded by a flash estimate published 30 days after the end of the quarter. Most requirements of the ESA2010 Transmission Programme are fulfilled. The domestic release is generally on a more detailed level than the ESA2010 transmission. The press release, a collection of in-depth articles and updated figures in the database are available on Statistics Sweden's website at 08.00 CET on the day of publication. The non-financial sector accounts are published at the same time as GDP.

Every new publication of the quarterly figures contains revisions according to a set revision policy. The policy states that when publishing the second, third and fourth quarter, all previous quarters of the reference year are open for revision. In addition, all quarters of the previous year are open for revision at every publication. The ordinary release of the first quarter in May coincides with the compilation of the annual accounts for the year t-2 and consequently the quarters of that year as well as all following quarters (year t-1 and the first quarter of year t) are revised. Furthermore, in cases when warranted, even periods not covered by the ordinary policy may be revised. Such revisions are however exceptional, and users of the accounts need to be properly notified and informed.

The detailed annual accounts of year t-2 are, as mentioned, released at the same time as the ordinary first quarter QNA publication in the end of May. Prior to this release, the quarterly figures are benchmarked to the annual accounts. The benchmarking process involves QNA revisions for the quarters of t-4 and onwards. The QNA are also affected by benchmark revisions of the ANA which typically take place every five years.

As will be described in section 3.4.3, the seasonally adjusted time series is subject to revision with each new compilation of the QNA.

Sweden's quarterly GDP estimate is calculated according to both the production approach and the expenditure approach. As to date, no complete calculation is performed of the income side.

1.3 QNA compilation approach

The most common method used in the calculations is to extrapolate the national accounts value from the corresponding quarter the previous year with the growth rate according to an indicator, e.g. value added in a certain manufacturing industry is extrapolated with the growth rate estimated in the Quarterly economic statistics (source 4) for that industry. For some components of the expenditure approach values from the sources enter the QNA directly. This is possible when the same source is used in the quarterly accounts as in the annual accounts and it is a method most notably used for changes in inventories and for exports and imports. The QNA calculations are based on non-adjusted values. GNI is calculated by adjusting GDP for primary income to and from the rest of the world.

1.4 Balancing, benchmarking and other reconciliation procedures

1.4.1 Quarterly GDP balancing procedure

Typically, the first compilations of GDP from the production side and from the expenditure side differ and balancing is required to arrive at a single GDP outcome. The average absolute difference over the past ten years is 1.1 percentage points.

The first reconciliation step is to scrutinize each GDP component to identify problems, inconsistencies and uncertainties. This work is performed both by the experts responsible for the calculations and by the group responsible for the overall compilation. Once all identified issues have been addressed and necessary adjustments have been made, the balancing requirements that persist are dealt with according to a set of objective guidelines coupled with knowledge and expertise (for a description see section 3.2.1).

1.4.2 Benchmarking of QNA and ANA

The quarterly accounts are benchmarked to the final annual accounts when the latter are released in May two years following the end of the reference year. The benchmarked quarters are published at the same time as the annual accounts to keep consistency between annual and quarterly figures at every release.

1.4.3 Other reconciliation procedures

The calculation process also involves confronting the value added outcomes with the outcomes of hours worked, i.e. analysing the industry's labour productivity. This analysis is made to detect apparent problems in the source data. However, adjustments based on labour productivity are done with great caution since there is no separate estimate to confront the national accounts estimate against and since the relation between hours worked and value added is weak in many industries. In a similar fashion, hourly wages are analysed and confronted with information on hourly wages from the statistics on wages and salaries in the private and the public sectors.

1.5 Volume estimates

The QNA calculations are done in both current and constant prices. The series expressed in constant prices use the latest full year, i.e. year t-1, as reference implying that the reference year is updated each time a year's first quarter is compiled. The volume changes are calculated through Laspeyres indices and price changes are consequently calculated as Paasche indices.

1.5.1 General volume policy

Most data used in the National Accounts are collected in current prices and then deflated into constant prices using relevant price indices such as producer price indices, service price indices and consumer price indices. However, for a few series quantities are used for calculating constant prices directly, and price indices are subsequently used to reflate into current prices. This is the case for example for parts of the calculation on production and consumption of energy. A third method, mainly used for non-market production, is to calculate constant prices and current prices separately,

making price changes a residual. For many parts of the calculations, deflation into constant prices is carried out by the source statistics. This is for example the case for the foreign trade statistics, for changes in inventories, and for production and intermediate consumption from the Quarterly economic statistics. For other parts of the calculations, deflation takes place at the National Accounts unit, e.g. for household consumption, foreign trade in services and gross fixed capital formation. In each case however, the calculations are carried out at a detailed level and subsequently aggregated to the levels of publication. The calculations are based on chain indices and the constant prices are thereby based on the price level the previous year (t-1). In both the National Accounts and in the price statistics, Paasche price indices are calculated and thereby the volume changes in National Accounts and in source data are Laspeyres indices.

1.5.2 Chain-linking and benchmarking

To enable comparability over time, the constant prices need to be chain-linked into a time series expressed in a price level for a certain year, the so-called reference year. The reference year for the QNA is the previous year and the method used for chain-linking is annual overlap (for more details see section 3.3.2).

Current prices and constant-priced, chain-linked series are benchmarked. The resulting benchmarked, chain-linked series in reference year prices are then recalculated into constant (t-1) prices. After the benchmarking the accounts will once again be unbalanced. Therefore, a new reconciliation/balancing must be carried out for all price levels i.e. current prices, constant prices (t-1) and average prices.

1.5.3 Chain-linking and seasonal adjustment

Seasonal adjustment of the volume measures is performed after chain-linking and benchmarking.

1.6 Seasonal and calendar adjustment

1.6.1 Policy for seasonal adjustment

Roughly 700 series are adjusted in the QNA, including all constant and current price series on the production side, several constant and current price series on the expenditure side and series covering hours worked, persons employed and labour costs. The seasonal adjustment is carried out in the DOS-programs TRAMO/SEATS with a SAS interface.

Adjustments for seasonal variations are done using a direct approach, i.e. each series is individually modelled in accordance with the recommendations given by Eurostat but subsequently modified to ensure additive properties. The method involves adjusting each series separately as a first step and then reconciling the subseries so that they can be summed into larger aggregates and ultimately to total GDP.

Another desirable property from a user's point of view is that the seasonally adjusted annual totals are equal to the non-adjusted annual totals, i.e. time consistency, even though this requirement could possibly deteriorate the

quality of the seasonal adjustment. The aim is to fulfil the requirement of time consistency for all series for which it is technically possible to do so.

1.6.2 Policy for calendar adjustment

Adjustments for differing number of working days are also arrived at using TRAMO/SEATS. Working-day adjustments are made for value added in constant prices as well as for the number of hours worked.

With each new calculation of a quarter, the seasonally adjusted and working-day adjusted figure for the entire quarterly series beginning in 1993 are revised.

1.7 Additional information

Home page Statistics Sweden and the page for the National Accounts

Home page Statistics Sweden:

https://www.scb.se/en/

Home page National Accounts:

https://www.scb.se/en/finding-statistics/statistics-by-subject-area/national-accounts/national-accounts/national-accounts-quarterly-and-annual-estimates/

QNA Statistical News

GDP increased in the second quarter 2025

Statistical database

National Accounts, quarterly and annual estimates

Descriptions of the annual and quarterly calculations (available in Swedish only)

QNA Quality Declaration, updated annually:

Quality declaration National Accounts, quarterly and annual calculations. 2025 quarter, 2023 year

Chapter 2 Publication timetable, revisions policy and dissemination of QNA

2.1 Release policy

The Swedish QNA are published four times per calendar year. Publications, also including institutional sector accounts, are released within 60 days of the reference period following the targets of the Action Plan on EMU statistical requirements and of the Principal European Economic Indicators. Ordinary quarterly releases are preceded by a flash estimate published 30 days after the end of the quarter. The statistical news, updated figures in the database and a collection of analysing and descriptive texts are available on the National Account's website at 08.00 on the day of publication. The release dates for a given calendar year are set in September of the previous year and communicated on the SCB website:

https://www.scb.se/en/finding-statistics/publishing-calendar/.

The same day as the release on the website, data is sent to Eurostat according to the ESA2010 transmission programme. In order to incorporate revised sources and other new information, the QNA are subject to systematic revisions. The periods open for revision in each release follow the stipulations of a set revision policy (see table 2.1).

The policy states that when releasing the second, third and fourth quarter, the earlier quarters of that year can be revised. The quarters of the previous year are open for revision every quarter. In addition, the ordinary release of the first quarter in May coincides with the compilation of the annual accounts for the year t-2 and consequently the quarters of that year as well as all following quarters year t-1 are revised. In addition to this, the policy allows for other revisions as well when such are strongly warranted.

The detailed annual accounts of year t-2 are released at the same time as the ordinary first quarter QNA publication at the end of May. At that time, the quarterly estimates for year t-2 are benchmarked to the new ANA using the Denton method. The benchmarking process involves QNA revisions for the quarters of t-4 and onwards. The QNA are also affected by major (benchmark) revisions of the ANA that typically take place every five years.

As will be described in section 3.4.3, the seasonally adjusted time series are subject to revision with each new compilation of the QNA.

The revision policy stipulates that quarterly GDP flash estimates are not open for revision, while monthly GDP flash estimates are revised within the current quarter.

Table 2.1 Revision policy of the Swedish QNA (GDP calculations)

Year	Publication	Q1 year t	Q2 year t	Q3 year t	Q4 year t	Full year t
t	End of May	First				
t	End of Aug	Revised	First			
t	End of Nov	Revised	Revised	First		
t	End of Feb	Revised	Revised	Revised	First	First sum of quarters
t+1	End of May	Revised	Revised	Revised	Revised	Revised sum of quarters
t+1	End of Aug	Revised	Revised	Revised	Revised	Revised sum of quarters
t+1	End of Nov	Revised	Revised	Revised	Revised	Revised sum of quarters
t+1	End of Feb	Revised	Revised	Revised	Revised	Revised sum of quarters
t+2	End of May	Final	Final	Final	Final	Final ANA

2.2 Contents published

The release of the regular QNA, as well as the flash estimate, include GDP according to the expenditure approach and GDP according to the production approach. No complete compilation of the income approach is made, and the operating surplus is derived residually.

Most time series disseminated in the online QNA publication stretch back to 1980 while a few are available only from 1993 and onwards. The latter group includes series on labour costs, household consumption by durability, and several fixed capital formation series, both by type of asset and by industrial allocation. With these exceptions, the seasonally adjusted and calendar corrected series are also available from 1980.

For many of the components, the accounts are published on a more detailed level than that delivered in accordance with the ESA2010 transmission programme.

The full set of Non-financial Quarterly Institutional Sector Accounts (QSA) is released along with the QNA.

Production approach

Value added for market producers and producers for own final use are published in both current and constant prices. The series are presented in the national release with a break-down of 33 industries and producers for own final use. Relevant industrial aggregates are also published. Non-market production is presented for the central government, local governments, municipalities, county councils and for Non-Profit Institutions Serving Households (NPISH).

Working-day adjusted and seasonally adjusted figures for value added are presented for a break-down of 14 industries, for aggregates of these and for central government, local government and NPISH.

Expenditure approach

The components of the expenditure side are presented at the same levels in both current prices and constant prices. Growth rates are also shown for constant prices.

Final consumption expenditure of households (including NPISH) is published with a break-down by purpose, 162 subgroups, and durability, 9 subgroups, according to the COICOP 2018 classification. Final consumption expenditure of general government is split into central government and local authorities. Gross fixed capital formation is published by industry, 33 subgroups, and by type of investment, 12 subgroups. Inventories are only published as an aggregate. For exports and imports a division is made between goods and services.

Seasonally adjusted figures are published for the main variables, with a break-down into 15 series. Furthermore, additional details are published for household consumption (by durability 5 subgroups and by purpose 15 subgroups) and for fixed capital formation (by type of investment 7 subgroups). Seasonally adjusted figures are published in both current and constant prices.

Income approach and employment

Compensation of employees, number of employed persons and hours worked are published with the same breakdown as value added, i.e. 33 industries for market producers and producers for own final use. For non-market producers the presentation is made for the central government, local government, municipalities, county councils and NPISH. Labour costs are split into three components - wages and salaries, and employers ´ social contributions and payroll taxes.

Working-day adjusted, and seasonally adjusted figures for hours worked, and persons employed are presented at the same level as value added.

The headline number in the GDP Statistical News is the seasonally adjusted growth rate compared to the previous quarter. Levels and growth rates of main GDP aggregates can be found in the statistical database and in excel tables on the home page.

QNA Statistical News:

GDP increased in the second quarter 2025

Statistical database

National Accounts, quarterly and annual estimates

Tables

GDP Quarterly 1993–2025:2

2.3 Special transmissions

2.3.1 ESA2010 transmission programme

Tables according to the ESA 2010 transmission programme for QNA are delivered to Eurostat the same day as the domestic release of the results, i.e. for most releases, within 60 days of the end of the reference quarter. In 2024, tables T0101, T0102, T0103, T0120, T0121 and T0117 have been reconciled into table T01GDP. The tables T0110 and T0111 have been reconciled into table T01EMP. This is in accordance with the "New transmission programme" effort stipulated by Eurostat. Time series are available from the first quarter of 1993 and the following content is delivered:

Table 0101: Gross value added at basic prices and gross domestic product at market prices

Table T01GDP includes:

GDP identity from the expenditure side.

GDP identity from the income side.

Final consumption expenditure of households by durability.

Exports- and imports of goods and services by member states of the EU/third countries

Table T01EMP: Population and employment

Table T01EMP also includes employment by industry.

2.3.2 Other transmissions

The National Institute of Economic Research gets a special transmission on a more detailed level than that published; a delivery that the Ministry of Finance also has access to. A separate transmission is also delivered to the Central Bank. Several other special transmissions are also made on a subscription basis.

2.4 Policy for metadata

A Quality Declaration, outlining the methodologies and sources used in the QNA, is published in Swedish and English on the website and updated annually. The aim of the document is to provide an up-to-date assessment of the overall quality in the quarterly accounts, including a discussion of possible weaknesses in both sources and methods.

Together with the release of new quarterly figures, a collection of explanatory and analysing texts is published. One of these texts concerns the balancing procedure of the quarter in question, with details on the size of the initial discrepancy between the two GDP estimates as well as information on exactly how reconciliation was achieved. Another text lists and comments the revisions made to previous quarters.

The website also contains brief descriptions of the methods and sources used in both the ANA and QNA as well as a glossary of National Accounts terms and concepts.

National metadata is supplied on an annual basis to Eurostat. This metadata concerns ESA tables which Statistics Sweden transmit quarterly and annually. The structure of this metadata has been updated during year 2025 and metadata from the member countries will be available in the link below.

Reference metadata reporting standards - Metadata - Eurostat

Metadata are also available according to the SDDS Special Data Dissemination Standard (SDDS Plus) at the IMF website: **https://dsbb.imf.org/dds-plus**.

Chapter 3 Overall QNA compilation approach

3.1 Overall compilation approach

3.1.1 General architecture of the QNA system

In terms of organisation, the annual and quarterly accounts are managed by the same organisational unit and often, the responsibility for a certain area applies to both the QNA and ANA.

Two independent GDP estimates are calculated; from the production side and from the expenditure side. The calculations are carried out at a detailed level and GDP is arrived at as a sum of these details. As mentioned, no complete calculation according to the income approach is in place, rather operating surplus and mixed income are derived residually. However, detailed calculations for compensation of employees and taxes less subsidies are made.

In general, the source statistics available in the quarterly accounts are not as comprehensive as those used in the annual accounts. In the QNA, the sources are largely based on surveys.

The methods used in the quarterly accounts can be classified into one of the following three categories:

- The value in the National Accounts is extrapolated using an indicator
- Source data are used directly in the National Accounts
- Model-based estimations

For most areas of the quarterly accounts the short-term statistics used in the calculation will be replaced by other sources once the annual accounts are compiled. The estimates in the short-term statistics and the annual statistics are rarely totally comparable. In some cases, the variables studied differ in definition, but even when this is not the case, the estimates are bound to differ due to the often-better coverage of the annual statistics. For these reasons, level estimates in the short-term statistics are rarely used directly in the QNA but rather used to calculate a rate of change between the reference quarter and the corresponding quarter of the previous year. This information is then used to extrapolate the underlying level values set in the annual accounts.

For certain indicators, source data is delivered in both current and constant prices while for others the deflation into constant prices (or reflation into current prices) is done at the National Accounts. Either way the price indices used are scrutinized by the expert responsible to ensure a correct relation between current and constant prices.

For some variables, the source used in the quarterly accounts is the same as that later used in the annual accounts and the source data can therefore enter the QNA directly and not via extrapolation. This is the case for inventories as well as for exports and imports.

The opposite is the case for a few other areas, with no information at all available on a quarterly basis. An example is gross fixed capital formation in the agricultural industry. In these cases, the QNA relies on model-based estimates instead.

The calculations are done with non-adjusted figures. The detailed, industry-level calculations on the production side are done at basic prices and estimates on taxes and subsidies are later added at an aggregate level. The details of the expenditure side are calculated at market prices. Seasonal and calendar adjustments are carried out in a subsequent, separate process and the release contains both non-adjusted and adjusted figures.

Below is an approximate timeline of the compilation process, commencing at the end of the reference quarter:

– 51 days	Acquisition of source data from surveys and administrative sources
45 – 51 days	Validation of source data and calculation of initial QNA estimates
51 days	Deadline for initial estimates
54 – 55 days	Reconciliation meetings, analysis and scrutiny of source statistics
55 days	Preliminary adjusted data available for analysis
55 – 57 days	Analysis and balancing
57 – 59 days	Writing of articles and press release
57 days	GDP, non-adjusted, determined
58 days	Chain-linking, seasonal and calendar adjustment
58 days	GDP, seasonally adjusted and calendar adjusted, determined
59 days	Publishing preparations, statistical news finalized
60 days	Release at 08.00

3.2 Balancing, benchmarking and other reconciliation procedures

3.2.1 Quarterly GDP balancing procedure

It is very unusual that the first compilations of GDP from the production side and from the expenditure side give a unanimous estimate of the GDP growth. The average absolute difference over the past ten years is 1.1 percentage points.

The balancing procedure contains many steps and permeates the majority of the QNA compilation process. Once the initial estimates have been calculated, the results are scrutinized in briefings between the group responsible for the overall compilation process and the experts responsible for the separate calculations. In these meetings, the initial results are presented, and any remaining questions, doubts or inconsistencies are

raised. Typically, some areas are identified as in need of further investigation. In practice this often implies referring the question back to the source statistics. To ease communication and improve cooperation, representatives from the various source statistics are invited to the meetings. This is the case also for members of the Large Case Unit, who tend to participate in the briefings and occasionally also in some of the following balancing meetings.

The group responsible for the overall compilation process keeps an inventory of the areas in need of looking into and progress is noted as work proceeds. Along with this process the balancing procedure starts. The initial steps towards reconciliation include scrutinizing each GDP component, investigating expected correlations between certain variables (between for example production in a certain industry with exports of those products, between hours worked and production and so forth) and analysing the initial outcomes from a macroeconomic perspective. To organize and secure these efforts, a checklist of items to address is employed.

The aim of the QNA is to predict the subsequent ANA as well as possible and this is also the guiding beacon in the balancing process. The reconciliation should as much as possible emulate the balancing done in the following ANA and balancing adjustments should primarily be done to components with data sources that tend to be revised substantially between the QNA and the ANA.

Once all identified issues have been addressed and the necessary adjustments have been made, the remaining difference between the production side and the expenditure side in fixed prices is balanced by the same amount in absolute numbers, 50 percent on the production side and 50 percent on the expenditure side.

Cases where the balancing adjustments required in constant prices and in current prices differ, are settled by altering the production side adjustments, and particularly the adjustments made to the value added of the manufacturing industries. When the new source for production and intermediate consumption, Quarterly Economic Statistics, is fully evaluated and established the balancing method will be looked over.

The entire balancing process, starting with the briefings of the various GDP components and ending with the determination of a non-adjusted GDP outcome, takes about three days. This entails that the time available for probing is scarce and in cases where questions remain unresolved, the final decisions on the adjustments made are based on expertise and on knowledge of the data source and on how the preliminary statistics tend to relate to the final statistics used in the ANA.

The GDP estimate according to the income approach is balanced through a residual calculation of the item operating surplus and mixed income. Before balancing, checks and validation of the source data are carried out in conjunction with the calculations. Relationships like labour productivity and hourly wages are also analysed in the reconciliation process.

Table 3.3 outlines the balancing procedure that took place in the August calculation of GDP for the second quarter of 2025. The first column consists of estimations of the various components prior to the final step of

reconciliation and the second column shows the outcome of the balancing procedure.

Table 3.1 Balancing of GDP for the second quarter 2025, in constant and current prices

	Initial estimate	Published estimate	Change in volume due to balancing	Balancing constant prices, BnSEK	Balancing current prices, BnSEK
Household consumption	1.6	1.5	-0.1	-0.5	-0.5
Government consumption	0,0	0.0	0.0	-	-
Gross fixed capital formation	1.2	1,0	-0.2	-0.5	-0.5
Inventories (contribution to GDP)	1.2	1.2	0,0	-0.5	-0.5
Export of goods	3.1	3,0	-0.1	-0.6	-0.5
Export of services	5.7	5.6	-0.1	-0.3	-0.3
Import of goods	4.9	5,0	0.1	0.6	0.5
Import of services	8.7	8.8	0.1	0.3	0.3
GDP expenditure approach	1.1	0.9	-0.2	-3.2	-3.2
Value added NACE B-C	-0.2	0.1	0.3	0.6	1.4
Value added NACE A,D-F	-5.1	-4.8	0.3	0.4	1,0
Value added NACE G-T	2.6	2.9	0.3	2.1	4.7
Value added government sector production	-	-1.6	0,0	-	-
Product taxes & subsidies	-	2.5	0.0	-	-
GDP production approach	0.7	0.9	0.2	3.2	7.1

3.2.2 Benchmarking of QNA and ANA

Upon completion of the annual accounts, the QNA series needs to be aligned to the new levels set in the ANA. The benchmarking is done prior to the balancing of GDP.

For value added data, benchmarking is done using the least square method, Denton. Throughout the years, SCB has used different methods of benchmarking. Up until 1985, the so-called Bassie method was used. This was later replaced with the MinQ method which in turn was substituted for the Denton's method currently used. Regardless of method, however, the objective is to benchmark the QNA to the final ANA in such a way that secures consistency in every time series while at the same time minimizing the revisions made to the quarterly time series.

A study in 2006 aimed at optimizing the benchmarking, assessed the various methods based on their respective theoretical, practical, numerical and technical merits2. The study found in favour of the Denton's method as given by minimizing the measure D4 in the equation

[2] See Öhlén (2006), 'Benchmarking and Seasonal Adjustment – A Study of Swedish GDP'. http://epp.eurostat.ec.europa.eu/pls/portal/docs/PAGE/PGP_DS_EUROIND/PGE_DS_EUROIND_WSA/TAB58876947/OHLEN%20AB.PDF

$$D4 = \sum_{q=1}^{q=n} (Z_q / X_q - Z_{q-1} / X_{q-1})^2 ,$$

where n is the number of quarters used.

The findings in Öhlén (2006) show that Denton's method is quite robust in terms of different structures of bias. Denton's method is also a linear procedure. The linear property is of great practical significance since it implies that benchmarking can be carried out at the lowest level of detail. Put differently, the aggregates of Denton's benchmarked series are equal to the sum of lower level benchmarked series. This means for example, that if total exports of goods and total exports of services are separately benchmarked, there is no need to benchmark total exports, it is simply the sum of its two components. The benchmarked sum retains the optimality properties of its components.

The Denton's method, programmed in SAS-software, was introduced in 2007 and has been used to benchmark the quarterly time series that stretches back to 1993. Since the seasonal pattern of the initial estimates on the production side are more reliable, the benchmarking is initially carried out for the production side and a balancing procedure needs to follow. Most other GDP components are benchmarked to their ANA values using a simple pro rata method, i.e. applying the old quarterly distribution to a new annual total. The benchmarking is carried out for both chain-linked, constant price values and current price values and covers the quarters of the year for the final annual accounts (year t-2) and the quarters for the two preceding years (t-3, t-4). A restriction for the benchmarking process is that the fourth quarter of year t-5 should be unchanged.

3.2.3 Other reconciliations of QNA

The expert responsible for a specific calculation is also responsible for analysing the data used in the calculations. When necessary, adjustments of source data to meet the definitions and coverage of the National Accounts are made. Explanations are sought when data significantly deviates from the ordinary. Contact with those responsible for compiling the source statistics may result in a confirmation of the data, to corrections in the data or, as can be the case, to no proper resolution. In case of the latter, adjustments can be made within the National Accounts if the source data is deemed unreasonable, for example if complementary information points in a different direction. However, the guiding principle is that such adjustments should be done rarely and only when properly substantiated.

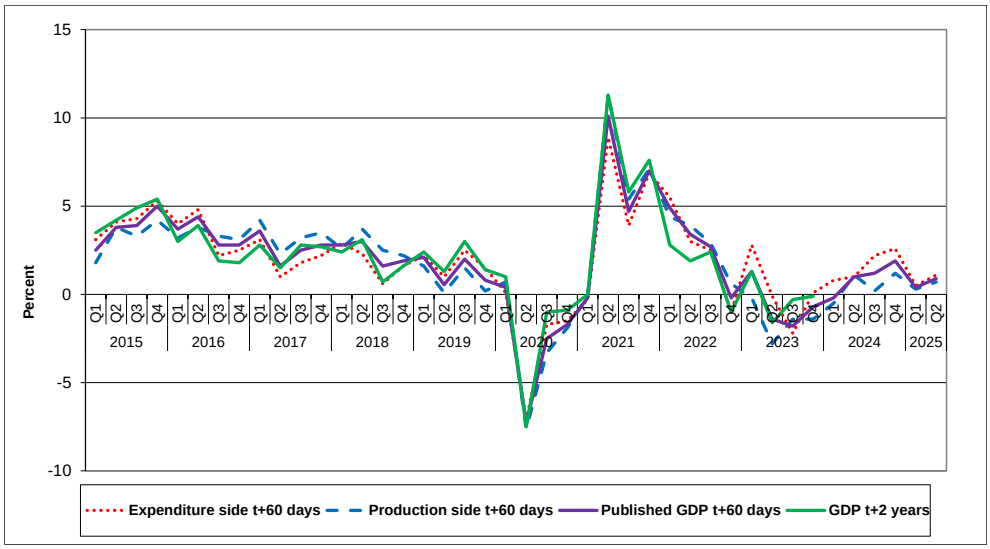
The calculation process also comprises confronting the value-added outcomes with the outcomes of hours worked, i.e. analysing the industry's labour productivity. This analysis is made to detect apparent problems in source data. However, adjustments on basis of labour productivity are done with great caution since there is no separate estimate to confront the national accounts estimate against and since the relation between hours worked and value added is weak in many industries. Also, hourly wages are analysed and confronted with information on hourly wages from the statistics on wages and salaries in the private and the public sectors.

3.2.4 Amount of estimation in various releases

The quarterly national accounts are published once a quarter. Between the releases, most source statistics are revised to some extent, primarily because of complementing reporting. New sources are typically not introduced directly into the QNA but rather in the detailed annual calculations compiled about 20 months after the end of the reference year (September t+2).

With each publication, new calculations are made for those quarters that are open for revision. The amount of revision naturally varies with each release. In the graph below, diagram 3.1, the initial GDP estimates are plotted against both the balanced estimate and against the revised estimates following the benchmarking to a new ANA approximately two years later. The graph details both the balancing process as well as the revisions between the initial published estimates and the final estimates. The dotted red line and the dotted blue line show the initial estimates from the expenditure side and from the production side respectively. The purple line is the balanced and published GDP outcome, and the green line is the subsequent published results following a new compilation of the annual accounts.

Diagram 3.1 Preliminary and final QNA estimates



While diagram 3.1 shows revisions to total GDP, table 3.2 shows the changes to the individual GDP components. The table contains the differences between the first calculation of a quarter and the calculation in May of the following year, in which all quarters of year t-1 are open for revision. The table also includes the revisions between the first calculation and the subsequent release in May t+2 to show the effects of the ANA. The period covered are the years 2018 to 2022. The results are presented both as a normal average for the period as well as the average in absolute values. The table shows that revisions mainly take place when the final annual accounts are compiled for the reference period in May t+2. Worth noting is that the absolute averages, although informative, may somewhat misrepresent the revisions in the sense that the calculation of the sum of four quarters (May t+1) as well as the reconciliation of the quarterly figures to the ANA (May t+2) commonly involve some redistribution among the quarters of a year.

Not unexpectedly, the table confirms that although the revisions to the GDP growth are often moderate, the revisions to certain, individual components can be substantial.

Table 3.2 Revision of quarters May year t+1 and May t+2

	May t+1 average	May t+1 (ABS)	May t+2 average	May t+2 (ABS)
GDP	0,1	0,3	0,3	0,8
Household consumption	-0,1	0,4	0,5	0,8
Government consumption	0,1	0,4	0,0	0,8
Gross fixed capital formation	0,8	1,6	-0,1	3,1
Inventories (GDP contribution)	0,1	0,3	0,1	0,3
Exports	0,3	0,9	1,3	1,8
Imports	0,8	1,1	1,3	1,5

3.3 Volume estimates

3.3.1 General volume policy

Data used in the National Accounts are usually collected in current prices and then deflated into constant prices using relevant price indices such as producer price indices, service price indices or consumer price indices. However, for a few series, data on quantities are available and price indices are instead used to reflate constant prices into current prices. This is the case, for example, for the bulk of the calculations covering energy production and consumption. A third method, mainly used for non-market production, is to calculate constant prices and current prices separately, thus arriving at price changes residually.

For an increasing number of sources, the deflation of current prices into constant prices takes place within the unit responsible for collecting the data. Such is the case for both International trade statistics in goods (source 13) and the Quarterly economic statistics (source 4). For other calculations, most notably for the calculations of household consumption, gross fixed capital formation and foreign trade in services, the deflation is done at the National Accounts unit. Regardless of whether the data arrives already deflated or not, the National Accounts unit is instrumental in determining the choice of price index and responsible for scrutinizing the outcome of a given quarter, both in nominal and volume terms.

The QNA calculations are carried out at a detailed level and subsequently aggregated to the levels that are published. The calculations are based on chain indices and the constant prices are thereby based on the price level the previous year (t-1). In the national accounts, as well as in the price statistics, Paasche price indices are calculated and thereby the volume changes in the national accounts and in the source, data are Laspeyres indices.

3.3.2 Chain-linking and benchmarking

For comparability reasons, values in constant prices need to be chain-linked into a time series expressed in a price level for a certain year, the so-called

reference year. In general, chaining is used to enable time comparisons despite structural changes in the economy. For the quarterly accounts the reference year is set to the previous calendar year, year t-1. Chain-linking was first introduced in the QNA in 1999. All three methods of linking were then considered, 'Annual Overlap' (AO), 'Over-the-Year' (OY), and 'Quarterly Overlap' (QO). The choice fell on the OY method, which was used up until 2010. In May 2010, however, the decision was taken to abandon the OY method in favour of AO chain-linking. The switch was mainly prompted by tests showing that the AO method is more compatible with the methods chosen for benchmarking and seasonal adjustment.

The method is used on transactions and aggregates with constant positive or negative signs. For items that alternate sign over time, other methods need to be used. A prominent example is the change in inventories. The solution chosen in the Swedish QNA is to present the changes in inventories, expressed in reference year prices, as having the same share of GDP as they do in t-1 prices.

The benchmarking is done for the chain-linked series and for the series in current prices. The benchmarked, chain-linked series in reference prices are then recalculated to constant prices (t-1). After conducting this benchmarking procedure, the accounts will no longer be balanced. Therefore, a new reconciliation must be carried out for all price levels i.e. current prices, constant prices (t-1) and average prices.

Below is an outline of the steps that lead up to the result of chain-linked, benchmarked and seasonally adjusted quarterly time series following a new compilation of the ANA.

Chain-linking

Benchmarking of three years t-4, t-3 and t-2

Recalculation to current prices and constant prices (t-1 prices)

Reconciliation in current prices and constant prices (t-1 prices) for the whole period, year t-4, t-3 and t-2.

Chain-linking

Seasonal adjustment

A decision has been taken to adjust the current quarterly chain-linking method by moving to a strict application of the AO method. This change is planned for some time during 2026 in conjunction with the deployment of a new IT-system for the National Accounts.

The present variant of AO applies mid-year prices (t-prices) for the reference year instead of the chained values generated by annual overlap. This methodological difference affects quarterly values in reference year prices for the reference year, as well as volume growth rates for the quarters of the reference year and the subsequent year. The transition aims to apply a more accurate method, thereby improving data quality. The current variant was introduced in May 2010 to ensure additivity for all quarters of the reference year, so that GDP in reference year prices matched the sum of its components.

3.3.3 Chain-linking and seasonal adjustment

As described in 3.3.2, seasonal adjustment of volume measures is performed after chain-linking and benchmarking.

3.4 Seasonal and calendar adjustment

3.4.1 Policy for seasonal adjustment

In the past, the Swedish QNA employed a strictly direct method of seasonal adjustment, meaning that each series was adjusted separately with a series-specific optimal model and no balancing or consideration was made as to how the series related to each other. Consequently, the series were non-additive implying that the sum of two subordinate series did not necessarily equal their total and that by extension, the seasonally adjusted GDP estimate was not equal to the sum of its parts.

Based on user demand, the direct approach was modified in 2010 to produce additive series. Adjustments for seasonal variations are still done using a direct approach, i.e. each series is individually modelled in accordance with the recommendations given by Eurostat but subsequently modified to ensure additive properties. The method involves adjusting each series separately as a first step and then reconciling the subseries so that they can be summed into larger aggregates and ultimately to total GDP. The residual that arises is distributed among the subseries according both to the relative size of the series and to the level of uncertainty of the seasonally adjusted estimate as measured by the variance in the irregular component. Since only the chain-linked figures for the reference year and the following year are additive anyway, the reconciliation of the seasonally adjusted figures is limited to these periods.

Roughly 700 series are adjusted in the QNA, including all constant and current price series on the production side, constant and current price series on the expenditure side and the series covering hours worked and persons employed. The seasonal adjustment is carried out in the DOS-programs TRAMO/SEATS with a SAS-interface. Each series is individually modelled in accordance with the recommendations given by Eurostat. More details can be found in the Öhlén's (2006)3 study.

A number of ARIMA-models, including but not limited to the model in place, the model automatically selected by the program, and the Airline model (if not included already), are investigated for each series before settling on the best choice. The decision criteria rely heavily on the statistical diagnostics. Possible revisions, different output of outliers, forecasts, and graphical checks are also considered. The models are revised and, if needed, altered once a year.

Another desirable property from a user point of view is that seasonally adjusted annual totals are equal to the non-adjusted annual totals, i.e. that they are time consistent even though this could potentially deteriorate the quality of the seasonal adjustment. The aim is to fulfil the requirement of time consistency for those series for which it is technically possible to do so.

[3] See Öhlén (2006) op.cit.

The NA is investigating the possibility to change the seasonal adjustment program to X13.

3.4.2 Policy for calendar adjustment

All production series and the number of hours worked are working day adjusted based on the Swedish calendar. The number of working days in a quarter (normalized) is used as an external variable in the regression model in TRAMO.

3.4.3 Revision policy for seasonally adjusted data

The seasonally adjusted series is revised with each release of a new quarter. As mentioned, the adjusted series currently stretches back to the first quarter of 1993.

Chapter 4 GDP and components: the production approach[4]

4.1 Gross value added, including industry breakdowns

For most areas, gross value added is estimated using indicators for output to extrapolate the value added from the corresponding quarter of the previous year. For constant prices, the base is the current prices of the previous year converted into average prices. Average prices (t prices) for the quarters are calculated from constant, t-1, prices by using the current prices (CP) over the year divided by t-1 prices over the year as expressed in the following formula:

$$Q_{1t} = Q_{1t-1} \times \frac{\sum Q_{n(CP)}}{\sum Q_{nt-1}}$$

No statistical model is used to consider the relationship between the quarterly indicator and the annual estimate. Rather the expert responsible for a certain industry evaluates how well the used indicator predicts the future annual estimate. Calculations are carried out at the same level of detail for both current prices and constant prices. Value added is usually assumed to follow the production indicator as quarterly information concerning intermediate consumption is not typically available.

Source statistics provide data in both constant and current prices for most sectors. While various indices contribute to the deflator adjustments for constant and current prices, the primary statistics used are the Producer Price Indices (source 20) and the Service Price Indices (source 21). The value added for most sectors, derived from market output, output for own final use, and intermediate consumption, is obtained by utilizing the Quarterly Economic Statistics (QES, source 4) as the main source, with further adjustments made during the process. However, as discussed in the subsequent sections, there are exceptions where alternative sources and/or methods are employed to estimate the QNA.

The non-market production in the government sector is not calculated directly by industry but by COFOG[5]. In the domestic releases central and local government sectors are presented separately. However, government activities by industry can be derived through the connection between COFOG and NACE[6] (Statistical Classification of Economic Activities) and are presented by industry in the ESA2010 transmission programme to Eurostat.

NACE A02-03, B-C, E-J, M-T are derived from QES. Other sources are used for NACE A01, D35, K and L described in 4.1.1 - 4.1.6

[4]The main sources used in the calculations are described in more detail in chapter 9. The source numbers refer to the number given in chapter 9.

[5] Classification of the functions of the government

[6] In this document NACE always refers to NACE rev. 2

4.1.1 Agriculture (NACE A01)

The data used to calculate value added in the agriculture industry consists of an annual forecast on the crop harvest, or statistics on the output of the crop harvest (source 1) depending on the quarter calculated, together with monthly statistics on animal production (source 2). All data is delivered from the Swedish Board of Agriculture. The annual figure for the harvest is split in equal shares over the four quarters according to the SNA guidelines. Calculations are made for five subgroups and are based on information about quantities and prices. Animal production is calculated in the same way, quantities multiplied by prices, and is split into seven subgroups. To calculate constant prices, the values expressed in the previous year's prices are extrapolated using the change in quantities.

4.1.2 NACE A02-03, B-C, E-J, M-S

In most industries, value added at constant and current prices is calculated primarily using the Quarterly Economic Statistics (QES, source 4). For current price estimates in the QES, data is gathered through a census survey of 400 large businesses with turnovers of no less than SEK 500 million. The remaining population is covered through data obtained from the Swedish Tax Agency's administrative records mostly filled with information derived from VAT. The Producer Price Indices (source 20), and Service Price Indices (source 21) are used to deflate the data at the source level, enabling the calculation of constant prices. These QNA calculations apply to 60 industries (NACE A02-03, B-C. E-J, M-N, R-S). The industries NACE P-Q are not covered by QES, so the calculation is instead based on Turnover Statistics (source 6).

The source data QES provides information on both production and intermediate consumption within each industry, with the difference between these values being essential for the calculation of the value added of the QNA. For those sectors not covered by the QES, only production value is retrieved, and intermediate consumption is also derived from production growth rates. The updated calculation method (since 2024-Q1) involves adjustments to the cost growth related to purchased investments in QES (such as purchased R&D and software), the consumption of Financial Intermediation Services Indirectly Measured (FISIM), and output for own final use.

4.1.3 Electricity, gas and steam (NACE D)

Calculations of electricity, gas, steam and hot water supply (NACE D) rely mainly on source data on quantities with subsequent reflation into current prices. A variety of price indices are used, e.g. relevant Consumer price indices (source 22) and Producer price indices (source 20). The short-term information is detailed, and the bulk of the source data is provided through the Monthly electricity statistics (source 5). Other information used is Monthly fuel, gas and inventory statistics and information on the imports of gas.

4.1.4 Financial and insurance activities (NACE K)

The calculations for financial intermediation are based on quarterly surveys on banks and insurance companies respectively (source 7 and 8) issued by Statistics Sweden on behalf of The Swedish Financial Supervisory. Financial services indirectly measured, FISIM, are described in section 4.2.

For financial services directly measured, commissions etc. (NACE 64), the value added in current prices is extrapolated from the development of commissions in banks, credit market enterprises, securities corporations, mutual funds, fund corporations and investment corporations. The price index used for deflation consists of a weighted index between the wage index for the financial industries (NACE 64-66) and an index on funds.

Insurance services (NACE 65) consist of life insurance, pension funding, non-life insurance, and reinsurance. Value added for life insurance is extrapolated based on the development of administrative costs and the wage index for NACE 64-66 is used for deflation. For non-life insurance in current prices, value added is extrapolated using the change in output, where output is measured in accordance with ESA 2010 as premiums, including equalisation provisions, applicable to the period plus premium supplements less claims due. Value added in constant prices is extrapolated with the change in the number of insurances.

The value added for activities auxiliary to financial intermediation (NACE 66) is model-based and calculated as the weighted average of the development in NACE 64 (excluding FISIM) and NACE 65.

4.1.5 Real estate activity (NACE L)

In the Swedish national accounts, NACE L is subdivided into two industries, L68A, Own homes and secondary residences and L68B, Other real estate management. The latter includes apartments in multiple-occupancy buildings and the letting of premises (part of NACE L68.2) as well as buying and selling of own real estate plus real estate intermediation and real estate management on a fee or contract basis.

For industry L68A, the calculation of constant prices is based on a weighted volume indicator for the development of the capital stock of one-to-two dwelling houses and leisure houses. Value added is adjusted for the only two components of intermediate consumption that are available in the quarterly calculations, FISIM and the ROT deduction[7]. Estimates in current prices for one-to-two dwelling houses are obtained by **reflating the constant prices** using a weighted consumer price index of both dwelling forms.

For industry L68B, the calculation of constant prices is based on a weighted volume indicator consisting of three parts. Firstly, it includes the volume change for housing in tenancies and tenants-ownership right, BRF, in multiple-occupancy buildings. It is inclusive of garage space but exclusive of heating costs. The second part consists of NACE 68.1, buying and selling of own real estate plus NACE 68.3, real estate intermediation and real estate management on a fee or contract basis. The last component is made up of NACE 68.202-203 and NACE 68.209, commercial letting of shop premises, offices and industrial premises. The value added is also adjusted for changes in FISIM. The estimates in current prices are obtained by **reflating** the

[7] Repair and maintenance as well as conversions and extensions are counted as ROT work and are therefore tax deductible, provided that such work is carried out in close connection with a dwelling that the client owns and in which he or she lives. The dwelling may also be a second home (weekend home).

constant price estimates using a weighted index based on the implicit index for rents and service price index for NACE 68.2 and NACE 68.3.

4.1.6 Activities of households as employers (NACE T)

The industry's value added in current prices is calculated using data covering the compensation that disabled persons receive to employ personal assistants. There is no intermediate consumption in the industry, so the output value is equal to value added. Constant prices are arrived at by deflating with an hourly wage index for self-employed persons.

4.1.7 Non-profit institutions serving households (NPISH)

Value added for NPISHs is measured using the cost method which is in accordance with the guidelines set out in ESA2010. Value added is extrapolated in current prices using information on changes in wages and salaries and employers' social contributions according to the Aggregate gross pay, payroll taxes and preliminary tax statistics from employers' monthly tax returns (LAPS, source 15) as well as information on capital consumption and payroll taxes. Consumption of fixed capital is calculated using a model-based approach. Constant prices are achieved using a wage index.

4.1.8 Government sector production

Value added in current prices is calculated using the cost method. The central government sector accounting data for authorities is collected quarterly by the Swedish Financial Management Authority (ESV) (Basis of central government net lending, source 9). Local government data is attained from quarterly inquiries based on a sample of about 84 municipalities in terms of population (measured as an average over the last five years) of the total 290 municipalities, and complete coverage of the 20 regions (source 10 and 11).

The Swedish National Accounts introduced volume measures for the calculations of the production of individual services in constant prices in 2007. According to the Commission Decision No 2002/990 on the principles for measuring prices and volumes, volume measures are introduced for the part of government production that constitutes individual services. For collective services at constant prices, the cost method is used.

See further chapter 5.2 Government final consumption.

4.2 FISIM

The main sources for the FISIM calculations are the Riksbank's (the Swedish Central Bank) monthly balance data of Monetary Financial Institutions (MFI), compiled by Statistics Sweden, and the Swedish Financial Supervisory Authority's quarterly balance and profit and loss data for financial enterprises. Import and export of FISIM is calculated using the Riksbank's Balance of Payments data on inflow and outflow of interest.

FISIM for the domestic sectors is calculated using method 1 as outlined in Council Regulation (EC) No 549/2013 of 21 May 2013 (ESA 2010) and thus uses the following three components:

1. Average stocks of loans and deposits for sub-sector 122 by user sectors
2. Accrued interest for sub-sector 122 by user sectors

3. Internal reference rate FISIM is calculated as follows, (deposit stocks × internal reference rate) - interest payable on deposits + interest receivable on loans - (loan stocks × internal reference rate)

The calculations of the internal reference rate rely on quarterly data from the Swedish Financial Supervisory Authority, where interest receivable and average stocks are used. The internal reference rate is calculated as the ratio of interest receivable on loans to the stocks of loans between sub-sectors 122 and 125. There are no FISIM producers in subsector 125. However, the data on stocks and loans and interest received in the data from the Swedish Financial Supervisory, unlike the data from the Riksbank, are aggregated for subsector 122 and 125 with no possibility of disaggregation. Changes in volume reflect the changes in stocks. For sub-sectors Banks and Housing Finance Institutions, the Riksbank's monthly balance data of Monetary Financial Institutions is used for data on stocks of loans and deposits by sector. An average of the opening and closing balance of each month in the quarter is used. The corresponding information for the sub-sector Other monetary credit market corporations is collected from the Swedish Financial Supervisory Authority's quarterly data. This information is also available by sector. An average of opening and closing balance is used.

In the Riksbank's monthly Financial Market Statistics, data on the total deposits of households and NPISH are divided into NPISH, households as owners of unincorporated enterprises and households. The definition of households as owners of unincorporated enterprises used in the Financial Market Statistics is consistent with the ESA definition. Banks and housing credit institutions' stock of loans with dwellings as collateral is used to distinguish households as owners of dwellings.

Interest, payable and receivable, is calculated using the Riksbank's deposit and lending rates upon stock data. There are no available data on interest flows per sector. Interest flows are only provided for credit institutions, i.e. MFI and other financial intermediaries, with the exceptions of insurance corporations and pension funds, and the rest of the economy.

There are sector specific average interest rates for households and non-financial corporations. The average interest rates are weighted by the maturity of the loans/deposits. NPISH are assumed to face the same interest rate as households. Financial corporations and general government are assumed to face lower interest rates on lending and higher interest rates on deposits compared to non-financial corporations. Quarterly data from the Swedish Financial Supervisory Authority on the ratio interest income and expense to stocks of loans and deposits is used for comparison purposes. Final or chosen interest on loans and deposits for each FISIM producing sub-sector is often adjusted to match the information of the separate sources.

Interest payable on households' total stock of loans is calculated using data on average lending rates on all types of loans. For households as owners of unincorporated enterprises the average lending rate for households as a total is used. For households as owners of dwellings the lending rates of housing credit institutions are applied. Interest payable on households' stock of loans for consumer purposes is calculated as the residual of total interest payable less interest payable used for intermediate consumption.

The external reference rate is calculated as defined in paragraph 10 of chapter 14 of ESA 2010. That is as the ratio of interest on loans plus interest on deposits between resident FIs and non-resident FIs, to the stock of loans plus the stock of deposits between resident FIs and non-resident FIs. The stock of loans between resident MFI and non-resident MFI and deposits between resident MFI and non-resident MFI are used as weights for calculating one external reference rate.

The Riksbank's Balance of Payment data on assets and liabilities by sector is the main source for the calculation of imports of FISIM. In the calculation of FISIM the export of Balance of Payment data for the monetary financial institutions is replaced with the Riksbank's monetary financial institutions data on stocks of loans between resident MFI and non-resident non-MFI to ensure that FISIM is not calculated for stocks of loans and deposits for resident MFI vis-à-vis non-resident MFI.

Interest payable receivable is calculated using interest rates on loans and deposits. The balance of payment data on interest is too volatile and is not used in the calculations of imports of FISIM except for the Riksbank interest payable. For exports of FISIM the balance of payment interest data includes interest payable/receivable from/to resident MFI from/to non-resident MFI and is therefore also inappropriate.

4.3 Taxes less subsidies on products

In the production approach GDP calculations, value added is valued at basic prices. Taxes and subsidies on products are added or subtracted, on an aggregate level to obtain GDP at market prices.

The calculations for taxes (excluding VAT) and subsidies on products are based mainly on the records from the Financial Management Authority of the income of central government departments and agencies under revenue headings. These are updated monthly. Period reallocations must be undertaken to obtain the accrued value, since the ESV records are cash-based and payments entered under the revenue headings are usually made in arrears.

To attain VAT in the production and expenditure side calculations of GDP, theoretical VAT is used. The calculations are made both in current and constant prices.

For current price estimates of taxes on products, the data from the Financial Management Authority is used to extrapolate the national accounts figures for taxes on products for the corresponding quarter of the previous year. For deflation, a price index for taxes on products is calculated implicitly from the estimated national accounts figures on selected household consumption purposes subject to VAT.

For subsidies on products, the current price values from the Financial Management Authority are used directly in the QNA. These are then deflated using CPI for public transport since it is the largest product subject to subsidies.

Chapter 5 GDP components: the expenditure approach

In the quarterly accounts, as well as in the annual accounts, complete calculations are made of the expenditure approach, i.e. on an aggregate level no component is determined as a residual.

5.1 Household final consumption

Household final consumption is compiled on a detailed level, covering 162 consumption purposes (COICOP[8]) according to the nomenclature of COICOP 2018.

From the annual accounts of 2023, all source materials and compilation procedures for household consumption expenditures were according to the COICOP 2018 and the new main source for compilation of HFCE called Household Consumption Statistics (HCS) has provided new opportunities for calculating quarterly HFCE. NA has updated calculating methods and levels of HFCE from the first quarter of 2024.

The calculations are based primarily on extrapolation and some different sources are used to get indicators for the extrapolation. The main source is Turnover statistics (source 6) which is used for 115 of 162 purposes, accounting for about 60 percent of total household consumption.

In addition to the Turnover statistics some other sources are used. For consumption purposes like energy and cars, information from monthly and quarterly statistics compiled by Statistics Sweden are available. The main methods and sources for the calculations are described below with examples of consumption purposes for which the information pertains. However, the description does not cover in detail every method used the different consumption purposes.

5.1.1 Household consumption matrix

As mentioned, the new data source HCS delivered according to COICOP 2018 for annual accounting of 2023 managed to cover 114 purposes of total 162. As of Q1 2024, all these consumption purposes and games (0947) are calculated in an extended matrix which is used to split the Turnover statistics into product groups and determine how much of these products are used by households.

The Turnover statistics measure total turnover in each sub-industry. Since the industries sell many different goods and services, and household consumption is calculated and recorded for each good and service individually, the trend figures for the different industries must be converted to trend figures for the various goods and services. This is done by a matrix where production (turnover) by industry is split into those goods and services that are sold and how much of such is ascribed to household consumption. Information on products by industry is attained from the HCS. By comparing

[8] Classification of Individual Consumption by Purpose

the distributed values between two years for the same quarter, a trend is obtained for the good or service in question. These trend figures are linked to the different purposes to calculate the quarterly levels of household consumption. The values calculated through the matrix in current prices are deflated with Consumer Price Indices (CPI, source 22).

5.1.2 Other methods

When domestic production is almost exclusively used for consumption of the resident households, as is the case for some services, the same indicator used for extrapolation of value added is also used for extrapolation of household consumption, assuming that household consumption is a fixed fraction of the production. Some of the purposes are, however, estimated using this method for lack of better alternatives. This method is used for electricity, gas and heating (COICOP 045) and for financial services (COICOP 122) where the calculations are based on information from monthly and quarterly statistics compiled by Statistics Sweden and The Financial Supervisory Authority respectively. For the consumption in occupant owned homes (COICOP 042) where household consumption is the only use for production, the output method is used as well. This also applies to other services within housing.

Prescription medicine (COICOP 06111) is attained from the Swedish eHealth agency.

Household consumption of motor vehicles (COICOP 071) is calculated based on the administrative source, Statistics Sweden's vehicle statistics (source 12), and information on average prices.

Most COICOP groups described above are calculated based on extrapolation of current prices and deflation into constant prices using CPI. A few COICOP, however, are extrapolated in constant prices using information on quantities and CPI is then used for reflating to current prices. This method is for example used in the calculations of the consumption of electricity, gas and heating (COICOP 045).

The calculations of household consumption are based on information about sales in Sweden, thus supplements are made for direct purchases by Swedes abroad (COICOP 15) and deductions are made for purchases in Sweden by non-resident households (COICOP 16). These adjustments are made on an aggregate level using information in current prices from exports and imports of services. A weighted consumer price index based on different countries is used for domestic consumption abroad. Consumption expenditure by Swedes abroad is deflated using an average of consumer price indices for top tourist destinations.

5.2 Government final consumption

Government final consumption in current prices is calculated from the cost side. The calculation of total consumption expenditure is broken down into the components of intermediate consumption, wages and salaries, social contributions, other taxes on production, other subsidies, consumption of fixed assets, sales, other assets produced for own account, and social benefits in kind. Central government data in current prices is obtained at a detailed level from the Swedish National Financial Management Authority

(ESV). The source is called the Basis of central government net lending (source 9) and data is received for the expenditure of departments and agencies of central government by type of expenditure. This source is derived from the central government accounting system and applies to all the expenditures of these bodies, even those financed from sources outside the central government budget. All expenditure is thus treated as consumption, investment or a transfer and is specified by type of expenditure and purpose.

The calculations of the social security funds sector, made up of the national pension insurance funds and the Swedish Pension Agency (SPA), are also partly based on the Basis of central government net lending as well as forecasts made by the SPA, quarterly surveys and annual financial statements.

The main statistical sources for county councils and municipalities are quarterly surveys that collect rather detailed information on costs and incomes. The survey for municipalities is a sample survey conducted by Statistics Sweden (source 10) and the survey for county councils is a census covering all units and conducted by Statistics Sweden (source 11). Other local government bodies, such as local government associations and reclassified local government corporations, are mainly compiled with indicators in the quarterly accounts. For local government subsectors, wages and salaries are based on Aggregate gross pay, payroll taxes and preliminary tax statistics from employers' monthly tax returns (LAPS, source 15).

In 2024 the local government comprised 290 primary municipalities, 20 regions, 176 local government associations and 201 reclassified local government corporations.

Since the third quarter 2007, volume measurements for government production have been introduced in the Swedish National Accounts on an annual as well as a quarterly basis. According to the Eurostat decision, volume measurements are only used for the individual production. In Sweden, approximately 64 percent of the total production in the government sector is individual production (for year 2023). On an annual basis, seven per cent of the individual production is not covered by volume measures. The picture is almost the same for the quarterly calculations, approximately 90 percent of the individual production is covered with volume measures. It must be mentioned that the quarterly volume measures are not as detailed as the yearly ones.

For Education (COFOG 9), actual data on the number of students are used for primary, upper secondary school and higher education. For pre-school we have data on the number of pupils. For other education areas, the quarterly estimates are based on forecasts using demographic data and historical volumes, believed to give relatively good estimates.

For Health (COFOG 7) the volume measures are based on health from the two largest regions in Sweden. The calculation of COFOG 1020, Old age, are based volume measures on residential care services. Sickness and disability (COFOG 1012) are based on demographics. Other social exclusion (COFOG 1071) is based on the number of handled cases and the number of days spent in care or accommodation. The calculation of COFOG 1011, sickness, is based on volume data over number of cases handled by the social insurance fund.

To determine fixed prices for collective production, the number of hours worked is used for the largest part consisting of compensation of employees and other taxes on production. For the other items of consumption, such as intermediate consumption, consumption of fixed capital, sales, other assets produced for own account, and social benefits in kind, weighted indices mainly based on CPI (source 22), Service producer prices (source 21) and Price index for domestic supply (source 20) are used.

5.3 NPISH final consumption

The consumption of NPISH is calculated using the cost method. The calculations of wages and salaries are based on Aggregate gross pay, payroll taxes and preliminary tax statistics from employers' monthly tax returns (LAPS, source 15). The data is comprehensive and comprises wages and salaries paid and pay-related benefits. Social contributions and other taxes on production are calculated using the information on their share of wages and salaries for the sector. A model-based approach is used to calculate the consumption of fixed capital.[9] Subsidies comprise subsidies to wages and salaries and are obtained from the calculations for central government subsidies. Sales as well as intermediate consumption is calculated using ratios from the previous year. Deflation is carried out using the CPI total (source 26).

5.4 Gross fixed capital formation

Gross Fixed Capital Formation is estimated by both industry and investment type, drawing on a range of data sources. The primary input is Statistics Sweden's *Quarterly Economic Statistics Survey* (source 4). Most calculations rely on extrapolation methods based on observed trends, while direct source values—particularly export and import data—are used for selected items such as ships and aircraft. These source statistics are generally expressed in current prices and converted to constant prices using domestic supply indices (source 20), with additional indices applied for specific areas.

5.4.1 GFCF with its breakdowns in the ESA2010 transmission programme

The Quarterly Economic Statistics Survey

Statistics Sweden's quarterly economic statistics (source 4) serve as the primary basis for estimating investments in other buildings and structures, machinery, equipment, and rail transportation within the business and household sectors. The survey, conducted four times annually, covers most industries. Rather than using the source values directly in the Quarterly National Accounts (QNA), they are primarily employed to extrapolate annual benchmark levels at current prices. Conversion to constant prices is achieved using domestic supply indices.

Dwellings

Housing investment estimates are derived using a model that incorporates the number of apartments and houses, along with data on construction start

[9] For a more detailed description, see the QSA documentation. https://www.scb.se/contentassets/c89bb85e14184e92a4d5e4eec5ce4b98/sweden-qsa-inventory-esa2010-nov-2016.pdf

costs, typical building processes, and completion timelines. To express these figures in current prices, a construction price index is applied for reflation.

Other buildings and structures
Investments in other buildings and structures are primarily estimated using quarterly economic statistics. Road infrastructure investments are based on data provided by the Swedish Transport Agency. For insurance-financed structures, calculations rely on damage payment data reported by insurance companies.

Other machinery and equipment and weapon systems
Investments in other machinery and equipment are primarily estimated using the *Quarterly Economic Statistics Survey*. Since the survey excludes agriculture, forestry, and fishing sectors, investment estimates for these industries are derived from the rate of change observed in manufacturing. Weapon systems are addressed separately in the section on public investments.

For financially leased machinery, the leased capital item is recorded as gross fixed capital formation within the leasing activity, in line with ESA guidelines. Leasing payments are reflected in the National Accounts with a breakdown into interest and amortization components. These estimates rely on both administrative and survey data; however, the sources do not specify the type of activity undertaken by users. To obtain this distribution, the investment survey is utilized.

Transport equipment
Gross fixed capital formation in railway machinery is derived directly from quarterly economic statistics, rather than through benchmark extrapolation. Motor vehicle investments are calculated separately using administrative data sources. Statistics Sweden's vehicle statistics (source 13) serve as the primary reference for estimating both vehicle investments and household consumption. For ships and aircraft, investment figures are based on import and export data.

ICT equipment
Quarterly estimates for ICT equipment investments at current prices are extrapolated using the latest annual national accounts data, alongside figures for other machinery investments. To convert these into constant prices, specialized ICT price indices derived from domestic supply are applied.

Cultivated biological resources
Investments in livestock are estimated by adjusting the previous year's figures using an appropriate price index. These calculations are based on reliable data incorporated into the annual national accounts. For forestry-related investments, data is provided by the Swedish Forest Agency.

Intellectual property products
The estimation of R&D investments is divided into two components: purchased R&D and own-account R&D. Purchased R&D is calculated by extrapolating annual capital formation values based on the year-on-year growth in domestic supply, which includes domestic production and net imports. Domestic production is measured using the production value index for NACE 72 (source 3), while net imports are derived from export and import data on services (source 14). Own-account R&D is estimated through

extrapolation using the annual growth in hours worked, applied separately for each industry. Both components are deflated using Service Producer Price Indices (source 21) for technical testing and analysis.

Software capital formation follows a similar structure, comprising purchased and own-account software. Purchased software is estimated using an extrapolation model based on the production value index for NACE 62. Own-account software is calculated using the same method as own-account R&D, relying on hours worked per industry. Both types are deflated using the Service Producer Price Index (source 21), specifically the index for computer consultancy services.

The public sector

The Basis of central government net lending (source 9), compiled by the Financial Management Authority (ESV), records grossed fixed capital formation in accordance with the National Accounts' definitions grouped by buildings and structures, machinery, transport equipment and other equipment, research and development, and intangible investments. GFCF data is reported to ESV by all central government agencies and then aggregated by Statistics Sweden. Further, GFCF in military weapon systems are also recorded in the source and split into different weapon types (such as ships and airplanes) by using weights provided by ESV.

The same surveys that are the basis for the calculations of consumption (see section 5.2) are the main source for the calculation of investments in the municipalities and county councils. GFCF reported by the local governments are aggregated into buildings and structures, and machinery and equipment directly from the source. Further, R&D as well as investments financed by leasing are also calculated. Regarding these investment types, the quarterly values of the previous year are extrapolated using appropriate growth rates.

For all government sub-sectors, software both purchased and produced for own account is extrapolated using the quarterly values of the previous year and production within the software industry.

5.4.2 Changes in inventories

The calculations of changes in inventories are based on several sources. Inventory stock consists mainly of inventories in the manufacturing industries and in retail and wholesale trade. A quarterly stock inquiry within the Quarterly economic statistics is carried out for the mining and quarrying, manufacturing, trade and for the major industries within the service (source 4). The survey report separately finished goods by own and other manufacturing, raw materials and work-in-progress. Quarterly information is also available for inventories of fuel, oil, agriculture, and inventories in the government sector. The calculations of inventories in forestry are based on information about input into the pulp and paper industry and sawmills. For almost all types of inventories, the source data is the same in the quarterly accounts as in the annual accounts and levels from the source data are used directly in the quarterly accounts.

5.4.3 Acquisitions and disposals of valuables

A total value estimate for assets in the form of valuables is calculated by using the trend of a weighted indicator based on the net exports of valuables,

Turnover statistics (source 6) for domestic trade with antiques and a forecast on new production of valuables.

5.5 Imports and exports

Imports and exports are based on the monthly international trade in goods statistics (ITGS) (source 13), and the quarterly International Trade in Services Survey (ITSS) (source 14). A few adjustments are made to the source data for national accounts purposes.

The main source is international trade in goods statistics (ITGS). ITGS consists of Intrastat and Extrastat. Intrastat is a survey processed at Statistics Sweden and Extrastat is a census of total record from Swedish Customs. The extra-EU trade data is obtained from the customs office on monthly basis. For the extra-EU trade, non-response is not a significant issue. Intrastat is a census with cut-off value based on the value of arrivals/dispatches from/to other EU countries. The calculations of constant prices are in all essentials based on the export and import price indices (source 20). Since international trade in goods statistics only partly cover non-cross border trade, a few complementary sources are used in the National Accounts. The adjustments made to the foreign trade in goods statistics are described below:

Adjustments for economic ownership instead of crossing border statistics:

- Merchanting is calculated yearly based on the Structural Business Statistics, SBS. The quarterly statistics are derived by using growth figures from the foreign trade in services statistics.
- Fish that is caught and exported directly, without first arriving in Sweden, is not included in the foreign trade in goods statistics and must be adjusted accordingly. The calculation of the adjustment is made using data from the Swedish Agency for Marine and Water Management.

Goods sent abroad for processing:

- Goods sent abroad for processing are supposed to be recorded on a net basis in the national accounts but are recorded on a gross basis in the foreign trade in goods statistics. In the annual accounts, this is adjusted for in the National Accounts and the quarterly estimates are calculated with the aid of growth figures.

Additional adjustments:

- Repairs are to be treated as goods in the National Accounts. Since Foreign trade in goods does not capture repairs, data from foreign trade in services are used instead.
- Adjustment is made to include bunkering of fuel used in flight aviation and shipping.
- Adjustment is made regarding Swedish shipping companies' purchases abroad.

Reclassification adjustments:

Certain CN[10] numbers in the trade in goods statistics are treated as services in the National Accounts and are therefore reclassified. The types of services in question are consultancy services for computer systems and software, architectural and technical consultancy services, miscellaneous other business services, film and video services and creative, literary and artistic services. Conversely, some services are classified as goods in the National Accounts and handled accordingly.

CIF/FOB-adjustments:

Another adjustment made in the National Accounts is that invoice values are used in the calculation of exports of goods and not statistical values (i.e. exports valued free on board). This approach also affects the calculation of trade in freight services, which are also expressed in invoice prices. The reason for shifting to invoice values is the difficulties involved in collecting data in a way that meets necessary requirements for valuing exports f.o.b. (free on board) and imports at c.i.f. (cost insurance and freight). Shifting to invoice values also allows for greater consistency with data on production, consumption and so forth. For Intrastat trade, export data is collected directly from invoice values. For Extrastat data, the information provided by Swedish Customs is transformed to invoice values. Because of this approach, a global f.o.b./f.o.b.-calculation, as stipulated in the ESA 2010 manual, is not carried out.

For trade in services, the estimates in the National Accounts are based on the International Trade in services survey (ITSS). The survey is done by Statistics Sweden on assignment from the central bank (Riksbank). Almost all information is available by country breakdown from 2012 and onwards and this data is used for the distribution of the total population by intra and extra EU-countries. A correspondence table between EBOPS and CPA is used to get products according to CPA in national accounts. Data from the trade in service statistics are produced in current prices and calculations in constant prices are made by the National Accounts department. Export and import specific indices are used for the most of trade in services and some are deflated with service price indices (source 21) if trade specific indices are not available. The remaining services are deflated with labour cost indices and consumer price indices.

Adjustments made to the foreign trade in services statistics are described below:

- Adjustments are made to exclude exports and imports for a specific branch related to a non-domestic enterprise. It refers to transactions that should not be part of the Swedish economy but are included in the trade in service statistics.
- In Balance of payments exports of travel tour packages are recorded net, which is not consistent with ESA. In the national accounts these transactions should be recorded gross, and adjustments are made to the source data to comply with the manual.
- To include the congestion income generated for exports of electricity as a transmission service (P.62, CPA D.35) adjustments are made. The value of the imports of the good have been lowered to reflect the

[10] Combined Nomenclature

prices of the selling market and imports of services (P.72, CPA D.35) have been added to include the congestion income generated from imports of electricity.
- Furthermore, an adjustment is made for income from the lease of equipment. A model is used to calculate the amounts from the lease, which are deducted from exports and instead recorded as transfers and transactions in financial assets and liabilities.
- Data from international trade in services statistics are used for recording of repairs. The repairs are recorded as export/import of services for the relevant product.
- Conceptual adjustments essentially consist of certain CN numbers in ITGS that are treated as services in NA.
- In case of good sent abroad for processing, the fee that the processor receives from the principal is registered as a service. The principal pays the processor a fee for the services provided. The approach is to make adjustments so that processing services are correctly recorded.
- Financial Services Indirectly Measured (FISIM) is added to National Accounts
- A transport company with multinational ownership is excluded from the data from the current external balance of services since only the Swedish part of the export/import is to be captured.
- An adjustment is made to the imports because of fees which Swedes pay to study abroad for less than a year.

Reconciliations are made quarterly between Balance of payments (BoP) and National Accounts. However, there are a few differences in the trade in services and goods between the National Accounts and the Balance of Payments. These discrepancies are due to a different valuation of freights, different models for goods sent abroad for processing and use of different sources. As mentioned above, shifting from statistical values to invoice values results in freight services being calculated at invoice values in the National Accounts while the statistical values are recorded in the Balance of Payments.

Chapter 6 GDP components: the income approach

GDP is allocated in the generation of income account between compensation of employees, taxes on production and imports minus subsidies, operating surplus and mixed income. The income approach is calculated on a total level and broken down by institutional sectors in the quarterly sector accounts. Compensation of employees is calculated by industries and published with the same breakdown as value added and hours worked.

6.1 Compensation of employees

For compensation of employees, estimates are carried out separately for total levels as well as for the separate industries and sectors.

The source for calculating Compensation of employees for the whole economy as well as for the business sector and NPISH is Aggregate gross pay, payroll taxes and preliminary tax statistics from employers' monthly tax returns (LAPS, source 15). For central government and local government, the sources are the same as those used for calculating consumption. For central government, the source is the records kept by the Financial Management Authority (ESV) and for the local governments the information collected in the specific surveys is used along with LAPS.

For the central governments, direct values from ESV are used. For local governments, the last known yearly values are extrapolated using LAPS. However, for the total economy, as well as for the business sector and NPISH, the source is used to extrapolate quarterly values from the previous year, with the trends formed in accordance with the source. The difference between the sector sums and the separate estimate of total wages and salaries are chiefly allocated to the business sector.

To scrutinize the estimates on wages and salaries as well as hours worked and number of employees, the implicit estimates of hourly wages and wages per employee are compared to estimates in the short-term statistics on wages and salaries. Inexplicable differences between the estimates are a basis for adjustment in the QNA estimates of wages and salaries, number of employees or number of hours worked.

Employers' social contributions are split into two components, social contributions compulsory by law and social contributions regulated by agreement. Calculations are made for the total levels, based on total payments and deposits within companies, as well as for the separate industries. The total sum of social contributions regulated by law is based on the value of social contributions that has been paid to the government and social security sectors from all sectors. For social contributions by agreement, the total level is compiled using information on payments from employers to insurance companies and the allocations made within the companies.

Calculations for the separate industries are carried out using wages and salaries and the established percentage rates for social contributions by law

and by agreement within the reference period. The same method is used for NPISH. For central and local government, information on actual payments is used after the deduction of payroll taxes. The difference between the sector sums and the separate estimate of total social contributions is allocated to the business sector.

Payroll taxes are calculated in the same manner as social contributions. Total payroll taxes are based on the payments to the central government. For the separate industries the payroll taxes are calculated by applying the established rates for payroll taxes on the values for wages and salaries. For central and local government payroll taxes are compiled using wages and salaries and the established percentage rates for payroll taxes.

6.2 Taxes less subsidies on production

The Swedish calculations for other taxes on production are based for the most part on the records kept by the Financial Management Authority, ESV (source 9) of the income of departments and agencies of central government by revenue headings that are entered monthly. Since the ESV's records are cash-based and inward payments to the revenue headings usually take place in arrears, period readjustments are made by ESV to obtain the accrued value. In practice, the incomes are shifted back in time, for example income items for February-January may instead be recorded as income for the fourth quarter. Subsidies are comprised both of subsidies paid by EU and by central government and local governments. As a result of the lack of reliable quarterly accrual information for some other items, redistribution between quarters is made. The calculation of subsidies is based on the Financial Management Authority (ESV) (source 9).

6.3 Gross operating surplus and mixed income

Gross operating surplus and mixed income (B.2g+B.3g) are balancing items that depend on the calculation of gross value added (B.1g), compensation of employees (D.1) and taxes on production and imports minus subsidies (D.2-D.3).

Chapter 7 Population and employment

7.1 Population

The population figures presented in the National Accounts are compiled by the Population statistics, which in turn, are based on the population registration administrated by the Tax Authority. The population in the QNA refers to the average between the beginning and the end of the reference quarter. In times of high migration adjustments to the populations is done.

7.2 Employment: persons

Employment in the Swedish National Accounts refers to persons employed, no estimation of the number of jobs is compiled. To estimate employed persons on a quarterly basis, the Population by Labour market status (BAS, source 16) is used.

BAS provides information on the supply of labour in Sweden on a monthly, quarterly and annual basis and is based on employer declarations at individual level (PAYE) to the tax authority. BAS disseminates statistics on, among other things, the number of employed, unemployed and persons outside the labour force for the registered population aged 15 to 89. BAS is based solely on administrative data from various authorities and have data for population aged 75-89 year which was introduced in NA in the benchmark revision. The statistics can be seen as a census survey and cover both domestic and national concept of employment.

Direct estimates of levels are not made on a quarterly basis. Instead, the method used is to extrapolate the level from the corresponding quarter of the previous year with the growths formed in accordance with the sources. When calculating employment, as well as hours worked, estimates are carried out independently for the total economy and for the separate industries and sectors. In a final step the estimates of the number of self-employed and the number of hours worked for self-employed is adjusted for the sum of the industries and sectors to equal the estimates for the total economy.

To estimate the number of employed persons in the total economy, the number of employed persons aged 15-89 years according to BAS is used. The QNA data is extrapolated using the growth rate from the corresponding quarters of the previous year in BAS (source 16). In the BAS data used in the National Accounts, Swedish residents working abroad are excluded and non-residents working in Swedish enterprises and authorities included. Data from BAS is used both for totals and on detailed activity, authorities and divided on employees and self-employed. Employed persons, as well as hours worked, are calculated separately for employees and self-employed persons with a breakdown of 68 industries. However, in the domestic release, covering 33 industries, no distinction is made between employees and self-employed persons. The reason for this is the poor quality in the detailed-level estimates of self-employed persons.

There is a conceptual difference between self-employed persons according to the BAS own publication and according to the National Accounts concerning self-employed persons working in their own corporation. In the National Accounts, persons working in their own corporation are regarded as employees and not as self-employed persons as they are in the BAS. Therefore, the definition of self-employed persons is adjusted in the delivery to the National Accounts in BAS.

7.3 Employment: total hours worked

To estimate total hours worked in the economy the following sources are used: Labour Force Survey (LFS, source 17), Employments statistics (ANST, source 18) and Short-term wages and salary statistics (KL, source 19).

The Labour Force Survey, LFS, is an individually based sample survey covering all persons in the population register aged 15 to 89. The purpose of the LFS is to describe the current employment situation and to provide information on trends in the labour market. The sample consists of three separate samples, one for each month in the quarter.

The data source ANST is a monthly register-based statistics that corresponds to the EU-regulation within Short-term statistics (STS). ANST consists of two parts. One part is register-based and is based on employer declarations at individual level (PAYE) from the Swedish Tax Agency and reports monthly employment data on the labour market broken down by gender, sector, industry and region, as well as wage amounts, etc. The second part consists of the sample survey concerning hours worked.

The source *Short term wage and salary statistics (KL) reports the* number of employees in each subsector within public authorities using data on employment trends from the short-term statistics on salaries. The data illustrate the level of wages and how it changes over time. The statistics for the public sector are based on a total population survey.

To calculate the volume of hours worked on both an annual and quarterly basis, the data compiled together with the number of employed persons. The levels of the numbers of hours worked are not calculated directly on a quarterly basis, rather the extrapolation method is used. When calculating the number of employed, as well as the number of hours worked, estimates are carried out independently for the total economy and for the separate industries and sectors. In a final step the estimates for the numbers of hours worked by employees of market producers are adjusted for the sum of the industries and sectors to equal the estimates for the total economy.

The Labour force survey (LFS, source 17) is the source for estimating hours worked for the total economy. The growth for the average working hours is multiplied with average working hours same quarter last year and then multiplied with the number of employed the actual quarter this year according to section 7.2 for employed persons 15-89 years. The treatment of hours worked for Swedish residents working abroad and non-residents working in Sweden is the same as for employed persons (see section 7.2).

For the quarterly calculations of hours worked in NA the average hours worked in LFS is used at an aggregated sector level. This applies to the entire economy, public authorities, business employees and household non-profit organizations. The average working hours is multiplied with the number of persons employed in NA, which is based on BAS. The hours worked for self-employed persons is calculated as a residual.

To make more accurate estimates for detailed economic industries and sub-sectors, average working hours according to ANST (source 18), and KL (source 19) is used.

The estimation of hours worked by employees in market producers per industry is calculated by using the growth rate for the average working hours from ANST multiplied with average working hours same quarter last year multiplied with the number of employees in NA. In a second step, the result per industry is calibrated against the total number of hours for employees in the business sector.

The estimation of hours worked by self-employed persons in the business sector is calculated by using the growth rate for the average working hours from LFS multiplied with average working hours same quarter last year multiplied with the number of employees in NA. If the average working hours growth rate according to the LFS is +/- 35 percent, the average working hours growth rate for the corresponding industry for employees in the business sector is used instead. In the last step, the result per industry is calibrated against the total number of hours for self-employed people in the business sector.

To estimate the growth rate for the average working hours from KL multiplied with average working hours same quarter last year multiplied with the number of employees in NA. The same method is used for the subsectors in a first step in a second step the subsectors are adjusted to fit the estimate for the total general government sector.

To estimate the number of hours worked per industry for employees in Non-profit institutions serving households the number of employees in NR current quarter is multiplied by the average working hours in NR previous year multiplied by the development of the average working hours according to KL (same development for all industries). In a second step, the result per industry is calibrated against the total number of hours for employees in Non-profit institutions serving households.

The number of hours worked per industry for public market producers in primary municipalities is estimated by multiplying: The number of employees in NR current quarter * The average working hours in NR previous year * The development of the average working hours according to KL (same development for all industries). In a second step, the result per industry is calibrated against the total number of hours for the public market producers.

Chapter 8 Flash estimates

8.1 Flash GDP estimate

GDP flash estimates are published monthly and quarterly, about 30 days after the end of the reference period, with the quarterly result obtained by summing monthly data. The overall structure of the flash calculation follows the regular QNA compilation wherever possible. All main aggregates from both production and expenditure approaches are estimated, allowing for reconciliation to be conducted in the same way as for the full QNA. However, differences in the available data lead to several areas being compiled using different sources and methods.

Output among market producers is estimated using the Production Value Index (PVI) for all industries except NACE sections A, K, and T. For section A, growth rates from VAT turnover are used, while sections K and T lack direct sources and are extrapolated using growth rates from the latest period in the preceding full QNA compilation. Effects on value added from changes in output/IC ratios are estimated using a simplified version of the Quarterly Economic Statistics (QES), which is compiled using VAT data.

General government output is estimated along similar lines as in the full QNA. Differences include a somewhat more aggregated set of volume measures for estimating individually consumed services and the use of labour input figures from the Labour Force Survey (LFS) for collectively consumed services, as opposed to the population labour market status (BAS). There is no direct estimation of intermediate consumption; instead, value added is estimated by regression, with production used as the explanatory variable. General government consumption is estimated in the same way.

Product taxes and subsidies are estimated using changes in expenditure aggregates.

Household final consumption for COICOP 01-13 is taken from the Monthly Indicator of Household Consumption. There is no direct data on unallocated Swedish household consumption abroad or purchases by non-resident households in Sweden; these are instead forecasted using ARIMA models.

For gross capital formation, two independent estimates are compiled and then reconciled in the aggregation of the expenditure approach. For the first, gross fixed capital formation is estimated through a supply approach using output by industry and imports concerning goods, while inventories are compiled using a preliminary version of the Quarterly economic statistics (QES) inventory survey. The second estimate is based on total business costs taken from VAT data.

Imports and exports are compiled using the International trade statistics in goods survey (ITSG) and VAT data, together with the forecasted consumption abroad and purchases by non-residents for trade in services.

Each component calculation results in year-on-year growth rates in volume terms, which are then weighted together to form the GDP growth rates for the production and expenditure approaches. For the production approach, aggregation is done in the same way as for the standard QNA. On the

expenditure side, two separate estimates are made. The first follows the standard QNA approach using the first capital formation estimate, and the second is estimated by a regression model containing all main expenditure components, with VAT business costs used as the capital formation indicator. The average of the two yields a combined expenditure approach estimate of GDP, which is reconciled with the production approach figure, with balancing conducted in line with QNA methods.

Statistical news:
GDP-indicator slightly down in September

8.2 Flash Employment estimate

The ordinary monthly Labour force survey (LFS) is published t+20 days and fulfils the criterion of flash estimate t+30.

Statistical news:
Unemployment remains at a higher level

8.3 Other existing flash estimate

8.31 Monthly indicator of household consumption

The monthly indicator of household consumption is intended to reflect purpose-distributed consumption according to the national accounts, i.e., household consumption excluding consumption abroad. For a detailed description of purpose-distributed consumption, refer to the national accounts.

The consumption indicator is based on input from a variety of sources. The most important input sources are Statistics Sweden's (SCB) turnover statistics, energy statistics, statistics on newly built dwellings, the consumer price index, the retail assortment survey, and the Structural business statistics (SBS).

Turnover statistics are the primary indicator for measuring the development in monthly private consumption. These statistics cover approximately 60 percent of purpose-distributed consumption. Volume indicators such as energy statistics and newly built dwellings are used to calculate private consumption of energy and housing. The consumer price index is used to convert consumption from current prices to constant prices.

Statistical news:
Household consumption increased in September 2025

8.32 Weekly indicator of household consumption

The weekly indicator of household consumption gives an early picture on the development of household consumption. The indicator is currently produced bi-weekly and is based on more limited and preliminary data than the monthly and quarterly statistics on household consumption. The weekly indicator is classified as statistics under development and is not part of the official statistics.

Statistical news:
Household consumption week 43 2025 unchanged

Chapter 9 Main data sources used

Before listing the main sources used in the QNA, it is of value to offer a brief description of Statistics Sweden's Business Register (FDB) as the sampling frame provided by the FDB is of particular importance to produce economic statistics. All statistics intended to provide information on the Swedish economy, regardless of level, call for coordination of definitions of units to be surveyed, industries, size categories etc. This in turn requires a register of high quality to serve as an instrument of coordination. The FDB register covers all Swedish enterprises, departments and agencies of government, organisations, their establishments and activity units. With the aid of the FDB, populations are demarcated depending on the coverage, industries and size groups needed for the specific statistical inquiry. The register also serves as a catalogue for name and address data for the enterprises, establishments and/or activity units to be covered by various inquiries.

Currently, the register consists of approximately 1.2 million enterprise units and 1.3 million establishments.

The production approach

Source 1: Crop production forecast for cereals and oilseed crops
Link to surveys undertaken at the European level: -
Type of source: Forecast on harvest.
Population and sample: Forecast
Periodicity: Annual, the forecast is made in August every year.
Time of availability of results: 15 days
Main variables used in QNA: Quantities and prices for the main crops
Further adjustments made to the survey data: -

Source 2: Animal products - Annual and Monthly Statistics
Link to surveys undertaken at the European level: -
Type of source: Administrative
Population and sample: Covers all slaughterhouses in Sweden
Periodicity: Monthly
Time of availability of results: 45 – 60 days
Main variables used in QNA: Quantities and prices for the main livestock groups, and for milk and eggs
Further adjustments made to the survey data: -

Source 3: Production value index
Link to surveys undertaken at the European level: -
Type of source: Survey.
Population and sample: All non-financial enterprises within NACE 07-96, except 64-66 and 84, largely mirroring the populations from the *New orders and deliveries in industry* and the *Turnover statistics* for NACE 07-35 and 36-96 respectively.
Periodicity: Monthly.
Time of availability of results: 35 days.
Main variables used in QNA: Production indices, volume changes by NACE 68
Further adjustments made to the survey data: Adjustment for changes in inventories are made for NACE 07-35 to better reflect the production value rather than deliveries.

Source 4: Quarterly economic statistics
Link to surveys undertaken at the European level: -
Type of source: Survey and administrative data
Population and sample: The population is the 400 largest enterprises. The remaining part is estimated by VAT data.
Periodicity: Quarterly
Time of availability of results: Approximately 55 days.
Main variables used in QNA: Production, intermediate consumption, value added, value changes by industry (NACE 02-95, excl. D35, K64-66, L68). Stocks of inventories as well as changes in inventories in current prices as well as constant prices. Changes in gross capital formation by industry and type of investment.
Further adjustments made to the survey data: Adjustment for changes in inventories to better reflect the production value rather than deliveries. For industries with more substantial production of services, supplements are made.

Source 5: Monthly electricity statistics (also used for Household consumption)
Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: The population is all establishments in NACE 10-37, electric network establishments, and railway traffic enterprises. Supply of electricity covers the whole population, and for the uses of electricity 1800 establishments are surveyed (all establishments with an annual exceeding 2000 MWh).
Periodicity: Monthly
Time of availability of results: 40 days
Main variables used in QNA: Quantities on MWh.
Further adjustments made to the survey data: -

Source 6: Turnover statistics (also used for Household consumption)
Link to surveys undertaken at the European level: Council Regulation No 1165/98 concerning short-term statistics
Type of source: Survey
The population is all non-financial enterprise units within NACE 36-96 except 64-66. The sample is about 7500 enterprise units.
Periodicity: Monthly
Time of availability of results: 45 days.
Main variables used in QNA: Turnover trends, value changes by industry
Further adjustments made to the survey data: -

Source 7: Financial corporations except insurance companies – quarterly financial data (also used for Household consumption)
Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: The sampling frame used is the inspection register of the Financial Supervisory Authority. The statistics cover insurance companies and pension institutions, excluding pension foundation and benevolent societies. The inquiry is a full census.
Periodicity: Quarterly
Time of availability of results: 45-55 days
Main variables used in QNA:
Further adjustments made to the survey data: -

Source 8: Swedish insurance companies– quarterly financial data (also used for Household consumption)
Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: The sampling frame used is the inspection register of the Financial Supervisory Authority. The statistics cover financial corporations- except insurance corporations. The inquiry is a full census.
Periodicity: Quarterly
Time of availability of results: 44-55 days
Main variables used in QNA: Data on administrative costs, premiums, provisions, claims and number of insurances.
Further adjustments made to the survey data: -

The expenditure approach

Source 9: Total activity of central government (also used for central government value added, wages, and salaries)
Link to surveys undertaken at the European level: -
Type of source: Administrative
Population and sample: Covers all the institutional units in the central government sector.
Periodicity: Quarterly
Time of availability of results: 45 days
Variables used for QNA: Income and expenditures
Further adjustments made to the data: -

Source 10: Quarterly survey on municipalities (also used for value added, wages and salaries in municipalities)
Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: Covers about 84 out of 290 municipalities
Periodicity: Quarterly
Time of availability of results: 40 days
Main variables used in QNA: Income and expenditures
Further adjustments made to the survey data: -

Source 11: Quarterly survey on county councils (also used for value added, wages and salaries in county councils)
Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: Covers all the 18 county councils and the 2 regions
Periodicity: Quarterly
Time of availability of results: 40 days
Variables used for QNA: Income and expenditures
Further adjustments made to the data: -

Source 12: Statistical register for vehicles
Link to surveys undertaken at the European level: -
Type of source: Administrative, based on the Central Motor Vehicle Register of the National Road Administration.
Population and sample: The vehicles registered in the Central Motor Vehicle Register of the National Road Administration
Periodicity: Monthly
Time of availability of results: 30 days
Variables used for QNA: Changes in number of vehicles
Further adjustments made to the data: -

Source 13: International trade statistics in goods
Link to surveys undertaken at the European level: Intrastat Regulation (EC) No 638/2004 of the European Parliament and of the Council amended by Regulation (EC) No 222/2009 of the European Parliament and of the Council Commission Regulation (EU) No 1093/2013 Regulation (EU) No 659/2014 of the European Parliament and of the Council Extrastat Regulation (EC) No 471/2009 of the European Parliament and of the Council amended by Regulation (EU) 2016/1724 of the European Parliament and of the Council Commission Regulation (EU) 2016/2119
Type of source: Administrative and survey (custom data for Extrastat and survey for Intrastat).
Population and sample: Intrastat: The VAT Register of the Swedish Tax Agency. Data are collected from all enterprises with total exports of goods to other EU countries to a minimum value of SEK 4 500 000 or imports of goods from other EU countries to a minimum value of SEK 9 000 000. Extrastat: Full census of total record from Swedish Customs.
Periodicity: Monthly in current prices, quarterly in constant prices
Time of availability of results: Intrastat and Extrastat, are published partly as aggregated statistics (total trade and net trade balance), 27 days after the close of the reference month, and partly as detailed statistics, 57 days after the close of the reference month.
Main variables used in QNA: Exports and imports on goods in current and constant prices.
Further adjustments made to the survey data: Invoice values are used in NA.

Source 14: External trade in services
Link to surveys undertaken at the European level: The regulation EC-184-2005 regarding the balance of payments.
Type of source: Surveys mainly
Population and sample: Population and sample: For the 2021 statistics, the sample framework was approximately 65 000 enterprises and the sample of approximately 6100 enterprise units.
Periodicity: Quarterly
Time of availability of results: 40 days after the reference quarter
Main variables used in QNA: Trade in services in current prices. Primary income to and from rest of the world, current transfers to and from rest of the world.
Further adjustments made to the survey data: Invoice values are used in NA

The income approach

Source 15: Aggregate gross pay, payroll taxes and preliminary tax statistics from employers' monthly tax returns (also used for value added in NPISH)
Link to surveys undertaken at the European level: -
Type of source: Administrative
Population and sample: Covers all employers that make payments of wages and salaries.
Periodicity: Quarterly
Time of availability of results: 50 days (for internal use 45 days)
Variables used for QNA: Wages and salaries
Further adjustments made to the data: -

Source 16: Population by labour market status (BAS)
Link to surveys undertaken at the European level: Council Regulation No 1165/98 concerning short-term statistics
Type of source: Administrative data based on employer declarations at individual level (PAYE) to the tax authority.
Population and sample: BAS disseminates statistics on, among other things, the number of employed, unemployed and persons outside the labour force for the registered population aged 15 to 89.
Periodicity: Monthly/Quaterly/ Annually
Time of availability of results: 50 days (for internal use 45 days)
Main variables used in QNA: Number of employees.
Further adjustments made to the survey data: -

Source 17: The labour force survey, LFS
Link to surveys undertaken at the European level: According the EU Regulation No 430/2005
Type of source: Survey
Population and sample: The target population in the Labour force survey is all persons with civil registration in Sweden who have reached the age of 15 but not 75, approx. 7 400 000 individuals. The survey is based on a sample of about 29 500 persons each month.
Periodicity: Monthly/Quarterly
Time of availability of results: Quarterly data after 40 days
Main variables used in QNA: Number of employees and self-employed by industry and by sector. Hours worked for employees and self-employed persons by industry and by sector.
Further adjustments made to the survey data: Self-employed persons that work in their own corporation are regarded as employees in the National Accounts and are specified separately in the delivered LFS data.

Source 18: Employment statistics (ANST)
Link to surveys undertaken at the European level: EU regulation (1165/98) concerning short-term employment statistics.
Type of source: Survey
Population and sample: The population includes all establishments in the private sector and NPISH and all organizations in the public sector with at least one employee in accordance with Statistics Sweden's Business register (FDB). The sample for the private sector comprises approx. 17800 establishments. The public sector is covered by a sample of 650 establishments and 900 establishments in NPISH.
Periodicity: The inquiry is conducted every month and published quarterly
Time of availability of results: 55 days
Main variables used in QNA: Changes in the number of employees by industry.
Further adjustments made to the survey data: -

Source 19: Short-term wage and salary statistics (KL)
Link to surveys undertaken at the European level: Council Regulation No 1165/98 concerning short-term statistics
Type of source: Survey
Population and sample: The population consists of enterprises with at least five employees. The sample in the 2018 survey was about 6000 enterprises.
Periodicity: Monthly
Time of availability of results: 60 days (preliminary results for internal use 45 days)
Main variables used in QNA: Number of employees, hours worked, hourly wages
Further adjustments made to the survey data: -

Prices

Source 20: Price indices in producer and import stages
Link to surveys undertaken at the European level: Council Regulation No 1165/98 concerning short-term statistics
Type of source: Survey
Population and sample: The population is all transactions concerning sales from producers and purchases from importers of products in NACE A-E. Approximately 1200 producers/importers are surveyed reporting about 4000 quotes (1500 home sales, 1000 exports and 1400 imports).
Periodicity: Monthly
Time of availability of results: 25 days
Main variables used in QNA: Indices for producer prices, home sales; producer prices, export sales (export price index); producer prices, home sales and exports: import prices, and; domestic supply prices, home sales and imports.
Further adjustments made to the survey data: -

Source 21: Service price index
Link to surveys undertaken at the European level: Council Regulation No 1165/98 concerning short-term statistics
Type of source: Survey
Population and sample: The population is all transactions concerning sales of certain services in service industries. 1000 enterprise units are surveyed reporting about 4000 quotes
Periodicity: Quarterly
Time of availability of results: 45 days
Main variables used in QNA: Service prices indices at detailed level
Further adjustments made to the survey data: -

Source 22: Consumer price index
Link to surveys undertaken at the European level: Harmonized Indices of Consumer Prices (HICPs) according to Article 121 of the Treaty of Amsterdam (109j of the Treaty on European Union).
Type of source: Survey
Population and sample: The population is all transactions concerning goods and services in the private domestic consumption.
Periodicity: Monthly
Time of availability of results: 15 days
Main variables used in QNA: Consumer price indices
Further adjustments made to the survey data: -