Quarterly National Accounts Inventory

Sources and methods for the Swedish National Accounts

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Chapter 1 Overview of the system of quarterly accounts

1.1 Organisation and institutional arrangements

The production of statistics and responsibility for the various statistical areas is organised in such a way that Statistics Sweden (SCB) has 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 contributes actively to international cooperation.

Statistics Sweden has direct responsibility for official statistics in 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. In a number of other areas of society, some 25 other agencies bear the responsibility for official statistics. The production of these statistics is effected partly by Statistics Sweden and partly by other producers of statistics.

The 1st of June 2008 Statistics Sweden was reorganised and a separate department for National Accounts was formed. The National Accounts Department consists of six units:

- Product Accounts
- Public Finance
- Financial and Sector Accounts
- Coordination of Economic statistics
- Economic Micro simulations
- Economic Analysis

The quarterly as well as the annual GDP calculations are mainly produced at the Product Accounts unit together with the Public Finance unit. A separate unit are responsible for the Financial and Sector Accounts including the data that refer to sector accounts in the QNA delivery according to ESA 95 transmission programme, i.e. the net lending/ borrowing as well as the household disposal income.

1.2 Publication timetable, revisions policy and dissemination of QNA

The quarterly accounts are published within 60 days after the end of the reference quarter. For the second quarter a flash estimate is published within 35 days after the end of the quarter with almost the same content as an ordinary release. Most requirements of the ESA95 Transmission programme are fulfilled. The domestic release is generally on a more

detailed level than the ESA95 transmission. The press release, the quarterly publication (BNP-kvartal) and updated figures in the database are available at the website at 09.30 on the day of publication.

From 2009 the non-financial sector accounts are published at the same time as GDP. However, at this point no division is done between non-financial and financial corporation, this split is done in the full release of the sector accounts about 90 days after the reference quarter.

Using new information available, revisions take place with every new publication of the quarterly figures. When releasing second, third and fourth quarter the other quarters of the reference year can be revised while figures in the previous years are fixed. When the first quarter is released all quarters of the previous year may be revised. The quarterly accounts are benchmarked to the final annual accounts when they are produced in November two years after 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.

1.3 QNA compilation approach

GDP are calculated according to the production approach as well as the expenditure approach. The most common method used in the calculations is to extrapolate the National Accounts value from the same quarter 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 Industrial production index for that industry. For some parts of the expenditure approach values from the sources are used directly. This is possible when the same source is used in the quarterly accounts as in the annual accounts and it mainly concerns changes in inventories and exports and imports. The 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

The balancing between the GDP by expenditure approach and GDP by production approach is done with the help of supply and use tables. GDP by income approach is balanced through a residual calculation of the item operating surplus and mixed income. Before balancing in the supply and use table checks and validation of the source data are made in the process of calculation by the expert responsible for a certain area. Relations like labour productivity and hourly wages are also analysed in the reconciliation process.

When the annual calculations are compiled the quarterly accounts are aligned to the annual accounts for the year at issue through the least square method, MinD4. Value added at a detailed level is benchmarked through MinD4 and the balancing of the quarterly supply and use tables and GDP are made after the benchmarking.

1.5 Volume estimates

The Swedish National Accounts introduced the method of chain linking constant prices in 1999 in coordination with the implementation of ESA 95. Calculations are made in current prices and constant prices. The current prices for the previous years, converted into average prices, form the base for the calculations in constant prices. Using the average prices of year 2000 the time series are published in constant prices with reference year 2000. The volume changes are calculated through Laspeyres indices and price changes are consequently calculated as Paasche indices. Constant prices are also calculated for GNI and other income variables according to table 0109 in ESA 95 transmission programme.

1.6 Seasonal adjustment and working day correction

Working-day and seasonal adjustments are integrated and made in Tramo/ Seats, the computer software recommended by Eurostat. Seasonally adjustment is made using a direct approach, this means that each series are adjusted separately.

Working-day adjustment is made for value added in constant prices and hours worked. Seasonal adjusted figures are presented for value added in constant prices and hours worked at the same levels as working day corrected figures. Seasonal adjusted figures are also presented for the expenditure side in constant prices at an aggregate level. The whole period back to 1993 is adjusted every quarter and new working-day and seasonally adjusted figures for the whole period are published. For now no adjustments are made for data in current prices, which means that the requirements of adjusted data in table 0102 in ESA 95 transmission program data are not fulfilled.

1.7 Additional information

Home page Statistics Sweden and the page for Quarterly National Accounts

Startpage - www.scb.se

http:/ / www.scb.se/ Pages/ Product____22922.aspx

Press releases of the quarterly National Accounts

http:/ / www.scb.se/ Pages/ List____250611.aspx

Statistical database

http:/ / www.ssd.scb.se/ databaser/ makro/ MainTable.asp?yp=bergman&xu=scb&omradekod=NR&omradetext=National+accounts&lang=2&langdb=

Description of the annual and quarterly calculations (Swedish only)

http:/ / www.scb.se/ statistik/ NR/ NR0103/ _dokument/ SOU2002.pdf

Chapter 2 Publication timetable, revisions policy and dissemination of QNA

2.1 Release policy

Quarterly estimates 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. The press release, the quarterly publication (BNP-kvartal) and updated figures in the database are available at the website at 09.30 on the day of publication. The release dates are published in September t-1 at the SCB website http:/ / www.scb.se/ Pages/ PublishingCalendarStartPage___259922.aspx

At the same day as the release on the website data are sent to Eurostat according to the ESA95 transmission programme. For the second quarter a flash estimate is released within 35 days after the end of the reference quarter followed by an ordinary publication after about 70 days.

Using new information available, revisions take place with every new publication of the quarterly figures. The policy for revising the Swedish National Accounts is shown in table 2.1. When releasing second, third and fourth quarter the other quarters of the reference year can be revised while figures in the previous years are fixed. When the first quarter is released all quarters the previous year may be revised.

The detailed annual accounts t-2 is released at the same time as the QNA for the third quarter at the end of November. At that time the quarterly estimates for t-2 are benchmarked to the new annual figures using the MinD4 method. In this benchmark process quarterly figures back to year t-5 are revised. The calculation of Quarterly Non-financial Institutional Sector Accounts always uses the QNA as the benchmark, in order to be fully consistent with QNA.

Table 2.1 Revision policy of the Swedish National Accounts (GDP calculations)

Reference Year	Time of publishing	Q1 Year T	Q2 Year T	Q3 Year T	Q4 Year T	Year T
T	**End May**	First				
T	**Mid September**	Revised	First			
T	**End November**	Revised	Revised	First		
T	**End February**	Revised	Revised	Revised	First	First sum of quarters
T+1	**End May**	Revised	Revised	Revised	Revised	Revised sum of quarters
T+1	**Mid September**					
T+1	**End November**	Revised	Revised	Revised	Revised	Prel. annual accounts
T+1	**End February**					
T+2	**End May**					
T+2	**Mid September**					
T+2	**End November**	Final	Final	Final	Final	Final annual accounts
T+2	**End February**					

2.2 Contents published

The release of the regular Quarterly National Accounts (QNA) as well as the flash estimate covers GDP by expenditure and GDP production approach whereas no complete compilation of the income approach is made as the operating surplus is derived as a residual.

2.2.1 ESA95 transmission programme

Tables according to the ESA95 transmission programme for QNA are delivered to Eurostat the same day as the domestic release of the results, i.e. within 60 days after the reference quarter. The requirements of ESA 95 transmissions are fulfilled to a large extent but some components are still not compiled. All time series are available from 1st quarter 1993 and the following content is delivered:

- Table 0101: Gross value added at basic prices and gross domestic product at market prices
  - Complete tables
- Table 0102: GDP identity from the expenditure side
  - Not complete coverage of seasonally adjusted figures, all details is not delivered. Also no data on working days adjusted expenditures are delivered.
- Table 0103: GDP identity from the income side
  - Complete table
- Table 0107: Disposable income, saving, net lending/ borrowing
  - Complete table
- Table 0109: Real disposable income
  - Complete tables
- Table 0110: Population and employment
  - Complete table
- Table 0111: Employment by industry
  - Not complete coverage of working day adjusted and seasonally adjusted figures, all details are not delivered.
- Table 0117: Final consumption expenditure of households by durability
  - Complete tables
- Table 0120: Exports of goods and services by Member states of the EU/ third countries
  - Complete tables but the data that is on voluntary basis are not delivered.
- Table 0121: Imports of goods and services by Member states of the EU/ third countries
  - Complete tables but the data that is on voluntary basis are not delivered.

2.2.2 The release on the domestic website

In the domestic release on the website the results of the quarterly accounts are published on a more detailed level than delivered in the ESA 95 transmission for many of the components.

The time series run from 1993 on a detailed level while data back to 1980 are published on an aggregated level covering the production approach and expenditure approach in constant prices as well as hours worked.

The full set of Non-financial Quarterly Institutional Sector Accounts (QSA) is released within t+90 days after the reference quarter. Starting 2009 a first release of the sector accounts, where no split is done between non-financial corporations and financial corporations was made together with the QNA release, within 60 days after the end of the quarter. Since before the preliminary annual figures for the sector accounts have been released together with QNA at the fourth quarter. Data on net lending/ borrowing have also been sent to Eurostat every quarter together with the QNA data, according to the ESA95 transmission program.

Production approach

Value added for market producers and producers for own final use are published both in current and constant prices. Current prices are presented in the national release at a breakdown of 15 industries while actual values in constant prices (reference year 2009) as well as growth rates are presented for 40 industries. Non-market production is presented for Central government, Local governments and Non-Profit Institutions Serving Households (NPISH)

Working day adjusted and seasonally adjusted figures for value added (reference year 2009) are presented with a breakdown of 15 industries as well as for central government, local government and NPISH.

Expenditure approach

The components of the expenditure side are presented at the same levels both in current prices and constant prices (reference year 2009). Growth rates are also shown for constant prices.

Final consumption expenditure of households (incl. NPISH1) is presented in the national release with a break down by purpose, 14 subgroups, and durability, 9 subgroups. Final consumption expenditure of general government is split into central government and local authorities. Gross fixed capital formation is published by industry, 15 subgroups, and by type of investment, 6 subgroups. Inventories are only published as an aggregate although acquisitions less disposals of valuables are shown separately. For exports and imports a division is made between goods and services.

Seasonally adjusted figures are published on the main variables, with a breakdown on 15 series, for the expenditure approach (reference year 2009).

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. 40

industries for market producers and producers for own final use. And for non-market producers the presentation is made for central government, local government and NPISH. Labour costs are split into the two components - wages and salaries - and employers´ social contributions and payroll taxes.

Working day adjusted and seasonally adjusted figures for hours worked are presented at the same level as value added, with a breakdown of 15 industries as well as for central government, local government and NPISH.

2.3 Special transmissions

The National Institute of Economic Research gets a special transmission on a more detailed level than published, a delivery that the Ministry of Finance also get access to. A separate transmission is also carried out for to the Central Bank (Riksbank). A few other special transmissions are also made on subscription.

2.4 Policy for metadata

When publishing the quarterly accounts comments on the balancing procedures as well as comments on revised estimates are posted on the website. Brief general comments of sources used and some concepts of National Accounts are also included. In these comments the discrepancy between the production approach and expenditure approach are show as well as the steps taken to balance the system. The causes of revision on earlier quarters are also briefly explained.

Documentation of the statistics according to the standard of Statistics Sweden (BAS), are available at the SCB website but only in Swedish.

Metadata are also available according to the SDDS Special Data Dissemination Standard (SDDS) at the IMF website:

http:/ / dsbb.imf.org/ Applications/ web/ sddsctycatbaselist/ ?strcode=SWE &strcat=N

Chapter 3: Overall QNA compilation approach

3.1 General architecture of the QNA system

In terms of organisation the annual and quarterly accounts are managed by the same organisational unit and in general the same persons responsible for a certain area in the quarterly accounts are also managing these calculations in the annual accounts.

The Gross Domestic Product is independently estimated by the production approach as well as by the expenditure approach. The calculations are carried out on a detailed level and GDP is summated from the details. For GDP by income approach operating surplus and mixed income is calculated as a residual. However compensation of employees is calculated on a detailed level as well as taxes less subsidies.

The statistics that the quarterly accounts are based on are for most areas not as comprehensive as for the Annual National Accounts. The data sources are to a larger extent based on surveys. Compared to the annual accounts, the single largest difference in the data available is that no information of the companies' intermediate consumption is collected.

The methods used in the quarterly accounts could be classified into the following three categories.

- The value in the National Accounts are extrapolated buy using an indicator
- The data from the source are used directly in the National Accounts
- Models

For most areas of the quarterly accounts the short-term statistics used in the calculation will be replaced by other sources when the annual accounts are compiled. The estimates in the short-term statistics and the annual statistics are rarely totally comparable. Sometimes there are differences in the definition of the variables and even if the definition is the same the estimates will differ due to the fact that annual statistics in general have better coverage. Thus the level estimates in the short-term statistics are not used directly rather the change between the reference quarter and the same quarter previous year are used for extrapolation of the national accounts value. For some areas indicators both in current and constant prices are delivered from the sources statistics, for other are variables deflation into constant prices (or reflation into current prices) are made within the national accounts department. Either way the price indexes that are used are analysed by the expert responsible for a certain industry or other area at the National Accounts department to ensure the relation between current prices and constant prices.

For some variables the source is the same in the quarterly and annual accounts, such as exports and imports and inventories, so values from the sources are used directly. For a few areas there is no information available

on quarterly basis, e.g. gross fixed capital formation in the agriculture industry, and for these areas suitable models are used.

The basis for the calculations is non-adjusted figures. The detailed calculations of the production approach are done at basic prices and estimates on taxes and subsidies are added at an aggregate level. The expenditure approach is calculated at market prices on detailed levels. Although not integrated in the whole calculating process a system of supply and use tables are used in the balancing process. Seasonally adjustment and calendar adjustment are carried out in a separate process and the release of the figures contains both non-adjusted and adjusted figures.

Beginning from the end of the reference quarter the following steps of the calculation process can be identified:

– 51 days	Acquisition of source data from surveys and administrative sources
45 – 51 days	Validation of source data and calculation of initially estimates in the National Accounts
52 days	Reconciliation meetings, scrutinizing the National Accounts estimates
53 days	Preliminary calendar adjusted and seasonally adjusted data available for analysis
53 – 58 days	Balancing in supply and use tables. Writing of articles and the press release.
58 days	Chain-linking, calendar adjustment and seasonally adjustment
58 days	GDP non-adjusted and adjusted values determined
59 days	Preparation of release, writing of press release etc
60 days	Release at 09.30

3.2 Balancing, benchmarking and other reconciliation procedures

3.2.1 Quarterly GDP balancing procedure

It is very unusual for the first compilation of GDP from the production side and the expenditure side to give a unanimous estimate of the GDP growth. Normally the difference in GDP-growth according to the two calculations would be around 1 percentage point.

After the initial estimates are calculated the calculations are scrutinized in meetings between the persons responsible for the balancing procedure and the persons responsible for the separate calculation. These discussions could lead to noting that some variables need further investigation and contact is then taken with the source statistics. Along with this process the balancing procedure starts. About three days are spent on balancing the

supply and use in the accounts and rechecking and confirming primary data.

The balancing is done in two parallel processes where one group looks at the macro perspective analyzing the development of the different components of GDP. At the same time an analysis in supply and use tables are carried out by another group. This analysis of supply and use is done for 77 products and industries. The findings from the two groups are discussed in regular meetings and decisions are made as to what steps that should be taken to balance the system. However, the time for investigating problems is quite limited. Therefore, when for example no obvious explanation is found in the contacts with source statistics, decisions as to what variable should be adjusted often have to be based on general knowledge about the primary statistics and the relations between preliminary and final statistics, rather than on direct information about the underlying problem causing the discrepancies.

The quarterly supply and use tables
The structures in the supply and use tables are mainly based on the structures according to the latest detailed annual accounts, concerning year t-2. The input data is the existing QNA information on output and expenditures. Using this data, the model generates the additional detail required to complete the supply and use tables for each quarter of the estimation period.

This means that it is assumed that the supply and use relationships in the annual tables also are relevant for the estimation period of the quarterly supply and use tables. For example, it is assumed that the share of intermediate consumption in relation to output is the same as it was in year t-2.

The tables are used to identify discrepancies between the supply and use of products that can then be investigated and resolved as far as possible prior to publication. It is primarily a tool for detecting larger inconsistencies in the accounts and for the moment the tables are not fully balanced at each quarterly release. The full balancing of the tables is done when detailed annual accounts are compiled for the reference period.

3.2.2 Benchmarking of QNA and ANA

SCB has used different methods of benchmarking (BM). Up to 1985, the so called Bassie method was used. After that both the MinQ method and MinD4 method has been used. All methods of benchmarking adjust Quarterly National Accounts (QNA) to final Annual National Accounts (ANA) in order to secure consistency in every time series and at the same time minimize the revision of the quarterly time series. These and other methods of benchmarking have been investigated from several points of view, theoretical, practical, and numerical and IT[1]. The benchmarking problem could be considered as a bias adjustment problem. Preliminary statistics include a certain amount of bias. How this bias is distributed on

[1] 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

quarters in the sources of QNA is important and any benchmarking procedure should consider this issue. For example, Industrial production index (IPI) is used as indicators for the production side of QNA. The survey design for IPI (one sample a year) causes an under coverage in upswings. As a consequence, the bias is increasing during the year.

Due to the experience that the algorithm for Min Q did not always produced reliable results, a research was made during 2007 to further analyze the Min Q method and if necessary, provide a better procedure.[2] This research suggested that Min Q should not be used. The old Denton's method as given by minimizing the measure D4 below seemed to provide an acceptable solution.

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

Where n is the number of quarters used. The D4 algorithm is further discussed in Öhlén (2006). It has been programmed in the SAS –software and has been used for benchmarking of QNA 1993-2006 and was introduced in 2007.

The findings in Öhlén (2006) show that MinD4 (Dentons method) is quite robust in terms of different structures of bias. MinD4 is also a linear procedure. This property is very practical because bench marking could be performed at the lowest level. All aggregates of MinD4 benchmarked series could be calculated as sums of benchmarked series at lower levels.

For instance, if total exports of goods and total exports of services are separately benchmarked, you do not need to benchmark total exports. It is calculated as the sum of the two components. The 'implicit' benchmarked sum shares the optimality properties from the components.

The seasonal pattern of QNA from the production side is considered more reliable than the seasonal pattern of the demand side. This is referring to the initial estimates. Therefore benchmarking is initially made for the production side. This means that a balancing procedure has to be made after the benchmarking of the quarterly figures. The benchmarking is carried out for chain linked 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 benchmark is therefore that the fourth quarter of year t-5 should be unchanged.

3.2.3 Other reconciliation(s) of QNA different from balancing and benchmarking

The person responsible for a calculation makes the first analysis of the data used in the calculations. Adjustments of source data to meet the definitions and coverage of National Accounts are made. Explanations of larger deviations from a "reasonable" development of the variables according to the time series are sought. If the data delivered from the source statistics for some reason seems questionable contacts are taken with persons at the

[2] See Öhlén (2006) op.cit.

source statistics to discuss the results. This could lead to adjustments of the data for the NA calculations. Even if no direct faults are detected in the source statistics adjustments can be made at the National Accounts if original data seems unreasonable, e.g. complementary information point in another direction or the data don't match other information in the NA. However, the main principle is that adjustment like this shall be done rarely and only if they are well grounded.

In the calculation process the results of value added are also confronted with the calculations of hours worked, analyzing labour productivity. This analysis is made to detect apparent problems in source data. However, adjustment on basis of labour productivity is done with great caution since there is no separate estimate to confront the NA estimate against and 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

National Accounts are only published once a quarter, except for the second quarter when a flash estimate is calculated. Between the releases of the quarters within a year most source statistics are revised to some extent. This is mainly due to complementing reporting from the companies. New sources for the calculations are mainly introduced when the detailed annual calculations are compiled about 23 months after the reference year (November t+2). The most substantial improvement in source data would be that information on intermediate consumption is available when the detailed annual are compiled.

Table 3.2 shows the revisions between the first time the quarter is calculated compared to the revised sum of quarters released in May, about 5 month after the reference year (May t+1), as well as the revision between the first calculation of the quarter and the release of the detailed annual calculation in November t+2, for the period 1999-2005. The results are presented both as a normal average for the period (column Average) as well as the average in absolute values (column Absolute). The table shows that revisions mainly take place when the final annual accounts are compiled for the reference period in November t+2.

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

	May t+1 Average	May t+1 Absolute	Novmber t+2 Average	Novmber t+2 Absolute
GDP	0,0	0,2	0,4	0,6
Household consumption	0,0	0,3	0,3	0,3
Government consumption	0,1	0,6	0,1	0,1
Gross fixed capital formation	-0,1	0,9	0,8	0,8
Inventories (contribution to GDP)	0,0	0,2	0,0	0,0
Exports	0,4	0,6	1,1	1,1
Imports	0,3	0,6	0,8	0,8

3.3 Volume estimates

Most data used in the National Accounts are collected in current prices and then deflated into constant prices using relevant price indices like producer price indices, service price indices and consumer price indices. However for a few series quantities are used for calculating constant prices directly, then using price indices to reflate into current prices. This is fore example the case 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 prices changes a residual. For many parts of the calculations deflation into constant prices is carried out in the source statistics. This is for example the case for foreign trade statistics, changes in inventories, industrial production index and service production index. For other parts of the calculations deflation is made at the National Accounts unit, e.g. for household consumption, foreign trade in services and gross fixed capital formation. Either way the calculations are made at a very detailed level and the aggregated to the levels of publication. The calculations are based on chain indices and the constant prices are therby 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 National Accounts and in source data are Laspeyres indices.

3.3.2 Chain-linking and benchmarking.

To be able to compare data based on chain indices the constant prices need to be chain-linked into a time series expressed in a price level for a certain year, so called reference year. In the domestic release the reference year is the previous year[3]. When changing to chain-linking in 1999 all three methods of chaining were considered, i.e. 'Annual Overlap' (AO), 'Over-the-Year' (OY), and 'Quarterly Overlap' (QO). In general, chaining is used to justify time comparisons in times of structural changes of the economy. Until May 2010 the chaining was made with the OY method. In May 2010 the chaining method was changed into the AO method. The decision to change to the AO method were mainly based on results from tests showing that the AO method is more compatible with the methods used for benchmarking and seasonally adjustment.

When chaining according to the Annual Overlap method the formula below is used. In the example the 2nd quarter of 2002 is calculated in reference prices 2000, where LQ stands for Laspeyres volume index. The base is the current price value for year 2000.

$$LQ(ao)_{2000,(2002,2)} = LQ_{2000,2001} * LQ_{2001,(2002,2)}$$

where

$LQ_{2000,2001}$ = the change between year 2000 and year 2001.

and

$LQ_{2001,(2002,2)}$ = the change between year 2000 and the second quarter 2002.

[3] In the ESA transmission the reference year are 2000.

The formula is used on transactions and aggregates with constant positive or negative signs. For items that change sign over time, other methods have to be used. In the Swedish QNA changes in inventories in reference year prices, that could be both positive and negative, are presented with the same share of GDP as in t-1 prices. For external balance of goods and services the net exports in reference year prices is subtracted from exports and imports in reference year prices.

The benchmarking is carried out in the chain-linked series and 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 not be balanced. Therefore a new reconciliation/ balancing is have to be carried out for all price levels i.e. current prices, constant prices (t-1) and average prices.

Below, we show the production of QNA for a year *t-2* to year *t-4* for different quarters when new ANA are available.

1) Chain-linking

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

    a) Benchmarking,

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

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

4) Chain-linking

5) Seasonal adjustment

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. A desirable property from the user point of view is that seasonally adjusted annual totals equals the non-adjusted annual totals, i.e. time consistency, even if this requirement could however deteriorate the quality of the seasonally adjustment somewhat. Therefore the objective has been that the requirement of time consistency shall be fulfilled for all series where it is technically possible.

3.4 Seasonal adjustment and working day correction

Until May 2010 a direct approach of seasonally adjustment were used. This meant that each series was adjusted separately with an optimal model for the specific series and no balancing was carried out and therefore the series were non-additive. Based on user demand it was decided in 2009 that the seasonally adjustment should be changed in a way so that the subseries should be able to aggregate to totals. A project were launched to look into what would be the best method to use for making the different series

additive . The result is a model where all series are direct seasonally adjusted at first, then the subseries are reconciled so that they sum to larger aggregates as well as to total GDP. The residual is split on the sub series in proportion to the level of the series and the uncertainty of the seasonally adjusted estimate where the uncertainty is measured as the variant in the irregular component. The new model was introduced in the release of the first quarter of 2010, in May 2010.

About 150 series of QNA are seasonal adjusted every quarter and includes all series of QNA from the production side in constant prices as well as hours worked and the aggregates on the expenditure side in constant prices. However the release of the production side and hours worked are not made at that detailed level and as described in chapter 2.2 all requirements of the ESA95 transmission programme are not fulfilled as series in current prices are presently not seasonally adjusted.

The DOS-programs of TRAMO/ SEATS is used together with an interface written in SAS. These programs have been used since 1998. Every series is individually modelled based on the recommendations as given by Eurostat since 1998. In Öhlén (2006) an overview of these issues is given[4].

Choice of ARIMA-model

Up till now, about 50 ARIMA-models have been investigated for every series before the final choice is made. The criteria used are based on statistical principles and variability issues as well as graphical output on the adjusted series and the residuals.

Working day/Trading-day 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.

[4] See Öhlén (2006) op.cit.

Chapter 4 GDP and components: the production approach[5]

4.1 Gross value added, including industry breakdowns

In the first step of the calculations gross value added is derived directly through using indicators for output, like production or turnover, to extrapolate the value added from the corresponding quarter of the previous year. For constant prices the base is the current prices previous year converted into average prices. Average prices (t prices) for the quarters are calculated from constant prices (t-1 prices) by using the current prices (CUP) over the year divided with t-1 prices over the year. This is expressed in the following formula:

$$00Q1_t = 00Q1_{t-1} * Sum00Qn_{CUP} / SumQn_{t-1}$$

No statistical model is used to take into account the relationship between the quarterly indicator and the annual estimate. Rather the compiler responsible for a certain industry evaluates how well the used indicator predicts in calculating the future annual estimate. Calculations are carried out at both current prices and constant prices at the same level of detail. Intermediate consumption is not part of the initial calculations but are derived when the supply and use tables are created and are analysed when balancing the system of supply and use tables, as described in section 3.2.2.

For most industries both constant prices and current prices are delivered from the source statistics where information is collected in current prices and then deflated with relevant indices. Information about prices mainly consists of Producer price indices (source 24) and Service price indices (source 25) although a variety of different indices are used. The main sources for calculating value added for market producers and producers for own final use is the Industrial production index (source 4), New orders and deliveries (source 5), the Service production index (source 8) and the Turnover statistics (source 7). However a lot of other sources are also used as described below.

The non-market production in the government sector is not calculated directly by industry but by COFOG[6]. In the domestic releases central and local government sectors are presented separately. However, government activities by industry can be derived by the connection between COFOG

[5]The main sources used in the calculations are described in more detail in chapter 10. The sources numbers refer to the number given in chapter 10.

[6] Classification of the functions of the government

and NACE[7] (Statistical Classification of Economic Activities) and are presented by industry in the ESA95 transmission programme to Eurostat.

4.1.1 Agriculture, hunting and foresting and fishing (NACE A+B)

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, and 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 in seven subgroups. To calculate constant prices the values in previous year's prices are extrapolated using the change in quantities.

The calculations of production in the ***fishing industry*** are based on monthly statistics on quantities and values from the National Board of Fisheries (source 3). Information is delivered on a very detailed level but in the calculations the development of the landing of the five main species of fish are used as indicators for the whole industry. Since the statistics only cover salt water fishing adjustments are made for cultivated fish and fresh water fishing. Constant prices are calculated by extrapolating the value in previous year's prices using the change in quantities.

Output in the ***forestry industry*** is regarded as being produced continuously over the entire period of production, not just when the timber is felled. Growing trees are treated as inventories of work in progress. They are transformed into inventories of finished stocks when they are mature. Output is composed of the production of the felling of trees together with the production of standing timber (net increment).

Information about sawmill timber and pulp wood products used in the saw mills and pulp mills are used as indicators for total production for the felling of trees. Sawmill timber and pulp wood delivered from roadside inventories as well as imports and exports of these products are adjusted for. For exports and imports data is available in foreign trade statistics. Information about sawmill timber data is collected by Statistics Sweden on a monthly basis and wood pulp data is collected by The Swedish Forest Industries Federation. Data on inventories of wood pulp is collected on a quarterly basis by Statistics Sweden. Statistics on inventories of sawmill timber are only available on an annual basis leading to model based calculations for the first to third quarters of each year. The calculations are first carried out in constant prices using data on quantities to extrapolate value added. Current prices are derived through using information on prices on sawmill timber and wood pulp.

Output of standing timber (net increment) in constant prices is derived from the total of cultivated forestry resources, which grow and are felled on forestry land. Gross increment is derived from annual data on the forest

[7] In this document NACE allways refers to NACE rev1.1

stand from the Swedish University of Agricultural Sciences. The annual data divided by four is used per quarter. The price used to calculate the gross increment value in current prices is the delivery prices of felled timber delivered to forest roadsides. The felling of trees is calculated as described above using information on the use of sawmill timber and wood pulp.

4.1.2 Manufacturing and mining (NACE C–D)

In the manufacturing industries value added in constant prices is calculated by using the Industrial production index (source 4) to extrapolate the value added for the same quarter previous year. To calculate value added in current prices, the monthly inquiry on New orders and deliveries (source 5) is used for extrapolation of the value added for a given industry). Industrial production index is mainly based on the survey on deliveries in the manufacturing industries which is then deflated using Producer price indices (source 24). The National Accounts calculations are made for 38 industries.

In the National Accounts some adjustments are made to the source statistics to enhance coverage and concepts. Since the source estimates deliveries rather than production adjustments are made for changes in inventories to take into account the production that is not delivered during the reference quarter but put into inventories as well as for the deliveries that are made from inventories that are not produced during the reference quarter. These adjustments are made based on the quarterly survey on Industrial Inventories and take into account the changes in inventories of goods in process as well as finished products. The source data only covers the production of goods in the manufacturing industries but not the production of services. For some industries in which the production of services is more substantial supplements are made for some products, e.g. for merchanting, using information about the export of services.

4.1.3 Energy (NACE E)

Calculations of electricity, gas, steam and hot water supply (NACE 40) are mainly done using data on quantities then reflating into current prices. A variety of price indices are used, e.g. relevant Consumer price indices (source 26) and Producer price indices. The short-term information is detailed and the main source is the Monthly electricity statistics (source 6). Other information used is Monthly fuel, gas and inventory statistics and information on imports of gas.

The Turnover statistics are used to extrapolate value added in current prices in NACE 41, Collection, purification and distribution of water. The Consumer Price Index for water is used for deflation. In Sweden waterworks are extensively integrated with seweage functions. Thus it is not possible to obtain data for waterworks separately and hence the industry covers both water supply and sewage disposal.

4.1.4 Construction industries (NACE F)

The approach to calculating production in the construction industry uses information about constant capital formation and repairs. The volume changes for investments and expenditures for purchased repair and maintenance services regarding buildings, structures, and houses are used as an indicator for value added in constant prices. Repairs are based on the assumption that they develop in the same way they did in the year t-2, (the most recent detailed annual calculation). Current prices are obtained by reflating with a weighted index, an index that is based on the implicit index for total gross capital formation in buildings, structures and houses as well as a number of construction indices reflecting the price change for repairs.

4.1.5 General approach on services (NACE G-O)

The main source to calculate services, NACE G-O, is Turnover statistics (source 7) in current prices and the related Service production index (source 8) expressed as volume change. The basis for the Service production index is the Turnover statistics. For deflation, a number of different indices are used like Service price index (source 25) and Consumer price index (source 26).

The information from the Turnover statistics and Service production index is used in the National Accounts to extrapolate value added in current prices and constant prices, respectively. The calculations are carried out on a detailed level for about 40 industries. Even if the Turnover statistics and Service production index form the main source other information such as quarterly financial statements for larger companies are also used as reference information in some industries. The following are those industries where Turnover statistics and Service production index are not used as the main source for the calculation of value added with attendant comments.

4.1.7 Financial intermediation (NACE J)

The source of the calculations for financial intermediation is based on quarterly surveys on banks and insurance companies respectively (source 9 and 10) issued by Statistics Sweden on behalf of The Swedish Financial Supervisory. FISIM is described in section 4.2.

For financial services directly measured, commissions etc (NACE 65), 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 65-67) and an index on funds.

Insurance services (NACE 66) 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 65-67 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 95 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 67) is model-based and is calculated as the weighted average of the development in NACE 65 (excluding FISIM) and NACE 66.

4.1.8 One-to-two dwelling houses and leisure houses (part of NACE 70.2).

The calculation of constant prices is based on a weighted volume indicator for the development of the stock of one-to-two dwelling houses and leisure houses. To calculate the development for one-to-two dwelling houses the number of completed dwellings are used, adjusting for modernising renovations and demolitions. For leisure houses information on building permits are used as a volume indicator. Current Prices for one-to-two dwelling houses is obtained by reflation using a weighted index of both dwelling forms. The indices are partial indices of Consumer Price Index.

4.1.9 Private households with employed persons, NACE P

Information on the compensation that disabled persons receive to employ personal assistants are the basis for the calculation of value added in current prices. There is no intermediate consumption in the industry, so the output value is equal to value added. Constant prices are compiled by deflation by an hourly wage index for the self-employed persons.

4.1.10 Non-profit institutions serving households (NPISH)

Value added for NPISHs is measured, in accordance with the definitions in ESA 95, using the cost method. The extrapolation method is used. Value added are first calculated 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 20) as well as information on capital consumption and payroll taxes. Consumption of fixed capital is calculated using a model based approach as described in chapter 8.2. Deflation is done using a wage index.

4.1.11 Production in the Government sector

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) (Total activity of central government source 11). Local government data is attained from quarterly inquiries based on a sample of about 80 out of 290 municipalities and complete coverage of the 20 county councils (source 12, 13).

Sweden 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 monthly balance data of Monetary Financial Institutions (MFI), compiled by Statistic 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 448/ 98 of 16 February 1998 and thus uses the following three components:

Average stocks of loans and deposits for MFI except the central bank and sector 123 (Other financial intermediaries, OFI, except insurance corporations and pension funds,) are included.

Accrued interest for MFI (except the central bank and OFI) by user sectors is included.

The internal reference rate given by the ratio of interest receivable on loans to the stocks of loans between MFI (except the central bank and OFI) is included.

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

To calculate the reference rate, quarterly, Swedish market rates are used. The rates that are used are STIBOR (Stockholm Interbank Offered Rate 3-month period), treasury bonds of 5-years duration and the government lending rate. The amount of interest, payable and receivable, is calculated using the Riksbank's deposit and lending rates upon the stock data. Information on profit and loss account data from the Swedish Financial Supervisory Authority is used for cross-checking the results of the FISIM calculation.

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.

The level of detail and quality of the components necessary for FISIM import and export calculations are not available in Sweden. The result of the external reference rate calculations, the ratio of interest received on

loans from non-resident credit institutions plus interest paid on deposits to non-resident credit institutions to the corresponding stocks of loans, are very volatile and therefore not suitable for use. The volatility probably stems from the financial reports of the non-resident branches. The level of detail of these reports is different from the domestic one. The Riksbank's Balance of Payments data on interest inflow and outflow by sector is used to calculate import and export for FISIM. The ratio of FISIM to accrued interest for each domestic sector is used to calculate inflow and outflow for FISIM. Only Monetary Financial Institutions (MFIs) export FISIM. FISIM between resident and non-resident MFIs are recorded in terms of net results. Therefore only one third of the ratio of FISIM to accrued interest is used for this sector.

Municipalities and county councils' loans in foreign currency are used as a key to divide FISIM into the two sub-sectors of local government.

On a quarterly basis FISIM is allocated by industry through the supply and use analysis.

4.3 Taxes less subsidies on products

In calculations of GDP production approach, value added is valued at basic prices. Taxes and subsidies on products are added or subtracted, on an aggregate level in order 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 (Ekonomistyrningsverket, ESV) of the income of central government departments and agencies under revenue headings, which are updated on a monthly basis. Period reallocations must be undertaken in order to obtain the accrued value, since 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. This is calculated in the supply and use tables for the different uses. The calculations are made both in current and constant prices.

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, in accordance with 147 consumption purposes (COICOP[8]). The calculations are mostly based on extrapolation and many different sources are used to get indicators for the extrapolation. The main source is Turnover Statistics (source 7) which accounts for about 30 percent of total household consumption. Besides Turnover Statistics a lot of other sources are used. For some consumption purposes where one large company is dominant specific inquiries are used, or information is collected through the company's financial statements. For other consumption purposes like energy and cars, information from monthly and quarterly statistics compiled by Statistics Sweden are used. The main methods and sources for the calculations are described below with examples on consumption purposes where the method is used. However, the description does not cover in detail what method is used for the different consumption purposes.

Household consumption matrix

For a number of consumption purposes, mainly within clothing and footwear (COICOP 3) and furnishing, household equipment, and routine maintenance (COICOP 5) a matrix is used to split the turnover figures from the Turnover Statistics into product groups and to determine how much of these products are used by households.

The Turnover Statistics measure total turnover in each sub-industry. Since the industries sell a large number of different goods and services, and household consumption is calculated and recorded for each good and service individually, the trend figures for the different industries have to 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 Retail Trade Survey. By comparing the distributed values between two years for the same quarter, a trend is obtained for the good and service in question. These trend figures are linked to the different purposes for calculating the quarterly levels of household consumption. The values calculated through the matrix in current prices are deflated with Consumer Price Indices (CPI).

[8] Classification of Individual Consumption by Purpose

Other methods
When domestic production is almost exclusively used for consumption of the resident households, like it is 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 this way because there are no other good indicators available. The Turnover Statistics are used this way for some services, for example for consumption groups within transports (COICOP 7) like taxi, railway transportation and public transportation. This method is also used for electricity, gas and heating (COICOP 045) and financial services (COICOP 126) 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.

For some consumption purposes where one large company dominates, specific inquiries are used or information is collected through the corporation's financial statements. This for example provides the basis for calculating the consumption of alcoholic beverages and tobacco (COICOP 021, 022) prescription medicines (COICOP 06111), parts of communication (COICOP 08), gaming (COICOP 0943), and newspapers and stationery (COICOP 0952-54).

Household consumption of motor vehicles (COICOP 071) is calculated based on the administrative source, Statistics Sweden's vehicle statistics (source 14), 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 a number of different countries is used for domestic consumption abroad. Consumption expenditure by Swedes abroad is deflated by an average of consumer price indices for the countries of the most frequent visited tourism destinations.

5.2 Government final consumption, including split into individual/collective 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 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. The calculations are based on the records of the Swedish National Financial Management Authority (ESV) for the expenditure of departments and agencies of central government by type of expenditure, the so-called total activity of central government (source 11). The basis for these records 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 sector, where the national pension insurance funds constitute the main part of the sector, are based on forecasts made by the Social Insurance Office as well as annual financial statements.

The 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 12) and the survey for county councils is a census covering all units and also conducted by Statistics Sweden (source 13). In 2008 the local authorities comprised 290 primary municipalities, 18 county councils, 2 regions and 103 local federations. The calculations of the local government sector include the Swedish Association of Local Authorities, the Federation of Swedish County Councils and non-profit institutions belonging to the local government sector.

Since the third quarter 2007, volume measurements for government production have been introduced in the Swedish National Accounts on an annual basis as well as on a quarterly basis. According to the Eurostat decision, volume measurements are only used for the individual production. About 65 percent of the total production in the government sector is individual production in Sweden. On an annual basis 7 per cent of the individual production is not covered by volume measures. On a quarterly basis the information is scarce and the volume measurements are to a large extent based on forecasts or on estimates according to the last annual accounts. One area where forecast is used is for the consumption purpose Education (COFOG9 9). The annual volume measurement is based on number of students/ student hours and the quarterly estimates are based on forecasts using demographic data. This is believed to give relatively good estimates. The most important areas to get better information on a quarterly basis is purposes with a large weight like Old age (COFOG 1020), Sickness and disability (COFOG 1012) and parts of Health (COFOG 7). Old age and sickness and disability are also based on forecast using demographic data. For health where there is no information available on quarterly basis and the quarterly estimates are the same as in the last annual accounts. Work is ongoing to evaluate the existing methods both on annual and quarterly basis and to get better information, especially on a quarterly basis.

[9] Classification of the functions of the government

To determine constant prices for collective production hours worked is used for the major part that consists of compensation of employees. For the other items of consumption, such as sales, other assets produced for own account, and social benefits in kind, weighted indices based mainly on CPI are used.

5.3 NPISH final consumption

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 20). 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. Consumption of fixed capital have a model based approach (see chapter 8.2.1). 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.

5. 4 Gross fixed capital formation

Gross Fixed Capital Formation is calculated both by industry and by type of investment. Many different sources are used in the calculations although the major source is the Investment Survey (source 15) conducted by Statistics Sweden. Extrapolation methods based on the trends according to the sources are used for most parts of the calculations. Source values based on data on exports and imports are used directly for a few items, mainly ships and aeroplanes. For most parts the source statistics are in current prices and for deflation indices for domestic supply (ITPI) as well as a variety of other indices are used.

5.4.1 The Business Sector by type of investment

Machinery, equipment and transportation equipment

The investment survey produced by Statistic Sweden is used to account most investments in other buildings and structures, machinery, equipment and rail transportation for the business and household sector and it covers most industries and it is conducted three times a year: in February, May and October. The survey has been adapted to the investment definition of the Swedish National Accounts but disposals of machinery are only separately given once a year. The survey covers both completed and anticipated investment, as well as intangible investment, in order to gain a comprehensive picture of business investments. The source values are not used directly but as a basis for extrapolation of annual benchmarked levels in current prices. Deflation to constant prices is done using indices for domestic supply. The indices are weighted on a detailed level according to the most recent annual calculation for year t-2.

The industries agriculture, forestry and fishing are not covered in the Investment Survey. Calculations for these industries are to large extent model-based using annual information from The Swedish Board of Agriculture, The National Board of Fisheries and The Swedish Forest Industries Federation.

Housing
To calculate investments in housing, a model is used based on the number of apartments/ houses treated in terms of their commenced construction expenditures, normal construction, and completion time. The basis for the calculation is volume changes and current prices are obtained by reflation using a number of indices for construction.

Motor vehicle
A separate calculation is carried out for motor vehicles based on administrative source material. The main source for calculation of both investment and household consumption of vehicles are Statistics Sweden's vehicle statistics.

Software
The calculation of gross fixed capital formation in software is based on extrapolation with the NACE 72's production value (computer consultancy industry SNI72) in current prices as well as in constant prices. The output value is based on the Turnover Statistics and the deflator used is Service Producer Price Index for computer consultants.

Leasing
The capital item leased is recorded in accordance with the ESA as gross fixed capital formation in the leasing activity. The leasing charges are consequently entered in the National Accounts with a breakdown as to interest and amortisation costs. The calculations are based on both administrative and survey material. However, the sources used give no information about users' kind of activity. To get this split the investment survey is used.

5.4.2 Government Sector

Total central government activity, compiled by the Financial Management Authority (ESV), records investment in accordance with the National Accounts definitions grouped by buildings and structures, machinery, transport equipment and other equipment, research and development, and intangible investment.

The same surveys that are the basis for the calculations of consumption are the main source for the calculation of investment in the primary municipalities and county councils. Investment is calculated into a breakdown by buildings and structures and machinery and equipment, software purchased and produced for own account, and investment financed by leasing. The information from the sources are not used directly but are used as a basis for extrapolation of the value the same quarter previous year.

5.5 Changes in inventories and valuables

The calculations of changes in inventories are based on a number of sources. The main part of the stocks of inventories consists of inventories in the manufacturing industries and in retail and wholesale trade. A quarterly stock inquiry is carried out for the mining, quarrying and manufacturing industries (source 16). The establishment's report separately finished goods, raw materials and work in progress. A quarterly survey is conducted for retail and wholesale trade (source 17). Information is also available on a quarterly basis 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 all types of inventories the source data is the same in the quarterly accounts as in the annual accounts and levels form the source data are used directly in the quarterly accounts.

A total value estimate for assets in the form of valuables is calculated by using the trend of a weighted indicator based on net exports of valuables, Turnover statistics for domestic trade with antiques and a forecast on new production of valuables.

5.6 Imports, exports

Exports and imports are based on the monthly Foreign trade in goods statistics (Extrastat and Intrastat) (source 18), and the quarterly Foreign trade in services statistics (source 19). Some adjustments are made in the National Accounts in comparison to source data.

External trade statistics are delivered from the source statistics both in current prices and constant prices. The calculations of constant prices are in all essentials based on the export and import price indices (source 24). Since international trade in goods statistics only partly cover non cross-border trade, a few minor complementary sources are used in the National Accounts. This mainly concerns estimates on procurements. 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. 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 to collect data in a way that meet 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 greater consistency with data on production, consumption, etc. For Intrastat 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

[10] Combined Nomenclature

global f.o.b./ f.o.b.-calculation, according to the ESA 95 manual, is not carried out.

For trade in services the estimates in the National Accounts are based on the trade in services survey and the complementary calculations that the Riksbank is responsible for. Data from the trade in service statistics are produced in current prices and calculations in constant prices are made by the National Accounts department. Since no indices are available for trade in services other indices have to be used. One third of the products are deflated with Service price indices (source 25) for the corresponding industry and one third are deflated by labour cost indices. Other than these, indices for export and imports of goods and the Consumer price indices are used.

There are a few differences in the trade in services according to the National Accounts and the Balance of Payments. These discrepancies are due to different valuation of freights, under coverage in the sources and manual differences. 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. Further more some adjustments are made on transportation services e.g. data on exports of port and navigation services are calculated on the basis of statistics covering ships entering and leaving ports. This item is not covered in the survey on trade in services. Travel services are recorded gross in National Accounts according to ESA but net in the Balance of Payments. Financial Services Indirectly Measured (FISIM) that is a part of National Accounts is not yet introduced in the balance of payments.

The distinction between EU-member states and non-member states is based on the information collected in the Foreign trade in goods statistics and foreign trade in services statistics. The split into member states and non-member of the Monetary Union as well as EU institutions is not submitted in the QNA ESA95 transmission (table 0120 ant 0221).

Chapter 6 GDP components: the income approach

Presently it is not possible to calculate GDP with regard to the income side of the Swedish National Accounts since there is no reliable information on Gross operating surplus and Gross mixed income. These items are calculated as a residual at an aggregate level. Compensation of employees is calculated on a detailed level and published in the same breakdown as production and hours worked.

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

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 20). For central government and local government the sources used are the same as 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 as well as LAPS. For the central and local governments direct values are mainly used. However for the total economy, as well as for the business sector and NPISH, the source is used to extrapolate quarterly values from 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 NA 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 calculated on the basis of the amount 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 with regard to local government. For central government and municipalities, information on actual payments is used. 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 government and municipalities actual values are collected in the data sources.

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 (source 11) (ESV) 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 in order 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.

6.3 Gross operating surplus & mixed income

The sum of 'Gross operating surplus' and 'Gross mixed income' is derived as the residual between GDP and the sum of compensation of employees (D.1) and taxes less subsidies on production (D.2 – D.3).

Chapter 7 Population and employment

7.1 Population

The population presented in the National Accounts are compiled on the Population statistics, which are based on the population registration, administrated by the Tax Authority. The population in National Accounts refers to the average between the beginning and end of the reference period (quarter).

7.2 Employment: persons

Employment in the Swedish National Accounts refers to persons employed, no estimation of number of jobs is compiled. Three sources are used on a quarterly basis, the Labour Force Survey (LFS) (source 21), Short-term employment (KS) (source 22), Wages and salaries in the private and public sectors (KL)(source 23). Direct calculations of levels are not done on a quarterly basis. Instead the method used is to extrapolate the level from the same quarter the previous year with the trends formed in accordance with the sources. When calculating employment as well as hours worked estimates are carried out separately for total levels as well as for the separate industries and sectors.

The Labour force survey is the source for estimating the quarterly employment in NA for the whole economy. The trend used for extrapolation is the growth rate for employed persons 15-74 years according to the LFS. In the LFS data used in the National Accounts Swedish residents (one-year rule) working abroad are excluded. Supplements for non-residents working in Sweden are only done on an annual basis. In the quarterly calculations these follow the same trend as the total economy.

To make more accurate estimates for detailed economic activities enterprise surveys are used to calculate number of employees. The secondary sources are Short-term employment, Wages and salaries in the private sector, Salaries in the Government sector and Salaries in the primary local authorities and county councils. Employed persons, as well as hours worked, is calculated separately as employees and self employed persons at a breakdown of 51 industries. However in the domestic release, on 31 industries, there is no split on employees and self-employed persons they are presented together as employed persons. The reason for this is the lack of quality in the estimates of self-employed persons at detailed level.

Self-employed persons are based on the LFS for the total as well as for the industry breakdown. There is a conceptual difference between self-employed persons according to the LFS and according to the National Accounts concerning self-employed persons working in their own corporation. In National Accounts persons working in their own

corporation are regarded as employees and not as self-employed persons as they are in the LFS.

7.3 Employment: hours worked

The volume of hours worked on annual as well as quarterly basis is compiled together with the number of employed persons. As for employed persons the levels are not calculated directly on quarterly basis, rather the extrapolation method is used.

The Labour force survey is the source for estimating hours worked for the whole economy. The treatment of hours worked for Swedish residents working abroad and non-residents working in Sweden corresponds is the same as for employed persons (see 7.2).

To make more accurate estimates for detailed economic activities hours worked according to the enterprise surveys Wages and salaries in the private sector, Salaries in the Government sector and Salaries in the primary local authorities and county councils are used.

Hours worked by self-employed persons are calculated using the LFS for the total economy as well as for the industries. Reclassification are made for hours worked by persons employed in their own company analogues with the treatment of number of self-employed persons.

Two methods are used to calculate the volume of hours worked in the Swedish economy:

- Direct method, the total hours actually worked are estimated according to the trends of LFS and the enterprise statistics

- Accounts method, data on the number of employed persons are combined with average hours worked according to the LFS and the enterprise survey.

The direct method is used for the aggregates of market producers and total economy where the LFS is used. When calculating industries the accounts method is used, combining estimates on employees according to Short-term employment with actual working time according to LFS and “Short-term statistics, wages and salaries, private sector”. The accounts method is also used for estimates of hours worked in central and local government and also for Non-profit institutions serving households. The number of employees in the government sector and NPISH are based on administrative sources. To estimate the volume of hours worked the trend for quarterly working time according to LFS is used (Volume of hours worked = Number of employees x annual working time).

Hours worked in the hidden economy are on quarterly basis assumed to have the same development as the industry for which they are calculated.

Verifying the validity of employees and hours worked

The validity of employees and hours worked is verified by a direct method and an indirect method. The direct method is to compare the estimates from the different sources used in the calculations. The number of employed persons and hours worked are measured both by LFS and KL and number the of employees are also estimated in the Short-term employment statistics. The indirect method is to compare estimates of hourly wages and wages per employee according to the NA with survey estimates of wages, salaries and labour costs. There are some conceptual differences between these estimates, for instance wages in NA is not on accrual basis, nevertheless the comparison indicates lack of consistency between employees/ hours worked and wages and salaries.

Chapter 8 From GDP to net lending/borrowing

In the Swedish National Accounts net lending/ borrowing (B.9) is calculated through the external balance. The residual between net lending/ borrowing according to the external balance and according to the domestic sectors is distributed to the non-financial corporation sector. The main sources used are - Foreign trade in services (source 19) and other Balance of Payments statistics like, Survey on Foreign Direct Investment (annual), monthly survey of direct investments, Balance statistics for non-financial corporations.

8.1 Primary income from/to the ROW (D.1 to D.4), gross national income

GNI is calculated by adjusting GDP for primary income to and from the rest of the world. The data for most of the transactions are collected from the balance of payments statistics, BoP. Statistics Sweden collects the bulk of the BoP statistics on commission by the Riksbanken. To get gross accrual figures on taxes to and subsidies from EU data from the Swedish Financial Management Authority (ESV) are used in the National Accents instead of BoP data.

8.1.1 Compensation of employees (D.1) from/to the ROW

From 2003 these data are part of the quarterly survey on external trade in services. Wages and salaries earned and also other remunerations are included. Wages for construction work is recorded separately. Swedish building sites in the rest of the world are considered as producer units in the RoW. Wages paid to Swedish building workers employed on these sites are therefore considered as coming from the rest of the world, even if they are paid from the Swedish firm. Information concerning embassy personnel is obtained from the Ministry of Foreign Affairs. ESA 95 requires gross recording, and a calculation on taxes is made at the processing unit of Statistics Sweden. The estimate however covers wages and salaries earned in a foreign country regardless of the length of the stay. ESA 95 allows for a maximum of one year. This difference is considered to be of minor significance in practice.

8.1.2 Taxes on production and imports (D.2) to the ROW

Data on taxes only arise on the outflow side. They consist of customs duties, VAT, agricultural levies and sugar levies, which make up parts of Sweden's dues or contributions to the EU. These are recorded as transactions precisely affecting taxes on production and imports. The GNI levy, also part of Sweden's contributions to the EU, is recorded instead as a current transfer. Data are obtained directly from the ESV (see below).

8.1.3 Subsidies (D.3) from the ROW

The data on subsidies apply to both subsidies on products and other subsidies on production from the EU and therefore only affect the inflow side. It is mainly a question of subsidies to agriculture. These data are obtained from the ESV, which compiles the basis for central government net lending. The material also comprises that part of the activity of central government, which is not recorded in the national budget. The national budget records the subsidies that departments and agencies of government pay out but are financed by EU funds. The departments and agencies are obliged to record types of expenditure under budget headings. This enables the ESV to determine how payments are distributed as between subsidies and other expenditures.

8.1.4 Property income (D.4) from/to the ROW

Interest (D41)

The data in the balance of payments statistics on financial returns are structured in accordance with the main items in the financial balance. Thus, three types of interest income and expenditure are distinguished.

Interest flows linked to direct investment. These represent interest on loans in a direct investment relationship. Interest paid to affiliated companies, such as intra-group banks etc., is included. The interest is recorded on an accrual basis.

Interest flows linked to portfolio investments excluding financial derivatives. These comprise interest on bonds and money market instruments that are recorded in Swedish kronor and foreign currency and specified by resident sectors and rest of the world. Interest on Swedish bond issues in foreign currency abroad is recorded as accrued interest. Riksbanken carries out separate calculations in order to obtain accrued interest for interest on stocks that arises mainly through trade, e.g. securities issued by the State and housing finance institutions and securities issued abroad.

Interest on loans etc., including interest on financial derivatives Recording has been mainly on an accrual basis.

The data are collected mainly by direct reporting by transactors who have stocks of assets or debt vis-à-vis the rest of the world involving large amounts; a guide value, but not an absolute limit, is approx. SEK 200 million. All the major banks report information on interests by country. Estimates for other monetary financial institutes are calculated based on the reports from the banks. Non-financial enterprises are covered by the survey on Balance Statistics for non-financial companies (BAST).

Distributed income of corporations (D42)

The distribution concept covers, apart from interest, dividends on shares in portfolio investments, repatriated share dividends and reinvested profits from direct investments.

Returns on portfolio shares comprise distributions from holdings amounting to less than 10 percent of the share capital or shareholder voting rights. The distribution is recorded on an accrual basis. The data are obtained

for debt securities by direct reporting, while earnings on equity securities are based on calculation.

Dividends on shares in a direct investment enterprise are recorded partly in respect of the date of payment and partly when the dividends are payable. Returns on direct investment are calculated as the net amount of financial income and costs and are recorded after tax in the host country. Depreciation, capital gains and capital losses are not included. An annual sample survey is conducted on direct investment in the rest of the world that makes use of a register continuously updated from Statistics Sweden's register of direct investment companies, newspapers and magazines etc. Direct reporting agents for the continuous reporting are selected, inter alia, with the aid of the survey register. Data collected on financial services are supplemented by a calculation of brokerage commissions from deals in shares.

Reinvested earnings on foreign direct investments to/from the rest of the world (D43)
Reinvested earnings constitute that part of a company's results that are not distributed to the shareholders but are retained in the company. These earnings are calculated as the difference between the company's total profit after tax and the distributed profit. Data on distributed profits are obtained via annual direct reporting as discussed above. Whereas dividends are recorded by date of payment, reinvested earnings are attributed to the year during which the company declared the profit.

Property income attributed to insurance policy holders (D44)
This income comprises the total of primary income generated by investment in so-called insurance technical reserves. The investment return is attributed to the insurance policyholders as property income. However, this is retained in practice by the insurance companies and pension funds and must therefore be treated as though the policyholders had paid premiums and contributions of a commensurate amount to the companies and funds in question. These premiums and contributions are added to the premiums and contributions actually paid.

Statistics Sweden obtains information through its collection of data from the insurance companies on how they invested the reserves, which they do mainly by way of portfolio assets. The returns are also reported but are not recorded separately. The stock of life insurance policies held by the household sector in the rest of the world is calculated and the returns to shares and other assets are allocated, though these are also not recorded separately.

Rents on land and on sub-soil assets (D45)
The rents received by landowners constitute a form of capital income; but not the rent on buildings on the land in question, which is treated as a service. The same applies to royalties, which the owner of deposits of minerals and fossil fuels collects by granting licences to other institutional units for the exploration or exploitation of such deposits. These transactions are not applicable in the case of the rest of the world. It follows from the accounting rule that transactions between residents and non-residents for land and sub-soil assets are deemed to occur between resident

units. In that case, the non-resident party accrues a financial claim on a notional resident unit according to BPM5, 312. It is considered that this property income, if it exists at all, is of minor significance as far as Sweden is concerned.

8.2 Consumption of fixed capital (K.1), net national income, acq. less disp. of non-financial and non-produced assets (K.2)

By definition, net national income is calculated by the subtraction of consumption of fixed capital (K.1) from gross national income (B.5*g) as derived in section 8.1.

8.2.1 Consumption of fixed capital (K.1)

Since the third quarter 2007 capital stocks are calculated on a quarterly basis. The calculation of consumption of fixed assets at Statistics Sweden is done by use of a Perpetual Inventory Method (PIM) with geometric depreciation rates. The method is used for data as far back as 1993.

The consumption of fixed assets, K1 is calculated in current prices according to the following formula:

$$K1 = \delta t \bullet N + (1 - 2\sqrt{1-\delta}) \bullet GFCF$$

where δt is the geometric rate of capital consumption. This rate is kept fixed over time if no specific information on changes in the rate is available. GFCFt is the gross fixed capital formation during the year. The GFCF of the year is assumed to be in service half of the year on average. The net stock at the end of the year is also equal to the net stock at the beginning

of the next year in constant prices(from the previous year) is calculated according to the following formula:

$N_{t+1} = N_t + GFCF_t - K1$

8.2.2 Acquisition less disposals of non-financial and non-produced assets (K.2)

Acquisition less disposals of non-financial non-produced assets are in the Swedish National Accounts only recorded for the domestic sectors. No transactions with other countries are registered due to lack of information. For instance, for intangible non-produced assets like patented entities, it is not possible to distinguish between what is payments for patented entities and what is payments for the use of a patent. Today no split is done between the two and the collected values are recorded as trade with services as a whole.

8.3 Current transfers from/to the ROW (D.5 to D.7), net national disposable income (B.6n)

By definition, net national disposable income is calculated by the subtraction of net current transfers from/ to the rest of the world (D.5 to D.7) from net national (B.5*n) income as derived in section 8.2.

8.3.1 Current transfers (D.5 to D.7) from the ROW

In the National Accounts external balance the Balance Of Payments statistics are used in the quarterly as well as the annual accounts.

8.3.2 Current transfers (D.5 to D.7) to the ROW

In the National Accounts external balance the Balance of Payments statistics is the main source for current transfers to the rest of the world. For a few items like the GNI, fee information from ESV is used on quarterly basis because it better complies to the accrual principal.

8.4 Adjustment for the change in net equity (D.8), net saving (B.8)

This item is not yet calculated in the Swedish QNA.

8.5 Capital transfers (D.9), net lending/borrowing (B.9)

Capital transfers (D.9) from/ to the rest of the world are derived by summing up capital transfers of the private and the public sector as published in the Swedish balance of payments. In the Swedish National Accounts net lending/ borrowing (B.9) is calculated through the external balance. The residual between net lending/ borrowing according to the external balance and according to the domestic sectors is distributed to the non-financial corporation sector.

Chapter 9 Flash estimates[11]

9.1 Flash GDP and employment estimate

Statistics Sweden has published National Accounts in a flash report version for the second quarter of every year since 1996. Both the production side and the expenditure side are calculated, and both constant and current prices are published since 2008. Only fixed prices were calculated and published prior to 2008. Compared to ordinary quarterly publishing, the expenditure side of the flash report version is published at the same level of detail while production and employment are published on a somewhat more aggregated level. The publication takes place about 30 days after the end of the quarter. The flash report calculations started by commission of the Swedish Ministry of Finance when a reorganisation of the budgetary year conferred that relevant National Accounts information was not available as the basis of forecasting work. There was not time for ordinary publication of the second quarter to be able to serve as a forecasting tool in the budgetary procedure.

The source data for the flash report calculations are more incomplete compared to the ordinary quarterly calculations. The amount of data available for the calculations varies among different areas, due to certain areas being treated by monthly statistics and others by quarterly statistics.

For areas covered by monthly statistics two of the quarters' three months are usually available for the National Accounts calculations. This applies to industrial manufacturing and production in the energy industry, as well as housing investments. This also applies to employment calculations to a certain extent, but estimates of total persons employed and total hours worked are based on information for an entire quarter from the Labour Force Survey. For the flash report, foreign trade in goods are based on the ordinary goods-distributed foreign trade statistics for two months and the flash statistics, based on a more limited survey of the quarter's last month.

In those cases where the data is made up of quarterly statistics, the data used have more imputed values than in an ordinary delivery. For example Foreign Trade in Services is handled in this way.

Certain areas have no or very little information available for the flash calculations, and then the estimates are based to a great extent on models and evaluations. Such are the conditions applying for municipal consumption in current prices, changes in inventories and production in forestry and financial services. The gross fixed capital formation has a large part of the calculations for industrial investments in enterprises investment forecasts as well as ordinary second quarter estimates are based on such material.

There is a three month Consumer Price Index and Producer Price Index for calculation in constant prices. The Service Production Price Index, a quarterly survey, uses a forecasting model.

[11] For a definition of flash estimates see footnote in section 1.2

9.1.1 Results of Flash estimates 2001-2008

Table 1 shows the difference in volume changes between the Flash Report Calculation and the ordinary quarterly calculation for the second quarter for years 2001-2007. The revisions to GDP have been moderate during this period, on average amounting to 0.2 percentage points in absolute numbers. On the other hand, revisions have been extensive for individual sections.

Table 1 Revisions of the Flash Report

The difference between the Flash Report and subsequent quarterly calculations (actual volume development according to the Flash Report less actual volume development in ordinary quarterly calculations) Using positive numbers mean that the Flash Report has overestimated the development and negative numbers mean that the Flash Report has underestimate the development.

	2001	2002	2003	2004	2005	2006	2007	2008
Resources								
Value added market producers and producers of own final use	0,5	-0,3	0,4	-0,1	-0,1	0,2	0,2	0,6
Value added central government and social authorities	0,0	0,5	0,3	0,1	-3,5	1,0	0,0	-1,7
Value added local authorities	0,1	-0,1	-1,4	-0,9	-0,4	-0,4	-0,2	-2,1
Value added NPISH	-2,0	0,8	-0,2	1,0	0,6	-0,6	0,6	1,0
Imports of goods and services	0,4	-2,9	-2,8	-1,5	-1,1	0,9	0,3	1,4
Uses								
Household consumption	0,9	1,0	0,6	0,3	-0,3	0,0	-0,2	0,0
General government consumption	1,2	-0,2	-0,7	0,1	-0,2	-0,7	0,0	-1,0
Gross fixed capital formation	-0,3	-4,2	-0,8	-1,1	1,8	0,0	-0,6	-0,3
Changes in inventories	0,4	-0,2	0,0	0,6	-0,2	0,6	0,3	0,2
Exports goods and services	-1,4	-1,4	-1,8	-3,2	-1,1	0,5	0,4	1,3
GDP	0,4	-0,1	0,2	-0,2	-0,1	0,2	0,1	0,0

Between 1998 and 2009 Statistics Sweden publishes a monthly activity index for the economic activity in the economy (AI). The index was based on a number of monthly indicators.

Chapter 10 Main data sources used

As a background to the information of the main sources for QNA a brief description of Statistics Sweden's Business register (FDB) is given. The FDB provides the sampling frame for statistics produced by Statistics Sweden. This applies in particular to 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 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 for statistical inquiries as regards coverage, industries and size groups. The register serves as a source for name and address data for the enterprises, establishments and/ or activity units to be covered by various inquiries.

In January 2008 there were about 950 000 enterprise units and about 1 020 000 establishments units in the database. Most surveys use the sample frame in March for the present year.

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 on 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 slaughter-houses in Sweden
Periodicity: Monthly
Time of availability of results: 45 – 60 days
Main variables used in QNA: Quantities and prices on the main cattles, milk and egg
Further adjustments made to the survey data: -

Source 3: Swedish sea-fisheries

Link to surveys undertaken at the European level : -
Type of source: Administrative
Population and sample: Covers all fisheries in Sweden
Periodicity: Monthly
Time of availability of results: 30 days
Main variables used in QNA: Quantities and values on the main species
Further adjustments made to the survey data: -

Source 4: Industrial production index

Link to surveys undertaken at the European level: According to Council Regulation (EC) no 1165/ 98, concering short-term business statistics
Type of source: Survey
Population and sample: Same as in New orders and deliveries in industry
Periodicity: Monthly
Time of availability of results: 40 days
Main variables used in QNA: Production indices, volume changes
Further adjustments made to the survey data: Adjustment for changes in inventories to better reflect the production value rather than deliveries. For some industries in which the production of services is more substantial supplements are made

Source 5: New orders and deliveries in industry

Link to surveys undertaken at the European level :According to Council Regulation (EC) no 1165/ 98, concering short-term business statistics
Type of source: Survey
Population and sample: The population is all enterprise units with at least 10 employees in (NACE 10-40) the sample consists of 2 100 enterprise units.
Periodicity: Monthly
Time of availability of results: 40 days
Main variables used in QNA: Production indices, value changes by industry (NACE 10-37)
Further adjustments made to the survey data: Adjustment for changes in inventories to better reflect the production value rather than deliveries. For some industries in which the production of services is more substantial supplements are made.

Source 6: 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 1 800 establishments are surveyed (all establishments with an annual use that exceed 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 7: 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
Population and sample: The population is all enterprise units within NACE 41, 50-93, except NACE 65-67, 70.201 and 91. The sample is about 13200 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 8: Service production index

Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: Same as Turnover Statistics
Periodicity: Monthly
Time of availability of results: 50 days (45 days for internal use)
Main variables used in QNA: Turnover trends, volume change by industry
Further adjustments made to the survey data: -

Source 9: 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: No separate publication, data are sent to NA 45-55 days after the quarter.
Main variables used in QNA:
Further adjustments made to the survey data: -

Source 10: 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: No separate publication, data are sent to NA 45-55 days after the quarter.
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 11: Total activity of central government (also used for central government value added and 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 12: Quarterly survey on municipalities (also used for value added and wages and salaries in municipalities)

Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: Covers about 80 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 13: Quarterly survey on county councils (also used for value added and 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 14: Statistical register for vehicles

Link to surveys undertaken at the European level: -
Type of source: Administrative based on 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 15: The investment survey

Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: The population covers all enterprises, except NACE 1-5, 80-85, 91-93. The sample includes all enterprises with more than 200 employees and enterprises with 20 to 199 employees are sampled. The survey has a cut-off for enterprises with less than 20 employees.
Periodicity: Quarterly (3 quarters, 1st , 2nd, 4th)
Time of availability of results: 50 days (for internal use 45 days)
Main variables used in QNA: Changes in gross capital formation by industry and type of investment.
Further adjustments made to the survey data: -

Source 16: Industrial inventories

Link to surveys undertaken at the European level:-
Type of source: Survey
Population and sample: The population is all enterprise units with at least 10 employees in (NACE 10-40). Sample of 1300 enterprise units.
Periodicity: Quarterly
Time of availability of results: 45 days
Main variables used in QNA: Stocks of inventories as well as changes in inventories in current prices as well as constant prices.
Further adjustments made to the survey data: -

Source 17: Quarterly survey on inventories in retail trade and wholesale trade

Link to surveys undertaken at the European level: -
Type of source: Survey
Population and sample: Covers wholesale and retail trading enterprises. About 4 500 enterprises are surveyed. Enterprises with a turnover exceeding SEK 100 million are subjected to a full census.
Periodicity: Quarterly
Time of availability of results: About 45
Main variables used in QNA: Stocks of inventories in current prices as well as constant prices
Further adjustments made to the survey data: -

Source 18: Foreign trade - exports and imports of goods

Link to surveys undertaken at the European level: Intrastat - Council regulation (EEC) no 638/ 2004. - Commission Regulation (EEC) no 1982/ 2004 Extrastat - Council regulation (EEC) no 1172/ 95 - Commission Regulation (EEC) no 1917/ 2000
Type of source: Administrative and survey (custom data for Extrastat and survey for Intrastat).
Population and sample: Extrastat: For enterprises exporting and importing goods to and from countries outside the EU (third countries) data are used from the export notifications and import declarations which the enterprises supply to Swedish Customs in conjunction with the export and import of goods. Intrastat: Data are collected on a monthly basis from enterprises with total exports of goods to other EU countries or imports of goods from other EU countries to a minimum value of SEK 2 200 000 or exports to a minimum value of SEK 4 500 000
Periodicity: Monthly in current prices, quarterly in constant prices
Time of availability of results: 65 days in constant prices (preliminary data for internal use, 50 days)
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 19: Foreign trade in services statistics

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: For the 2007 statistics, the sample framework was approximately 47 000 enterprises and the sample of approximately 4 800 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 20: 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 21: The labour force survey

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. 6 800 000 individuals. The survey is based on a sample of about 21 000 persons each month.
Periodicity: Monthly/ Quarterly
Time of availability of results: Quarterly data 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.

Source 22: Short-term empolyment statistics

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 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. 19 500 establishments. The public sector are covered by a sample of 4 100 establishments
Periodicity: The inquiry is conducted every month and published quarterly
Time of availability of results: 45 days
Main variables used in QNA: Changes in the number of employees by industry.
Further adjustments made to the survey data: -

Source 23: Wages and salaries in the private sector

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 2008 survey was about 7 7800 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 24: 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 concering 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 25: 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: Populationen is all transactions concering 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 26: 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 serviced 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: -