Quality Report 2011

Austria

General information

Major changes and improvements to sources and methods of national accounts

Statistics Austria has implemented the statistical classification of economic activities NACE Rev. 2 as well as the revised classification of products by activity (CPA) into national accounts and has revised the corresponding time series from 1995 onwards. In accordance with Commission Regulation (EU) no 715/2010[1] the results were transmitted to Eurostat and published on 9 September 2011.

Statistics Austria's publications exceed the compulsory breakdown A64 derived from NACE Rev. 2 and P64 derived from CPA 2008, as specified by the Commission Regulation, by far. Published economic activities now amount up to 75. The more detailed classification involved additional effort concerning data compilation. The original claim to improve information on the services sector was fully taken into account.

The revision of national accounts was based on data for the year 2008, because of the availability of basic statistics in compliance with the updated classifications of economic activities (ÖNACE 2008) and products by activity (ÖCPA 2008). Moreover, calculations of input-output statistics for the benchmark year 2008 were subject to a detailed consistency check.

In addition to implementing the revised classifications, calculation methods for quality assurance purposes of gross national income (GNI) were improved. Foremost among these methods is the recalculation of own-account software, which increased gross domestic product and gross fixed capital formation. Beyond that, adjustments for exhaustiveness were revised for accommodation activities and own-account construction of dwellings.

General remarks on the implementation of the revised statistical classifications

The differences between previous and updated calculations arising from changes of statistical classifications can be put down to various factors, which are difficult to quantify in detail. In principal, the implementation of new statistical classifications should not affect the level of national accounts' aggregates. For a number of reasons, however, the results are not identical, because of changed classification assignment of statistical units in business register, changes in the reporting patterns of respondents but also in the accounting practice in national accounts. For example, more detailed classification concepts have an impact on results of national accounts, as the more selective distinction of products by activity reduces the problem of previously hidden inconsistency. Implementing new classifications therefore necessarily is accompanied by effects concerning level as well as structure.

[1] Commission Regulation (EU) No 715/2010 of 10 August 2010 amending Council Regulation (EC) no 2223/96 as regards adaptations following the revision of the statistical classification of economic activities NACE revision 2 and the statistical classification of products by activity (CPA) in national accounts

On the one hand, comprehensive revisions present good opportunities to carry out essential updating and adjustment measures. Changes resulting from measures of this kind usually can be retraced numerically (“clearly defined changes”).

On the other hand, differences result from revisions and supplements of business register, changes of the survey area of the underlying basic statistics along with changed reporting structures and adaptations of technical assumptions concerning quotas specific to economic activities (“statistical effects”).

Another reason for differences, particularly in 2008, stems from the availability of data from structural business statistics for the first time, as well as from improved results from other statistical surveys. Even in a regular calculation cycle without extraordinary revision the results after implementing data from structural business statistics differ from published preliminary figures. Improved empirical evidence is therefore reflected in calculations for 2008 too. In many cases preliminary results according to former statistical classification were replaced by results based on updated data and according to NACE Rev. 2. This makes exact retracing of differences impossible.

In summary, the transition to a new classification is a highly complex process, which goes beyond simple reclassification and is influenced by a multitude of aspects.

Changes in the revision policy and timetable for finalising the estimates; (domestic) publication date of the submitted numbers

Although not following the usual publication interval, revised national accounts data were published on the website of Statistics Austria on 9 September 2011 in accordance with Commission Regulation No. 715/2010. The regulation states, that annual and quarterly data covering the observation period from 2000 onwards shall be supplied by September 2011. In 2012 data from 1990 onwards shall be transmitted. The latest publication of Statistics Austria covers the period from 1995 onwards, which means that minimum requirements are exceeded. The available data base allows for the publication of time series starting in 1988. Annual data from 1988 to 1994 will be published at the beginning of 2012.

Changes to sources and methods to final estimates

The GDP time series from 1995 to 2009 was revised fundamentally in the course of the implementation of new classifications.

Gross domestic product
Comparison of GDP before and after the revision

Year	current prices, m. €			
	before revision	after revision	difference	in %
1995	174.613	174.794	181	0.1
1996	180.150	180.560	410	0.2
1997	183.480	184.321	841	0.5
1998	190.851	191.911	1.061	0.6
1999	197.979	199.266	1.288	0.6
2000	207.529	208.474	945	0.5
2001	212.499	214.201	1.702	0.8
2002	218.848	220.529	1.681	0.8
2003	223.302	224.996	1.694	0.8
2004	232.782	234.708	1.926	0.8
2005	243.585	245.243	1.658	0.7
2006	256.951	259.034	2.084	0.8
2007	272.010	274.020	2.010	0.7
2008	283.085	282.746	-339	-0.1
2009	274.320	274.818	498	0.2
2010		286.197		

Revised GDP is above its previous level by about 0.1 to 0.8%. Except for the year 2008, when revised GDP was 339 m € (0.1%) below its previously published level, this is true for the period of 1995 to 2009.

The main reason for the increased figures is enhancement of methods to assure the quality of gross national income (GNI). Foremost among these new methods is the recalculation of own-account software, which increased gross fixed capital formation and gross domestic product. In addition, adjustments for exhaustiveness were improved for accommodation activities and own-account construction of dwellings.

The implementation of the revised common statistical classifications was based on data of reporting year 2008, because of the availability of a complete set of basic statistics in compliance with the updated economic activities (ÖNACE 2008) and products by activity (ÖCPA 2008) classifications for the first time. Moreover, calculations of input-output statistics for the benchmark year 2008 were subject to a detailed consistency check.

Structural business statistics, which provide the most comprehensive source of data, were adapted for national accounts purposes for the year 2008 as usual. Test calculations based on former classifications confirmed the assumption that current data from structural business statistics were far below previous estimates. This was particularly the case for manufacturing, where just about one third of the difference could be traced back to the revision of classifications.

Detailed analysis of structural business statistics showed, that in some cases revised classification had changed the reporting patterns of respondents of companies surveyed. In some cases (e.g. installations and repair services) changes of reported output, which could not be explained by the new classification and the associated reclassification in the registers, required redistributions of output, intermediate consumption, gross value added, gross capital formation etc.

In total, all these effects influenced final results of revised calculations considerably.

The revision of classification in national accounts required comprehensive preparation work over an extended period of time, especially concerning backward data. The core objective was to follow the original production structures after reclassification. National accounts' input data (data from non-agricultural business statistics in 1995 and structural business statistics since 1997) were re-coded by means of business register's list of units, which were coded according to both ÖNACE 2003 and ÖNACE 2008.

In addition, double-classified data from structural business statistics were available for 2007. In case of problems of assignment, individual solutions like assignment according to the main business activity were strived for. Moreover the re-classification of units with high turnover was checked ad hoc and corrected if required.

As structural business statistics don't cover all economic activities, in some cases data from annual sales tax statistics enter national accounts. Data from sales tax statistics, which were coded according to both ÖNACE 2003 and ÖNACE 2008 were available from 2006 onwards. For previous years data could be re-coded for some economic activities.

The Production Approach

The consequences of the implementation of the revised statistical classifications differ depending on economic activity. A detailed description of significant quantitative changes follows below.

Gross value added in **Manufacturing** (ÖNACE C) was reduced by about 3 bn. € partly due to the reclassification of publishing activities (formerly part of ÖNACE 22, now ÖNACE 58 in section J – Information and Communication). About one third of the total difference of gross value added at basic prices between previous and updated calculations for 2008 can be put down to the revision of classifications.

In the division **Water collection, treatment and supply** (ÖNACE 36) some parts of municipal budgets were identified, which had not been introduced in national accounts. They were recorded under non-financial corporations (S.11). The corresponding revenues and capital expenditures had to be added from 1997 onwards.

Since 2008, a large part of corporations in the divisions **Sewerage and Waste collection** (ÖNACE 37-39) are collected from structural business statistics, instead of gathering the relevant information from other sources (non-agricultural business inquiry of 1995, sales tax statistics, statistics on accounting of public authorities, municipal budgets). However, data from some corporations is still not acquired in structural business statistics. This particularly applies to corporations, which are market producers according to ESA 95 and which are kind-of-activity units of municipalities. Data collection in structural business statistics is limited to institutional units. The institutional unit, which in this case is the municipality, is

classified in the sector General Government (S.13), and therefore not captured by structural business statistics. To avoid double counting, in-depth adjustments were required.

Construction (ÖNACE F) recorded considerable increases in output and intermediate consumption in 2008 compared to previous estimates. The reason for this is both revision of classifications and methodical improvements. As regards revision of classifications, the former Construction division is now divided into three new divisions (Construction of buildings, Civil Engineering and Specialised construction activities, ÖNACE 41 to 43). Moreover the former group 70.1 is now classified as group "Development of building projects" (ÖNACE 41.1) and the former class "Erection of roof covering and frames, tinsmiths and waterproofing" (ÖNACE 45.22) is now part of the division "Specialised construction activities" (ÖNACE 43). Furthermore, the estimation model for own-account construction of dwellings was further enhanced. As a result, gross value added increased by 200 m € on average in recent reporting years.

Implementation of updated data from structural business statistics has resulted in significant structural changes in production accounts concerning **Wholesale trade** (ÖNACE 46). Particularly in the group "Other specialised wholesale" (ÖNACE 46.7) a sharp decline in margin ratio was noticed. Although intermediate consumption decreased compared to first estimates too, implementation of structural business statistics resulted in distinctly lower gross value added (-1.2 bn €). The loss of gross value added was reinforced by reclassification of two units with total value added of about 160 m €, which are no longer part of wholesale, but changed to Computer programming, consultancy and related activities (ÖNACE 62). One of these units actually reprioritised its activity. The other one had to be reclassified over the entire time series, because its assignment to Wholesale trade proved wrong. Moreover tax and foreign trade statistics were used to identify units, particularly in the group "Wholesale of household goods" (ÖNACE 46.4), which were initially classified as non-resident, but contributed to domestic value added (abt. € 330 m). The activities of these units were examined closely for previous years too, and results were adapted accordingly. Overall the abovementioned structural changes and reclassifications resulted in a decrease in gross value added of about 590 m € in 2008, compared with previous estimates. Total trade reduced its gross value added by 457 m € in 2008.

The **Transportation and storage** section (ÖNACE H) was also affected by the revision of classification of economic activities. The former division "post and telecommunications" (ÖNACE 64) is now divided into two parts. Postal and courier activities remain in section H, whereas telecommunication (ÖNACE 61) is now part of Information and communication (ÖNACE J). Travel agencies were integrated into the Administrative and support service activities section (ÖNACE N). Overall, transportation and storage records much lower gross value added after the implementation of NACE Rev. 2.

In the **Accommodation** division (ÖNACE 55) estimates of renting of private rooms, which is not covered by structural business statistics, were improved. The estimation method was redesigned in cooperation with travel statistics experts. It provided higher results and thus gross value added was about 100 m € above the previously published result in 2008. The entire division's difference between current and previous gross value added amounts to 240 m €.

Financial and insurance activities (ÖNACE K) were hardly impacted by the classification revision. Only Trusts, funds and similar financial entities (ÖNACE 64.3), which comprise parts of former Management activities of holding companies (ÖNACE 74.15), were added. Gross value added in this group amounted to 130 m € in 2008.

Calculations in the division **Financial service activities, except insurance and pension funding** (ÖNACE 64) for 2009 are based on data from current structural business statistics and were supplemented by adaptations of financial intermediation services indirectly measured (FISIM), which account for about 50% of output of financial service activities. The updating of FISIM hardly had effects on gross value added of banks. However, a shift from intermediate to private consumption was recorded.
For methodical reasons, FISIM at current and constant prices can differ considerably. This is particularly the case, when interest rate trend is exceptional as it was in the wake of the global financial crises. In accordance with European legislation FISIM at constant prices is calculated using a volume index, which is based on deflated stocks of loans and savings. As these stocks are relatively constant, values at constant prices can be entirely different from values at current prices, which are determined by strongly fluctuating interest rates. In some cases, this can have significant impact on the implicit price index of aggregates.

Real Estate Activities (ÖNACE L) were affected by NACE Rev. 2 too. The former subclass "Management of land, dwellings and other real estate on a fee or contract basis" (ÖNACE 70.32-01) was split in two. The largest part of the subsection remained within Financial and insurance activities (ÖNACE K), whereas Facility management was reclassified into Administrative and support service activities (ÖNACE N).
Actual and imputed rents were revised too. The calculation of repair and maintenance of dwellings was based on new calculations of fixed assets of dwellings for the first time. The results were compared with data from HBS 2009/2010. The analysis of data revealed, that maintenance costs were overestimated since 2002, due to non-availability of statistics on the costs and financing of residential construction.
In addition, operating costs were calculated in a more sophisticated way. Estimates on average operating costs now exclusively relate to rented dwellings. The bias resulting from other legal titles was thereby avoided.
All in all revised Real estate activities recorded a decrease in gross value added by about 180 m €. The loss can be attributed to the reclassification of Facility management and of Development and selling of real estate (formerly ÖNACE 70.11), which is now part of division F (Construction).

An in-depth analysis of administrative data was carried out in the **Human health and social work activities** section (ÖNACE Q) by comparing sales tax with income tax. This additional data source resulted in an increase in gross value added by 245 m € in division 86 (Human health activities) in 2008. For residential nursing care activities and care activities for the elderly and disabled (ÖNACE 87.1 and ÖNACE 87.3) a completely new calculation method was developed. It is based on unit-based secondary statistics which contain all necessary data for calculating micro-economic production accounts. Nearly 95% of production value now derives from real data. This also ensures high coverage, as statistical imputation is now limited to the rest. The database additionally allows plausibility checks on very detailed levels as well as higher accuracy of differentiation concerning offered services in human health and social work activities. As a result of the analysis, gross value added increased by 380 m €.

The more detailed classification of economic activities made it necessary to check and correct sector allocation of activities (e.g. adult education, artistic activities) of production accounts in the NPISH sector. Gross value added of the sector slightly declined by 85 m € in 2008.

The Expenditure Approach

Changes of GDP based on the production approach usually have an impact on **private consumption** and capital formation. However, the revision of the classification of economic

activities hardly affected consumption of private households. Most of the changes, which resulted from balancing procedures in the course of creating supply and use tables, did not deviate from their usual extent. Private consumption (domestic concept) nevertheless was above its previously published level by about 880 m €. The reason for this is recalculation of some products after methodical changes, rather than revision of classification. As regards purchases of passenger cars, a shift from capital formation in vehicles to consumption by 700 m € was recorded (see capital formation in vehicles). Consumption expenditure on nursing homes grew by about 400 m € due to a comprehensive revision in this field.
Major changes of imports of services and of the item **consumption of residents abroad** resulted from a more detailed comparison between travel statistics and structural business statistics concerning package tours. Recalculations of production accounts concerning Travel agency, tour operator and other reservation service and related activities (ÖNACE 79) left gross value added unchanged, as both production and intermediate consumption decreased by the same amount. Similarly, imports of services fell significantly (-1.066 m €), whereas consumption of residents abroad rose to the same extent. Domestic consumption was not affected by these shifts.

A shift of **final consumption expenditure of government** from individual to collective consumption expenditure was recorded in time series before 2006. Collective consumption expenditures on higher education have been attributed to tertiary education so far, and thus to expenditure from individual consumption. A part of these expenditures is now transferred to research and development, which is assigned to collective consumption expenditure. A break in time series between 2005 and 2006 could be eliminated by applying this rule for years earlier than 2006.

Capital formation in equipment fell by 2.5 bn € in 2008, compared to first estimates. The difference is based on all abovementioned circumstances connected to the revision, which are hard to quantify in detail.
The implementation of updated data of basic statistics reduced domestically available supply of machinery and equipment (ÖCPA 28) considerably. Another factor was the creation of a new division for the Repair and installation services of machinery and equipment (ÖCPA 33). Furthermore, a disproportionally high increase in the supply of repair and installation services resulted in a shift of shares between intermediate consumption and capital formation in equipment.

Another reason for the decline in capital formation in equipment is a change of the way of accounting concerning installation costs. As costs for installation services are now clearly covered by ÖCPA 33 and part of fixed capital formation, all construction services are recorded as capital formation in construction, instead of recording a part of them as capital formation in equipment.

Finally, the decline in capital formation in equipment can be put down to more detailed classifications in input-output tables. The more selective distinction of commodity flows revealed, that in many cases parts of capital expenditure on machinery and equipment had to be transferred to intermediate consumption goods (machinery components etc.) to reach minimum values of intermediate consumption according to input statistics.

Investment in **information and communication technologies** (ICT) was firstly published in accordance with the current ESA transmission program, with time series beginning in 1995. Structural business statistics as well as commodity flow served as data sources. The items of OECD HS classification for ICT[2] goods were classified according to CPA subcategories.

[2] OECD Guide to Measuring the Information Society, Working Party on Indicators for the Information Society, November 2005

Relevant HS items then were integrated into the commodity flow application. In this way, gross capital formation in office machines, computers and peripheral equipment as well as in communication equipment was calculated.

In the course of classification revisions, **capital formation in vehicles** was revised too. A better distinction between capital formation and consumption is now ensured due to more detailed calculations of new and used passenger car registration statistics as well as calculations of leasing of motor vehicles. For the first time, a supply and use table for used passenger cars, based on used passenger cars statistics and data from the Austrian association of leasing companies was created. It showed that consumption of used passenger cars has been underestimated so far. Provided that sales are carried out by dealers, used passenger cars are recorded in consumption with their trade margins, as sales between households would offset. Only in case of sector changes, there would be no offset. This situation occurs if leased or company cars are sold to private households. Total selling price is then recorded in consumption, along with negative investments of leasing companies. This revision resulted in a shift from capital formation to consumption.

The level of **capital formation in construction**, particularly in **other buildings and structures**, increased considerably by 1.5 bn € in 2008. The increase is the result of the significant rise of output in the construction division. The updated level served as benchmark for calculating previous years' values.

Intangible fixed assets hardly deviate from their previously published values. However, its internal composition changed massively. The revision of calculation methods concerning own-account software led to a noticeable increase in investment of own-account software. In contrast, investment in purchased software dropped enormously due to a clearer definition of calculation methods.

Inconsistencies between production and exports as well as between imports and intermediate consumption were detected in the course of aligning **foreign trade with services** statistics with reports of units in structural business statistics. The resulting adaptations, together with revisions of source data concerning foreign trade with services induced a decrease in imports of services by 86 m € and an increase in exports of services by 74 m €, compared to previous estimates for 2008.

A need for revision of imports and exports of crude petroleum and electricity resulted from a comparison between **foreign trade** and production accounts. Imports of goods grew by 201 m € in 2008, whereas exports of goods shrunk by 100 m € in the same period, compared to last years' calculations.

Domestic **supply of goods and services** as a share of GDP declined since 1995. This development is in line with calculations prior to the classification revision. A trend reversal, however, was recorded between 2009 and 2010. Consumption expenditures of private households as a share of domestic supply grew at the charge of gross fixed capital formation. Within gross fixed capital formation there was a shift between capital goods.

Austrian National Bank (OeNB) fixed the results of cross-border property income for 2008. After a final revision, it was increased by 3.36 bn €. This in turn raised **gross national income** by the same amount.

The changes of gross fixed capital formation level and structure induced recalculations of **consumption of fixed capital**. In addition, depreciation rates from 1995 onwards were adapted due to more detailed representation of capital formation in equipment concerning information and communication technology.

All results concerning **employment** were revised in the course of a comprehensive analyse. For the first time, all ESA concepts of employment, i.e. employees, jobs, full-time equivalence and total hours worked are presented together. The sum of employees was slightly revised downward, because of data revisions by the Federation of Austrian Social Security Institutions (Hauptverband der österreichischen Sozialversicherungsträger). Economic activities were assigned using various additional sources (e.g. structural business statistics, business register).
The number of self-employed jobs was also slightly revised downward (2007 and 2008 excepted). As usual, the calculations were based on data from the Federation of Austrian Social Security Institutions. However, these data do not include information about assignments to economic activities. For that reason, this item had to be gathered from other sources, such as income tax statistics, business register, structural business statistics and labour force survey. To calculate unpaid family workers, labour force survey was used. For the years 2004 to 2006 unpaid family workers had to be supplementary estimated due to changed questioning in labour force survey that created a break in time series.

Volume of work of employees was significantly corrected upward, because of revisions of data on the amount of actual hours worked, which are necessary to calculate volume of work. The reason for this was the implementation of unpaid overtime hours, which were taken into account for the first time. In addition, the reconciliation of labour force survey and business statistics resulted in a revision of the correction factors used.

Due to an increase in the volume of work of employees, full-time equivalent employment dropped significantly, compared to previously published results. Whereas the revision had an effect on the level of full-time equivalent employment, the corresponding growth rates remained virtually unchanged.
Despite of the downward correction of the volume of work of self-employed persons, full-time equivalent employment slightly increased. This can be put down to a sharp drop of the average number of hours actually worked in full-time jobs, as their calculation was adapted too.