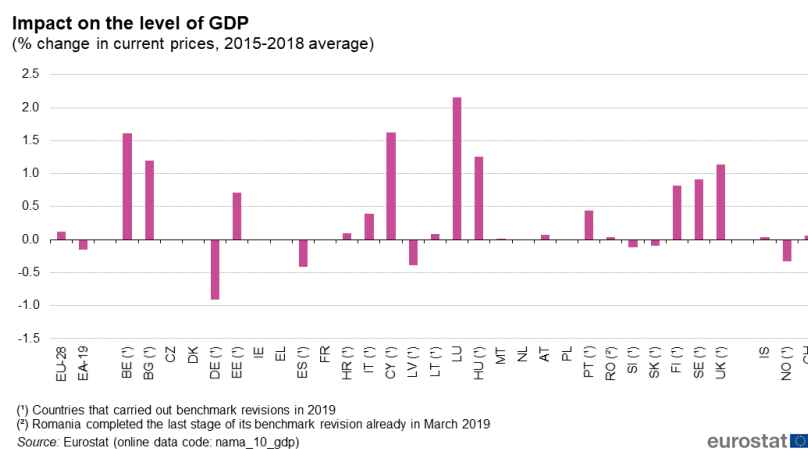


Annual national accounts coordinated 2019 benchmark revisions - impact on main GDP aggregates

Statistics Explained

Data extracted in October 2019



Impact on the level of GDP (% change in current prices, 2015-2018 average) Source: Eurostat (nama_10_gdp)

In 2019, 18 EU Member States and Norway, decided to carry out coordinated benchmark revisions of national accounts in line with recommendations of harmonised European revision policy (HERP). National statistical institutes (NSIs) took the opportunity to improve the quality of their national accounts estimates further by introducing methodological or statistical changes as well as using new data sources. This had some effect on countries' estimates of gross domestic product (GDP) and other important macroeconomic indicators, which in turn affected European aggregates estimates.

Following the publication of updated European main GDP and employment aggregates on 21 October 2019, this article analyses how the 2019 benchmark revisions changed main annual GDP and employment aggregates after last publication on 19 July 2019, focusing on euro area (EA-19) and European Union (EU-28), but also showing underlying revisions of country data.

As an overall outcome, it can be highlighted that effects of the 2019 benchmark revisions were much more limited than the previous coordinated benchmark revision introducing the European System of Regional and National Accounts (ESA 2010) in September 2014. Revisions carried out at the national level in 2019 were more varied and limited and partially compensated each other at European level.

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Background

Benchmark revisions are coordinated major revisions carried out at least once every five years to incorporate new data sources and major changes in international statistical methodology. In national accounts, they aim to ensure a maximum degree of consistency within national accounts, i.e. they should be implemented to obtain longest possible time series as well as consistency across Member States and between domains. In September 2014, all EU and most EFTA Member States disseminated the results of the revised national accounts as part of (ESA 2010) implementation. This coordinated benchmark revision of national accounts led to significantly higher levels of GDP in most countries due in particular to the capitalisation of research and development expenditures. The level of EU-28 gross domestic product (GDP) rose by 3.7 % for reference year 2010. Changes were analysed in more detail in [this article](#).

In the year 2019, 18 Member States, namely Belgium, Bulgaria, Germany, Estonia, Spain, Croatia (*informed Eurostat officially (in January 2020) that their 2019 revision should be considered a benchmark revision*), Italy, Cyprus, Latvia, Lithuania, Hungary, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden and the United Kingdom, as well as Norway, carried out coordinated benchmark revisions of national accounts. This is in line with the implementation of a harmonised European revision policy (HERP) and [practical guidelines for revising ESA 2010](#) data published in 2019. Even though some countries opted to implement their benchmark revisions already earlier (Denmark in 2016, Austria in 2017, France and Netherlands in 2018) or later, the 2019 benchmark revision covered countries that represented 65 % of the euro area (EA 19) and 69 % of the EU-28. Based on a questionnaire circulated to national statistical institutes in Spring 2019, it was expected that the impact of the 2019 benchmark revision on the European aggregates would be much more limited than in 2014, i.e. ranging between -0.3 % and 0.0 % for the euro area and +/- 0.2 % for the EU. This questionnaire also informed on the source of main expected changes in the countries such as improvements of the recording of flows vis-a-vis rest of the World sector, agriculture, government, financial services, and capital formation. Many Member States also improved the exhaustiveness of accounts and classification of units, as well as make more extended use of administrative data. Eurostat and NSIs also agreed on a communication strategy that uses the [main aggregates data](#) and [ESA 2010](#) websites to inform users on progress with the [coordinated benchmark revisions in 2019 \(Q&A\)](#) ; [data publications](#) and some [country particularities](#) .

Impact on the level and growth rates of EA-19 and EU-28 GDP

Since most countries transmitted their data affected by the 2019 benchmark revisions between the end of August and the end of September 2019 in line with the transmission deadlines for quarterly and annual main aggregates (i.e. 2 months after the end of the quarter and respectively 9 months after the end of the year), the incorporation of benchmark data into the European aggregates was actually progressive as announced on 31 July 2019 in the [GDP flash news release](#) . In this respect the European aggregates published on 6 September 2019 included benchmark revisions only from Germany, Estonia and Slovenia, while the subsequent estimates published on 21 October 2019 included not only the remaining publications of benchmark revisions but also the regular annual revisions from other countries. The overall results of 2019 benchmark revision implementation for the year 2015 can be summarised as follows: GDP at current prices for EU-28 was revised upwards only by 0.17 %, while for EA-19 the impact was -0.1 %. On average for this period revisions were 0.12 % and -0.15 % respectively. Table 1 shows revisions to the nominal GDP of the European aggregates for the period 2015 to 2018. Calculations of the revisions are based on the latest annual transmissions in September-October 2019, with incorporated benchmark revision data in comparison with the previous regular annual transmission.

Impact on nominal GDP of European aggregates
(% change, current prices)

	2015	2016	2017	2018	Average
EU-28	0.17	0.15	0.11	0.05	0.12
EU-27_2020	-0.03	-0.08	-0.06	-0.13	-0.08
EA-19	-0.10	-0.14	-0.14	-0.21	-0.15

Source: Eurostat (online data code: nama_10_gdp)



Table 1: Impact on nominal GDP of European aggregates (% change, current prices) Source: Eurostat (nama_10_gdp)

In addition to this, the annual volume growth rates of GDP (based on chain linked volumes with reference year 2010), were affected minimally, as shown in Table 2. The annual GDP volume growth rates for the period 2015-2018, changed only by -0.03 percentage points on average for both EU-28 and EA-19.

Impact on growth rates of GDP European aggregates
(change in percentage points, chain linked volumes, reference year 2010)

	2015	2016	2017	2018	Average
EU-28	-0.01	-0.02	-0.10	0.01	-0.03
EU-27_2020	-0.02	0.00	-0.11	0.01	-0.03
EA-19	0.00	-0.01	-0.10	0.01	-0.03

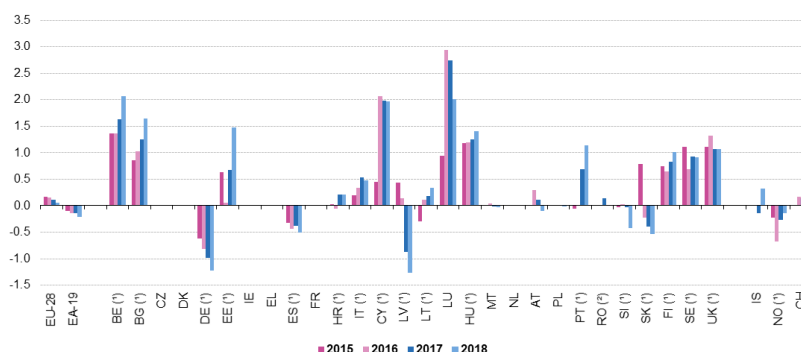
Source: Eurostat (online data code: nama_10_gdp)



Table 2: Impact on growth rates of GDP European aggregates (change in percentage points, chain linked volumes, reference year 2010) Source: Eurostat (nama_10_gdp)

At national level, changes to the nominal GDP are more visible and can be observed in Figure 1. It represents the revisions for the period 2015-2018 for European aggregates, as well as Member States and EFTA countries .

Impact on the level of GDP
(% change in current prices)



(*) Countries that carried out benchmark revisions in 2019
(*) Romania completed the last stage of its benchmark revision already in March 2019
Source: Eurostat (online data code: nama_10_gdp)



Figure 1: Impact on the level of GDP (% change in current prices) Source: Eurostat (nama_10_gdp)

Among countries which carried out benchmark revisions, the highest average impacts for the period 2015 to 2018 on GDP levels were noted for Belgium and Cyprus (both +1.6 %), Hungary (+1.3 %) and Bulgaria (+1.2 %). Higher negative revisions were observed for Germany (-0.9 %), Spain and Latvia (both -0.4 %) as well as

EFTA country Norway (-0.3 %). Luxembourg, even though it did not carry out a benchmark revision, have also revised its GDP significantly (+2.2 %), due to globalization related accounting effects, i.e. recording of activities of multinational companies. All the observed patterns across countries should be analysed together with their [provided methodological explanations](#), which would reflect improved information for the estimates. Figure 1 also shows the pattern of the revisions at national level over the years, and that the latest periods (years 2017 and especially 2018) were revised the most. These significant changes were usually due to other factors than the benchmark revisions (i.e. usually changes in source data which is also common for routine revisions). The assessed impact of countries benchmark revisions on European GDP aggregates was expected to range from -0.2 % to +0.2 % on EU-28 GDP and from -0.3 % to 0 % on EA-19 GDP according to initial estimation in June 2019. The average GDP revisions of +0.1 % for EU-28 and -0.1 % for EA-19 confirm that the impact was fairly estimated and is within the limits.

Revision of GDP and main expenditure components

One of three approaches of calculating GDP is expenditure approach, where the sum of all final goods and services purchased is taken into account in an economy over a set period of time. This includes final consumption expenditure of households and non profit institutions serving households (NPISH), general government final consumption expenditure, as well as gross fixed capital formation (GFCF), plus exports less imports as trade balance item. Figures 2 and 3 demonstrate how GDP components by expenditure were affected by incorporation of benchmark revisions as an average of the period 2015-2018. Estimates for these series are typically quite volatile, so higher revisions are to be expected. As shown at Figure 2, at EU-28 and EA-19 levels, final household and NPISH consumption expenditure were revised by -0.2 % and -0.4 % respectively. At national level, highest revisions were noted for Belgium (+2.3 %), Sweden (+2.1 %) and Croatia (+1.9 %). Bigger negative revisions were observed for Germany (-1.8 %), Cyprus (-1.7 %) and Finland (-0.8 %). General government final consumption expenditure was revised the most for the United Kingdom (+3.2 %), Hungary (+2.1 %) and Italy (+1.5 %), while the negative pattern was more pronounced for Slovakia (-3.4 %). The impact on EU-28 and EA-19 general government final consumption expenditure was respectively 0.9 % and 0.5 % on average for the period 2015-2018.

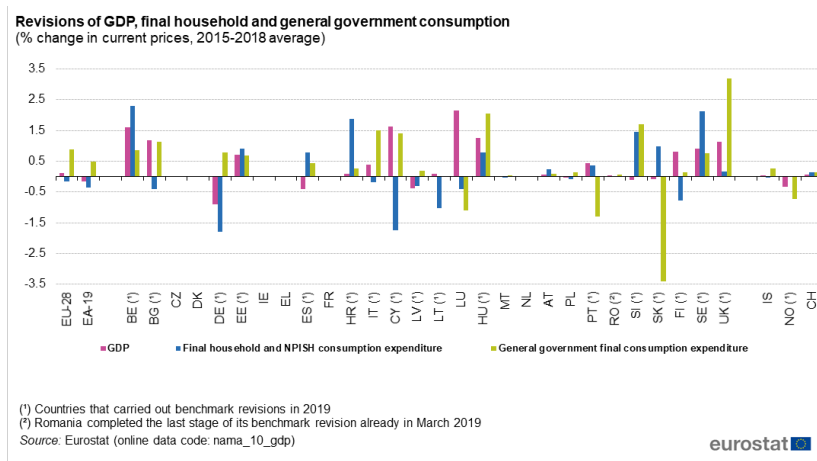


Figure 2: Revisions of GDP, final household and general government consumption (% change in current prices, 2015-2018 average) Source: Eurostat (nama_10_gdp)

Figure 3 presents GDP expenditure components of GFCF, as well as exports and imports. Gross fixed capital formation was revised the most in Finland (+5.2 %), Lithuania (+3.5 %) and Estonia (+2.2 %). Biggest negative revisions were observed in Spain (-9.5 %), Slovakia (-2.0 %) and Slovenia (-1.4 %). For most of the countries exports and imports revisions share similar pattern as for GFCF, and were revised upwards the most for Cyprus (+13.1 % for exports and +8.8 % for imports) and the United Kingdom (+1.8 % and 2.0 % respectively). The highest negative revisions were noted for Lithuania (-8.7 % and -8.2 %) as well as Belgium (-2.9 % for both exports and imports). For European aggregates, revisions were minimal, as GFCF for EU-28 was revised by -0.2 %, exports by -0.1 % and imports by +0.1 %, while the corresponding EA-19 aggregates were revised by -0.8 %, -0.3 % and -0.2 % respectively.

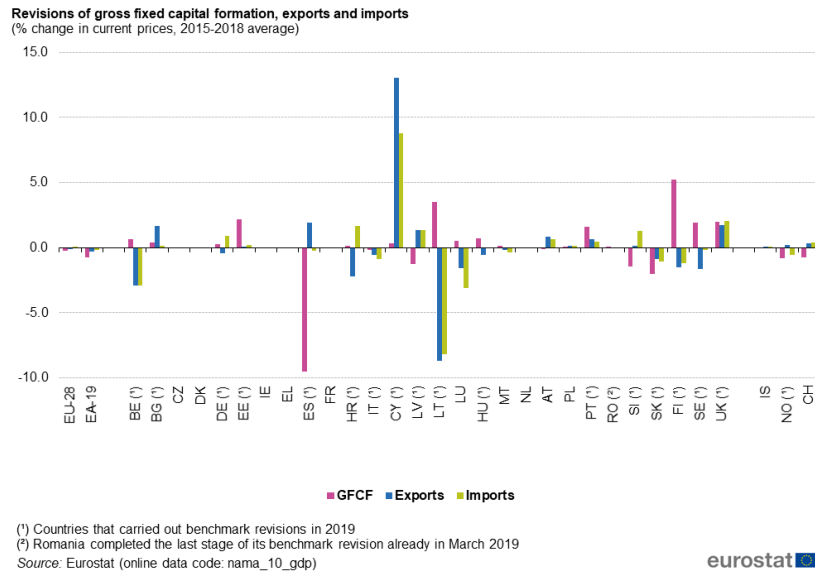


Figure 3: Revisions of gross fixed capital formation, exports and imports (% change in current prices, 2015-2018 average) Source: Eurostat (nama_10_gdp)

Revision of main production components

Another way of calculating and measuring GDP is the production approach, based on the total value of the goods and services produced by different activities in the economic territory of a country during a given period, plus taxes less subsidies on products. Figure 4 shows how these indicators were affected by the benchmark revisions as an average for the period 2015-2018. The highest averages revisions for gross value added (GVA) were observed for Luxembourg (+2.2 %), Belgium (+1.6 %) and Cyprus (+1.4 %). Negative GVA average revisions were noted for Germany (-0.9 %), Spain and Latvia (both -0.4 %), as well as Norway (-0.3 %). Taxes less subsidies were revised the most for Slovakia (+3.0 %), Cyprus (+2.9), Bulgaria (-2.2 %), while negative average revisions were observed for Sweden (-1.1 %), Spain (-0.7 %) and Hungary (-0.3 %). Large downward revisions were noted in Iceland (-7.8 %), which did not carry out a benchmark revision. GVA indicator is the main contributor for GDP revisions, as it has a similar pattern. At European aggregates level, EU-28 total gross value added was revised upwards by 0.1 %, while EA-19 was revised downwards by 0.18 % (when GDP was revised +0.12 % and -0.15 % respectively for the European aggregates).

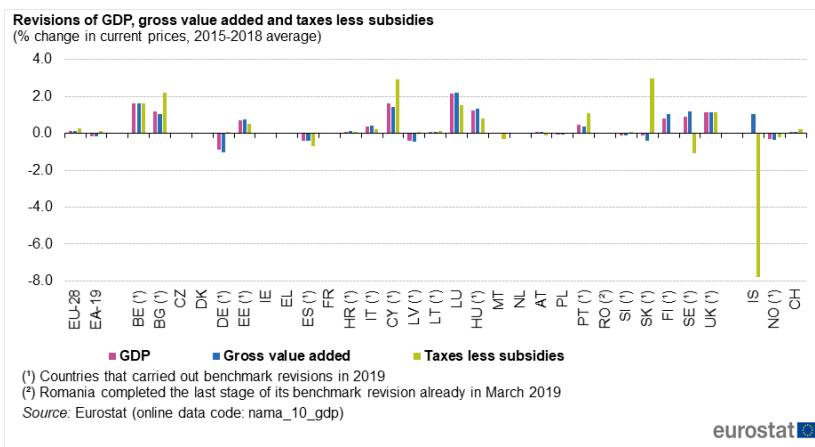


Figure 4: Revisions of GDP, gross value added and taxes less subsidies (% change in current prices, 2015-2018 average) Source: Eurostat (nama_10_gdp)

Revision of main income components

Under the income approach, GDP is calculated by adding all the sources of income earned during the process of production of goods and services together plus taxes on production and imports less subsidies. Income is broken down by type: compensation of employees, gross operating surplus and gross mixed income. Looking at GDP components of main income (Figure 5), we can see high changes in indicators. Information shown in this figure represents the average revisions of the mentioned components for the period 2015-2018. Highest positive revisions for compensation of employees were Hungary (+1.8 %) and Cyprus (+1.3 %). The largest negative revision occurred in Spain (-4.4 %). EU-28 compensation of employees was revised upwards by 0.2 %, while the revision of the same EA-19 aggregate was negligible. Gross operating surplus and mixed income was revised the most in Luxembourg (+4.8 %), Spain (+4.1 %) and the United Kingdom (+2.8 %). High negative revision was noted for Germany reaching -4.2 %. Impact on EU-28 gross operating surplus and mixed income was negligible, while for EA-19 it was -0.4 %. Taxes less subsidies on production is another component for GDP calculation, which again shows high changes due to revisions. Slovakia (+2.2 %), Belgium (+2.0 %) and Norway (+2.1 %) had larger positive average revisions, while bigger negative revisions occurred in Lithuania (-2.7 %) and Hungary (-1.7 %). EU-28 taxes less subsidies on production was revised upwards by +0.2 % and EA-19 aggregate experienced negligible revisions.

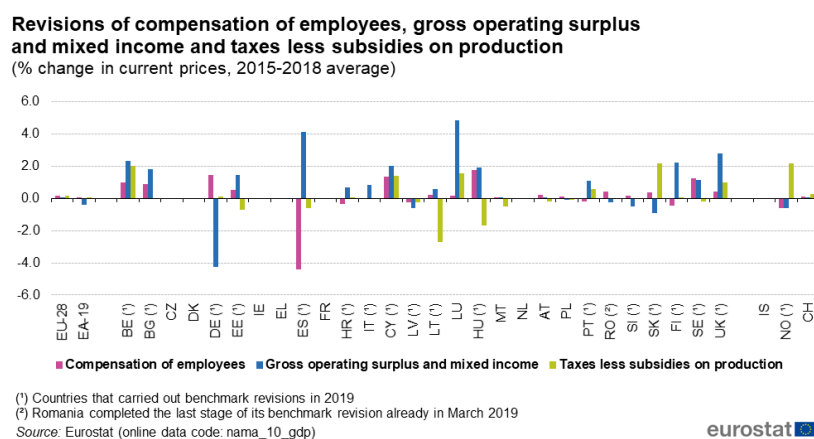


Figure 5: Revisions of compensation of employees, gross operating surplus and mixed income and taxes less subsidies on production (% change in current prices, 2015-2018 average) Source: Eurostat (nama_10_gdp)

Revisions to main employment aggregates

Employment and population are considered to be auxiliary variables in national accounts. The importance of employment within the system has increased, and now is a key short-term economic indicator. Employment in national accounts is the result of the integration of data from many sources, and should be estimated simultaneously to and consistently with other national accounts variables, like production and the compensation of employees. Figure 6 shows average revisions for the period 2015 to 2018 for population, total employment and employees. Highest positive revision for population was in Croatia (+0.4 %) and lowest negative in Bulgaria and Romania (-0.1%). European aggregates remained unchanged. Highest revisions for total employment and employees were observed in Hungary (+0.4 % and +2.7 % respectively), Cyprus (+0.8 % and 1.0 %) and Lithuania (+0.7 % and +0.8 %). Negative revisions occurred in Spain (-0.6 % and -2.3 %) and Norway (-1.7 % and -1.9 %). European aggregates for total employment changed negligibly, while employees indicator for EU-28 was revised by -0.1 % and -0.2 % for EA-19.

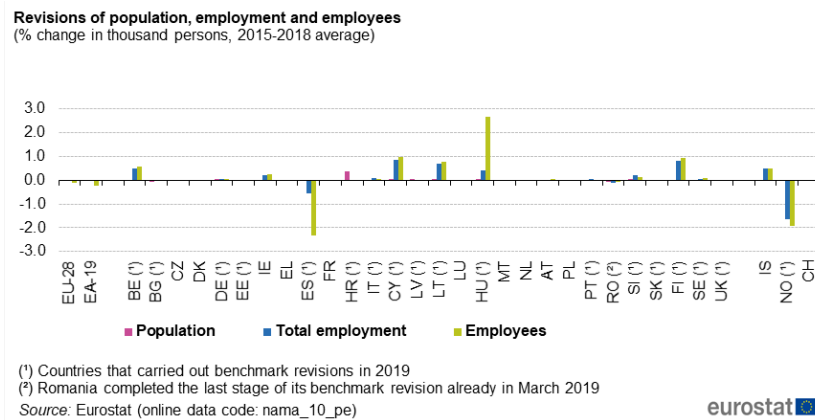


Figure 6: Revisions of population, employment and employees (% change in thousand persons, 2015-2018 average) Source: Eurostat (nama_10_pe)

Data sources

The analysis in this article is based on the annual national accounts data, including 2019 benchmark revisions transmitted in September-October of 2019 and the European aggregates published on 21 October 2019. It compares the recent data with a previous version, which was published on 19 July 2019. Each country provided methodological explanations about benchmark revisions.

From September 2014, the data transmission in line with [Regulation \(EU\) No 549/2013](#) of the European Parliament and of the Council on the European system of national and regional accounts in the European Union started to apply. This required Member States to transmit their main GDP aggregates based on the [European system of national and regional accounts 2010 \(ESA 2010\)](#).

Context

National Accounts provide important macroeconomic indicators for national and EU decision making. It is, therefore, important that regular quality improvements are introduced in the data sources and methods. This is achieved through data revisions in line with the [harmonised European revision policy](#). The most important changes are introduced with the benchmark revisions typically carried out every 5 years. In line with the [European statistics code of practice](#) this article communicates the main results of the 2019 coordinated benchmark revisions in a transparent way.

Other articles

- [European system of national and regional accounts - ESA 2010](#) - background article
- [Annual national accounts - how ESA 2010 has changed the main GDP aggregates](#) - background article
- [National accounts - an overview](#)
- [National accounts and GDP](#)

Main tables

- [National accounts \(including GDP\) \(t_na\)](#) , see:

Annual national accounts (t_nama)

GDP and main components (t_nama_10_gdp)

Database

- [National accounts \(ESA 2010\)\(na10\)](#) , see:

Annual national accounts (nama_10)

Quarterly national accounts (namq_10)

Dedicated section

- [National accounts \(including GDP\)](#)
- [ESA 2010 dedicated section](#)

Methodology

- [Annual national accounts](#) (ESMS metadata file — nama_10)
- [European system of accounts - ESA 2010](#)
- [NACE Rev.2](#) publication
- [Quarterly national accounts](#) (ESMS metadata file — namq_10)
- [ESA 2010 dedicated section](#)
- [Practical guidelines for revising ESA 2010 data](#)

Legislation

- Commission implementing [Decision 403/2014](#) of 26 June 2014 on granting derogations to Member States with respect to the transmission of statistics pursuant to [Regulation \(EU\) No 549/2013](#) of the European Parliament and of the Council of 21 May 2013 concerning the European system of national and regional accounts in the European Union
- [Summaries of EU Legislation: European Union system of national and regional accounts](#)
- Commission implementing [Regulation \(EU\) No 724/2014](#) of 26 June 2014 on the interchange standard for the transmission of data required under [Regulation \(EU\) No 549/2013](#) of the European Parliament and of the Council on the European system of national and regional accounts in the European Union

External links

- [Harmonised European revision policy](#)