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# EUROSTAT REVIEW ON NATIONAL ACCOUNTS AND MACROECONOMIC INDICATORS

## SPECIAL ISSUE ON THE IMPLEMENTATION OF THE EUROPEAN SYSTEM OF ACCOUNTS (ESA 2010)

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## Aims and scope

EURONA is an Open Access, peer-reviewed, scholarly journal dedicated to

- Methodologies, techniques and tools related to National Accounts and Macroeconomic indicators; and their use in supporting economic decisions;
- Standards, methods and practices used for the production of National Accounts statistics and Macroeconomic indicators;
- Analytical methods and results in subject fields making use of National Accounts data and Macroeconomic indicators.

EURONA aims to bring a distinctive perspective to tackle with different National Accounts related issues, also listening to oppositional voices and bringing in best practices and innovative perspectives from research and work at national and international level, in order to promote sustainable statistical information empowerment. EURONA's core objective is to provide a platform for the researchers, scholars, producers and users of statistics and other practitioners to come together and share their research findings, thereby facilitating progress and enhancement of National Accounts and Macroeconomic indicators.

EURONA is non-partisan and applies the highest standards to its content — specifically, it emphasises research integrity; high ethical standards; constructive peer-review; validity of the findings; and cutting edge results.

The articles published in EURONA do not necessarily reflect the views or policies of the European Commission or Eurostat.

## Editors



## Editorial board



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# Editorial

Some people say that compiling national accounts is more art than science. It is certainly true that it is an art to combine sometimes hundreds of different data sources into one coherent framework depicting the state of the economy. It is even more of an art when the definitions of the framework as well as the data sources are changing.

On the other hand, the framework itself is based on the latest 'state-of-the-art' of economic theory, and is thus a reflection of how economists currently look at the world. Economic insights develop as the world continuously changes. Policy makers, researchers and other users express their evolving data needs, requiring an updating of the framework.

In recent years, national accountants in Europe have been making a major investment to update the accounts to a new framework: the European System of Accounts 2010 (ESA 2010). The ESA 2010 is based on an international framework, the System of National Accounts 2008 (SNA 2008). The aim of this update is to make the accounts more useful for users (by reflecting economic developments such as globalisation and the importance of intangibles) and to improve comparability of data across countries (e.g. by providing more precise definitions).

The aim of EURONA is to provide a forum for researchers, scholars, producers and users of statistics on national accounts and macroeconomic indicators to share their research findings with each other and the rest of the world. It is therefore very appropriate to dedicate this special issue of EURONA to the introduction of ESA 2010 — a major event for national accounts in Europe — for which the first results were released at European level in October 2014. The aim of this special issue is to provide users of national accounts data with a detailed insight into the reasons for the observed changes in the data. It also serves as a platform for the producers of the data to share their experiences and lessons learned, which is beneficial for future updates of the national accounts.

As an exception to the general policy of EURONA, the articles in this special issue were not peer-reviewed but submitted by invitation. The processes and results of the implementation of ESA 2010 are discussed first from the European perspective in the article by Marianthi Dunn, Leonidas Akritidis and Luis Biedma from Eurostat. The national perspective is elaborated in the four articles by Irmtraud Beuerlein (Germany), Ronan Mahieu (France), Gerard J. Eding and Marcel Pommée (the Netherlands) and Michael Brennan (Ireland). Each article has its own angle, reflecting each country's own specific circumstances. The contributions from all authors are gratefully acknowledged.

The issue closes with an obituary for Derek Blades who passed away in June 2014. Derek was a long-standing and highly respected member of the international national accounts community. David Roberts, a former colleague and close friend, reflects on his life and his contributions to national accounts.

Paul Konijn

Editor of EURONA, Eurostat

# The impact of ESA 2010 on key indicators of the national accounts in Europe

Marianthi Dunn, Leonidas Akritidis and Luis Biedma (*)

(*) Eurostat; the authors thank Silke Stapel-Weber, Paul Konijn, Joachim Recktenwald, John Verrinder, Christine Gerstberger and Hans Wouters for the comments provided on earlier drafts of this article.

# Summary

The introduction of ESA 2010 has been a major event for the national accounts of the EU Member States. ESA 2010 brings national accounts in Europe in line with the international standards of the SNA 2008 and ensures the relevance of key economic data in the years to come.

The Member States also took the opportunity to re-benchmark their national accounts, review their data sources and introduce new or improved ones. Together with the changes induced by the methodological update of ESA 2010, this led to — in most cases — significantly higher levels of GDP.

The methodological changes introduced in ESA 2010 increased the GDP of the European Union by 2.3 % in 2010. By far the most significant and noticeable impact of ESA 2010 has been the treatment of research and development and military weapon systems as capital formation. Statistical improvements increased GDP by 1.4 %, creating an upward revision to total GDP for the EU-28 of 3.7 %.

However, history has not been rewritten: data on economic growth are virtually unaffected. The annual GDP volume growth rates changed only by + /– 0.1 percentage point.

Revisions to household savings and investment rates were marginal, but the investment rate of non-financial corporations in the EU-28 is now higher by about 2 percentage points and their profit shares are up by about 1.5 percentage point.

The introduction of ESA 2010 did not affect much the EU-28 government deficit ratio, but at national level there were some significant changes. Nine countries improved their deficit ratios and eleven worsened them. Revisions to the government debt ratio were quite substantial in a number of countries and – 1.7 percentage points for the EU-28.

# 1. Introduction

The European System of Accounts (ESA) is the fundamental methodological rulebook in the European Union explaining how Member States' economies should be measured in a consistent, coherent, comparable and reliable way. In compiling the national accounts of a country or defined territory such as the European Union (EU-28) ([1]) or the euro area (EA-18) ([2]), Member States ([3]) and Eurostat aim to capture the economic activity which takes place during a given period, usually over a quarter or a year. The last twenty years have shown significant changes to the way the global and domestic economies operate. For example, information and communication technologies are playing an increasing role in production processes and there is a growing importance of intangible assets, intellectual property products and services across the economies. As the last update of the accounting rules occurred almost 20 years ago, it is important to adjust the national accounts' framework to capture these fundamental changes. The methodological changes introduced in ESA 2010 should therefore be seen as a necessary adaptation to a changing world.

The adaptation of the national accounts is not only European, but world-wide. Europe's ESA 2010 counterpart is the *2008 System of National Accounts* (SNA 2008) which was adopted by the United Nations Statistical Commission and has already been implemented in Australia in 2009, Canada in 2012, the USA in 2013 and New-Zealand in 2014.

([1]) The European Union (EU-28) includes Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), the Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK).

([2]) The euro area (EA-18) includes Belgium, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Luxembourg, Malta, the Netherlands, Austria, Poland, Slovenia, Slovakia and Finland.

([3]) The ESA 2010 is or will be also adopted by EFTA countries and EU candidate countries.

ESA 2010 is an EU Regulation (No 549/2013) which comprises a compulsory methodology and transmission programme of data by Member States. After several years of preparation both the transition to and the transmission of data according to ESA 2010 methodology has commenced. On 17 October 2014 Eurostat published a special press release presenting the annual nominal GDP for the EU-28 which was followed by a further special release on 21 October that explained the impact on the government deficit and debt estimates. On 27 October Eurostat disseminated the European sector accounts estimates for the euro area and the EU.

It is important to recognise that National Statistics Institutes (NSIs) took the occasion of the implementation of ESA 2010 to revise other aspects of their national accounts and include statistical improvements. The main statistical improvements were:

- Benchmark revisions, in which data sources were reviewed and updated. In some countries, notably Cyprus and the Netherlands, benchmark revisions generated a more significant revision to GDP than the implementation of ESA 2010.
- The harmonisation of measurement of certain illegal activities, notably prostitution, the production and trafficking of drugs and the smuggling of alcohol and tobacco. While these have been included in the official definition of GDP since ESA 95, implementation has varied from country to country. A common methodology for recording these activities was adopted.
- Country specific improvements to address shortcomings identified in Eurostat verification procedures.

The article will deepen the analysis presented in the first press releases by reviewing the impact on main GDP aggregates from the output, expenditure and income sides as well as changes in key indicators derived from sector accounts and government accounts. While the focus is on presenting data for the economic territories of the European Union (EU-28) and the euro area (EA-18), particular developments in Member States are also highlighted.

Section 2 of this article summarises the main methodological changes in ESA 2010 that have had an impact on the European aggregates for GDP.

Section 3 presents the (methodological and statistical) revisions to nominal GDP at the European level. Observing the main aggregates of the three approaches used in estimating GDP at market prices, it includes an analysis of the industries which have generated significant revisions to gross value added (GVA), and continues with a similar analysis of the categories of final expenditure and of the components of income.

Section 4 presents revisions to the main indicators from the sector accounts, focusing on the household saving rate, investment rates and profit shares. Finally, section 5 discusses the revisions to the estimates of government debt and deficit.

## 2. Main methodological changes in ESA 2010 having an impact on the European GDP and main aggregates

A full description of the changes between ESA 95 and ESA 2010 is given in the Manual on the changes between ESA 95 and ESA 2010 ([4]). The changes that had the largest impacts on key national accounts indicators were:

- **Research and development:** Recognition that expenditure on research and development has the nature of investment. Research and development expenditure is recorded as gross fixed capital formation and no longer as current expenditure. The identification and treatment

([4]) http://ec.europa.eu/eurostat/product?code=KS-GQ-14-002

of research and development expenditure as investment is very important in the context of the Europe 2020 strategy.

- **Military weapons systems:** Recognition that expenditure on weapon systems has the nature of investment. Because of their potentially destructive nature, the previous ESA recorded them as immediately consumed. The new system recognises their productive potential for the external security of a country, over several years. This identifies them as gross fixed capital formation.
- **Goods sent abroad for processing:** The value of goods sent abroad for processing will no longer impact on gross exports and imports figures because ESA 2010, in the light of globalisation, uses a change in ownership approach and is no more based on physical movements. ESA 2010 just records an export processing service. This will reduce the level of exports and imports, but will not affect the overall current account balance.
- **Merchanting:** The new treatment of merchanting is consistent with the change of ownership principle as it requires goods to change ownership and so transactions are recorded in the trade in goods accounts. The revised treatment of merchanting will only impact the breakdowns of exports in terms of products and services. The total level of exports and net exports remain unchanged.
- **Employers' pension schemes:** Recognition that with defined benefit schemes an increase of pension entitlements is to be recorded independently from actual contributions, where the level of the employer's contributions should be determined in an actuarial way.
- **Small tools:** ESA 2010 eliminates a monetary threshold for the purchase of small tools to be recognised as capital expenditure. The only criterion used in ESA 2010 it that the tools are to be used in production for more than one year.

A number of methodological changes that affect the data for government debt and deficit are discussed in section 5.

# 3. The impact of ESA 2010 on the European GDP

The analysis in this paper focusses on the year 2010. The reason is that NSIs carried out a detailed analysis of the causes of revisions for this reference year. Each country completed a questionnaire, which was used by Eurostat to identify the respective driving forces at the level of the European aggregates.

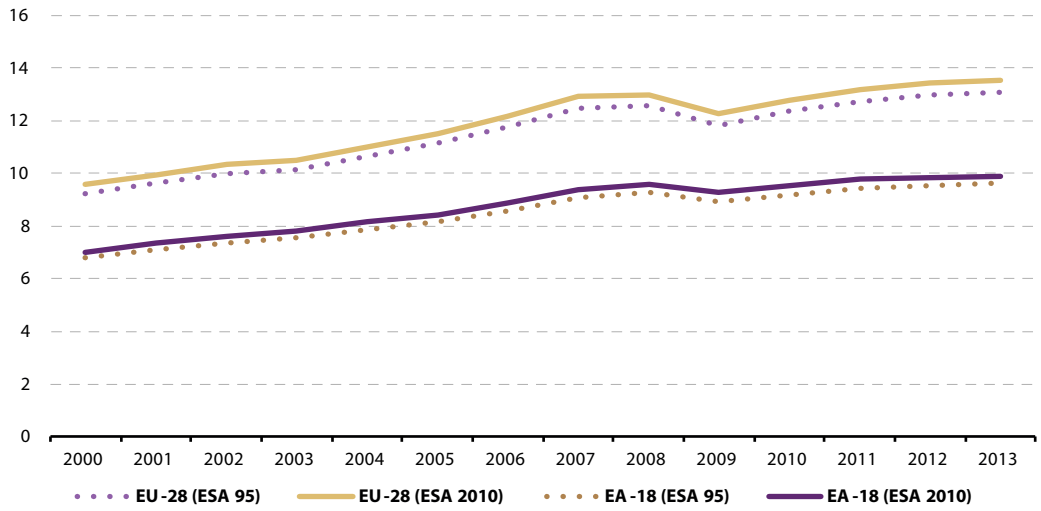
## 3.1 Impact on the level and growth rates of EA-18 and EU-28 GDP

As a consequence of the ESA 2010 implementation and the introduction of other statistical improvements the average annual revision to the levels of GDP in current prices over the period of 1997 to 2013 amounted to 3.4 % in both the euro area and the EU-28. Figure 1 shows the levels of GDP for the euro area and the EU-28 under ESA 95 and ESA 2010 for the years 2000 to 2013.

In 2010, the upward revision in the level of GDP for the euro area and EU-28 was 3.7 %, a bit higher than average.

Figure 2 summarises how the ESA 2010 methodological improvements and the statistical improvements have contributed to the 3.7 % upward revision of the EU-28 GDP in current prices, for the year 2010.

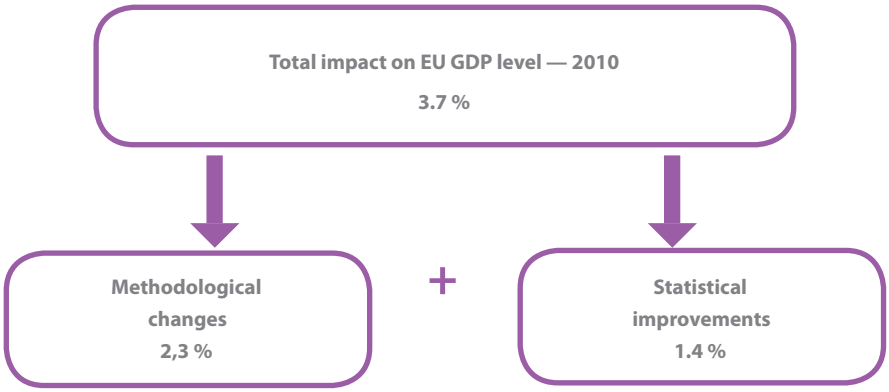
**Figure 1:** Nominal GDP
(1000 billion EUR)




*Source:* Eurostat

Overall, the methodological changes introduced by ESA 2010 increased EU-28 GDP by 2.3 % while the statistical improvements accounted for a revision of 1.4 %. The most significant ESA 2010 methodological changes have been the capitalisation of research and development expenditures and expenditures on weapons systems which revised EU-28 GDP by 1.9 % and 0.2 %, respectively.

**Figure 2:** Revisions to EU-28 GDP, 2010




*Source:* Eurostat

The revised treatment of small tools accounted for a revision of 0.07 % and had thus the third largest methodological impact, while the change to the sector classification of government (see section 5) and the recording of employers' pension schemes revised GDP up by 0.06 % each.

Of the statistical improvements, new and improved data sources had the largest impact and increased EU-28 GDP by 0.5 %. Illegal activities and country specific improvements accounted both for a 0.4 % increase of GDP. It is important to note that some countries already included some estimates for il-

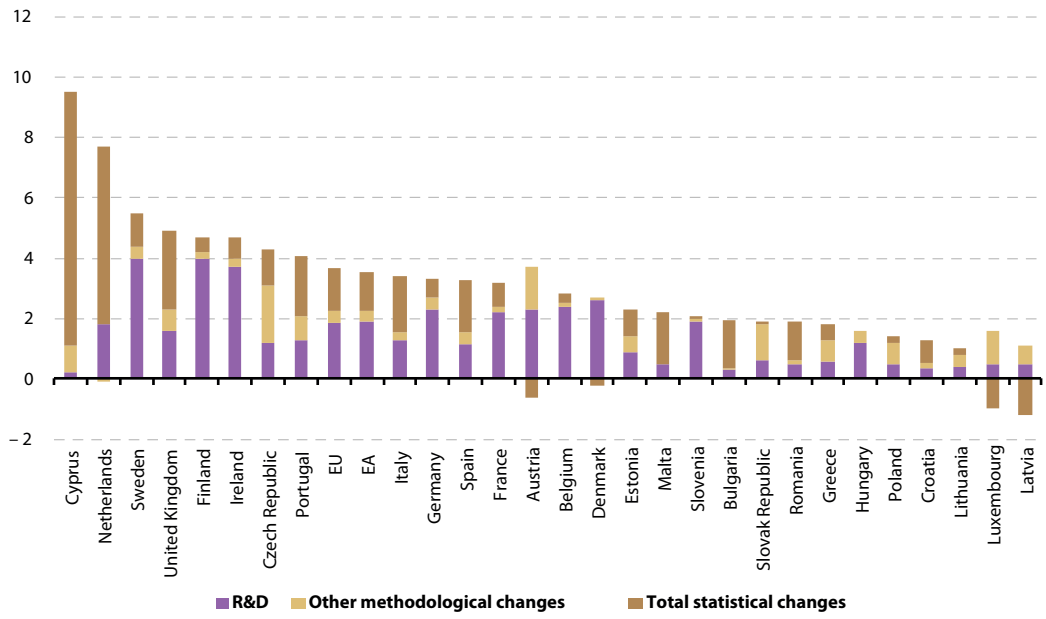
legal activities. Therefore, the 0.4 % revision from illegal activities accounted for those countries that previously had not included estimates of all the three types of illegal activities or a subset of them, i.e. prostitution, the production and trafficking of drugs and the smuggling of alcohol and tobacco.

At national level, for 2010, the largest overall revisions to GDP were noted for Cyprus (+ 9.5 %) and the Netherlands (+ 7.6 %) while small negative impacts were observed in Luxembourg (– 0.2 %) and Latvia (– 0.1 %).

Figure 3 shows the impact of methodological changes and statistical improvements on the level of GDP in 2010 as a percentage of the individual 28 Member States' GDP.

The largest methodological impacts on GDP levels were noted for Sweden (+ 4.4 %) and Finland (+ 4.2 %), of which for both Member States 4.0 % was due to research and development. The smallest methodological impacts were reported by Bulgaria (0.4 %), Croatia and Malta (both + 0.5 %) of which revisions due to research and development contributed between 0.3 % and 0.5 %.The largest impacts from statistical improvements, for 2010 GDP levels, were registered for Cyprus (8.4 %) and the Netherlands (5.9 %), while negative impacts were noted for Luxembourg (– 1.4 %), Latvia (– 1.2 %), Austria (– 0.6 %), Denmark and Estonia (both – 0.2 %).

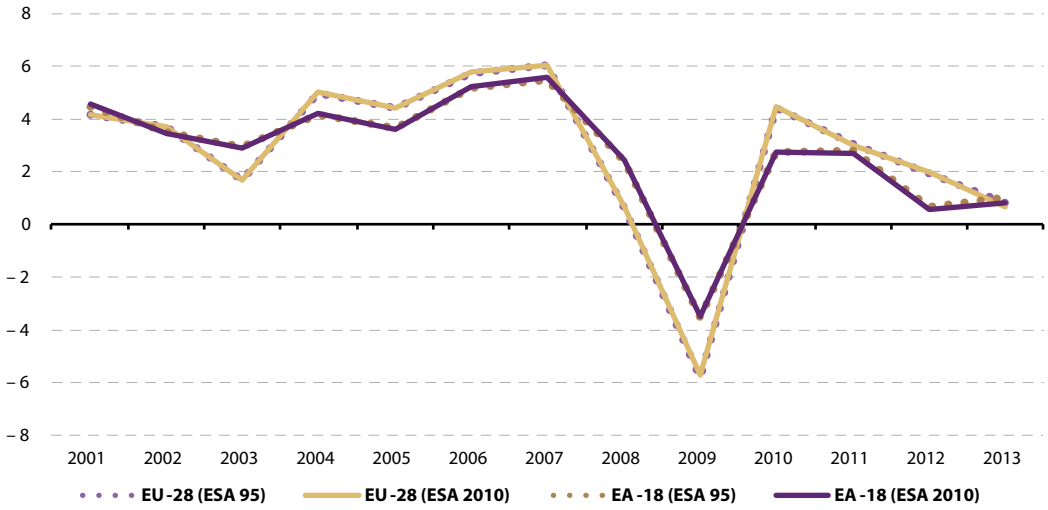
**Figure 3:** Impact of methodological and statistical changes on the level of GDP, 2010
(%)




*Source:* Eurostat

Unlike the impact to the levels of GDP, the impact to the growth rates has been almost negligible: the average change in the annual GDP volume growth rates over the years 1997 to 2013 was around +/– 0.1 percentage points for both the euro area and the EU-28. Figure 4 show revisions to the growth rates of GDP for the euro area and the EU-28 under ESA 95 and ESA 2010.

**Figure 4:** GDP volume growth rates for EA-18 and EU-28 under ESA 95 and ESA 2010
(%)




*Source:* Eurostat

## 3.2 Revisions by industry

The production approach to GDP measures GDP as the sum of the values added by all activities which produce goods and services, plus taxes less subsidies on products. The value added can be broken down by type of activity or industry. Revisions were analysed at the A*10 NACE Rev. 2 industry breakdown given in table 1.

**Table 1:** A*10 classification of industries

| A*10 | | |
|---|---|---|
| **Seq. No** | **NACE Rev. 2 sections** | **Description** |
| **1** | A | Agriculture, forestry and fishing |
| **2** | B, C, D and E | Mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities |
| **3** | F | Construction |
| **4** | G, H and I | Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities |
| **5** | J | Information and communication |
| **6** | K | Financial and insurance activities |
| **7** | L | Real estate activities |
| **8** | M and N | Professional, scientific and technical activities; administrative and support service activities |
| **9** | O, P, and Q | Public administration and defence; compulsory social security; education; human health and social work activities |
| **10** | R, S, T and U | Arts, entertainment and recreation; other service activities; activities of households as employers; undifferentiated goods- and services-producing activities of households for own use; activities of extraterritorial organisations and bodies |

*Source:* Eurostat

Table 2 shows that, at European level, similar revisions to GVA were observed for the EU-28 (4.0 %) and the EA-18 (3.9 %). Industry groups M to N (6.3 %), L (6.2 %) and J (6.0 %) noted the largest revisions. However, after taking into account the weights of the industries, groups B to E and G to I made the largest contributions to revisions to both the EU-28 and EA-18 GVAs. Finland (15.4 %), Sweden (12.8 %) and Belgium noted the largest upward revisions to group B to E, whereas Greece revised down by 17.8 %. Cyprus (25.8 %), Germany (13.7 %) and the Netherlands (13.2 %) noted the largest revisions to group G to I. The third largest industry group driving revisions to the EU-28 was O to Q where Poland (11.0 %), the UK (8.0 %) and Spain (7.1 %) recorded the largest revisions. The third largest group driving revisions to the EA-18 GVA was M to N where the Netherlands (25.7 %), Cyprus (23.9 %) and Italy (12.7 %) recorded the largest revisions.

At national level, for 2010, the largest overall revisions to GVA were noted for Cyprus (+ 10.3 %), where industry groups G to I (+ 23.5 %) and M to N (23.9 %) recorded the most significant revisions. The Netherlands recorded the second largest revision to GVA of 8.3 %, where industry groups M to N (25.7 %) and A (15.6 %) recorded the largest revisions.

Negative revisions to GVA were observed in Latvia (– 3.4 %) where industry groups F (– 14.5 %) and A (– 14.0 %) recorded the most significant revisions.

**Table 2:** Percentage revisions by industry and country

| | | Total GVA | A | B to E | F | G to I | J | K | L | M to N | O to Q | R to U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Share in EU-28 GVA | 100.0 | 1.6 | 19.2 | 5.8 | 19.0 | 5.6 | 5.6 | 10.8 | 10.2 | 19.4 | 3.5 |
| | | Percentage revisions | | | | | | | | | | |
| **EU-28** | 100.0 | 4.0 | 1.2 | 4.2 | – 1.1 | 4.1 | 6.0 | – 0.5 | 6.2 | 6.3 | 4.1 | 4.1 |
| **EA-18** | 75.1 | 3.9 | 2.7 | 4.3 | – 2.3 | 4.2 | 6.7 | 0.9 | 5.5 | 6.9 | 3.3 | 1.4 |
| Belgium | 2.9 | 3.1 | 16.8 | 10.9 | 0.6 | 4.3 | – 1.0 | – 6.4 | – 0.3 | 3.5 | 0.6 | 5.6 |
| Bulgaria | 0.3 | 2.3 | 6.5 | – 4.5 | – 0.5 | 0.7 | 0.1 | 4.2 | 21.6 | 5.1 | 0.1 | 4.5 |
| Czech Republic | 1.2 | 4.8 | 6.3 | 5.5 | – 1.9 | 0.7 | 5.5 | 7.4 | 24.6 | 1.7 | 3.2 | – 3.3 |
| Denmark | 1.8 | 2.3 | 0.7 | 9.2 | 0.0 | – 0.5 | 9.9 | 1.3 | – 3.7 | 5.9 | 0.7 | 1.8 |
| Germany | 20.2 | 3.7 | – 3.6 | 3.6 | – 1.5 | 13.7 | 13.9 | 3.8 | 0.5 | 0.8 | 1.3 | – 5.9 |
| Estonia | 0.1 | 1.4 | – 0.1 | 0.8 | – 0.2 | 0.1 | 3.1 | 7.6 | – 4.2 | 5.0 | 4.3 | 2.7 |
| Ireland | 1.3 | 4.8 | – 12.9 | 5.1 | – 4.0 | 2.3 | 17.5 | – 0.2 | 1.9 | 9.8 | 4.0 | 6.9 |
| Greece | 1.7 | 2.3 | 3.2 | – 17.8 | 28.5 | – 3.3 | – 23.0 | 1.1 | 32.9 | – 3.4 | 7.1 | – 8.4 |
| Spain | 8.6 | 3.7 | 2.3 | 7.5 | – 14.1 | – 3.6 | 5.5 | – 0.2 | 43.0 | – 0.2 | 4.3 | 15.2 |
| France | 15.7 | 3.4 | 0.9 | 9.5 | 2.9 | 0.7 | 7.3 | – 2.6 | 0.7 | 9.5 | 3.2 | – 7.3 |
| Croatia | 0.3 | 1.2 | 0.1 | 1.8 | 1.9 | 1.9 | – 2.2 | – 1.2 | – 7.4 | 12.0 | 0.8 | 12.3 |
| Italy | 12.6 | 3.9 | 7.9 | 2.2 | – 2.8 | 2.7 | 0.3 | 0.0 | 3.0 | 12.7 | 5.0 | 15.3 |
| Cyprus | 0.2 | 10.3 | 5.1 | 0.6 | 0.2 | 25.8 | 1.5 | – 5.7 | 14.9 | 23.9 | 4.6 | 8.9 |
| Latvia | 0.1 | – 3.4 | – 14.0 | – 1.4 | – 14.5 | – 8.7 | – 1.3 | 2.6 | 4.0 | – 3.6 | 2.9 | 8.1 |
| Lithuania | 0.2 | 1.2 | 1.5 | 0.4 | 0.6 | 0.5 | 1.2 | 10.7 | 3.3 | 1.1 | 1.8 | 1.0 |
| Luxembourg | 0.3 | 0.1 | – 3.5 | 1.7 | – 6.9 | – 1.9 | – 5.8 | 4.3 | – 8.7 | 0.3 | 3.5 | 9.6 |
| Hungary | 0.7 | 1.8 | 0.3 | 1.6 | 0.4 | 1.2 | 4.3 | 1.1 | 0.8 | 5.2 | 1.5 | 1.1 |
| Malta | 0.1 | 2.5 | 2.3 | 3.5 | – 1.0 | 5.2 | 0.4 | 11.5 | 0.1 | – 1.8 | 0.8 | 0.6 |
| Netherlands | 4.9 | 8.3 | 15.6 | – 1.9 | 9.0 | 13.2 | 10.5 | 9.3 | – 1.9 | 25.7 | 5.1 | 9.0 |
| Austria | 2.3 | 1.6 | – 3.4 | 2.3 | – 1.5 | 5.7 | 3.1 | – 5.9 | – 3.2 | 1.7 | 1.7 | 1.8 |
| Poland | 2.8 | 1.5 | – 19.6 | 4.0 | 3.7 | 0.7 | 3.6 | – 5.5 | – 3.7 | 3.1 | 11.0 | – 22.7 |
| Portugal | 1.4 | 4.6 | – 0.1 | – 0.6 | – 2.5 | 1.1 | 4.1 | 0.5 | 30.6 | 11.2 | 4.4 | 3.3 |
| Romania | 1.0 | 2.3 | 0.1 | 0.5 | 0.4 | 4.4 | 31.3 | 8.1 | – 1.8 | 1.9 | 0.1 | 3.2 |
| Slovenia | 0.3 | 1.9 | – 18.8 | 5.6 | – 0.1 | 0.2 | 2.3 | – 1.2 | 1.2 | 4.5 | 2.5 | 1.1 |
| Slovak Republic | 0.5 | 2.2 | 0.4 | 1.5 | 1.6 | 2.0 | 1.1 | 3.0 | 5.2 | 0.4 | 4.6 | 0.3 |
| Finland | 1.4 | 5.2 | – 0.4 | 15.4 | 0.8 | 0.5 | 4.9 | – 3.9 | – 0.6 | 6.5 | 5.2 | 1.8 |
| Sweden | 2.8 | 6.2 | 0.5 | 12.8 | 19.9 | 1.2 | 7.8 | 2.1 | 0.8 | 1.7 | 6.0 | 1.2 |
| United Kingdom | 14.2 | 5.5 | 4.7 | 1.8 | – 0.3 | 6.5 | 2.6 | – 5.3 | 13.6 | 5.2 | 8.0 | 26.4 |

*Source:* Eurostat

## 3.3 Revisions by expenditure component

The expenditure approach to GDP measures the total final expenditures made in either consuming the final output of an economy, or in adding to wealth, plus exports less imports of goods and services. The sum of all the final expenditure components in an economy is equal to GDP.

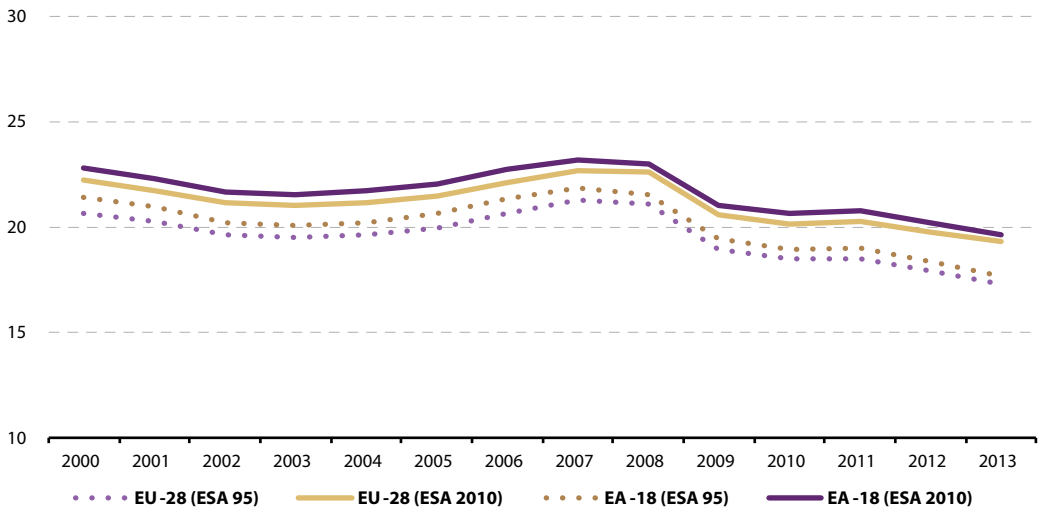
In ESA 95, final consumption expenditure of households and non-profit institutions serving households (NPISH) accounted for over half of the expenditures in the EU-28 in 2010. This was followed by government final consumption expenditure and gross fixed capital formation (GFCF), which accounted for 22.2 % and 18.5 % of the EU-28 GDP, respectively.

The implementation of ESA 2010 and associated statistical revisions increased the proportion of GFCF by 1.7 percentage points to 20.1 % of GDP, in 2010. This was mainly due to the treatment of research and development and military weapons systems, which were recognised as capital formation. Revisions to household and NPISH final consumption expenditure are mainly due to statistical improvements, such as embedding results from the recent population Census and new household budget surveys.

The ratio of GFCF to GDP shows a consistent average upward revision of 1.6 percentage points for the EU-28 and 1.5 % for the euro area over the period 2000–2013, as is shown in Figure 5. The trend in the investment ratios remains the same.

Table 3 shows that, in 2010, the countries with the largest GFCF ratios under ESA 2010 are the Czech Republic (27.0 %) and Romania (25.9 %). The countries with the smallest GFCF expenditure as a percentage of GDP in ESA 2010 for the same period are Ireland (15.8 %) and the UK (16.1 %).

**Figure 5:** Investment ratios in ESA 95 and ESA 2010
(%)




*Source:* Eurostat

**Table 3:** GFCF as percentage of GDP in ESA 95 and ESA 2010, 2010

| | GFCF/GDP (ESA 95) | GFCF/GDP (ESA 2010) | Difference |
|---|---|---|---|
| **EU-28** | 18.5 | 20.1 | 1.7 |
| **EA-18** | 19.0 | 20.7 | 1.7 |
| Belgium | 20.1 | 22.3 | 2.2 |
| Bulgaria | 22.8 | 22.9 | 0.1 |
| Czech Republic | 24.5 | 27.0 | 2.4 |
| Denmark | 16.9 | 18.3 | 1.3 |
| Germany | 17.4 | 19.3 | 1.9 |
| Estonia | 20.0 | 21.2 | 1.3 |
| Ireland | 12.2 | 15.8 | 3.6 |
| Greece | 17.6 | 17.3 | – 0.4 |
| Spain | 22.2 | 23.0 | 0.8 |
| France | 19.5 | 22.1 | 2.6 |
| Croatia | 20.8 | 21.3 | 0.5 |
| Italy | 19.4 | 19.9 | 0.5 |
| Cyprus | 19.1 | 21.8 | 2.7 |
| Latvia | 18.2 | 19.1 | 0.9 |
| Lithuania | 16.3 | 16.9 | 0.6 |
| Luxembourg | 17.4 | 16.7 | – 0.7 |
| Hungary | 18.6 | 20.4 | 1.8 |
| Malta | 19.9 | 21.4 | 1.5 |
| Netherlands | 17.4 | 19.7 | 2.4 |
| Austria | 20.2 | 21.6 | 1.4 |
| Poland | 19.9 | 19.8 | – 0.0 |
| Portugal | 19.6 | 20.5 | 1.0 |
| Romania | 24.7 | 25.9 | 1.2 |
| Slovenia | 19.7 | 21.2 | 1.5 |
| Slovak Republic | 21.0 | 22.2 | 1.2 |
| Finland | 18.9 | 21.9 | 3.0 |
| Sweden | 18.0 | 22.3 | 4.2 |
| United Kingdom | 14.9 | 16.1 | 1.2 |

*Source:* Eurostat

The largest changes to GFCF to GDP ratio in 2010 were observed for Sweden, Ireland and Finland, which had a change of 4.2, 3.6 and 3.0 percentage points respectively, while Greece recorded a negative change of 0.4 percentage points.

As shown in table 4, at European level, the expenditure component with the largest revision was GFCF with 12.9 % for the EU-28 and 12.8 % for the EA-18. At national level, for 2010, the largest overall revisions to GFCF were noted for Ireland (35.4 %), Sweden (30.2 %) and Cyprus (24.8 %). Negative revisions to GFCF were observed for Luxembourg (– 3.8 %) and Greece (– 0.3 %).

Household and NPISH final consumption expenditure for the EU-28 was revised by 2.0 % (1.5 % for EA-18). At a national level Cyprus (5.8 %), The Netherlands (5.3 %) and the UK (4.8 %) recorded the largest revisions in 2010. Negative revisions to household and NPISH final consumption expenditure were observed for Greece (– 2.8 %), Malta (– 0.7 %), France and Estonia (both – 0.3 %), Belgium (– 0.2 %) and Slovenia (– 0.1 %).

Exports were revised downwards due to two methodological changes introduced by ESA 2010 the treatment of goods sent abroad for processing and the treatment of merchanting (see section 2).

The revisions are somewhat larger (– 2.7 % for exports and – 3.0 % for imports) for the EA-18 than for EU-28. The biggest impacts on exports and imports were seen for two small island states: Malta and Cyprus.

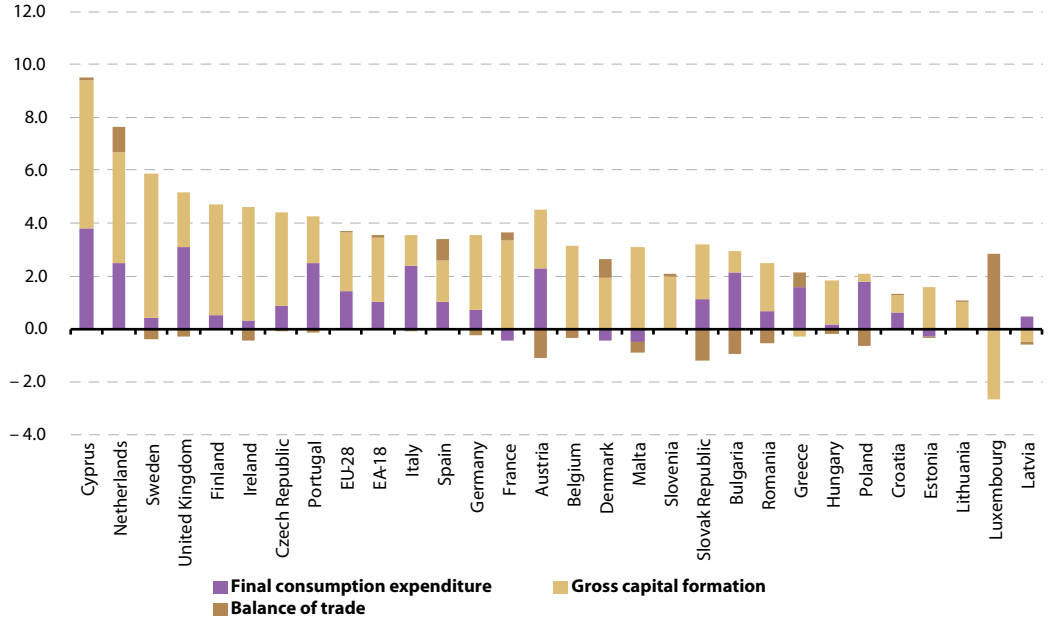
Figure 6 shows the contributions to GDP revisions by the main expenditure components for each Member State.

**Table 4:** Percentage revisions by expenditure component and country, 2010

| | | GDP | Final Consumption expenditure | | Gross capital formation | of wich Gross fixed capital formation | Exports | Imports |
|---|---|---|---|---|---|---|---|---|
| | | | Household & NPISH | General government | | | | |
| | Share of EU 28 GDP | 100.0 | 57.2 | 21.6 | 20.2 | 20.1 | 38.5 | 37.6 |
| | | Percentage revisions | | | | | | |
| **EU-28** | 100.0 | 3.7 | 2.0 | 1.2 | 11.9 | 12.9 | – 2.2 | – 2.2 |
| **EA-18** | 74.4 | 3.6 | 1.5 | 0.6 | 12.7 | 12.8 | – 2.7 | – 3.0 |
| Belgium | 2.9 | 2.8 | – 0.2 | 0.1 | 15.3 | 14.0 | – 1.8 | – 1.5 |
| Bulgaria | 0.3 | 2.0 | 3.5 | – 0.5 | 3.5 | 2.2 | – 2.1 | – 0.4 |
| Czech Republic | 1.2 | 4.3 | 1.6 | 0.3 | 14.3 | 14.6 | 3.7 | 4.0 |
| Denmark | 1.9 | 2.2 | 0.8 | – 2.8 | 11.4 | 10.3 | 0.7 | – 0.7 |
| Germany | 20.1 | 3.3 | 0.7 | 1.4 | 16.3 | 14.3 | – 8.3 | – 8.8 |
| Estonia | 0.1 | 1.2 | – 0.3 | – 0.6 | 7.9 | 7.7 | – 1.9 | – 2.0 |
| Ireland | 1.3 | 4.3 | – 0.0 | 1.6 | 36.4 | 35.4 | 0.0 | 0.5 |
| Greece | 1.8 | 1.8 | – 2.8 | 20.0 | – 1.8 | – 0.3 | 1.2 | – 0.9 |
| Spain | 8.5 | 3.4 | 2.3 | – 1.2 | 6.7 | 7.1 | – 3.6 | – 6.1 |
| France | 15.6 | 3.2 | – 0.3 | – 1.2 | 17.2 | 16.9 | 5.2 | 3.7 |
| Croatia | 0.4 | 1.3 | 0.5 | 1.5 | 3.3 | 3.8 | – 3.8 | – 3.8 |
| Italy | 12.6 | 3.5 | 3.8 | 0.2 | 5.9 | 6.2 | – 2.0 | – 1.6 |
| Cyprus | 0.1 | 9.5 | 5.8 | – 0.1 | 28.2 | 24.8 | 24.5 | 21.1 |
| Latvia | 0.1 | – 0.1 | 1.1 | – 1.4 | – 2.5 | 4.6 | – 1.2 | – 1.0 |
| Lithuania | 0.2 | 1.1 | 0.7 | – 2.4 | 5.9 | 4.9 | – 2.4 | – 2.4 |
| Luxembourg | 0.3 | 0.2 | 0.6 | – 1.1 | – 13.5 | – 3.8 | 6.0 | 5.2 |
| Hungary | 0.8 | 1.6 | 0.1 | 0.3 | 8.8 | 11.6 | – 1.3 | – 1.1 |
| Malta | 0.1 | 2.2 | – 0.7 | – 0.4 | 14.6 | 9.8 | 72.9 | 72.9 |
| Netherlands | 4.9 | 7.6 | 5.3 | 0.2 | 23.6 | 22.3 | – 1.6 | – 3.1 |
| Austria | 2.3 | 3.2 | 1.2 | 8.1 | 10.7 | 10.5 | – 3.8 | – 1.9 |
| Poland | 2.8 | 1.5 | 2.0 | 3.1 | 1.5 | 1.2 | – 2.8 | – 1.2 |
| Portugal | 1.4 | 4.1 | 3.8 | – 0.2 | 8.8 | 9.2 | – 0.7 | – 0.1 |
| Romania | 1.0 | 1.9 | 1.3 | – 0.8 | 7.0 | 7.0 | – 7.0 | – 4.8 |
| Slovenia | 0.3 | 2.1 | – 0.1 | 0.2 | 9.6 | 10.0 | – 1.6 | – 1.8 |
| Slovak Republic | 0.5 | 2.0 | 1.6 | 1.2 | 9.1 | 7.6 | – 2.9 | – 1.4 |
| Finland | 1.5 | 4.7 | 0.5 | 1.1 | 22.5 | 21.5 | 0.3 | 0.4 |
| Sweden | 2.9 | 5.5 | 1.1 | – 0.4 | 29.1 | 30.2 | – 1.6 | – 0.8 |
| United Kingdom | 14.2 | 4.9 | 4.8 | 0.0 | 14.0 | 13.1 | – 0.0 | 0.8 |

*Source:* Eurostat

**Figure 6:** Contributions to GDP revisions by expenditure component, 2010
(%)




*Source:* Eurostat

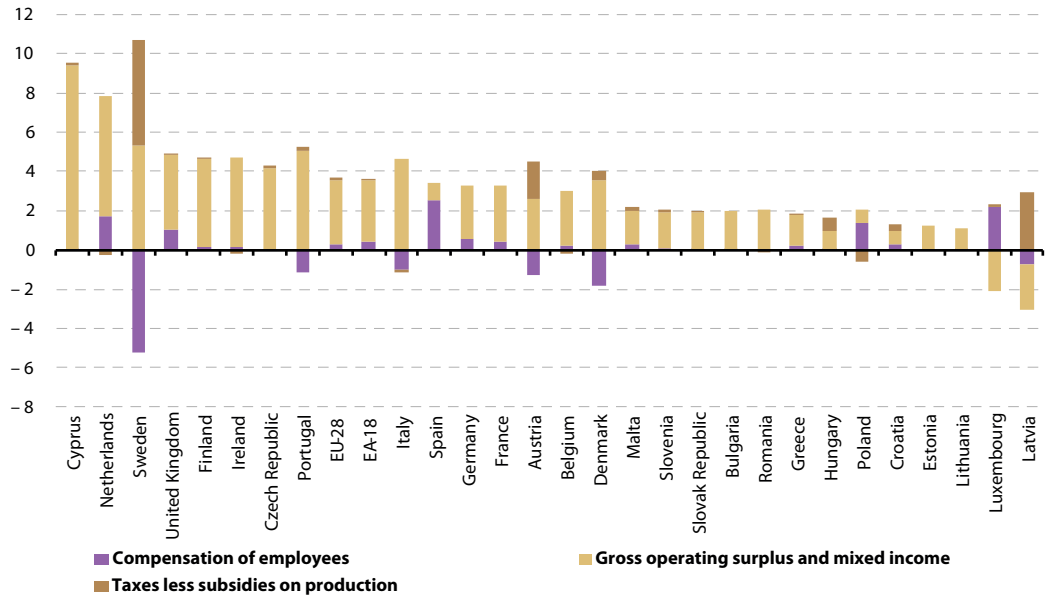
## 3.4 Revisions to the income components of GDP

The income approach of GDP is the approach according to which GDP is measured as the total of all incomes earned in the process of producing goods and services plus taxes on production and imports less subsidies. These incomes are broken down by type, i.e. compensation of employment and operating surplus/mixed income. In ESA 95, compensation of employees accounted for just under half of GDP for both the EU-28 and the euro area in 2010, while operating surplus and mixed income accounted for just under 40 % of GDP. For the same period, the implementation of ESA 2010 increased the proportion of operating surplus and mixed income in both the EU-28 and the euro area by 1.7 percentage point.

Gross operating surplus and mixed income are by far the largest income component contributing to 3.2 percentage points of the total GDP revision in 2010 for the EU-28 and 3.1 percentage points of the total GDP revision in the euro area. This is mainly due to the revised treatment of research and development and military weapons systems that have been reclassified into capital expenditure. As a consequence of this change, these items are now recorded as GFCF and their value has been deducted from intermediate consumption. This resulted to an increase in GVA, which has been discussed in section 3.2. This additional GVA has now been distributed back into the economy in the form of operating surplus for producers. As shown in Figure 7, gross operating surplus and mixed income have recorded the most significant contributions to GDP revisions in 2010 for Cyprus (9.4 %), the Netherlands (6.2 %) and Sweden (5.3 %). Gross operating surplus and mixed income made negative contributions to GDP revisions for the same period in Latvia (– 2.3 %) and Lithuania (– 2.1 %).

Significant contributions from taxes less subsidies on production, in the GDP revisions, were observed in Sweden (+ 5.4 %). This was due to a reclassification of social contributions to payroll taxes.

**Figure 7:** Contributions to GDP revisions by the income components, 2010
(%)




*Source:* Eurostat

# 4. Impact of ESA 2010 on key indicators from the sector accounts

This section presents revisions to a number of key indicators from the sector accounts for the euro area (EA-18) and the European Union (EU-28) for the household and business sectors.

As explained above, the revisions are due to methodological changes associated with the introduction of ESA 2010 and statistical improvements.

## 4.1 Household sector

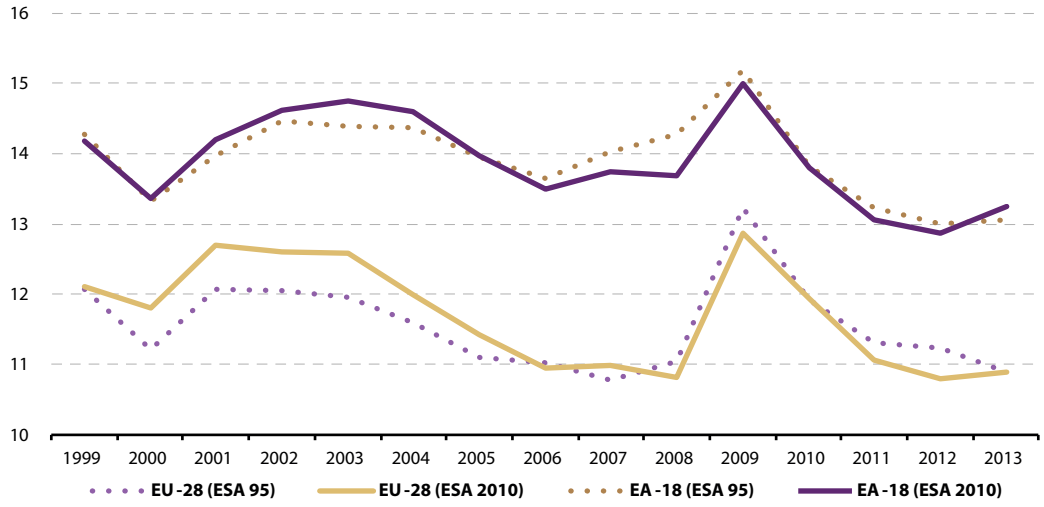
The gross saving rate of households (household saving rate) is defined as gross saving divided by gross disposable income, with the latter including the change in the net equity of households in pension funds reserves. Gross saving is the part of the gross disposable income which is not spent as final consumption expenditure. Therefore, the saving rate increases when gross disposable income grows at a higher rate than final consumption expenditure.

The revisions to households' saving rates in both EA-18 and EU-28 were marginal, as shown in Figure 8, and largely due to statistical improvements.

It is worthwhile noting that the revisions for:

- EA-18 of – 0.6 percentage points (pp) in 2008 were mainly driven by negative contributions of Italy, Germany and Portugal;
- EU-28 of + 0.6 pp years before 2005 were mainly driven by positive contributions of the UK.

**Figure 8:** Revisions to households' saving rates
(%)

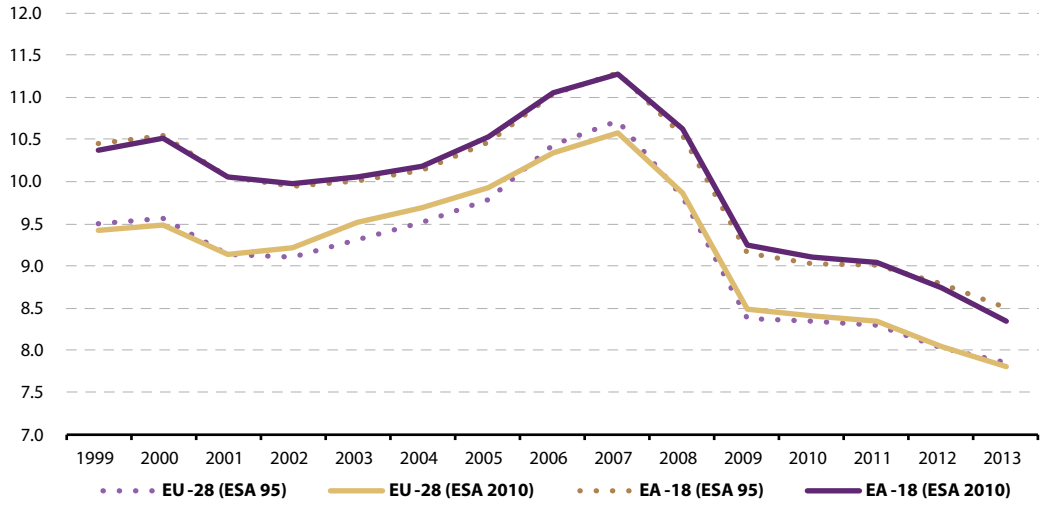



*Source:* Eurostat

The gross investment rate of households (household investment rate) is defined as gross fixed capital formation divided by gross disposable income, with the latter being adjusted for the change in the net equity of households in pension funds reserves. Household investment mainly consists of the purchase and renovation of dwellings.

Revisions to households' investment rates in both EA-18 and EU-28 were insignificant, as show in Figure 9.

**Figure 9:** Revisions to households' investment rates
(%)



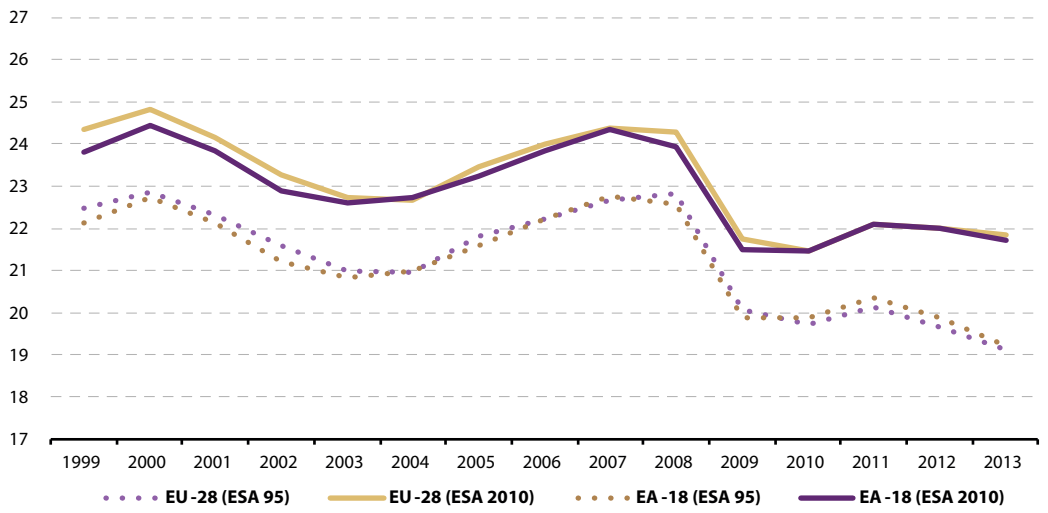

*Source:* Eurostat

## 4.2 Non-financial corporations sector

As explained in section 2, significant methodological revisions were due to the capitalisation of research and development recorded as investment. This is clearly demonstrated by Figure 10 that shows the non-financial corporations investment rates. The gross investment rate of non-financial corporations is defined as gross fixed capital formation divided by gross value added. This rate relates the investment of non-financial businesses in fixed assets (buildings, machinery etc.) to the value added created during the production process.

Figure 10 shows an upward level shift in the investment rates in both EA-18 and EU-28 of approximately 2 percentage points. This was due to a large increase in the level of investment while gross value added increased only modestly.

**Figure 10:** Revisions to non-financial corporations' investment rates
(%)

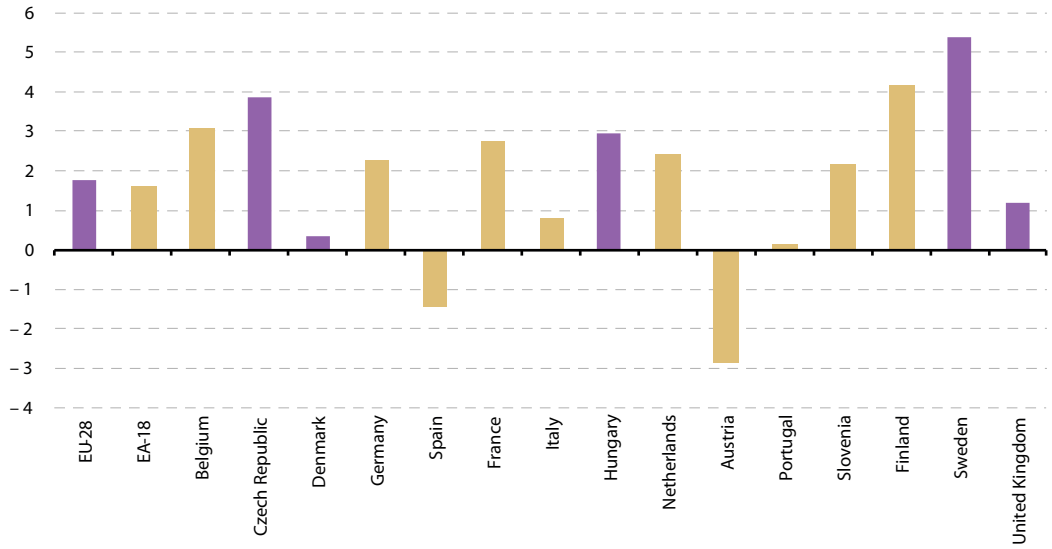



*Source:* Eurostat

The majority of EA and EU countries contributed positively to the upward revisions in the non-financial corporations' investment rates, and only few countries like Spain and Austria contributed negatively, see Figure 11 that illustrates the revisions to non-financial corporations' investment rates in 2010 for selected countries largely contributing to the EA-18 (in yellow) and to the EU-28 (in purple).

In Spain, the statistical improvements resulted in a much stronger increase of the level of the production and gross value added compared to the upward revisions of investment, hence the downward revisions to Spanish investment rate.

**Figure 11:** Revisions to non-financial corporations' investment rates by country, 2010
(%)

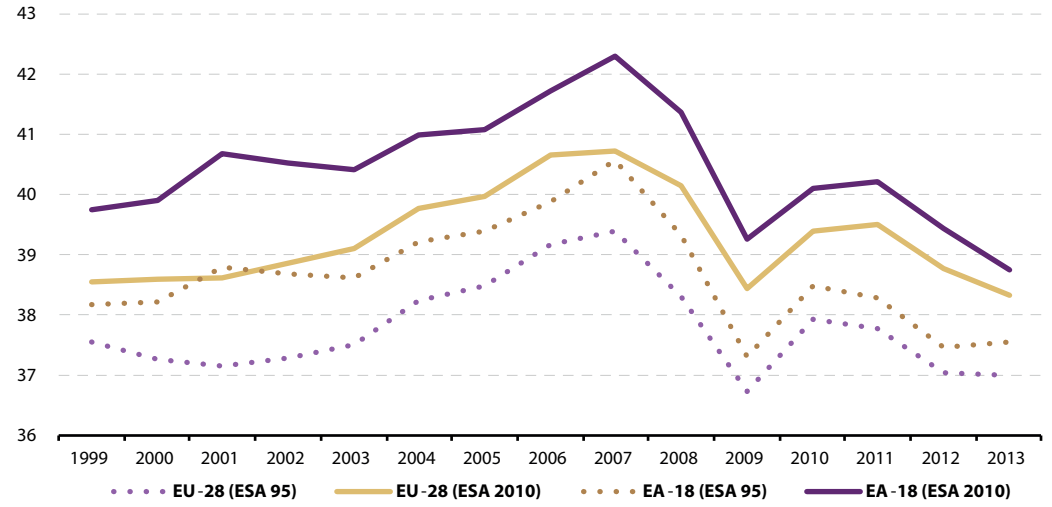



*Source:* Eurostat

The profit share of non-financial corporations is defined as gross operating surplus divided by gross value added. This profitability-type indicator shows the share of the value added created during the production process remunerating capital. It is the complement of the share of wage costs (plus taxes less subsidies on production) in value added.

The revisions to profit shares presented in Figure 12, show a level shift in both EA-18 and EU-28. This is mainly a result of gross operating surplus increasing faster than the gross value added.

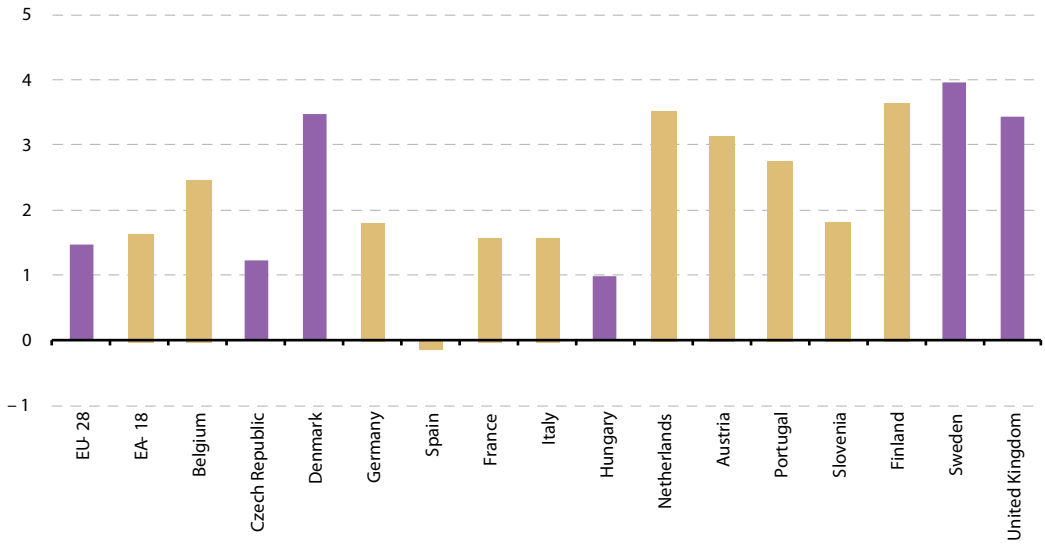
**Figure 12:** Revisions to non-financial corporations' profit shares
(%)




*Source:* Eurostat

Almost all countries contributed positively to the revision of the euro area and EU non-financial corporations' profit shares, as shown in the Figure 13, illustrating the revisions to non-financial corporations' profit shares in 2010 for selected countries largely contributing to the EA-18 (in yellow) and to the EU-28 (in purple).

**Figure 13:** Revisions to non-financial corporations' profit shares by country
(%)




*Source:* Eurostat

# 5. The impact of ESA 2010 on government deficit and debt data

This section presents the most important methodological changes resulting from the introduction of ESA 2010 as regards the recording of government deficit and debt.

## Sector classification

The fundamentals of sector classification rules did not change. In a simplified way, a unit is classified in the government sector if (1) it is an institutional unit, (2) it is controlled by government, (3) and it is a non-market unit.

The non-market nature of a unit means that the output is provided for free or not sold at economically significant prices. In practice it is verified by application of the so-called market/non-market test, according to which a unit is a market producer if its sales exceed 50 % of production costs. Compared to ESA 95, in ESA 2010 the definition of production costs now includes net interest charges.

The second difference is the addition of so called 'qualitative criteria', which assesses the competition situation of a unit selling to government. For example, a government controlled unit that would be a market producer according to the market/non-market test may still be classified in the gov-

ernment sector if it sells its output only to government and it does not compete with other producers.

In addition, the government sector may include some specific government controlled entities for which the market/non-market test is not relevant (for example public defeasance structures).

## Lump sum payments for pension schemes

On a number of occasions governments have taken over pension obligations from non-government units (such as public corporations classified outside the government sector) accompanied by respective lump sum payments relating to the assets of the pension schemes from these units to general government. Under ESA 95 such transfers to general government impacted positively the deficit at the time of transfer, but this is no longer the case under ESA 2010.

## Interest on swaps and forward rate agreements (FRAs)

This is actually not a change to the core ESA methodology, but the dropping of a specific definition of deficit which existed under ESA 95 and was used for the purpose of the Excessive Deficit Procedure (EDP). The 'EDP deficit' defined under ESA 95 included the net impact of interest flows on swaps and FRAs, while the deficit of the core ESA 95 accounts did not include these flows (they were treated as financial transactions). From the introduction of ESA 2010, the EDP framework uses the same deficit concept as the core ESA.

## Other items (standardised guarantees, payable tax credits and government issues of permits)

The other items that led to some revisions to government deficit are standardised guarantees granted by government, tax credits, and the sale of government issued permits (including mobile phone licenses).

Under ESA 95 the standardised guarantees granted by government (such as student loans) were regarded as contingent liabilities whereas ESA 2010 requires to recognise them as a financial liability of government reflecting the likely level of calls on the guarantees (this financial liability could be compared to a provision in the government accounts). The deficit impact of these guarantees should now be based on the change in such provisions.

While ESA 95 did not provide explicit guidance for tax credits, ESA 2010 establishes two different recordings for payable or non-payable tax credits. Non-payable tax credits are to be recorded as a reduction of tax revenue, as under ESA 95. On the contrary, payable tax credits represent an obligation for government and, under ESA 2010, they have to be recorded as government expenditure instead of a reduction of tax revenue. The time of recording of payable tax credits may change government deficit for some countries as compared to the recording followed under ESA 95. Under ESA 2010, the impact on the government deficit would take place in one single year (when the obligation is recognised by government) instead of being spread over time, when it would be used to offset tax liabilities.

As regards the sale of government issued permits, if a government issues a permit which gives the control on the natural resource asset to its holder during an extended period (bearing associated risks and rewards), it may be recorded as a new asset only if the permit is transferable to a third party. In practice, it means that the proceeds from the sale of such asset are recorded as government revenue at the time when it is transferred to the buyer. On the contrary, if the government has the right to block such a transfer to third parties, or if the contract requires the permit holder to keep the licence until its extinction, the licence should not be recognised as an asset and payments to government are recorded as rents or taxes which are spread over time until its extinction.

Tables 5 and 6 show the revisions to deficit and debt ratios for the year 2010. For the EU-28 the deficit ratio was revised from – 6.5 % to – 6.4 % which was due to revisions of the GDP (+ 0.2 pp) and other revisions not linked to ESA 2010 (– 0.1 pp). While the introduction of ESA 2010 did not have a significant impact on the deficit ratio of the EU-28, it did for individual countries. Nine countries improved their deficit ratios and eleven worsened them.

For the EU-28 the debt ratio was revised from 79.9 % to 78.2 %. The revision in the debt ratio of – 1.7 p.p. is explained by the revision of GDP (– 2.8 p.p.), revisions due to ESA 2010 (+ 0.9 p.p.) and by other revisions (+ 0.2 p.p.). The revisions to debt due to ESA 2010 were particularly important for Austria (+ 12.2 p.p.), Croatia (8.3 p.p.), Portugal (6.1 p.p.) and Belgium (4.5 p.p.). It is worth noting that for two countries the debt ratio was reduced (Lithuania – 1.1 p.p and Poland – 0.5 p.p.) due to consolidation effects of government liabilities held by units that have been reclassified in the general government as a consequence of ESA 2010.

**Table 5:** Revisions to government deficit ratios, 2010

| | Deficit ratio April 2014 (ESA 95) | Revisions from April to October 2014 | | | | Deficit ratio October 2014 (ESA 2010) |
|---|---|---|---|---|---|---|
| | | Revisions to deficit due to ESA 2010 | Other revisions to deficit | Revisions due to GDP (denominator) | Revisions to deficit ratio | |
| **EU-28** | – 6.5 | 0.0 | – 0.1 | 0.2 | 0.1 | – 6.4 |
| **EA-18** | – 6.2 | 0.0 | – 0.1 | 0.2 | 0.1 | – 6.1 |
| Belgium | – 3.8 | 0.1 | – 0.3 | 0.1 | – 0.1 | – 4.0 |
| Bulgaria | – 3.1 | – 0.2 | 0.0 | 0.1 | – 0.1 | – 3.2 |
| Czech Republic | – 4.7 | 0.1 | 0.0 | 0.2 | 0.3 | – 4.4 |
| Denmark | – 2.5 | – 0.2 | 0.0 | 0.1 | – 0.2 | – 2.7 |
| Germany | – 4.2 | 0.0 | 0.0 | 0.1 | 0.1 | – 4.1 |
| Estonia | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Ireland | – 30.6 | – 0.9 | – 2.2 | 1.3 | – 1.8 | – 32.4 |
| Greece | – 10.9 | – 0.3 | – 0.1 | 0.2 | – 0.2 | – 11.1 |
| Spain | – 9.6 | 0.0 | – 0.1 | 0.3 | 0.2 | – 9.4 |
| France | – 7.0 | 0.0 | 0.0 | 0.2 | 0.2 | – 6.8 |
| Croatia | – 6.4 | 0.0 | 0.2 | 0.1 | 0.3 | – 6.0 |
| Italy | – 4.5 | 0.2 | 0.0 | 0.2 | 0.3 | – 4.2 |
| Cyprus | – 5.3 | 0.0 | 0.0 | 0.5 | 0.5 | – 4.8 |
| Latvia | – 8.2 | – 0.1 | 0.0 | 0.0 | – 0.1 | – 8.2 |
| Lithuania | – 7.2 | 0.2 | 0.0 | 0.1 | 0.3 | – 6.9 |
| Luxembourg | – 0.8 | 0.1 | 0.0 | 0.0 | 0.1 | – 0.6 |
| Hungary | – 4.3 | – 0.3 | 0.0 | 0.1 | – 0.2 | – 4.5 |
| Malta | – 3.5 | 0.1 | 0.0 | 0.1 | 0.2 | – 3.3 |
| Netherlands | – 5.1 | 0.1 | – 0.4 | 0.4 | 0.1 | – 5.0 |
| Austria | – 4.5 | 0.1 | – 0.2 | 0.1 | 0.1 | – 4.5 |
| Poland | – 7.8 | 0.1 | 0.0 | 0.1 | 0.2 | – 7.6 |
| Portugal | – 9.8 | – 1.9 | 0.2 | 0.4 | – 1.3 | – 11.2 |
| Romania | – 6.8 | 0.0 | 0.0 | 0.1 | 0.1 | – 6.6 |
| Slovenia | – 5.9 | 0.0 | 0.1 | 0.1 | 0.2 | – 5.7 |
| Slovak Republic | – 7.5 | – 0.1 | 0.0 | 0.1 | 0.1 | – 7.5 |
| Finland | – 2.5 | – 0.3 | 0.0 | 0.1 | – 0.1 | – 2.6 |
| Sweden | 0.3 | – 0.3 | 0.0 | 0.0 | – 0.3 | 0.0 |
| United Kingdom | – 10.0 | – 0.1 | 0.1 | 0.5 | 0.4 | – 9.6 |

*Source:* Eurostat

**Table 6:** Revisions to government debt ratios, 2010

| | Debt ratio April 2014 (ESA 95) | Revisions from April to October 2014 | | | | Debt ratio October 2014 (ESA 2010) |
|---|---|---|---|---|---|---|
| | | Revisions to Debt due to ESA 2010 | Other revisions to Debt | Revisions due to GDP (denominator) | Revisions to deficit ratio | |
| **EU-28** | 79.9 | 0.9 | 0.2 | – 2.8 | – 1.7 | 78.2 |
| **EA-18** | 85.5 | 0.8 | 0.3 | – 2.9 | – 1.8 | 83.7 |
| Belgium | 96.6 | 4.5 | 1.1 | – 2.6 | 2.9 | 99.6 |
| Bulgaria | 16.2 | 0.0 | 0.0 | – 0.3 | – 0.3 | 15.9 |
| Czech Republic | 38.4 | 1.4 | 0.0 | – 1.6 | – 0.2 | 38.2 |
| Denmark | 42.8 | 0.2 | 0.8 | – 0.9 | 0.1 | 42.9 |
| Germany | 82.5 | 0.1 | 0.2 | – 2.6 | – 2.3 | 80.3 |
| Estonia | 6.7 | 0.0 | 0.0 | – 0.2 | – 0.1 | 6.5 |
| Ireland | 91.2 | 0.0 | 0.0 | – 3.8 | – 3.8 | 87.4 |
| Greece | 148.3 | 0.3 | 0.0 | – 2.7 | – 2.3 | 146.0 |
| Spain | 61.7 | 0.4 | 0.0 | – 2.0 | – 1.6 | 60.1 |
| France | 82.7 | 0.1 | 1.2 | – 2.6 | – 1.3 | 81.5 |
| Croatia | 45.0 | 8.3 | 0.0 | – 0.6 | 7.8 | 52.8 |
| Italy | 119.3 | 0.0 | 0.0 | – 4.0 | – 4.0 | 115.3 |
| Cyprus | 61.3 | 0.5 | 0.0 | – 5.3 | – 4.8 | 56.5 |
| Latvia | 44.5 | 2.2 | 0.0 | 0.1 | 2.3 | 46.8 |
| Lithuania | 37.8 | – 1.1 | 0.0 | – 0.4 | – 1.4 | 36.3 |
| Luxembourg | 19.5 | 0.1 | 0.0 | 0.0 | 0.1 | 19.6 |
| Hungary | 82.2 | 0.1 | 0.0 | – 1.3 | – 1.3 | 80.9 |
| Malta | 66.0 | 3.1 | 0.0 | – 1.5 | 1.6 | 67.6 |
| Netherlands | 63.4 | 0.0 | 0.1 | – 4.5 | – 4.4 | 59.0 |
| Austria | 72.5 | 12.2 | 0.0 | – 2.2 | 10.0 | 82.4 |
| Poland | 54.9 | – 0.5 | 0.0 | – 0.8 | – 1.3 | 53.6 |
| Portugal | 94.0 | 6.1 | – 0.3 | – 3.7 | 2.2 | 96.2 |
| Romania | 30.5 | 0.0 | 0.0 | – 0.6 | – 0.6 | 29.9 |
| Slovenia | 38.7 | 0.0 | 0.0 | – 0.8 | – 0.8 | 37.9 |
| Slovak Republic | 41.0 | 0.9 | 0.0 | – 0.8 | 0.1 | 41.1 |
| Finland | 48.8 | 0.5 | 0.0 | – 2.2 | – 1.6 | 47.1 |
| Sweden | 39.4 | 0.0 | – 0.7 | – 2.0 | – 2.7 | 36.7 |
| United Kingdom | 78.4 | 1.6 | 0.0 | – 3.7 | – 2.0 | 76.4 |

*Source:* Eurostat

# 2014 Major revision of the national accounts in Germany

2

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# Implementation of ESA 2010 as the main driver of the major revision

The main purpose of the 2014 major revision is to implement the European System of Accounts 2010 (ESA 2010), which must, by law, be applied in all EU Member States as from September 2014, replacing the former ESA 95 ([1]). The switch to ESA 2010 brings the German System of National Accounts into line with the new worldwide standard, the System of National Accounts 2008 (SNA 2008), thus taking an important step towards improving international comparability of national accounts data ([2]).

The implementation of the new international standards was used in Germany as an opportunity to also review the calculation methods and sources for the entire system. The 2014 major revision of the national accounts thus includes a total overhaul of all the tables since 1991. In this revision, data on the former territory of the Federal Republic of Germany (i.e. before 1991) were not recalculated. Thus, back until 1970, current data come from the 2005 calculation, the last time that a calculation was undertaken for the area of the former territory of the Federal Republic of Germany. Historically, there have been twelve major revisions of the German national accounts since they started again being calculated after the Second World War. Most of these revisions were linked to the implementation of changes in international concepts ([3]). The previous major revision, in 2011, served primarily to introduce new industries and goods classifications, which was also a worldwide harmonised implementation of new standards ([4]). In the 2005 revision, it was mainly about implementing outstanding points of the ESA 95, which was still valid at that time, in particular the recording of Financial Intermediation Services Indirectly Measured (FISIM) and the calculation of price-adjusted results in previous year's prices with chain linking. The 1999 revision served primarily to introduce the ESA 95.

## Publication of the revised results

On 14 August 2014, the Federal Statistical Office published selected first results of the 2014 major revision together with the regular release of the flash estimates for the second quarter of 2014. On 1 September 2014, when detailed figures for the second quarter of 2014 were released, also further results of the 2014 major revision for the period from 1991 onwards were published. At the same time, a press conference was scheduled to explain the background to the conceptual changes and their impact on the GDP and on other indicators of the national accounts.

## GDP revised up by around 3 %

As a result of calculations in the frame of the 2014 major revision, the nominal GDP increased by around 3 % over the entire time series, showing small variations in individual years. For 2010, the revised GDP was EUR 2 576 billion, i.e. EUR 81 billion or 3.3 % more than on the basis of the previous methodology.

## The basic cyclical pattern remains almost unchanged

The rates of change in the annual price-adjusted GDP differ by up to 0.3 percentage points from the

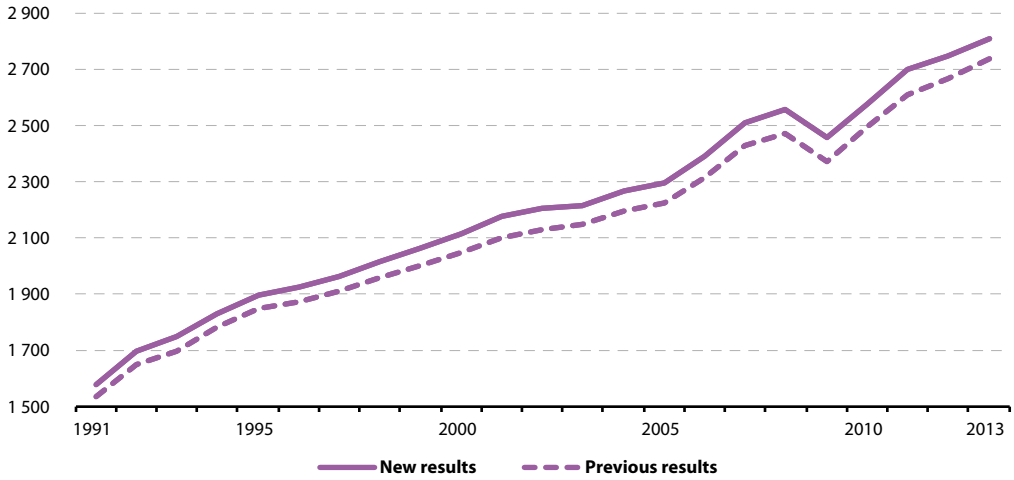
([1]) See Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union (OJ L 174, 26.6.2013, p. 1).

([2]) See Braakmann, A.: 'Revidierte Konzepte für Volkswirtschaftliche Gesamtrechnungen' (Revised concepts for national accounts) in WiSta 8/2013, p. 521 ff., here: p. 522 f.

([3]) A good overview of earlier revisions of the national accounts can be found in Schmidt, J.: 'Entwicklungen der Volkswirtschaftlichen Gesamtrechnungen seit 1950' (Developments in the national accounts since 1950) in 'Die Volkswirtschaftlichen Gesamtrechnungen in Deutschland. Von der Vision zur Realität' (The national accounts in Germany. From vision to reality), Festschrift for Dr Hildegard Bartels on her 90th birthday, Wiesbaden 2004.

([4]) See Räth, N./Braakmann, A.: 'Revision der Volkswirtschaftlichen Gesamtrechnungen 2011 für den Zeitraum 1991 bis 2010' (2011 revision of the national accounts for the period 1991 to 2010) in WiSta 9/2011, p. 825 ff.

**Figure1:** Gross domestic product at current prices
(billion EUR)



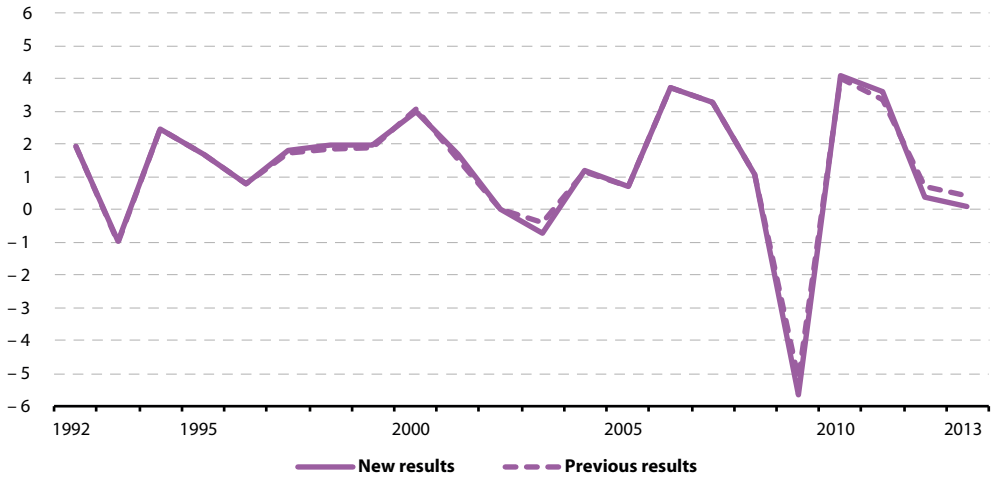

*Source:* Federal Statistical Office, Germany

previously published results. Only for 2009 the correction was slightly larger (– 0.5 percentage points): the economic downturn during the recent financial and economic crisis was somewhat more marked in the revised data than shown by the previous data (– 5.6 % instead of – 5.1 %). Accordingly, the subsequent recovery in 2010 and 2011 was stronger. The revisions for the most recent years are mainly due to new or improved basic data. In the long term, over the period 1991 to 2013, the average annual rate of change of the GDP remained almost the same (+ 2.7 % in nominal terms and + 1.3 % price-adjusted).

The quarterly rates of change of the price-adjusted GDP were revised by up to 0.4 percentage points in both directions, upwards or downwards, and in both comparison dimensions: compared with the same quarter of the previous year or with the previous quarter in the time series. There is only one exception: the year 2009, where the rate of change compared to the same quarter of the previous year was revised by 0.8 percentage points. The basic cyclical pattern of the time series, however, has remained almost unchanged, as the major revision comprised the entire time series, so that statistical breaks could be avoided. The mean absolute revision of the quarterly rates of change of the price-adjusted GDP was just 0.12 percentage points compared to the same quarter of the previous year and 0.09 percentage points in the seasonally and calendar-adjusted comparison with the previous quarter in the time series ([5]).

([5]) For detailed comments on the revised results, see Räth, N./Braakmann, A: 'Generalrevision der Volkswirtschaftlichen Gesamtrechnungen 2014 für den Zeitraum 1991 bis 2014' (2014 major revision of the national accounts for the period 1991 to 2014) in WiSta 9/2014, p. 502 ff.

**Figure 2:** Revision of the price-adjusted GDP compared to the same quarter of the previous year
(%)




*Source:* Federal Statistical Office, Germany

## Important conceptual changes and non-conceptual changes having an impact on GDP

An essential reason for the GDP increase is the capitalisation of research and development expenditure. In quantitative terms, this is by far the largest conceptual change introduced by ESA 2010, accounting for around 70 % of the overall effect. For 2010, 2.3 percentage points of the GDP increase (out of a total of 3.3 %) are due to the reclassification of R&D (see table 1). Another 0.1 percentage points are due to recording military weapon systems as capital formation, while 0.2 percentage points are caused by a modified delimitation of small tools, i.e. durable low-value goods or small equipment. In Germany, the modified recording of non-life insurance in the ESA 2010 has no impact on GDP, as the compilation rules to calculate the service charge are already applied. However, in Germany, the new way of recording reinsurance led to a slight GDP increase of just under 0.1 % in 2010. The increase in the accuracy of the Government sector definition in the ESA 2010 has only a marginal impact on the GDP level.

All in all, the conceptual changes contributed 2.7 percentage points to the GDP increase ([6]).

Non-conceptual changes, on the other hand, accounted for just 0.6 percentage points of the overall impact, of which the new calculation of dwelling services on the basis of the 2011 census (+ 0.2 percentage points) was a particularly important component.

Less important in quantitative terms is the recording of illegal activities, i.e. of the production of and dealing with drugs and of tobacco smuggling, which accounted for less than 0.1 percentage points of the overall impact. The inclusion of illegal activities in GDP was already stipulated by the ESA 95, but it has long been a source of controversy. ESA 2010 also requires illegal activities to be included in GDP; the European Commission therefore pushed this point forward. Prostitution is in principle legal in Germany, and it was already included in GDP, which meant that estimates had to be generated only for tobacco smuggling and for the drugs

([6]) A detailed description can be found in the working document 'Konzeptionelle Unterschiede zwischen ESVG 95 und ESVG 2010' (Conceptual differences between ESA 95 and ESA 2010) available on the website of the Federal Statistical Office.

economy ([7]). Inclusion of the drugs economy and of tobacco smuggling accounts for a slight increase in the GDP over the whole time series.

The recording of car scrap premiums was amended in the 2014 major revision. Car scrap premiums were introduced by several Member States in 2009/2010 in order to counteract the impact of the global financial crisis in the real economy. In the German national accounts they were initially recorded GDP-neutral, as a transfer from the general government to households. After detailed consultations at European level, it was decided to record the car scrap premiums as a subsidy on products in all Member States. This reduced slightly the nominal GDP for Germany in 2009 and 2010.

**Table 1:** Gross Domestic Product, 2010

| | billion EUR | % ([1]) |
|---|---|---|
| **New result** | 2 576.22 | X |
| **Previous result** | 2 495.00 | X |
| **Difference** | 81.22 | 3.3 |
| **of which:** | | |
| **a) conceptual** | 66.69 | 2.7 |
| of which: Research and development | 57.14 | 2.3 |
| Military weapons systems | 2.38 | 0.1 |
| Small tools | 5.35 | 0.2 |
| **b) non-conceptual** | 14.53 | 0.6 |
| of which: Dwelling services | 4.51 | 0.2 |
| Illegal activities | 1.52 | 0.1 |
| Car scrap premiums | – 0.73 | – 0.0 |

([1]) % of the previous result.
*Source:* Federal Statistical Office, Germany

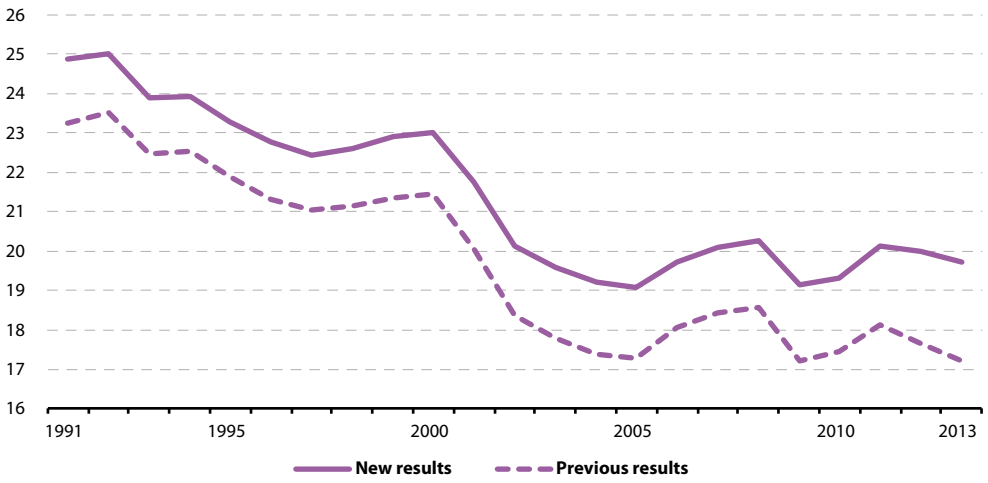
# Impact on main aggregates and indicators

## Gross fixed capital formation

On the expenditure side, the changes to the way of recording research and development led to a notable increase in nominal gross fixed capital formation of around EUR 62 billion or 14.3 % in 2010. Investment in research and development (R&D) is now recorded under the heading of 'Intellectual property'. This conceptual change affects both acquired and own-account R&D. The composition of the GDP by expenditure has notably changed in particular as a result of the increase in capital formation: according to the revised results, the share of nominal gross fixed capital formation in GDP was 19.3 % in 2010. This investment rate was thus almost 2 percentage points higher than in the unrevised accounts (17.4 %). However, the picture of a gradually falling investment rate persists also after the revision.

([7]) Further information on this subject can be found in the working document 'Zur Erfassung illegaler Aktivitäten im Bruttoinlandsprodukt' (On the recording of illegal activities in GDP) produced by the Federal Statistical Office and available on the internet.

**Figure 3:** Investment rate (*)
(%)




(*) Gross fixed capital formation as share in GDP
*Source:* Federal Statistical Office, Germany

## Government final consumption expenditure

Major conceptual changes affecting the general government sector are again the recording of R&D and of military weapons systems as capital formation. Moreover, the sector delimitation of general government is more accurately and stringently specified in the ESA 2010, so that the general government sector now includes more government units than before. The effects on government final consumption expenditure, however, often cancel each other out: due to conceptual changes, the government final consumption expenditure fell by 0.1 % in 2010. However, data-related changes increased the nominal government final consumption expenditure by 1.5 % in 2010. This can be attributed primarily to the new calculation of imputed social security contributions.

## Household final consumption expenditure

ESA 2010 did not lead to any conceptual changes in the household final consumption expenditure. The increase by 0.7 % (nominal) in 2010 was primarily due to new basic data. Moreover, further calculation modules especially for trade were redesigned: for example, the share of sales to households in total sales and the mail order trade calculations were revised. For the first time, data on smuggled tobacco products and drugs purchased by households as obtained by model calculations were included. In addition, according to an international agreement, the car scrap scheme for 2009 and 2010 was no longer recorded as income and final consumption expenditure of households (car purchases), but as subsidies on products. However, this change reduced only the results at current prices, the price-adjusted figures for car purchases remained unaffected.

## Exports and imports

The level of imports and exports is considerably lower now, in particular because goods sent abroad for processing are now shown in net terms. This means that only the fee charged for processing services is recorded as exports or imports. Thus, both export and import ratios (in relation to GDP) have also fallen significantly: according to the new compilation, the export ratio was 42.3 % for 2010 (compared with an unrevised ratio of 47.6 %), and the import ratio was 37.1 % (compared with 42.0 % unrevised). Further changes in exports and imports are due to a methodological harmonisation of concepts in the national accounts and in the balance of payments statistics. However, the external balance of goods and services, i.e. the difference between exports and imports, changed only slightly over the whole time series.

## Gross value added

In the production approach, the economic structure remains basically the same. Again, the capitalisation of research and development was the most significant conceptual change in quantitative terms. This led to an increased nominal gross value added. In the breakdown by industry, this change in the level of the gross value added has had an impact above all on manufacturing industries and, in relation to the sectors, on the research and development activities of market producers. The new rule also applies to government units and to non-profit organisations serving households; however, the impact on non-market producers is lower, as the value added is calculated using different methods. Whilst the reclassification of purchased research and development from intermediate consumption to capital formation leads directly to an increased gross value added of market producers, it has only an indirect impact for non-market producers by way of higher consumption of fixed capital.

## Consumption of fixed capital

Consumption of fixed capital has risen by around 20 %, primarily because of the broader definition of capital formation to include research and development and military weapons systems.

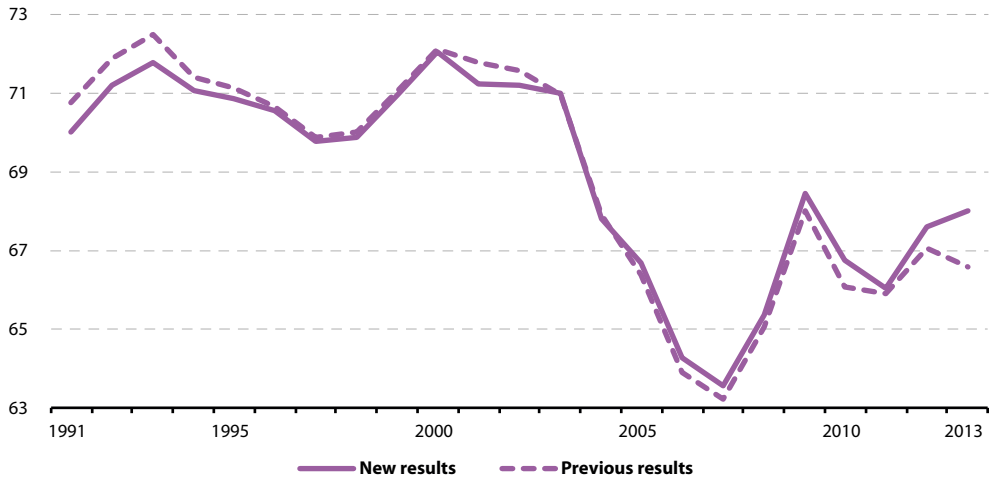
## National income

The significant increase in consumption of fixed capital is also a crucial factor for many income aggregates, because the rise in the level of the GDP or of gross national income is offset to a large extent by the large increase in consumption of fixed capital. As a consequence, the 'net aggregates' have barely changed. For example, the revised net national income in 2010 increased by only 0.1 %, and the net national income at factor costs remained almost unchanged.

## Compensation of employees

There were some further conceptual changes in the income approach. For example, after the revision the compensation of employees in 2010 was around EUR 13.4 billion or more than 1 % higher than before. This was the result of higher wages and salaries as well as of revised employers' social contributions. The rise in wages and salaries was caused in particular by the inclusion of stock options, by the revision of wages and salaries of marginally employed persons, and by the inclusion of wages and salaries of disabled persons working in sheltered workplaces. The revised employment figures were also integrated in the calculations. Employer's social contributions were also revised upwards, the main reason being the new calculation of employers' imputed social contributions for the public officials' pension scheme. The wage share — i.e. the share of compensation of employees in the net national income at factor costs — for 2010 is 0.7 % higher after the revision, in particular because of an upwards adjustment of compensation of employees.

**Figure 4:** Share of compensation of employees in net national income at factor costs
(%)

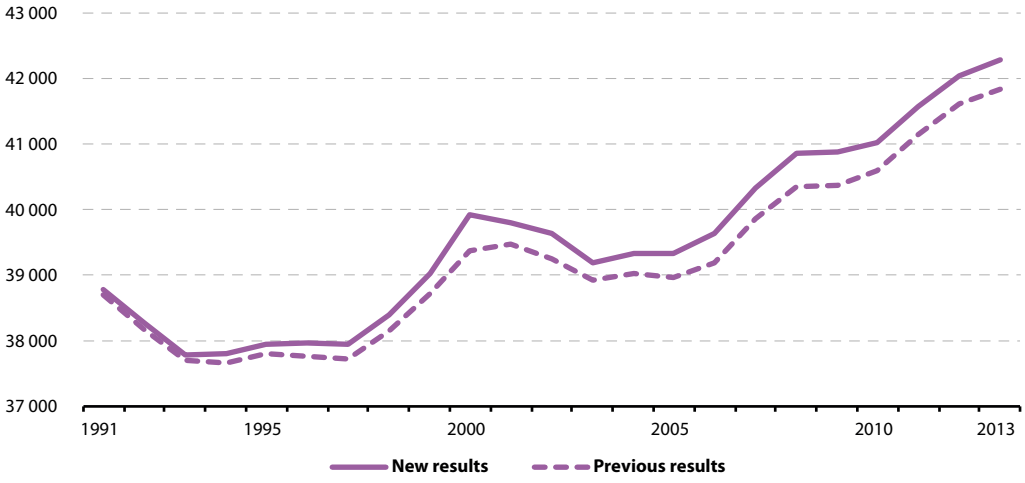



*Source:* Federal Statistical Office, Germany

## Employment

The calculation of the number of persons in employment was also overhauled as part of this major revision of the national accounts. Over the entire revised time series, as of 1991, the number of persons in employment in Germany was revised upwards by an average of 320 000 persons (0.8 %). These upwards corrections resulted almost entirely from the new calculation of the number of employees, which can be attributed in turn to the revision of employment statistics carried out by the Federal Employment Agency (BA). The broader definition of employees to include disabled people working in sheltered workshops played a particularly important role here. On the other hand, the results of the register-based 2011 census, which were also fed into the new calculations, made relatively little difference. The introduction of ESA 2010 did not entail any quantitatively significant methodological changes for the calculation of employment. Overall, the new calculations for the years 2010 to 2013 led to the number of persons in employment in Germany being revised upwards by about 1 % to 42.3 million (2013).

**Figure 5:** Persons in employment
(thousand)



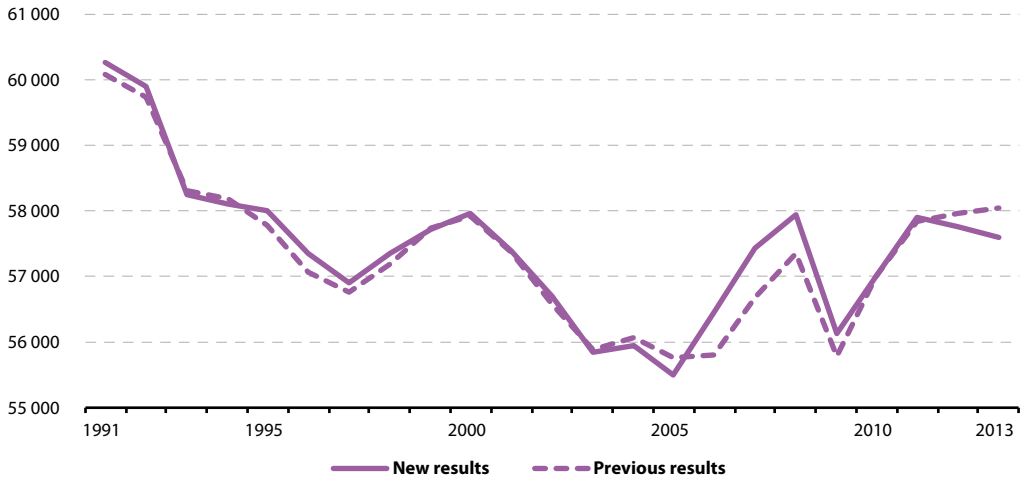

*Source:* Federal Statistical Office, Germany

## Hours worked

The hours worked have also been revised. They are compiled by the Institute for Employment Research (*Institut für Arbeitsmarkt* und *Berufsforschung*) (IAB) which belongs to the Federal Employment Agency (BA). An important part of the revision was to include the revised results for the number of persons in employment and thus the BA's employment statistics. After the revision, the working time calculation showed a consistently higher part-time employment rate. One methodological change brought about by ESA 2010 is the recording of unpaid overtime, which led to a revision of the overtime component in the working time calculation.

As a result, in most years, the average number of hours worked per person in employment is slightly lower than before the revision, e.g. in 2010 it is by 15 hours or 1 % lower. However, the total hours worked (i.e. number of persons in employment multiplied by the number of hours worked per person in employment) did not change notably in 2010.

**Figure 6:** Hours worked
(million hours)

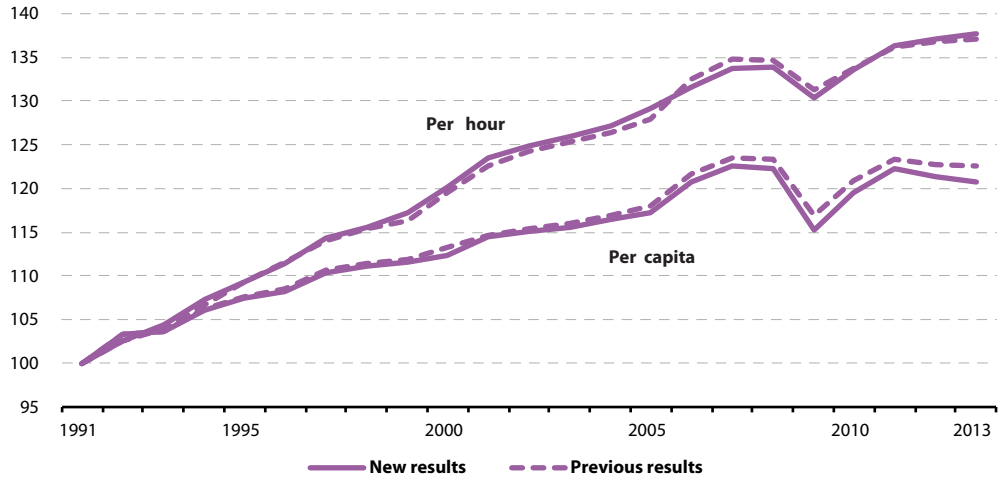



*Source:* Federal Statistical Office, Germany

## Labour productivity, unit labour costs

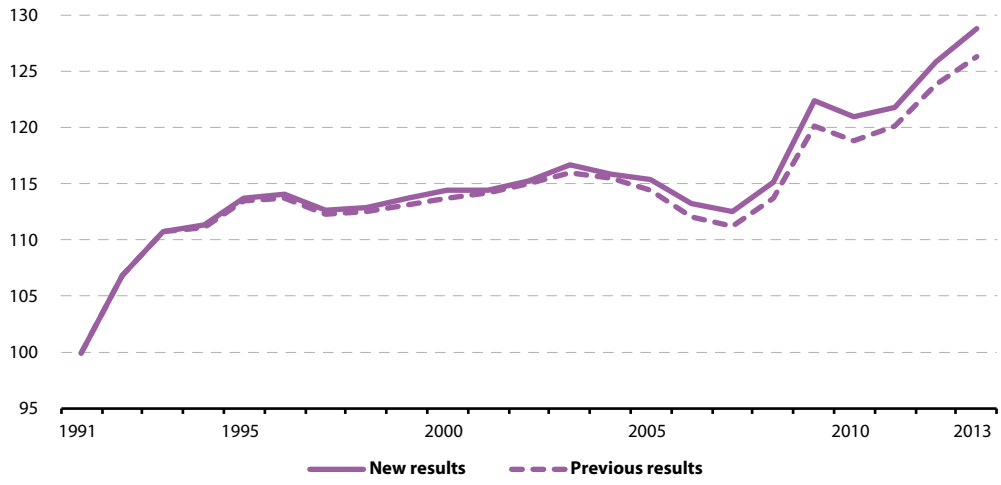
In the context of the 2014 major revision, the derived indicators labour productivity and unit labour costs also change over the entire time series, but the long-term trend remains more or less the same as before the revision.

**Figure 7:** Labour productivity (per hour and per capita)
(1991 = 100)



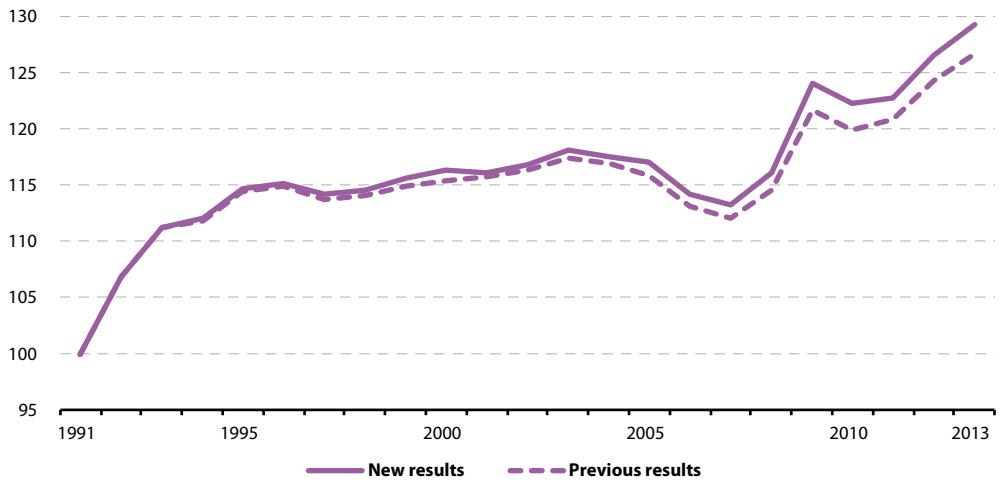

*Source:* Federal Statistical Office, Germany

**Figure 8:** Unit labour costs (per capita)
(1991 = 100)




*Source:* Federal Statistical Office, Germany

**Figure 9:** Unit labour costs (per hour)
(1991 = 100)




*Source:* Federal Statistical Office, Germany

## Net lending/net borrowing of general government, government deficit ratio

Major conceptual changes, in particular the capitalisation of R&D and of military weapons systems, together with data-related changes having an impact on the government sector, led to an increase in government revenue and expenditure for every year since 1991. With regard to the net lending/net borrowing of general government, the revision led to slight positive or negative changes. The revised deficit ratio is mostly slightly better, as the increase in GDP was larger than the change in net lending/net borrowing of general government caused by the revision. Moreover, the increase in GDP compared to government expenditure led to a lower ratio of government's expenditure to the GDP: this ratio fell, depending on the period considered, by between 0.1 and 0.9 percentage points.

**Table 2:** Overview of revision-related changes in 2010 and their major causes

| Indicator | New (2010) | Difference | Cause |
|---|---|---|---|
| **Gross domestic product (GDP) (billion EUR)** | 2 576.2 | – 3.3 | Sum of all conceptual and data-related changes |
| **Gross national income (GNI) (billion EUR)** | 2 630.4 | – 3.2 | Sum of all conceptual and data-related changes |
| **Net national income (billion EUR)** | 2 171.4 | – 0.1 | Effect of higher fixed capital consumption (compared to GNI) |
| **Consumption of fixed capital (billion EUR)** | 459.0 | 20.7 | R&D, military weapons systems, data-related changes |
| **Persons in employment (thousand)** | 41 020.0 | 1.1 | 2011 census, revised employment statistics of the BA |
| **Gross fixed capital formation (billion EUR)** | 497.2 | 14.3 | R&D, military weapons systems |
| **Capital formation ratio (gross fixed capital formation in relation to GDP) (%)** | 19.3 | 1.9 percentage points (pp) | R&D, military weapons systems, GDP increase |
| **Exports (billion EUR)** | 1 089.7 | – 8.3 | Goods sent abroad for processing, trade in electricity and gas, revision of the balance of payment statistics |
| **Export ratio (exports in relation to GDP) (%)** | 42.3 | – 5.3 pp | Goods sent abroad for processing, trade in electricity and gas, revision of the balance of payment statistics, GDP increase |
| **Imports (billion EUR)** | 956.1 | – 8.8 | Goods sent abroad for processing, trade in electricity and gas, revision of the balance of payment statistics |
| **Import ratio (imports in relation to GDP) (%)** | 37.1 | – 4.9 | Goods sent abroad for processing, trade in electricity and gas, revision of the balance of payment statistics, GDP increase |
| **Net national income at factor costs (billion EUR)** | 1 923.0 | 0.0 | Effect of higher fixed capital consumption (compared to GNI) |
| **Compensation of employees (billion EUR)** | 1 283.8 | 1.1 | New calculation of persons in employment, imputed social contributions |
| **Property and entrepreneurial income (billion EUR)** | 639.2 | – 1.9 | Impact of higher fixed capital consumption and higher compensation of employees |
| **Wage ratio (compensation of employees in net national income at factor costs) (%)** | 66.8 | 0.7 | Higher compensation of employees |
| **Saving ratio (%)** | 9.9 | – 1.0 | Data-related changes |
| **Labour productivity per capita (% change)** | 3.8 | 0.3 | Increase in GDP, new calculation of persons in employment |
| **Labour productivity per hour (% change)** | 2.5 | 0.7 | Increase in GDP, new calculation of hours worked |
| **Unit labour costs (per capita), (% change)** | – 1.2 | – 0.1 | Broad confirmation of previous results |
| **Unit labour costs (per hour) (% change)** | – 0.5 | 0.0 | Broad confirmation of previous results |
| **Net lending/net borrowing of general government (billion EUR)** | – 104.0 | 0.3 | Broad confirmation of previous results |
| **Deficit ratio (in relation to GDP) (%)** | – 4.0 | 0.2 | GDP increase, broad confirmation of previous results |

*Source:* Federal Statistical Office, Germany

# Communication strategy for the first time internationally networked

The Federal Statistical Office pursued a long-term communication strategy for the 2014 major revision of the national accounts. Communication with users had started long before the actual revision work began and it was reinforced as the date of first publication came closer. A wide range of information was gradually set up and expanded. It was aimed, in decreasing intensity, mainly at experts in the field and at specific users of national accounts data, but also at the media, and at the general public.

The communication on the implementation of the ESA 2010 involved, for the first time, close international networking. Since July 2013, the website of the Federal Statistical Office has included a heading dedicated to the '2014 revision of national accounts', which, in addition to own documents, includes a link to the Eurostat homepage. Conversely, the Eurostat website also has corresponding links.

Overall, the revision of the international national accounts methodology has been widely followed by the media in Germany. First reports appeared in early 2013, when the United States introduced the new international standards for national accounts (System of National Accounts, SNA 2008). Interest was stepped up in January 2014, when Eurostat published a first technical press release on the subject. There was a wave of reporting around the publication of the revised results in Germany in August/September 2014. The media discussed in particular whether prostitution, drugs and smuggling really belonged to the GDP. Many press articles picked up reports on the 2014 major revision to continue a public debate, which has been going on for several years about how to properly measure prosperity, quality of life and sustainability.

# Implementation of the ESA 2010 in France

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# Implementation of the ESA 2010 in France

Non-financial accounts were published on 15 May 2014, in accordance with the provisions of the ESA 2010. As a whole, the innovations introduced by the ESA 2010 resulted in GDP being revised upwards by + 2.3 % in comparison with the 2005 base. However, other changes were also made to the accounts, designed both to adjust them in line with structural business statistics (which to a large extent determine the level of GDP in the French national accounts) and to implement methodological improvements not connected to the ESA 2010. Ultimately, the level of GDP is increased by + 3.2 % for 2010 (Figure 1). GNI is increased in the same proportion (also + 3.2 %).

**Figure 1:** Source of revisions of GDP level for 2010

| | billion EUR | % of GDP in 2005 base |
|---|---|---|
| **GDP in 2005 base** | 1 936.7 | 100.0 |
| **Impact of ESA 2010** | 45.5 | 2.3 |
| R&D created by market producers | 27.7 | 1.4 |
| R&D created by non-market producers | 13.8 | 0.7 |
| Expenditure on weapons systems | 3.3 | 0.2 |
| Expenditure on databases | 1.2 | 0.1 |
| Development of output for own final use | 0.5 | 0.0 |
| Non-life insurance | 0.2 | 0.0 |
| Allocation of output of the central bank | 0.6 | 0.0 |
| Other | – 1.8 | – 0.1 |
| **Impact of alignment with structural business statistics** | 8.6 | 0.4 |
| **Methodological improvements** | 7.7 | 0.4 |
| Household activity in leasing services | 5.0 | 0.3 |
| Recording of tax on car registration certificates | 1.7 | 0.1 |
| Other | 1.0 | 0.1 |
| **GDP in 2010 base** | 1 998.5 | 103.2 |

*Source:* INSEE, national accounts

# Implementation of the ESA 2010 explains nearly three quarters of the upward revision of GDP (+ 2.3 %)

## A broader definition of assets and investment in the ESA 2010

The ESA 2010 broadens the scope of fixed assets to include in particular outputs of R&D activity, databases and military weapons systems (vehicles, submarines, tanks, ballistic missiles with high destructive capability intended to provide ongoing deterrence, etc.). The corresponding expenditure (acquisition of military equipment, purchase or own-account production of databases or R&D services) by enterprises or general government (GG) are now therefore recorded as gross fixed capital formation (GFCF), which increases GDP.

The new treatment of R&D expenditure alone has the effect of increasing GDP by 2.1 % in 2010 (EUR 41.5 billion). Two thirds of this increase (EUR 27.7 billion) comes from non-financial corporations (NFCs) and one third (EUR 13.8 billion) from gen-

eral government. The recording of databases as an asset in their own right, which reflects the growing role of information and communication technology in production processes, increases the GDP generated by NFCs by EUR 1.2 billion in 2010. Lastly, the recording of military weapons system expenditure as GFCF increases only the value added of general government: in 2010, deliveries of military equipment were significant, which increased the GFCF of general government by EUR 6.7 billion, but increased its value added only by EUR 3.3 billion.

The ESA 2010 also requires that the output for own final use (OOFU) of non-market producers include remuneration of the fixed capital mobilised for this output, while OOFU is valued on the basis of the sum of costs. As the OOFU is invested in full, inclusion of this 'servicing of capital' results in the value added (VA) and GFCF of NFCs being adjusted by EUR 0.5 billion in 2010. The impact of this innovation on GDP is marginal.

## A better definition of the activity of financial corporations, in particular insurance corporations, in the ESA 2010

The ESA 2010 introduces two major innovations in the treatment of insurance corporations. The activity of reinsurance corporations, which was previously consolidated with that of direct insurers, is now described separately. This results in an upward revision of the overall output of insurance corporations, which in itself has no impact on GDP, as output thus introduced for reinsurers is offset by a new intermediate consumption for direct insurers.

The measure of output for non-life insurance services changes too. Conceptually, this output broadly corresponds to the margin generated by insurers. In the ESA 95, this margin was calculated by subtracting the claims payable from the premiums collected and income earned from the investment of technical reserves each year. This calculation led to the somewhat paradoxical result that an exceptionally high level of claims (for example, as a result of natural disasters) resulted in an abnormally low or even negative output of insurance services. The ESA 2010 also requires expected claims to replace claims actually settled in calculating output. This new treatment is justified conceptually by the fact that what is produced by insurers is the ex ante guarantee to pay compensation to policyholders in the event of an accident, regardless of the level of claims observed ex post. This new treatment, which required the implementation of a method of estimating the expected claims, has a very limited impact overall on the value added of insurers and GDP, but varies from year to year according to the level of claims (+ EUR 0.3 billion in 2010, + EUR 2.1 billion in 2009).

Financial corporations (FCs) now include holding companies in a new specific institutional sub-sector. They were previously classified to a certain extent as non-financial corporations. The reclassification was implemented with the Bank of France, consistent with the concepts used in business registers, in particular with regard to profiling of groups of corporations. This reclassification has a neutral impact on the estimated level of GDP.

## External trade amended by applying the economic ownership criterion

Another important conceptual change, consistent with the sixth edition of the Balance of Payments Manual, also implemented in 2014, focuses on the external trade in goods, which is described not only on the basis of observation of physical flows across country borders by Customs, but in terms of the concept of economic ownership. The treatment of processing abroad and merchanting is therefore amended.

Processing takes place when an enterprise, acting as the ordering customer, commissions another enterprise, known as the subcontractor, to manufacture a good and provides them with the necessary inputs. When the enterprises are located in different countries, physical flows of inputs and finished goods between the countries in question are observed. In the ESA 2010, given that the inputs and the finished good remain the property of the ordering customer at all times, no trade in goods is recorded between the two countries (unlike in the ESA 95). Conversely, the import of an industrial service by the coun-

try of the ordering customer for an amount equal to the difference in value between the finished product and the inputs is recorded. Conceptually, this new treatment does not change the total balance of external trade, although it reduces exports and imports of industrial goods and introduces an import of an industrial service. In practice, the existence of discrepancies between the data sources used (Customs and Balance of Payments) results in exports being revised downwards (– EUR 9.9 billion) more than imports (– EUR 8.6 billion), introducing a slight deterioration in the external balance (EUR 1.3 billion) without affecting GDP.

Merchanting takes place when an enterprise from country A purchases a good in country B and resells it without processing, and without the good crossing the border of country A (regardless of whether the good is resold in country B or in a third country). In the ESA 95, no trade of goods was recorded for country A as the product did not enter its territory. Only an export of a trading service was recorded, for an amount equal to the trader's mark-up (difference between the resale price and the purchase price). In the ESA 2010, given that the good purchased in country B becomes the economic property of an enterprise in country A, an export of a good for country A equal to the trader's mark-up is recorded. This new treatment has no impact on either GDP or total external trade, but decreases exports of services by around ten billion euro to the benefit of exports of goods.

## Some of the ESA 2010 changes affect the general government account

A number of provisions of the ESA 2010 affect the general government (GG) account, in particular the new treatment of lump sum payments and payable tax credits.

The ESA 2010 changes the treatment of lump sum payments made by public corporations to GG, where employee pension liabilities are transferred to these public corporations. A number of lump sum payments have been made in France since 1997 (from France-Telecom, EDF-GDF and La Poste). Lump sum payments were previously fully recognised as government revenue in the year of the transaction, thereby positively impacting the GG deficit for that year. They are now considered to be a financial advance in respect of future retirement pensions, and their recognition as government revenue is spread out over the period of payment of the pensions. This treatment negatively impacts the government deficit for the years in which a lump sum payment was made (with a maximum impact of – EUR 7.1 billion in 2005, the year in which the electricity and gas industries made a lump sum payment) and has a slight positive impact on the government deficit in subsequent years.

Payable tax credits were generally recorded in the form of lower tax revenues. They are now fully recognised as expenditure (which the taxpayer receives in the form of a refund from the tax authorities or a tax rebate). Furthermore, they are now fully recorded at the time the recipient's claim is acknowledged by the tax authorities, regardless of when the payment is actually made. This new treatment therefore covers both government expenditure and revenue, but not necessarily for the same amount if the claim generated by the tax credit is not immediately recovered. More than 25 tax credits relating to corporate or income tax have been identified and included: the research tax credit (RTC), for example, is linked to investment aid, the employment premium (EP) to social benefits in cash, etc.

The ESA 2010 changes the delineation of GG at the margin by including capital costs in the valuation of production costs. Only units for which the share of market revenue in the total production costs is consistently above 50 % can be considered as outside the scope of GG, and the increase in production costs pushes certain units below this threshold. However, the quantitative impact of this change is marginal. Conversely, the ESA 2010 recommends the use of more qualitative criteria, in addition to the market test, to determine whether or not a unit should be classified in GG. Application of these criteria led to the central oil stockholding body, SAGESS (Société Anonyme de Gestion des Stocks de Sécurité) and the Caisse nationale des autoroutes (CNA), the company responsible for financing investments made by motorway companies, to be reclassified in GG.

# Benchmark revision is the reason for one quarter of the total revision of GDP (+ 0.8 %)

The transition to the 2010 base is not restricted to adoption of the recommendations of the new ESA. Many improvements to methods and sources have been introduced, which also have an impact on economic aggregate figures.

The value added of non-financial corporations is determined by structural business statistics (Ésane). The update of Ésane data for 2010 raises the value added of NFCs and non-incorporated enterprises by EUR 7.3 billion, and the value added of financial auxiliaries (classified as financial corporations) by EUR 1.3 billion. In addition to the value added calculation, some new elements draw on the Ésane system for the 2010 base: information from Ésane regarding corporate accounting is now used to estimate those enterprises' GFCF in both tangible and intangible assets (software). The information provided by Ésane on trading enterprises drawn from Ésane is also used to re-estimate household final consumption.

Work has been conducted outside the ESA 2010 to improve the valuation of the insurance sector account. The transition to the national accounts data of the accounting statements sent by insurers to the Prudential Supervisory and Resolution Authority (PSRA) has been reviewed in detail. It has also been possible to use accounting data to better estimate the activity of mutuals and provident insurance schemes, and the method of calculating the output of collective investment schemes has been heavily revised. Ultimately, all these improvements have opposing impacts on the estimation of value added, with the result that they have little overall impact on the GDP revision.

Use of data from the housing satellite account has also improved the valuation of household production in real estate services, increasing household production by EUR 10.6 billion. On the other hand, intermediate household consumption has been revised upwards (+ EUR 4.8 billion), which decreases the value added accordingly. Furthermore, clarification of the treatment of building caretakers results in a EUR 0.5 billion decrease in the value added of households. In total, the revision of estimates concerning housing increases the value added of households and GDP by around EUR 5.0 billion.

External trade is also revised following the introduction of the further survey into international trade in services (FSITS), which replaces bank reporting on behalf of third parties in estimates of the balance of payments, amounting to + EUR 35.5 billion on exports and + EUR 27.3 billion on imports, or + EUR 8.2 billion in 2010 on the balance of external trade. The inclusion of the FSITS data does not change GDP which, in the French national accounts, is determined using an income approach (institutional sector accounts). The external trade revisions generated by FSITS are therefore offset against other final uses.

Lastly, the treatment of car registration tax, which was previously recorded in other current taxes (D.59), has been revised. As this tax is due when a new vehicle is purchased, it is recorded as a tax on products (D.21), which increases GDP (+ EUR 1.7 billion) accordingly.

# The weight of manufacturing in the economy revised upwards

The value added of the total economy in 2010 is increased by EUR 60.0 billion in comparison to the 2005 base (Figure 2). The revisions are focused on:

- NFCs, as a result of the upward impact of the new treatment of R&D and expenditure on databases, as well as the adjustment in line with Ésane;
- GG, as a result of the new treatment of R&D and expenditure on weapons systems.

The value added of households is also revised upwards significantly due to the adjustment in line with Ésane (for the estimated value added of non-incorporated enterprises) and the change in the estimated value added of households as producers of real estate services.

The upward revision of the value added of NFCs has different effects depending on the industry considered (Figure 3). Since market R&D expenditure is concentrated in industrial activities, the share of industry in the total value added of the economy is revised upwards by 0.7 points to 13.5 %. Within industry, the share of transport, electrical, electronic and information technology equipment and pharmacy in particular was revised upwards. Conversely, the share of predominantly market services, which are not major R&D consumers, decreased by 0.6 points, while the share of predominantly non-market services, which benefit from public R&D activity, remained stable from one base to the next.

**Figure 2:** Revision of gross value added of institutional sectors and of GDP, 2010

| | 2005 base (billion EUR) | 2010 base (billion EUR) | Revision level (billion EUR) | Revision (%) |
|---|---|---|---|---|
| **Non-financial corporations** | 975.7 | 1 012.0 | 36.3 | 3.7 |
| **Financial corporations** | 88.2 | 90.3 | 2.1 | 2.4 |
| **General government** | 319.3 | 334.4 | 15.1 | 4.7 |
| **Households** | 328.0 | 334.1 | 6.1 | 1.9 |
| **Non-profit institutions serving households** | 29.5 | 30.1 | 0.6 | 2.0 |
| **Total for institutional sectors** | 1 836.9 | 1 896.9 | 60.0 | 3.3 |
| **Taxes on products, net of subsidies** | 99.8 | 101.6 | 1.7 | 1.8 |
| **Gross domestic product** | 1 936.7 | 1 998.5 | 61.8 | 3.2 |

*Source:* INSEE, national accounts

**Figure 3:** Revision of gross value added by major industry, 2010

| | 2005 base | | 2010 base | |
|---|---|---|---|---|
| | Level (billion EUR) | Share (%) | Level (billion EUR) | Share (%) |
| **Agriculture** | 31.8 | 1.8 | 32.1 | 1.8 |
| **Industry** | 222.7 | 12.8 | 243.8 | 13.5 |
| **Construction** | 106.2 | 6.1 | 109.2 | 6.1 |
| **Predominantly market services** | 987 | 56.7 | 1 010.2 | 56.1 |
| **Predominantly non-market services** | 393.3 | 22.6 | 405.7 | 22.5 |
| **Total** | 1 741.0 | 100.0 | 1 801.0 | 100.0 |

*Source:* INSEE, national accounts

# A significant increase in total investment (+ 17 %)

From a demand approach, the upward revision of GDP mainly affects GFCF (Figure 4), which is revised upwards by EUR 63.9 billion in 2010 (+ 16.9 %). The new treatment of R&D (+ EUR 43.5 billion) and of weapons system expenditure accounts for the majority of the revisions. GFCF is however also significantly revised upwards because of the re-estimation, as a result of the new treatment of databases, of the amount of expenditure on software (which was already recorded as GFCF in ESA 95) and databases: the impact on total GFCF thus increases to + EUR 11.7 billion. Ultimately, tangible GFCF is revised very little (around + EUR 4 billion), with intangible assets such as R&D, software and databases accounting for most of the revision of total GFCF.

Conversely, total consumption is revised downwards (– EUR 8.7 billion, i.e., – 0.5 %). This revision reflects both a review of the statistical sources used to estimate households' consumption expenditure (which are reflected item by item by revisions in different directions) and the downward impact of the ESA 2010 on GG consumption([1]).

**Figure 4:** Revision of the demand approach, 2010
(billion EUR)

| | 2005 base | 2010 base | Revision (billion EUR) | Revision (%) |
|---|---|---|---|---|
| **GDP** | 1 936.7 | 1 998.5 | 61.8 | 3.2 |
| **Imports** | 538.3 | 558.1 | 19.7 | 3.7 |
| **Consumption expenditure** | 1 606.9 | 1 598.2 | – 8.7 | – 0.5 |
| of which households | 1 085.3 | 1 082.4 | – 2.9 | – 0.3 |
| of which GG | 481.8 | 476.2 | – 5.6 | – 1.2 |
| of which NPISHs | 39.8 | 39.6 | – 0.2 | – 0.5 |
| **GFCF** | 377.2 | 441.1 | 63.9 | 16.9 |
| of which pure households | 101.6 | 107.1 | 5.5 | 5.4 |
| of which non-financial enterprises | 198.9 | 234.0 | 35.1 | 17.6 |
| of which financial corporations | 12.3 | 13.1 | 0.7 | 6.5 |
| of which GG | 60.4 | 82.9 | 22.5 | 37.3 |
| of which NPISHs | 3.9 | 4.0 | 0.1 | 2.6 |
| **Exports** | 494.5 | 520.5 | 25.9 | 5.3 |
| **Changes in inventories** | – 3.5 | – 3.2 | 0.3 | – 8.6 |

*Source:* INSEE, national accounts

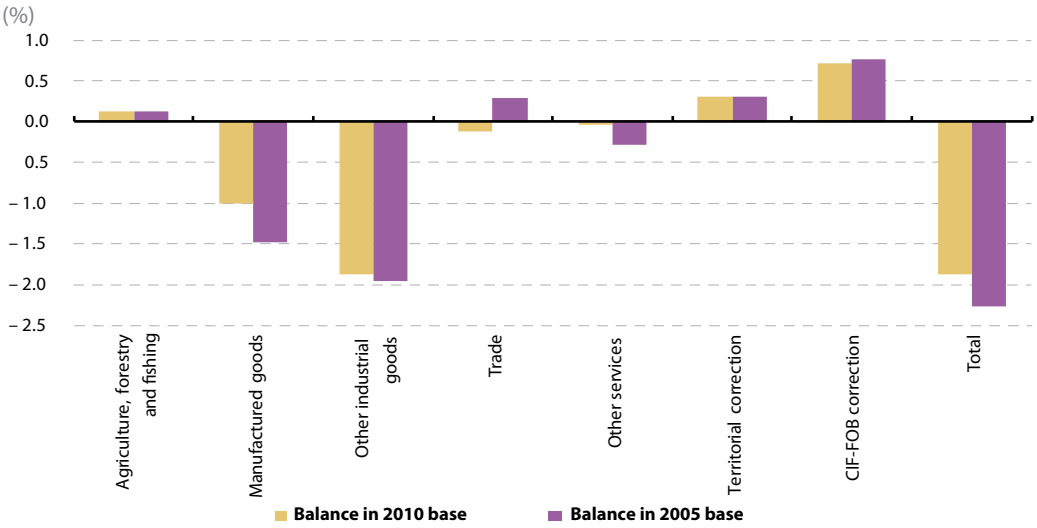
The other major revision in the demand approach concerns external trade: the upward effect on both exports and imports of the adjustment in line with the new balance of payment estimates resulting from the FSITS investigation clearly outweighs the downward impact of the treatment of processing. For all products combined, exports are therefore revised by + EUR 25.9 billion (+ 5.3 %) and imports by + EUR 19.7 billion (+ 3.7 %), while the external trade deficit is therefore slightly reduced, from 2.3 % of GDP in the 2005 base to 1.9 % in the 2010 base.

The revisions of the external balance are therefore highly differentiated by product (Figure 5): the trade in services (excluding trade) is significantly improved (by 0.25 GDP points), as inclusion of the FSITS data results in exports being revised upwards more than imports. Conversely, the balance of the product trade, which was in surplus in the 2005 base, is revised downward by 0.4 GDP points in the 2010 base and is now in deficit: the new treatment of merchanting (the balance of which is inherently

([1]) In the ESA 95, GG expenditure on weapons system and R&D, which was recorded as intermediate consumption, affected the estimation of non-market production, which was offset by collective consumption. In the ESA 2010, it is consumption of fixed capital resulting from GFCF of GG in R&D and weapons systems which affects the estimation of non-market production, and thus GG collective consumption.

positive as it is recorded in dealers' trade margins) reclassifies the corresponding transactions in deliveries of goods rather than trade. As merchanting essentially involves manufactured goods, the trade deficit in manufactured goods is reduced by 0.5 GDP points.

**Figure 5:** Balance of external deliveries by product




*Source:* INSEE, national accounts

While the revisions made in the 2010 base sometimes have a significant effect on certain aggregates, in particular GDP, investment and the NFC sector account, they barely impact developments. However, some methodological innovations applied to the breakdown into volumes and prices are worth mentioning as they alter somewhat the rate of change in volume in recent years. These innovations mainly concern two types of products:

- life insurance: the volume of household consumption expenditure on life insurance is now calculated as outstanding life insurance provisions deflated by the general consumer price index. This innovation avoids that the spontaneous volatility of the value of the life insurance account (related in particular to income from the investment of reserves) is reflected in the change in GDP in volume terms;
- telecommunications services: to better reflect the growth in consumption of telecommunications services, the change in volume of this sector is no longer determined solely by the consumer price index for this item, but also by taking into account the change in the number of minutes of mobile communications and the number of text messages. The new method of breaking down volumes and prices has the effect of revising the rate of GDP growth in volume terms since 2008 upwards slightly.

# Government deficit and debt

Notified public finance ratios (government debt and deficit relative to GDP) have been affected by the transition to the 2010 base of the national accounts.

The implementation of the ESA 2010 particularly affects the deficit through the treatment of lump sum payments and payable tax credits. The treatment of lump sum payments reduces the deficit by

about EUR 0.7 billion annually from 2010 to 2012. The impact of the treatment of payable tax credits is more uneven: the impact on the deficit was practically neutral in 2010, while worsening it by about EUR 2 billion in 2011 and 2012. In both 2011 and 2012, the asset to the State accumulated by companies receiving the research tax credit was less than the amounts they actually received (either in the form of lower taxes or payments made by the State). In addition to these two effects, the reclassification of SAGESS increased the government deficit in 2012, as the company recorded a substantial deficit related to an increase in its oil stock holdings in this year.

Moreover, the government deficit has been changed as a result of certain methodological improvements in the consolidation of flows between the different sub-sectors of general government, and the adjustment in line with updated sources. These changes have the effect of reducing the deficit in 2010 and 2011 but increasing it in 2012. Ultimately, the government deficit is adjusted slightly downwards in 2010 and 2011, and upwards in 2012. In view of the increase in the level of GDP, the deficit/GDP ratio is reduced by 0.3 points in 2010 and 0.2 points in 2011, but remains unchanged in 2012 (Figure 6).

The government debt is itself revised upwards by just over EUR 30 billion annually from 2010 to 2012. Just over half of these changes are not related to the ESA 2010, but instead result from methodological improvements concerning the consolidation of deposits, integration of the debt of some local public entities not previously covered by the available sources, and the integration into the State debt of part of the debt of Réseau Ferré de France (RFF). The remainder, accounting for approximately EUR 15 billion, can be attributed to the reclassification of two units in GG as a result of the new qualitative criteria proposed by the ESA 2010: SAGESS (whose debt increased from EUR 2.6 billion at the end of 2010 to EUR 3.9 billion by the end of 2012) and the CNA (whose debt of about ten billion euro is conversely decreasing every year). Ultimately, the impact of the upward revision of GDP exceeds the upward revision of the outstanding debt, so the debt/GDP ratio is revised downwards by about one point every year.

**Figure 6:** Revision of notified deficit and debt aggregates

| | 2010 | 2011 | 2012 |
|---|---|---|---|
| **Notification of 1 October 2013** | | | |
| Notified deficit (billion EUR) | – 136.8 | – 105.4 | – 97.6 |
| Notified debt (billion EUR | 1 595.0 | 1 716.9 | 1 833.8 |
| GDP (billion EUR) | 1 936.7 | 2 001.4 | 2 032.3 |
| Deficit/GDP (%) | – 7.1 | – 5.3 | – 4.8 |
| Debt/GDP (%) | 82.4 | 85.8 | 90.2 |
| **Revision of deficit (billion EUR)** | 1.5 | 0.9 | – 3.4 |
| Impact of ESA 2010 (billion EUR) | 0.5 | – 1.4 | – 2.3 |
| Other sources of revision (billion EUR) | 1.0 | 2.3 | – 1.1 |
| **Revision of debt (billion EUR)** | 32.8 | 32.5 | 33.0 |
| Impact of ESA 2010 (billion EUR) | 15.9 | 14.5 | 15.3 |
| Other sources of revision (billion EUR) | 16.9 | 18.0 | 17.7 |
| **Notification of 1 October 2014** | | | |
| Notified deficit (billion EUR) | – 135.2 | – 104.5 | – 101.0 |
| Notified debt (billion EUR) | 1 627.8 | 1 749.4 | 1 865.8 |
| GDP (billion EUR) | 1 998.5 | 2 059.0 | 2 091.1 |
| Deficit/GDP (%) | – 6.8 | – 5.1 | – 4.8 |
| Debt/GDP (%) | 81.5 | 85.0 | 89.2 |

*Source:* INSEE, national accounts

# Non-financial assets

ESA 2010 introduces a renewed classification of assets. It introduces new items, such as weapons systems and R&D. The old item 'Software' is split to distinguish databases, certain items are redefined and intangible fixed assets are renamed 'intellectual property rights'.

Consumption of fixed capital, which measures the depreciation of assets related to their use and their obsolescence, has been revised for all institutional sectors. This requires long sets of data on gross fixed capital formation, by institutional sector, industry and product, which have been entirely reviewed on the basis of data from the business statistics regarding NFCs. In construction, the distinction between dwellings and other buildings has been improved in the balance sheets.

The costs related to the acquisition of fixed assets are part of the GFCF. In accordance with the provisions of the 2008 SNA, the costs related to the acquisition of dwellings and non-residential buildings are now amortised according to the average time the asset is held; for other assets (civil works, equipment, etc.), the amortisation period of transfer costs is equal to the life of the asset concerned — it is assumed that the owner of these assets rarely changes in practice. The reduction in the amortisation period reduces the net capital stock.

Water resources are now valued, at up to EUR 11 billion in the public sector assets, on the basis of charges levied for abstraction of groundwater and surface water. Lastly, the valuation of land, the most significant asset item, has been reviewed by reconstructing long sets of data on land use.

Ultimately, the estimated total of produced assets is revised downwards by nearly EUR 160 billion (Figure 7): the upward impact of the introduction of new assets (R&D and weapons systems, accounting for a total of EUR 235 billion additional assets) and the upward revision of the GFCF in software is effectively more than offset by the effect of decreasing the amortisation period of the associated costs. The total value of non-produced assets is itself adjusted slightly downwards. The removal of patents as non-produced assets (as a result of the new treatment of R&D) is effectively offset to a large extent by the re-estimation of the value of land and the introduction of water resources in non-produced assets.

**Figure 7:** Non-financial assets — Revisions from the 2005 base to the 2010 base
(billion EUR)

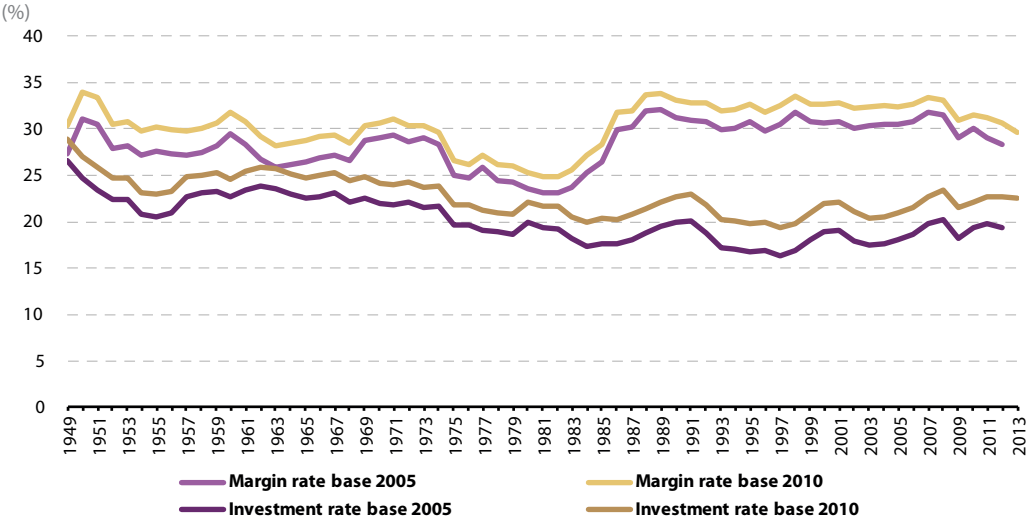
| Whole economy | 2005 base | 2010 base | Revision |
|---|---|---|---|
| **Non-financial assets** | 13 200 | 13 004 | – 196 |
| **Produced assets** | 7 158 | 6 999 | – 159 |
| Construction | 5 973 | 5 572 | – 401 |
| of which housing | 3 928 | 3 743 | – 185 |
| Machinery and equipment | 550 | 561 | 11 |
| Military equipment | 0 | 34 | 34 |
| R&D | 0 | 201 | 201 |
| Other produced assets | 635 | 631 | – 4 |
| of which software and data bases | 94 | 117 | 23 |
| **Non-produced assets** | 6 042 | 6 005 | – 37 |
| Land | 5 613 | 5 709 | 96 |
| of which land under construction | 5 171 | 5 095 | – 76 |
| Water resources | 0 | 11 | 11 |
| Other non-produced assets | 428 | 285 | – 143 |

*Source:* INSEE, national accounts

# Long-term series backcasted from 1949 onwards

All non-financial accounts data, both annual and quarterly, have been revised from 1949 onwards, The great temporal depth of the national accounts data is of fundamental interest to users, as it allows them to analyse the most recent economic changes in the light of changes over a very long period, such as GDP growth, the purchasing power of households, etc. As in the previous rebasing, INSEE made a special effort to preserve the temporal depth of the data. Generally speaking, although the implementation of the ESA 2010 has a very significant impact on the level of many aggregates, such as GDP and the profit rate of non-financial corporations (defined as the ratio between gross operating surplus and gross value added), it has little effect on developments (Figure 8).

**Figure 8:** Profit rate and investment rate of non-financial corporations




*Source:* INSEE, national accounts

# Revision of the Dutch national accounts: experiences from the publication and communication of the first results

4

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# Introduction

Like many other countries in recent years the Netherlands has invested substantial amounts of time and capacity to revise its national accounts. This culminated in the publication of the first results of the revised national accounts of the Netherlands in March 2014. A direct cause for this revision is of course the adoption of new international and methodological guidelines, like ESA 2010 and SNA 2008 ([1]). However, Statistics Netherlands, as with many other European Member States, has also simultaneously conducted a statistical source revision. The previous benchmark revision of the Dutch national accounts was conducted for the reporting year 2001, and was published in 2005.

On March 6th Statistics Netherlands presented the first results for the benchmark year 2010 (level estimates); and at the end of June 2014 revised figures for the national accounts for the period up to and including the first quarter of 2014 were published. So from this date, the Dutch national accounts are consistent with the new international guidelines.

As a result of the revision of the Dutch national accounts, new estimates for many macro-economic key indicators will become available; e.g. gross domestic product (GDP) for the benchmark year 2010 was adjusted upwards by EUR 44.7 billion (7.6 %); implementation of the new international guidelines (of which ESA 2010/SNA 2008) accounts for 3.0 percentage points of this, and introduction and evaluation of (new) data sources accounts for the remaining 4.6 percentage points. Estimates for the public deficit for 2010 were adjusted downwards from 5.1 % to 5.0 % of GDP. The public debt estimates have been adjusted downwards from 63.4 to 59.0 % of GDP.

The publication of these first results in the Netherlands has been a carefully designed process. The main reason for this is of course the substantial impact of the revision on the figures. But also the knowledge that explaining such changes to the general public and the main users of the national accounts needs to be carefully elaborated and planned beforehand. In this paper we will share some of our experiences with this process and motivate the choices we made. In the end, the communication worked out the way we planned it, resulting in factual and neutral coverage of the results in the Dutch newspapers and media.

This paper is organized in four parts. The first part gives a short background to the revision of the Dutch national accounts and presents some of the first results for the year 2010. In the following parts of the paper we will discuss the strategy for the publication of the results, beginning with the process up to March 6th. We will also review the way the news was covered in the Dutch newspapers and media. We end with some lessons learned.

# The revision of the Dutch national accounts, some background and results

The national accounts are the source for frequently used macro-economic variables, e.g. gross domestic product (GDP, economic growth), the trade balance, gross national income (GNI), the public deficit and the public debt. As a result of a revision, the level of these figures will normally change. Revisions of the national accounts are conducted on a regular basis. The reason for the current revision is the adoption of new international methodological guidelines. These guidelines have been laid down in the European System of Accounts (ESA 2010),

([1]) ESA 2010, European System of Accounts, Eurostat, European Commission, 2013, ISBN 978-92-79-31242-7, and SNA 2008, System of National Accounts, United Nations and others, 2009, ISBN 978-92-1-161522-7

which is entirely based upon the new System of National Accounts of the United Nations (SNA 2008). The new international guidelines facilitate comparison between national economies and provide a safeguard that structural economic developments are measured consistently. Adoption of the new ESA guidelines is obligatory for all Member States of the European Union.

The most important adjustments in this revision affecting GDP concern research and development (R&D) expenditures plus a number of military expenses. These will henceforth be included in investments, as expenditure on these items lasts longer than one production process and are expected to generate future benefits. Software that organisations have developed for private use will be valued against the market price, instead of the cost price, thus including a return to capital. The income earned from illegal activities must also be included.

Statistics Netherlands, like statistical offices in many other European Member States, has conducted a statistical source revision and a methodological revision simultaneously. The level of the indicators is re-evaluated and made consistent with the new data sources, which have become available in recent years. Introduction of new source levels is not possible in a normal production cycle, because this would interfere with economic growth figures. The new sources, for example, the Wage declaration database and the VAT database compiled by the tax authorities, new statistics compiled by the Dutch Central Bank and the revised trade register of the Chamber of Commerce, were used prior to the revision only to estimate indicator changes.

The current revision has proven to be a massive project, covering a period of more than three years and about 200 revision projects, including the 44 issues of the revised SNA 2008. It constituted also a heavy burden on human capacity as it involved, in total, about 50-60 man-years. The subsequent revision of the time-series required additional resources, but compared to the previous revision the work will be done more efficiently. The latest revision of the time-series, based on the 2001 benchmark revision, encompassed a total of about 30 man-years (including the development of new methodology and related ICT-systems). The current time-series (which in general will be 10 years longer) involves a total investment of approximately 15-20 man-years. This efficiency is a consequence of improved and new (automated) compilation tools and less focus on details.

Each revision of the national accounts is based on a benchmark year. Changes in definitions and source material are implemented for this year and the effects of the changes on the level of the figures are analysed. The benchmark year for the current revision of the Dutch national accounts is 2010. The previous revision was based on the year 2001. With the current revision we first compiled the figures for 2010 and directly afterwards compiled the new figures for 2011. This combination of compiling 2 years lead to further improvement of the results of the benchmark year 2010, e.g. in the field of the coordination between the results of the supply and use tables and the sector accounts.

As a result of the revision, new estimates for many macro-economic key indicators have become available. The most important are mentioned below:

- Gross domestic product (GDP) for the benchmark year 2010 was adjusted upwards by EUR 44.7 billion (7.6 % ); implementation of the new international guidelines accounts for 3.0 percentage points. The most important effect is that R&D expenditure is now included as an investment and no longer in current costs. Re-evaluation of new source accounts for adjustment of GDP by the remaining 4.6 percentage points.
- The public deficit consistent with the EMU definition for the benchmark year 2010 has been adjusted upwards by EUR 1.8 billion, mainly as a result of the use of newly available source data. Because the level of GDP was also adjusted upwards, the net effect on the public deficit, expressed as a percentage of the GDP, is modest. The public deficit for 2010 is slightly reduced from 5.1 to 5.0 % of the GDP.
- The public debt for the year 2010 has been adjusted upwards by EUR 0.6 billion as a result of use of new source data. Because the GDP ad-

justment is larger in relative terms, the public debt for 2010 was adjusted downwards considerably from 63.4 to 59.0 % of GDP.

- The trade balance for the benchmark year 2010 has been adjusted upwards by EUR 5.5 billion to EUR 52.8 billion. The main reason for adjustment of the trade balance is the use of new source information about international trade.
- The gross national income (GNI) for the benchmark year 2010 has been adjusted upwards by EUR 57.7 billion (10.0 % ); adjustment of the GDP accounts for EUR 44.7 billion and adjustment of primary income flows to and from other countries (in particular interest and dividends) accounts for EUR 13.0 billion. The main reason is the use of new source material provided by the Dutch Central Bank. If the GNI changes, this may affect the Dutch contribution to the European Union, but this also depends on whether the GNIs of the other Member States, which also implement revisions, change.
- Because level estimates have been adjusted for all the relevant years, the effect on the growth rates has been rather limited. The growth rates of GDP and GNI were not substantially affected by the revision; and this also applied to government deficit and debt.

For more background information and figures related to the revision, the reader is referred to the publication national accounts, revision 2010 by Statistics Netherlands ([2]). This publication deals with the level of the figures for the benchmark year 2010. It shows the difference between the figures before and after the revision; and also indicates to what extent the difference is caused by the new international guidelines or new data sources. In addition to the indicators mentioned above, the publication also includes information on other indicators and more detailed information on sectors, industries and labour.

By the end of June 2014, a complete set of back data from 2001 onwards were revised and published, comprising of both annual and quarterly estimates, up to and including the first quarter of 2014. And by the end of September 2014, the back data were extended to the year 1995. As a result of the revision, the Dutch national accounts are consistent with the new international guidelines.

## Towards a strategy for a communication of the first results

In the middle of 2013 the first work on the Communication strategy of the revised Dutch national accounts started. The major issue to be solved was how to communicate revision results at an early stage and inform and reassure the users. Two scenarios, representing two leading tendencies in the office, were considered:

(1) A revision is a major statistical event which should receive a lot of media attention.

(2) A revision is an important event for the Statistical Bureau itself and communication should be well-balanced and directed.

However, before addressing this issue, the first (thorough) internal discussion we needed to have concerned the exact point in time we wanted to publish the first results of the revision.

One has to realise that the regular publication of the national accounts in the Netherlands differs substantially from the practice in most other European Member States. In the Netherlands the presentation of budgetary choices for the year ahead and political debate on these choices takes place in September. The third Tuesday in September (the day is called 'Prinsjesdag' in Dutch) is an important milestone in this process. On this day the government

([2]) See http://www.cbs.nl/en–GB/menu/themas/macro–economie/publicaties/publicaties/archief/2014/default.htm

present its plans for the upcoming fiscal year to parliament and the King holds his annual speech to the Dutch parliament and the Dutch public at large. To prepare for this day, the government needs new economic forecasts from the Dutch Bureau for Economic Policy Analysis. For this purpose this Agency prepares a report in July/August, which entails the needed forecasts and a retrospective of how the Dutch economy has performed in the latest period. Input for both the modelling exercise, as well as the retrospective, are the Dutch national accounts of Statistics Netherlands. It has therefore been a long tradition that the annual Dutch national accounts are published at the end of June each year. In 2014 the Dutch national accounts were published on June 25th.

In the discussions we considered 3 options: (1) to publish at the end of June according to the regular publication scheme of the Dutch national accounts, so users would receive a complete set, including the full time series of revised data at one point in time; (2) to publish the results of the benchmark year in April/May as we did with the previous revision of 2005; and (3) to publish the results of the benchmark year as soon as possible, i.e. as soon as the work on the revision of the benchmark year 2010 had been finished.

All options had of course their own advantages and disadvantages. Option (1) had the major advantage that we would have only had one point in time for the publication and that this would be a clear and much more manageable message to the (general) public. But it also had the major disadvantage that we hardly left any time for the digestion of the results by our (major) users for their own purposes; e.g. the Bureau for Economic Policy Analysis, the Ministry of Economic Affairs and the Ministry of Finance would in this scenario have no or very little time left to prepare properly for the budgetary discussions in September. They would not be able to include the results of the revision of the Dutch national accounts into their analysis and reports, which, given the major impact on the macro-economic variables, should be considered a great risk. We would then have caught them by surprise, which would have probably also lead to 'unpleasant' reactions and (possible) damage to our good relationships. This, in the end, made us decide not to choose this option.

Option (2) had the major advantage that we would have had enough time left between finishing the technical work on the revision and the publication of the first results. It would also give us the possibility to inform our users beforehand on the expected (quantitative) results of the revision of the Dutch national accounts, so they could account for it in their own processes. The reason for including this scenario was also based on the good experience we had during the previous revision. However it also had one major disadvantage: timeliness and the need of sharing essential information, especially relating to the Excessive Deficit Procedure.

In Europe the Excessive Deficit Procedure (EDP) is one of the well-known administrative uses of national accounts data. Council Regulation 479/2009, as amended, requires that Member States report EDP — related data to Eurostat twice per year — at the end of March and the end of September. The data are reported in harmonised tables. These tables are designed specifically to provide a consistent framework, with a link to national budgetary aggregates and between the deficit and changes in the debt. They should be fully consistent with government finance statistics. Eurostat publishes the notification tables as transmitted by Member States. In application of Council Regulation 479/2009, these tables include data for the current year which are forecasts and not statistics ([3]).

*'On 2 December 2009, the Council decided, in accordance with Article 126(6) TFEU, that an excessive deficit existed in the Netherlands and issued a recommendation to correct the excessive deficit by 2013 at the latest, in accordance with Article 126(7) TFEU and Article 3 of Council Regulation (EC) No 1467/97 of 7 July 1997 on speeding up and clarifying the implementation of the excessive deficit procedure'* ([4]).

([3]) See:http://ec.europa.eu/eurostat/web/government-finance-statistics/excessive-deficit-procedure/edp-notification-tables

([4]) Recommendation for a COUNCIL RECOMMENDATION with a view to bringing an end to the situation of an excessive government deficit in the Netherlands {SWD(2013) 392 final}

Since then the Netherlands has remained in the EDP. For the year 2013 the 3 % threshold was therefore still a critical and very important issue, also at the political level. As the revision of the national accounts would influence the figures, it seemed therefore advisable to publish the first results as soon as possible in 2014. However the month of April or May would probably not be the best moment in time, because the information would then become available very shortly after the EDP notification of April 1st and the subsequent assessment procedure by the commission. A publication of Statistics Netherlands on revised figures, during this procedure would presumably have hampered the analyses and assessment of the notification by the commission. So in the end we did not choose for this option, but chose to publish even sooner.

Option (3) appeared the best alternative, i.e to publish the first results of the revision as soon as they became available. The work on the revision of the benchmark year 2010 and the finalisation of the new annual and revised figures for 2011 was planned to be completed in February 2014, which made us decide to publish our first results in the first week of March. This would also provide our major users with enough time (3 weeks) to prepare their own assessment on the possible impacts of the revised figures on the EDP notification of April 1st. All insights from the revision so far would then be made publicly available in a transparent way — a strategy that aligns with the basic principle of Statistics Netherlands to publish results as soon as they are available. However, a major disadvantage of this option was that little time was left for us to prepare the publication.

With the publication date set, an important additional factor to think about when wording this publication was the European Commission press release on the impact of conceptual changes (i.e. ESA 2010) on GDP figures of EU Member States, which was published on January 16th 2014. This press release explained the reasons and major conceptual changes of the revision; and gave an overview of the estimated impact on GDP for most European countries. The table in this press release shows that the impact of all conceptual changes for the Netherlands amounts to an estimated 3 to 4 % of GDP, similar to Austria and the United Kingdom. Generally speaking, the results seem to indicate that the impact of the revision on GDP tends to correlate with the level of GDP, presumably suggesting a link between the level of GDP and the level of R&D expenditures. Nevertheless, the publication of these estimated results for the Netherlands concerned only the conceptual changes and not the impact of the source revision. In that sense, the results were only half of our story to be told.

Shortly before the European press release we put a notification on our website informing users about the reasons and consequences of a revision. In a question and answer format we discussed topics like, why are there revisions, which data are affected, what is the expected impact on key variables (with some qualitative indications of the direction and magnitude of the expected changes), what about the new data sources, when are the data published, what do other countries do, etc. ([5]).

We looked closely at and learned from the national (and international) press and media coverage of the press release by Eurostat. The press release did receive some attention in the Dutch newspapers. It did not produce major headlines, but in almost all major Dutch newspapers a short article of 1 or 2 columns appeared. Media coverage was mainly negatively formulated. A heading like 'A trick from Brussels to save our economy' perfectly summarises the main discussions and conclusion in the Dutch media. The main message was basically that due to 'newly invented rules' from the European Commission our economy would grow overnight. And, more importantly, that the economy and government finances would all of a sudden be in better shape and would solve some of our economic problems. Some papers even spoke of tweaking the figures on purpose. Some international media attention had similar tendencies (e.g. in Germany). From this media coverage as well as that from, for example the US, we learned the importance of framing the main messages we wanted to get across at the beginning of March. By carefully assessing the context of the message and prudently picking the most important

([5]) This publication is available at the CBS website, only in Dutch, see http://www.cbs.nl/nl–NL/menu/themas/macro–economie/methoden/dataverzameling/revisie–2010/2014–02–revisie–macro–economische–cijfers–cbs.htm.

messages to be sent to the public, the impact of the message would be maximised. And more importantly it also helps to steer the media coverage in a more efficient way; and would hopefully lead to the kind of media coverage that is desired.

That takes us back to the basic issues about which we wanted to present our first results. As discussed above, two scenarios were considered:

(1) A revision is a major statistical event which should receive a lot of media attention.

(2) A revision is an important event for the Statistical Bureau itself and communication should be well-balanced and directed

To address these we looked closely at the main perceived risks and potential issues with the communication of our first results. We tried to envisage how our users might react. An important exercise in this process was to put ourselves in the situation of our major users, and ask ourselves what kind of questions might arise on their side from our publication.

The first issue/risk we identified is that Statistics Netherlands simultaneously performed a conceptual and statistical sources revision. In our message these should therefore be separated, because each of the revisions has its own impact and reasons. This would have to be clearly communicated to the public. The main message should be that conceptual revisions are driven by new international guidelines (such as ESA 2010 and SNA 2008); but we agreed we should also explain why we have new international guidelines (better tools to measure the total economy and its components and to compare economies across countries).

The second issue/risk was that the impact of the statistical sources revision would be rather large, almost 5 per cent. And at that point in time it was not publicly known if other European Member States would also conduct statistical revisions and/or what their impact would possibly be. A large statistical revision could easily be interpreted as implying that Statistics Netherlands hasn't done a very good job in measuring the economy in the last few years. The communication should therefore openly address the reasons for our statistical revision and highlight the most important changes in statistical sources in a positive way. It should also say something about the possible impact on key variables, e.g. the path of economic growth and public deficit and, at the same time, explain that statistical revisions are a natural part of national accounts. New sources will always be incorporated in the national accounts. But for reasons of continuity, and the need to account properly for real economic changes, any changes in levels of indicators found in the new sources cannot directly be incorporated. For that a major revision is needed and is therefore a natural and common part of the national accounts; this is so in almost all other countries, not only the Netherlands.

A third essential issue/risk for the Netherlands was that, very recently, parts of the press have criticised Statistics Netherlands for their regular revisions of the quarterly economic growth data, more specifically of 'accusing' Statistics Netherlands of underestimating economic growth. With an upcoming message that the economy would be much larger than we anticipated so far this could be an extra complication in communicating the revision results. The message should therefore preferably say something about the effect of the revision on the path of economic growth, if possible in a quantitative way, but otherwise at the qualitative level. At Statistics Netherlands we had ambitious plans to include a time series for the revised economic growth path (2001–2010) in our press release of March 6th. But, in the end, technical and methodological issues prevented this, so we had to stick to a qualitative message.

The fourth issue concerns the principle of equal treatment of users. The publication policy of Statistics Netherlands prescribes, as in most other statistical offices, that all users get the information at exactly the same time and all information is equally open to all users. There are only a very few specific exceptions, which are published on our website. This is in in accordance with the European statistical code of practice. With a major event like the publication of the revised national accounts data and knowing the substantial forthcoming changes in the macro-economic figures, we had to think about this policy and ask ourselves whether it would be a good option to inform our major users beforehand and how we could possibly benefit

ourselves from such an option.

We weighted all the pros and cons and in the end decided to inform our major users (the Bureau for Economic Policy Analysis, the Dutch Central Bank, the Ministry of Finance and the Ministry of Economic Affairs) three days before the official release of our publication. This would not only provide them with enough head time to prepare for any media attention they might get from our publication, but also with enough time to inform their internal organisation. For the latter, we agreed that they informed only the most relevant people in their organisation. In return, they helped us by providing good feedback on the way we wanted to communicate, but also supporting us by copying and using our information in their own statements and answers to the press. It even led to a letter from the Minister of Economic Affairs and the Minister of Finance to the parliament, explaining the reasons for the revision and its impact in a factual and neutral way. The letter was sent on the same day as our communication (a few hours later) and worded in such a way that it almost completely reflected our main intended messages.

Finally, but not less important, the amount of information to present in a communication is an issue to be considered very carefully. The revision of a set of national accounts by definition generates a lot of information, as most data and economic indicators change. It is therefore important to make a selection and concentrate on the main issues; a selection tailored to the needs of our users. Including too much information in the communication seriously hampers the message and could also impose a risk that your message is not understood, or even worse, misinterpreted. After careful deliberation we choose to limit ourselves to only five relevant macro-economic indicators: (a) GDP, (b) GNI (relevance for EU own resources), (c) public debt (EDP), (d) public deficit (EDP) and (e) trade balance (because the Netherlands is a relative open economy). Other indicators and background information were provided in a more elaborated (technical) publication, which we published simultaneously. The communication provided a web-link to this technical note, which is only available electronically (as a PDF file) ([6]).

Taking these issues and risks into account we eventually decided that in the Dutch case it would be best to see the revision as an important event for the Statistical Bureau itself. But that the external communication should be well-balanced and directed. Not only to coordinate our messages and the coverage in the media, but mainly to prevent as much as possible the misinterpretation of the results and any subsequent negative publicity for our statistical agency.

## The communication up to March 6th and beyond

As stated before we started to communicate with the general public and our major users in advance of the Eurostat press release. On February 10th we posted a Q&A document on the ESA 2010 revision project in the Netherlands on our website. Elements in this document were: (a) informing users about the reasons for a revision; (b) explaining what conceptual and benchmark revisions are and elaborating on the influence of European regulations; (c) providing a first (qualitative) indication of the approximate size of the benchmark revision; (d) reassuring our users on economic growth, public deficit and GNI contributions; and (e) providing more information on planned dates of publications, i.e. results for 2010 at the beginning of March, and data for more recent years and time-series in June 2014. The paper was posted on our website, but also actively distributed to our major users. We also contacted them personally in the week after the publication to see whether or not they had additional questions and to enquire how and whether we could help them to prepare for our announced publication in March.

To prepare for our March publication, we organised a range of special training sessions for our econom-

([6]) See footnote ([1]).

ic spokesman. An important element in this was to prepare him for difficult questions (policy issues, GNI contribution, 'magic tricks from Brussels') and the way to answer them. Key messages in this were to put an emphasis on the absolute need for new international guidelines (keeping up with new economic developments like the internet, emphasis on methodological improvements, this is a European and worldwide exercise, the revision is not just a Dutch exercise, etc.). For the benchmark revision we prepared the spokesman by providing him as much background information on the revision as needed; and helped him to design some tools to explain to the general public the principles of continuity of the national accounts and why that prevents the direct full inclusion of new sources. A final element in the proposed line of reaction was that some (very important) key data were likely not to be affected (like economic growth, public deficit).

To manage the preparation for the communication we formed an internal technical steering group consisting of the Director of national accounts, the Director of Media Affairs, the spokesman and a few senior statistical experts. In the last weeks we continuously improved the details of the content of the press release and the content of PowerPoint presentations (for the press release and the meeting with our major users). This group also reported directly to the deputy director general.

The second milestone in the process was the presentation (under embargo) of the revision results for our stakeholders on March 3rd 2014. In a session of 3 hours, (high level) representatives from the major stakeholders (Central Bank, Ministry of Finance, the ministry of Economic affairs and Bureau for Economic Policy Analysis) were the first to be given detailed results of the impact of the revision on the Dutch national accounts and the related macro-economic figures. This was done by a PowerPoint presentation by our economic spokesman, with detailed results including the politically more sensitive issues: government deficit higher in absolute terms, household savings not negative anymore, major adjustments in international investment position, etc. This was followed by a Q&A session. In the end this session proved to be a very valuable dress rehearsal for our official release. It helped us to gain experience; we could make suggestions for improvement; we could address questions and thereby improve the communication on March 6th.

The official release of revision results for the benchmark year 2010 was on 6 March 2014. On that day we published at 10.00h a press release (2 ½ pages) with background information and the main results of the revision (GDP, GNI, public deficit and debt). We deliberately choose a different timeslot than our standard publication time (09.30 a.m.) in order to emphasis the different technical character of this press release. The press release was sent in advance to our major stakeholders, who were present at the meeting of March 3rd. In addition we organised, on March 6th at 09.30 a.m., a technical session for the press. In this session we provided journalists with technical background information on the revision and the reasons for this revision. The press meeting also entailed a PowerPoint presentation with the main results of the revision. The presentation was held by our economic spokesman. Simultaneously with the publication of the press release we also published on our website a report with a more elaborate text; and explanations on the major changes and with the standard tables on the Annual National Accounts, the Annual Sector Accounts and the Labour Accounts. In this publication all the changes were decomposed into either conceptual or benchmark adjustments. This more technical report was also actively distributed to our major users.

In the aftermath of the press release we stayed in close contact with our major users. On the one hand, we inquired about the questions they had received from the press and offered our help in answering these. On the other hand, we checked whether or not they had new questions themselves after reading the press release.

On June 25th the revised national accounts were published, covering annual and quarterly data from 2001 onwards up to and including the first quarter of 2014. These results didn't generate much media attention as the revision adjustments were already covered on the 6th of March and the first quarter estimates concerned the second release. The flash estimate of the first quarter was already released on the 15th of May, and as usual accompanied by

a (broadcasted) press-conference. The few articles that appeared in the newspapers predominantly referred to the inclusion of illegal prostitution and drugs in the new figures.

By the end of September, the results were submitted to Eurostat, including a complete set of time-series from 1995 onwards. Work on the time-series will continue, especially on detailed specifications beyond the required tables of the transmission programme. This should lead in the course of 2015 to the publication of a complete set of annual supply and use tables and input-output tables from 1995 onwards. In the meantime, discussions with our major users started on the extension of the time-series. Due to budget restraints this work must be (partly) financed by these stakeholders.

## Conclusion and evaluation

Looking back we conclude foremost that our communication on the first results of the revised Dutch national accounts has been picked up in a proper way; and more importantly in the way we envisaged. The media coverage was factual, accurate and closely reflected the main messages we wanted to get across. The related communication to our major users was aligned with our key messages. With headlines like: 'Dutch economy 8 % larger after revision of Statistics Netherlands', '45 billion euros richer, after new definition GDP', 'Public debt weights less on economy', the tendency of the coverage was much more neutral than in January 2014. But, in the end, we did not get very much attention in the (printed) press, and only a few journalists attended our press meeting on the results. So was this thorough preparation necessary after all?

We think the unambiguous answer to that question is yes, because in the end:

- Our key users appreciated our openness and explanation of the revision results. This led to a better understanding and, therefore, acceptance of the changes pursued.
- Broader media coverage was factual and informative, and had a positive tone, like 'more exhaustive estimate of economy with inclusion of illegal activities' and 'in line with practises in other European countries'.

Finally the lessons we draw from the communication on this revision naturally have a wider application. As with all stories it is essential to start by considering the framing of your message. What are the most important messages you want to get across? How do you limit yourself in terms of the number of messages in one communication? This not only helps you write a better communication, but will also helps to better influence the media coverage you get. Of course this is not a guarantee, but failing to do so will certainly result in media coverage you didn't want or even feared.

# Introduction of ESA 2010 into the national accounts of Ireland

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# Introduction

The Irish Central Statistics Office (CSO) released its National Income and Expenditure Annual Estimates 2013 and Balance of Payments results for Ireland on 3 July 2014. These sets of accounts were compiled in accordance with new accounting standards of the European System of Accounts 2010 (ESA 2010) and Balance of Payments 6th Manual (BPM6).

In addition to the new methodologies, the 2013 national accounts also included changes to our estimates for illegal activities to address a transversal reservation placed on the accounts of all Member States by Eurostat.

Furthermore, in line with the CSO's standard annual revisions policy, the national accounts reflected routine revisions caused by the inclusion of more comprehensive and up to date results, primarily from income and corporation tax datasets. Back data are available to 1997 for the quarterly series, and to 1995 for the annual series.

This article sets out the various steps taken by the CSO in this process of introducing new accounting standards. The impact of the new methodologies on the results is also outlined.

# Communication policy

CSO notified its national users, at its regular press conference for the Quarter 4 2013 national accounts in March 2014, about the impending changes in the accounting standards and that the next set of accounts — the Quarter 1 2014 and the annual results (a 1995 to 2013 time series) would be prepared in accordance with the new standards. The news that a total of 25 updates to the ESA 2010 framework had the potential to affect Ireland's national accounts certainly prompted queries, both at the press conference and subsequently; we indicated that few of these would have a significant impact, with the exception of the Research & Development (R&D) capitalisation effect. We explained the timing of the changeover so that it would coincide with the compilation of our annual National Income and Expenditure results. Some users had been aware of the September 2014 deadline for the introduction of the new standards and had expected that all Member States would publish at that time. We pointed out that Ireland would be in a minority that published earlier; so that country by country comparisons would not be immediately possible. We provided links to the relevant Eurostat sources and methodology documents on the CSO website.

One week ahead of the July release, we issued a press release summarising the main areas of change to be expected in the national accounts, again highlighting the significance of research & development (R&D) capitalisation, but we did not provide any numerical detail. The media reaction focussed predominantly on the estimates for illegal economic activities. While this persisted upon publication of the results, the scale of the R&D impact did also attract much attention, as it exceeded expectations of most national users by some distance. Underestimating the degree of R&D services imports accounted for this.

Another aspect of the changes to attract attention was the difference they made to the ratios of general government deficit and deficit to GDP. We provided some high-level estimates on the day; the detailed explanations were given in the government finance statistics publication on 29 July 2014.

# Results detail

As outlined in table 1 and figure 1, the new treatment of research and development (R&D) expenditure is the ESA 2010 change with the greatest impact on Ireland's gross domestic product (GDP).

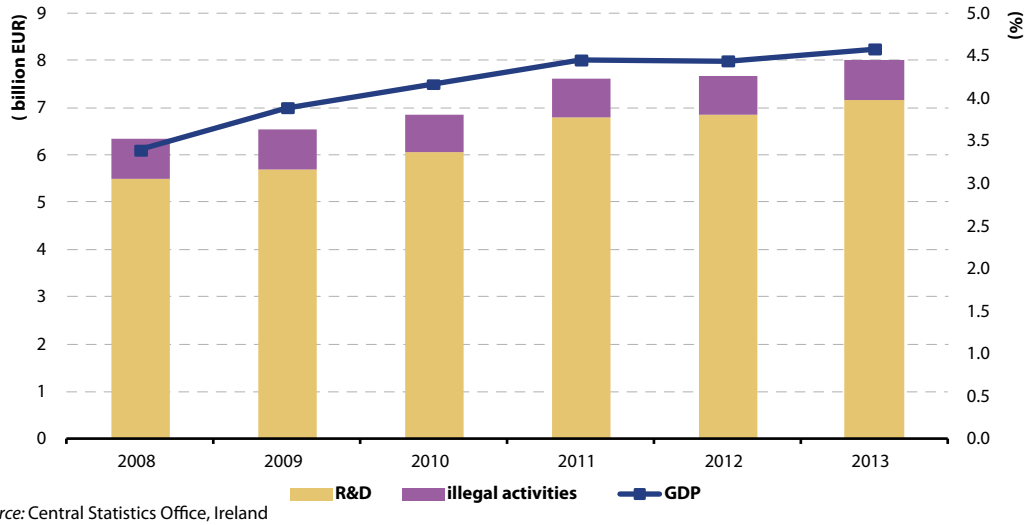
**Table 1:** Gross Domestic Product (GDP) on an ESA 2010 basis at current market prices

| | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|
| **GDP (billion EUR)** | 164.9 | 171.0 | 172.8 | 174.8 |
| **contribution of:** | | | | |
| **Capitalisation of R&D (%)** | 3.7 | 4.0 | 4.0 | 4.1 |
| **Illegal economic activities (%)** | 0.73 | 0.72 | 0.70 | 0.72 |

*Source:* Central Statistics Office, Ireland

Under ESA 95, R&D expenditure was treated as an ancillary cost to the main production of an enterprise. Under ESA 2010, however, R&D expenditure is recognised as investment and is included as gross fixed capital formation in the expenditure approach to GDP and as value added in the income approach ([1]).

**Figure 1:** Impact of R&D and illegal activities on GDP at current prices 2008–2013




*Source:* Central Statistics Office, Ireland

There are three distinct components to R&D expenditure in Ireland's case, dominated by the international element, which would not be the situation for many other Member States.

- firstly, the R&D being performed for resident multi-national enterprises (MNEs) by their affiliates abroad. The amounts represent the cost to companies of their R&D employees working for them abroad. They cover those services that are associated with basic research, applied research and experimental development of new products and processes. Activities in the physical sciences, social sciences and humanities are covered, including the development of operating systems that represent technological advances. Also included is commercial research related to electronics, pharmaceuticals and biotechnology.

([1]) Note that for Ireland, GDP at current prices is calculated as the average of two independent approaches i.e. the income and expenditure methods.

- secondly, the 'In house' R&D refers to domestic R&D activities in the private sector and also in Government including Health and Education. The data here is collected in the Frascati model surveys ([2]) such as the Business Expenditure on R&D (BERD) survey and in other various structural business surveys.
- thirdly, sales and purchases of intellectual property i.e. non-produced, non-financial assets which are the results of research and development (such as patents, copyrights and industrial processes). Such purchases were previously classified as capital transfers, and thus were not included in gross fixed capital formation (GFCF) or as imports in the balance of payments current account. They are now part of GFCF and are treated in the same way as other R&D imports. The net capital transfers tend to be a more irregular feature of the accounts. As Ireland is typically a net purchaser of patents and copyrights, the new treatment reduces the current account balance in the quarters affected by adding to imports of services.

It is important to be aware that the imports of R&D have no effect on GDP — the imports (negative on GDP) are offset by the inclusion of R&D in Capital Formation (positive for GDP). The more pronounced impact on GDP arises from the recognition of R&D as an asset in the new standards ESA 2010 and BPM6; imports of R&D, it should be noted, were already recognised and recorded in line with the previous standards, BPM5 and ESA 95. Table 2 illustrates the relative scale of each component.

**Table 2:** Analysis of R&D by source
(billion EUR)

| | 2010 | 2011 | 2012 |
|---|---|---|---|
| **a) Imports of R&D services** | 4.2 | 4.9 | 4.8 |
| **b) R&D 'in house'** | 1.9 | 1.9 | 2.0 |
| **c) Capital transfers** | 0.7 | 0.4 | 2.1 |

*Source:* Central Statistics Office, Ireland

# Balance of Payments — BPM6

In conjunction with the ESA 2010 changes, and in line with other EU Member States, the CSO also implemented the sixth edition of the IMF's Balance of Payments and International Investment Position Manual (BPM6) as reflected in the Quarter 1 2014 Balance of Payments (BOP) results. Back data to 1998 was calculated for the main aggregates, while revisions to the BOP results for 2012 and 2013 due to the availability of additional and revised data were also included in the results.

## Change of ownership principle

Under BPM6, the change of economic ownership principle has been brought more into focus; the treatment of goods sent abroad for processing and of merchanting has been revised.

The recording of goods sent abroad for processing is no longer based on physical movements of goods; and in the BOP statistics, goods sent abroad for processing are no longer included in gross exports and imports of goods, instead the fee received for the processing is included in the service category 'Repairs and Processing'. This new treatment of processing services has very little effect on the current account balance.

In BPM5, a change of ownership was imputed for goods undergoing processing by an entity other than the owner. These imputed transactions were included on a gross basis in 'goods for processing' in the goods account. In BPM6, this imputation is

([2]) http://www.oecd.org/science/inno/frascatimanualproposedstandard–practiceforsurveysonresearchandexperimentaldevelopment6thedition.htm

eliminated and the fee received for the processing services rendered is included in 'manufacturing services on physical inputs owned by others'. Trade in goods are recorded (only) when the goods change economic ownership, not when they are physically shipped to an economy for processing without a change in economic ownership.

In BPM5, merchanting was included in 'merchanting and other trade-related services'. In the case where these goods were kept in inventories from one period to the next, the purchase of goods under merchanting was included in merchandise imports, and the same amount deducted from imports (as negative imports) in the period in which the goods were relinquished. Any difference between the value of the goods when acquired and their value when relinquished was entered as exports of merchanting services. In BPM6, merchanting of goods is reclassified from services to goods. The purchase of goods is classified as a negative export of goods of the economy of the merchant, and the sale is classified as a positive export of goods, with the difference between sales and purchases recorded in goods exports as 'net exports of goods under merchanting'.

The significance of these two activities (goods for processing and merchanting) is illustrated in Table 3 and demonstrates the globalised nature of the Irish economy.

**Table 3:** Merchanting and Goods for Processing ([3]) 2012–2013
(million EUR)

| | 2012 | 2013 |
|---|---|---|
| **Goods acquired under merchanting** | – 62 290 | – 55 539 |
| **Goods sold under merchanting** | 67 551 | 59 290 |
| **Net merchanting** | 5 261 | 3 751 |
| **Repairs and processing — export of services** | 1 322 | 1 406 |
| **Repairs and processing — import of services** | 1 167 | 726 |

*Source:* Central Statistics Office, Ireland

# Government Finance Statistics

As mentioned previously, the ESA 2010 changes had an effect on ratios of the general government deficit and debt to GDP — see Figure 2. The increased level of GDP clearly improved the denominator part of the ratios. At the same time, ESA 2010 required changes to how some items of government expenditure were classified or measured, which affected the numerator.

We highlight below the impact of two in particular:

- Sector classification changes
- Changes in the treatment of the assets and liabilities of pension schemes where pension obligations are transferred to government

([3]) Goods for processing are now termed Manufacturing Services on Physical Inputs owned by others

**Figure 2:** General government deficit as a percentage of GDP 2009 to 2013
(%)


*Source:* Central Statistics Office, Ireland

## Sector classification changes

The classification of Irish Bank Resolution Corporation (IBRC) into the General Government sector with effect from mid-2011 is the ESA 2010 change with a material debt/deficit impact. IBRC is the merger of the former Anglo Irish Bank and Irish Nationwide Building Society, and was created on 1 July 2011. This results from a technical change from the ESA 95 standard where entities that were classified as Monetary Financial Institutions (MFIs) were by definition excluded from the General Government sector. This automatic exclusion no longer applies, however; each MFI is now assessed on a case-by-case basis.

The establishment of IBRC took place on 1 July 2011 following approval by the European Commission of a joint restructuring plan for Anglo Irish Bank and Irish Nationwide Building Society, which required the merger of the banks, the sale of their deposit books, and the orderly work-out of the merged loan book over a period not to exceed 10 years.

The impact of the reclassification on the general government deficit is shown in table 4.

**Table 4:** General government deficit following reclassifications
(% of GDP)

| | 2011 | 2012 | 2013 |
|---|---|---|---|
| **GG Deficit impact (1)** | – 0.2 | – 0.4 | 0.7 |

(1) – implies deficit is worsened in period, + implies deficit improvement.
*Source:* Central Statistics Office, Ireland

Why did the deficit position improve for 2013? During that year, IBRC was put into liquidation. In ESA 2010, the payments under the Eligible Liabilities Guarantee Scheme arising from this liquidation were treated as intra-government transfers rather than government expenditure, as they would have been under ESA 95 rules.

## Transfer of pension obligations to government

Under ESA 95, when government assumed the pension liabilities of the pension fund of a corporation the transfer of assets of the fund at the time of the transfer to government was treated as a lump sum payment which contributed to government revenue for the period in which the

transfer took place and therefore improved the deficit for the period. Under ESA 2010, in the case where the assets and liabilities of the funded pension scheme are equal, such a transfer is now treated as a financial transaction with no impact on the government deficit. In the case where the liabilities exceed the assets of the scheme, the deficit is now worsened by the difference in the assets and liabilities at the time of the transfer. An accounts payable liability is recorded in the government accounts at the time of the transfer; and as cash payments are made in future periods this liability decreases accordingly. In the years following the transfer the impact on the deficit is neutral with an imputed revenue offsetting the expenditure incurred.

The impact of this on the Irish accounts can be seen in 2009 and 2010, at which time government assumed responsibility for the pension schemes of the universities and of a number of semi-state bodies — see table 5. Under ESA 95 the transfer of these assets had a positive impact on the deficit in the relevant years (as outlined above). Under ESA 2010 this impact is now reversed, and an additional deficit impact reflecting the difference between the assets and liabilities of these schemes is included in the revised deficit figures.

**Table 5:** Treatment of lump-sum payment on transfer of assets & liabilities of pension scheme to government
(billion EUR)

| Impact on general government balance | 2009 | 2010 |
|---|---|---|
| **ESA 95** | 0.6 | 1.1 |
| **ESA 2010** | – 0.4 | – 0.4 |
| **Change in previously recorded balance** | – 1.0 | – 1.5 |

*Source:* Central Statistics Office, Ireland

In later years the imputed revenue results in a small deficit improvement under ESA 2010 when compared with the recording under ESA 95 which reflected the expenditure incurred but no imputed revenue for those years.

# Illegal activities

In addition to the ESA 2010 changes, the results included extended estimates for illegal economic activities — see table 6. The European statistical agency, Eurostat, agreed recommendations on the estimation and recording of these activities in recent years and required Member States to include estimates for illegal economic activities in the national accounts by September 2014. They are consistent with the estimates included in Ireland's Balance of Payments (BOP).

Estimates for the smuggling and production of narcotics were the biggest contributor to the addition. These were based on BOP figures for seizures, estimated to be 10 % of all activity, and assuming a street value at a multiple of the wholesale value.

Data for smuggled fuel was already indistinguishably included in the estimates. Estimates for prostitution were based on information from relevant advocacy organisations and agencies on the numbers involved and income generated.

**Table 6:** Impact on Gross Domestic Product (GDP)
(million EUR)

| | 2010 | 2011 | 2012 |
|---|---|---|---|
| **Narcotics** | 736 | 744 | 737 |
| **Tobacco** | 133 | 134 | 122 |
| **Prostitution** | 45 | 53 | 61 |

*Source:* Central Statistics Office, Ireland

# Conclusion

The accounts compiled in accordance with new accounting standards of the European System of Accounts 2010 (ESA 2010) and Balance of Payments 6th Manual (BPM6) resulted in a significant increase in the level of Gross Domestic Product (GDP), with a minor impact on the GDP growth time series. In general, we believe that our data users have a good understanding of the changes and the methodologies underlying them, albeit we expect to continue to address questions on specific issues as they arise.

# DEREK BLADES (1937–2014) ([1])

Derek William Blades who died in his sleep in the early morning of 26 June 2014 was a well known and much respected member of the international statistical community. His passing was completely unexpected — he had had no major health problems recently and had just returned from an eleven day cruise of the Norwegian fjords with his wife Evelyn. He was about to depart for a six week work assignment with the Asian Development Bank in Manila.

His death came as a complete shock to his family, friends and former colleagues. He will be greatly missed in national accounting and ICP circles; not only for his down to earth practical approach to statistics but also for his erudite and to-the-point interventions at meetings and for the wit and humour with which he made them. His generosity and willingness to help others will also be missed.

Derek was born on 23 December 1937 in Birkenhead in the United Kingdom. He attended Birkenhead School between 1949 and 1956 where he won a prestigious State Scholarship in classical studies to study at university. Subsequently, he gained a place to read classics at Lincoln College at Oxford University which he attended from 1959 to 1962.

Between school and university he did his national service in the Royal Navy during which he saw 'action' in the 'cod war' between Iceland and the United Kingdom. Although his original intention had been to continue with his classical studies at Oxford, he decided that, after two years before the mast, his Greek and Latin were too rusty and no longer up to it, although he continued to benefit throughout his career from the intellectual discipline and semantic skills acquired during his early studies in classics. On going up to Oxford he switched to reading Philosophy, Politics and Economics. After obtaining his BA he worked for a year as a journalist in London. But remembering the advice of his tutor — if you want to be an economist you should first be an economic statistician — he returned to Oxford in 1964 to study for a Certificate in Statistics. Having completed his studies, he married Evelyn and together they went off to newly independent Malawi to work in the National Statistical Office in Zomba.

Derek worked in the statistical office from 1964 to 1972 first as a statistician, then as a senior statistician and finally as the Director of Census and Statistics. At the time, Malawi's economic statistics left much to be desired, a state of affairs he set out to rectify. One of his first tasks was to create a system of foreign trade statistics. Almost single handily, he launched the annual and quarterly establishment surveys for various economic activities and worked closely with his colleagues carrying out rural and urban household income and expenditures surveys. His major contribution, and the one of which he was most proud, was the development of the first set of national accounts for Malawi.

On leaving Malawi in 1972, he went to work as an administrator at the OECD Development Centre in Paris. It was during his time at the Development Centre that he researched and wrote Non-Monetary (Subsistence) Activities in the National Accounts of Developing Countries (OECD Development Centre, Paris 1979). In 1975 he was promoted to Principal Administrator in the OECD Department of Economics and Statistics where he worked on the national accounts and labour force statistics of OECD member countries. He left the OECD in 1978 to work as a senior statistician at the United Nations Statistical Office in New York where he commissioned and edited statistical manuals on national accounts and price indexes.

In 1980 he returned to the OECD to head the National Accounts Section in the National Accounts and Statistics Division of the Department of Economics and Statistics. He was responsible for developing a work programme for the improvement of macroeconomic statistics in OECD member countries, drafting of methodological handbooks, organising regular expert meetings on national accounts and contributing

([1]) This obituary has been prepared for the Review of Income and Wealth. EURONA is grateful to the Review for sharing it.

to analytical research in the OECD Economics Department.

At an international level, the major development in the 1980s and early 1990s was the revision of the UN System of National Accounts (or SNA). All the major interested international organisations — the UN, the IMF, World Bank, EU and the OECD agreed to assume collective responsibility for the revision. Derek played a major role in the revision process acting as the OECD's representative in the Inter Secretariat Working Group on National Accounts set up to manage the process. His services were much in demand during the revision not merely because of his knowledge and expertise but because of his ability to think logically and constructively and to draft clearly, rare talents that were no doubt enhanced by his early education in classics.

When the OECD created a new Statistics Directorate in 1993 Derek became the first head of its Non-Member Countries Division. This involved setting up a programme of technical assistance in economic statistics for transition economies in Eastern Europe, Central Asia, and the Commonwealth of Independent States and for non-member countries in Asia and Latin America. The main areas of technical assistance were national accounts, price statistics, purchasing power parities, business tendency surveys, and cyclical analysis.

In 2002 he retired from the OECD, but not from his professional work. As just noted, his services were always much in demand and he continued working as a consultant for the International Monetary Fund, the World Bank, the OECD, Eurostat, the Asian Development Bank and the African Development Bank.

He was a fellow of the Royal Statistical Society, a member and former chairman of the Council of the International Association for Research in Income and Wealth (IARIW), and a member of the International Association of Official Statisticians branch of the International Statistical Institute. He also sat on the editorial boards of the OECD Economic Studies and the Review of Income and Wealth, and coedited with Stephan Klasen the special issue of the Review published in 2013 on Issues and Challenges in Measuring National Income, Wealth, Poverty, and Inequality in Sub-Saharan African Countries. Just ten days before his death he had another paper accepted for publication in the Review.

Derek will be remembered for his love of travel, his curiosity particularly when travelling, his ability to establish a rapport with a whole manner of different people even when they did not share a common language, his love of reading, his collection of paintings from around the world, and his willingness to try his hand at anything at least once.

He is survived by his wife, Evelyn, his daughters, Catherine and Nicola, and his grand-daughters, Lea Marie and Amelie.

DAVID ROBERTS (*)

## Selected publications:

Non-Monetary (Subsistence) Activities in the National Accounts of Developing Countries, OECD Development Centre, Paris 1979.

The Hidden Economy, OECD Occasional Studies, June 1982.

Defining and Measuring the Public Sector (with Leila Pathirane), Review of Income and Wealth 28(3), September 1982, pp. 261–289.

(*) The author gratefully acknowledges the comments of Peter Hill and Robert Hill on an earlier draft.

Alternative Measures of Saving, OECD Occasional Papers, June 1983.

Statistics for a Market Economy, (editor), OECD, Paris 1991.

The 'Recent Period' of the IARIW, 1988 to 1998, Review of Income and Wealth, September 1999, Vol. 45 Issue 3, pp. 409–417.

National Accounts for China: Sources and Methods (with Xu Xianchun and Ye Yanfei), OECD, Paris 2000.

Measuring Capital, OECD Manual on the Measurement of Capital Stocks, Consumption of Fixed Capital and Capital Services (with Peter Harper, Charles Aspden, Mike Harper, Peter Hill, Barbara Fraumeni), OECD, Paris 2001.

Women and Men in OECD Countries, OECD, Paris 2006.

Understanding National Accounts (with François Lequiller), OECD, Paris 2006.

A Story Behind Each Number: An Obituary of Angus Maddison (with Bart van Ark and Harry X Wu), Review of Income and Wealth, September 2010, Vol. 56 Issue 3, pp. 640–646.

Estimating Value Added of Illegal Production in the Western Balkans, Review of Income and Wealth. March 2011, Vol. 57 Issue 1, pp. 183–195.

The Informal Economy in Developing Countries: An Introduction (with Francisco H. G. Ferreira and Maria Ana Lugo), Review of Income and Wealth. May 2011 Supplement, Vol. 57, S1–S7.

How relevant are the United Kingdom's official measures of price change? (with Michael Ward and Carol Carson), Statistical Journal of the IAOS. 2011, Vol. 27 Issue 1/2, pp. 31–37.

Issues and Challenges in Measuring National Income, Wealth, Poverty, and Inequality in Sub-Saharan African Countries: An Introduction (with Stephan Klasen), Review of Income and Wealth, October 2013, Vol. 59, Supplement, S1–S8.

A Short-Cut Method of Estimating Capital Stocks: When can it be used and how well does it work? Review of Income and Wealth, forthcoming.

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