National accounts

2024 Benchmark Revision

Overview of the main methodological changes

National Accounts Institute

National Bank OF BELGIUM
Eurosystem

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1. Introduction

In accordance with **Eurostat's recommendations**, Belgium, like most European countries, carried out a benchmark revision of its national accounts in 2024. In principle, such a revision takes place **every five years** as part of the normal procedures to improve statistics.

On the one hand, such a revision incorporates into the national accounts methodology the various action points identified by Eurostat which lead to adjustments considered to be "mandatory"[1]. It also integrates certain improvements to sources and methods developed on a "voluntary" basis to improve the **quality** of statistics or reinforce their **relevance** by taking into account recent economic developments.

Finally, another guiding principle of the current benchmark revision was to further improve the **consistency** between the real national accounts and other macroeconomic statistics, in particular the national financial accounts and balance of payments.

The revision focused on the **period 2009-2023**, in order to ensure temporal homogeneity of the series over the entire post-financial crisis period. However, this choice resulted in breaks in the time series for certain macroeconomic variables between 2008 and 2009[2].

The main national accounts aggregate - gross domestic product (GDP) - is affected by the benchmark revision, as are gross national income (GNI) and the main economic indicators.

This note describes the main revision points, which are categorised into four groups, in terms of methodology and impact on the main macroeconomic aggregates. The first group covers those points with an impact on GDP. The second contains points with an impact on GNI, while the third includes those with an impact on employment. The fourth and final group focuses on points with an impact on government statistics.

2. Revision points with an impact on GDP

The revisions mentioned in this section are expressed in current prices and as a percentage of GDP prior to the benchmark revision.

2.1 Household final consumption expenditure

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	+2 073.5	+3 648.5	+3 207.8	+5 710.3	+4 778.6
Percentage of GDP	+0.6 %	+0.9 %	+0.7 %	+1.2 %	+0.9 %

The list of action points identified by Eurostat as mandatory can be found in the Annex.

2 In this regard, it should be noted that 2009 was a pivotal year, as certain action points addressed by the previous benchmark revision (2019) were incorporated as from that year and the new NACE classification (known as NACE-BEL 2008) was introduced.

The measurement of household final consumption expenditure, which corresponds to total consumption expenditure on goods and services by resident households, is based mainly on the (biennial) household budget survey, administrative data and a number of other specific surveys.

The revision of household final consumption expenditure has various components:
– Implementation of the new Classification of Individual Consumption According to Purpose (COICOP 2018)
– Incorporation of the results of the 2022 household budget survey
– Revision of e-commerce and cross-border spending
– Other adjustments resulting from changes made in the production approach

Classification of Individual Consumption According to Purpose (COICOP)

Household final consumption expenditure is published in accordance with the Classification of Individual Consumption According to Purpose (COICOP). This classification includes categories such as food, clothing and footwear, housing, water, electricity, gas and other fuels, and leisure goods and services.

To date, household final consumption expenditure has been published in accordance with ECOICOP[1]. As part of the 2024 benchmark revision, these data are now published based on COICOP 2018[2]. The aim of the new classification is to better reflect current consumption patterns (online purchases, self-generated electricity, new means of soft mobility, etc.). In addition, the new system is more closely aligned with other classifications (particularly in terms of healthcare). Tables showing the ECOICOP and COICOP 2018 classes, as well as the correspondence between the two classifications, are appended to this note.

The revision has no impact on the total level of household final consumption expenditure but does affect the breakdown of expenditure by COICOP class given the changes to the structure of the new classification. It was carried out for the period 1995-2023.

Household budget survey 2022

The household budget survey (HBS) is the main source of data used to estimate household final consumption. This biennial survey collects data on the consumption expenditure of private households for a reference year.

Until now, the latest HBS data used to estimate final consumption expenditure related to the 2010 wave of the survey. The results of subsequent waves were not included due to coverage issues.

In January 2020, the HBS was revised by Statbel in cooperation with the National Bank of Belgium to include more detail on products and better reflect economic reality. The survey now makes it possible to identify services such as parcel delivery, takeaway food consumption and online food shopping, as well as the use of new means of transport such as light rail and shared taxi services, or the consumption of self-generated solar power.

In the framework of the 2024 benchmark revision, the results of the HBS 2022 were analysed and integrated into the national accounts. Certain additional adjustments, which complement those developed by Statbel, were made to guarantee high-quality integration.

In order to ensure consistency between the survey results (benchmark years 2010 and 2022), the intervening years (2011-2021) were reviewed and estimated by interpolation. This was done using growth coefficients based on administrative data such as VAT turnover. For the estimate of 2023 expenditure, the results of the HBS 2022 were extrapolated based on either the change in VAT turnover or exogenous trends.

The revision affects the total level of household final consumption expenditure from the year 2011 onwards.

1 A table listing the ECOICOP one-digit classes is appended to this note.
2 A comparison of the ECOICOP and COICOP 2018 classes, expressed to two digits, is appended to this note.

Revision of e-commerce and cross-border spending

The method used to estimate e-commerce spending has been revised, as from year 2011.

Previously, online purchases in Belgium by resident households were accounted for using the HBS 2010 extrapolation method. Online purchases abroad were assessed using credit card data. Further to the 2024 benchmark revision, online purchases both in Belgium and abroad are now estimated using new data on transactions settled with a payment card. However, these data, which include a greater number of suppliers and types of transactions, are only available as from 2022. The intervening years (2011-2021) were therefore estimated by interpolation.

- Online purchases in Belgium were estimated using the general HBS interpolation method based on VAT indicators.
- Online purchases abroad were estimated based on changes in credit card data (old reporting).

For the year 2023, online purchases in Belgium were accounted for using the HBS 2022 extrapolation method (based on VAT turnover). New payment card data were used to estimate e-commerce expenditure abroad for 2023.

The method for estimating cross-border spending, i.e. spending by Belgian residents abroad and by non-residents in Belgium, has also been revised as from year 2009. In the national accounts, total household final consumption expenditure is estimated using the national concept. Given that the estimate per category of expenditure (COICOP class) is based on the domestic concept, i.e. expenditure on the Belgian territory by residents and non-residents, it was necessary to switch to the national concept. The shift to the national concept was done by subtracting expenditure by non-residents in Belgium from domestic expenditure and adding expenditure by residents abroad. This revision point has two components:

– private travel expenses paid for mainly with a credit card were estimated using new payment card data;
– transactions linked to cross-border life insurance activities were adapted, to ensure consistency between the non-financial national accounts, financial accounts and the balance of payments

Other adjustments resulting from changes made in the production approach

The estimate of annual household final consumption expenditure is based half on HBS results and half on exogenous estimates. Several of these have been revised, following methodological changes introduced in the production of these services: these include expenditure on insurance and financial services, on housing services, on healthcare and on financial intermediation services indirectly measured (FISIM). These various items are described in more detail below.

Lastly, some expenditure erroneously recorded in final consumption expenditure has been removed.

The final consumption expenditure totals remain unchanged over the period 1995-2008 but are broken down according to the new classification (COICOP 2018). From 2009 onwards, revised household final consumption expenditure exerts an upward influence on GDP, ranging from €2 073.5 to €5 710.3 million (between +0.6% and +1.2% of GDP) depending on the year.

2.2 Illegal economy

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	+63.3	+160.3	+338.8	+222.1	+282.0
Percentage of GDP	+0.0 %	+0.0 %	+0.1 %	+0.0 %	+0.1 %

The illegal economy includes activities which, although illicit, are on the production boundary according to national accounting concepts. These include drug production and trafficking, prostitution services and tobacco smuggling. As part of the 2024 benchmark revision, the estimates for the production of drugs and prostitution services were adjusted.

The estimates for prostitution services are based on a detailed study carried out by KU Leuven in cooperation with the National Bank of Belgium; this supply-based study relates to reference year 2015. These services are divided into different market segments (window prostitution, street prostitution, escort services, etc.). For each segment, production (output) in the reference year was estimated by multiplying the segment-specific price by the corresponding specific volume.

In the framework of the 2024 benchmark revision, certain assumptions were updated based on new data collected online and information from the Federal Police on the number of window prostitutes for the year 2023. An interpolation for the period 2015-2022 was then made based on the number of window prostitutes and the general index for conventional wages.

With regard to drug production, statistics were compiled per type of drug based on a (limited) range of available data and assumptions drawn from academic studies. The approach used is based on demand; a comparison between supply and demand was made wherever possible. The available information comes mainly from the European Union Drugs Agency (EUDA), various charities, the Federal Police and the (Belgian) Scientific Institute of Public Health.

The revision was aimed primarily at improving measurement of the prevalence of drug use, using the results of the Health Interview Survey (HIS) for Belgium as from 2009, as well as developments in neighbouring countries in cases where survey data for intervening years were missing for Belgium. Moreover, the estimate for cannabis and ecstasy production was improved by including recorded seizures of these products.

The revision of the illegal economy has an upward impact on GDP, ranging from €22.2 to €338.8 million (between +0.0% and +0.1% of GDP) depending on the year.

2.3 Dwelling services

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	+628.2	+1 225.6	+1 774.2	+1 910.8	+2 252.8
Percentage of GDP	+0.2 %	+0.3 %	+0.4 %	+0.4 %	+0.4 %

Production of dwelling services

In the national accounts, the production of dwelling services must be estimated not only for tenants of dwellings (actual rents) but also for owner-occupiers (imputed rents). Production (output) is measured by the value of rents. It is recorded as a service for owners and as consumption for tenants (final consumption for a household and intermediate consumption for a firm). When a household owns the dwelling it occupies, the national accounts record both the production of housing services and final consumption for that household.

The estimate of the production of dwelling services is based on a so-called “price × quantity” approach, i.e. one that combines an estimate of the quantity of dwellings with the rental prices for these units. The “quantity” component is based on housing stock observations from ten-year censuses. The price component is based on monthly rent observations. Since data on rent are derived from surveys, the estimate relies on an extrapolation method that generalises the sample of observed rents for all dwellings with similar characteristics.

Further to the 2024 benchmark revision, the “price × quantity” method was adapted in a number of ways.

Previously, the housing stock for the period 2011-2022 was estimated by extrapolation based on 2011 census data and changes in land registry data. In the 2024 benchmark revision, 2021 census data relating to the housing stock for the year 2020 were taken into account. The housing stock for intervening years (2011-2019) was estimated
by interpolation from land registry data. In addition, the number of dwellings was also “calibrated” annually to the household population as per the National Population Register.

The production of dwelling services relating to second homes has also been adapted. With regard to the number of second homes, the results of the survey of 5 000 households carried out by WES Research and Strategy were used to date. However, the latest edition of this survey dates from 2014, and WES dropped the question on second-home ownership. Estimates for years after 2014 were therefore extrapolated based on the change in the percentage of Belgian households owning a second home (in Belgium and abroad) according to the Survey on Income and Living Conditions (SILC). Further to the 2024 benchmark revision, the number of second homes in Belgium used for recreational purposes was revised and is now based on the results of the three-yearly Household Finance and Consumption Survey (HFCS). These results were then broken down by municipality based on the proportion of unoccupied dwellings (according to census information), so as to better reflect the characteristics of tourist areas where the number of unoccupied dwellings is generally higher.

In addition, the occupancy rate for second homes was revised. Whereas the length of time that second homes are occupied was based entirely on assumptions under the old method, it is now based on new data on the “sharing economy” derived from tourism sector statistics, thus allowing greater account to be taken of economic events likely to affect tourism.

Until now, non-resident owners were grouped together with resident owners of dwellings or second homes. To enable the separation of these two groups, land registry data are now used. These are available on an annual basis and are broken down by type of property and the owner’s country of origin. The number of apartments and houses owned by non-residents is distributed proportionally, based on the known density of rented accommodation or second homes (i.e. rented accommodation, second homes or empty dwellings, provided they are owned by a single household) in all municipalities. Non-resident ownership of houses and apartments is calculated separately per type of dwelling. This new distinction makes it possible to estimate an export flow of housing services with the rest of the world, as well as property income received from the rest of the world. In addition to the population of resident dwellings, the volume of dwellings abroad owned by Belgian residents was also taken into account for the first time. The Federal Public Service (FPS) Finance has tax data on the number of these houses and flats, as from 2021. The series have been back-cast to 2009, following the same trend as the number of dwellings owned by non-residents in Belgium. This new information makes it possible to record an import flow of housing services with the rest of the world, as well as property income paid to the rest of the world[1].

In terms of the price component, SILC data are the sole source used to estimate rents. To date, properties have been grouped into 30 strata based on three main criteria, namely the location of the property, the degree of urbanisation of the municipality in which the property is located, and the type of property. A rent is defined for each of these strata.

In the context of the 2024 benchmark revision, the property location stratification criterion based on market price, which took only three levels into account, was replaced by a modelling of average rent based on the price of the property. The modelling takes into account the heterogeneity of property market prices between municipalities. Using regression, a rental value can be imputed to each type of dwelling in each municipality, including properties owned by non-residents in Belgium. In the case of dwellings owned by residents abroad, the average rent is adjusted based on purchasing power parities in order to take into account differences in price levels between countries.

1 Income from property arising from the ownership of second homes abroad is addressed in Section 3.3.

Intermediate consumption of dwelling services

Until now, HBS 2010 data have been used to estimate the intermediate consumption of housing services produced by households. Expenditure typically borne by owners is allocated to intermediate consumption, while that specific to tenants is recorded as final consumption; expenditure that cannot be attributed exclusively to one or the other is split between the two aggregates. Average household expenditure is then treated the same way as other HBS data in the national accounts (i.e. multiplied by the number of households and adjusted to take into account collective households and expenditure by residents abroad).

A number of changes have been introduced further to the 2024 benchmark revision. These mainly concern the use of more recent data. First, the estimate of intermediate consumption is now based on the 2022 wave of the HBS, with interpolation for years between the 2010 and 2022 waves of the survey. The revision affects the overall level of intermediate consumption. In addition, ECOICOP has been replaced by COICOP 2018. As a result, some final consumption of products related to housing has been reclassified as intermediate consumption.

The revision of dwelling services has an upward impact on GDP ranging from €628.2 to €2 252.8 million (between +0.2 and 0.4% of GDP), visible in both the production and consumption of such services.

2.4 Real estate abroad

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	-277.6	-400.7	-448.3	-499.1	-524.1
Percentage of GDP	-0.1 %	-0.1 %	-0.1 %	-0.1 %	-0.1 %

As stated in the previous section, a distinction between resident/non-resident ownership of dwellings in Belgium was not made under the previous methodology. Belgian dwellings owned by non-residents were considered as being held by Belgian residents and, as a result, no exports of housing services were recorded in the national accounts. In addition, no estimate for imports of housing services was recorded for Belgian residents owning dwellings abroad.

Pursuant to the benchmark revision, the production of housing services by non-residents was assessed based on newly available land registry data. This resulted in the recording of export estimates for the entire revision period. This new data source also allowed the production of estimates for dwellings abroad owned by Belgian residents. Data on these dwellings are only available as from year 2021, so the series were completed from 2009 through back-casting.

This revision has a negative impact on GDP for the entire period, in the amount of -€277.6 to -€524.1 million (-0.1 % of GDP each year).

2.5 Missing data in firms' annual accounts

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	-721.3	-105.0	-16.6	+1.282.4	+1 839.5
Percentage of GDP	-0.2 %	-0.0 %	-0.0 %	+0.3 %	+0.4 %

GDP is estimated under the production approach in a two-phased process. In the first phase, the production side is estimated using Belgian Generally Accepted Accounting Principles (BE GAAP). These concepts guide the compilation of firms' financial statements. This phase results is what are sometimes referred to as "administrative aggregates", owing to the frequent use of administrative data sources during the compilation process. In the second phase, the administrative variables are aligned with the accounting concepts used in the European System of Accounts (ESA 2010). The current revision related to the first phase of the value-added calculation and focused more specifically on estimating missing data in firms' annual accounts.

Until now, the methods used to estimate missing data relied on a number of important (implicit) assumptions. A frequently employed method entailed ratio extrapolation of a complementary indicator (e.g. VAT turnover, the NSSO wage bill or another variable). The choice of indicator was made in advance for the entire group of firms in the same stratum, thus not on a firm-level basis. This sometimes resulted in an implicit zero assumption, e.g. when the NSSO wage bill was chosen as the variable to extrapolate, a firm would automatically be assigned a value of zero if it had not filed an NSSO return. This was the case even when the firm had filed a non-nil VAT return. Another drawback of the ratio extrapolation method was the straightforward summing of various types of firms in the reference group to calculate the numerator and denominator of the ratio:

– when a reference firm had a numerator value but no denominator value (e.g. turnover but not wages) this directly increased the size of the ratio (application of the ratio indirectly assumes the same structure in the group of firms to be estimated);
– the calculation of the ratio was not preceded by outlier detection;
– the ratio approach assumed no intercept bias in the relationship between variables.

The 2024 benchmark revision introduced a new statistical method to calculate production and intermediate consumption for firms that are not obliged to file annual accounts. The new methodology is based on regression techniques using annual accounts as a dependent variable and VAT data, the NSSO wage bill and employment as explanatory variables. This approach eliminates the assumptions implicit in the ratio extrapolation method and increases the use of available data by allowing for more than one explanatory variable. In addition, an integrated outlier detection process precedes estimation of the regression coefficients.

Implementation of the new method led to a clear upward revision of the production of companies and associations (+2% level shift on average for the period 2009-2021) but revealed a mixed picture of value added. The impact on GDP ranged from -€1 433.1 to +€1 839.5 million (between -0.4% and +0.4% of GDP) depending on the year.

2.6 Gross fixed capital formation

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	-527.7	+516.4	-63.8	+514.0	-506.1
Percentage of GDP	-0.2 %	+0.1 %	-0.0 %	+0.1 %	-0.1 %

Gross fixed capital formation is defined as the value of acquisitions less disposals of fixed assets by resident producers over a reference period. Fixed assets are produced assets used repeatedly in production processes for more than one year.

The revision of the estimate of gross fixed capital formation consisted of three parts: (a) revisions to the valuation of investment in housing; (b) updates to source data and one-off corrections, mainly to intangible assets; and (c) adjustments arising from revisions made in accordance with the production approach.

The first point concerned adjustments made to the estimate of investment in housing. While the method (quantity x price) remained unchanged in principle, with quantities corresponding to the number of new dwellings placed on the market and the cost of a dwelling estimated based on the biennial survey of contractors active in the building industry, certain adjustments were nevertheless made. The most important of these entailed smoothing price changes estimated based on the contractors' survey, whose volatility was clearly due to the size of the sample. With regard to the estimation of quantities, the statistics on housing starts were updated based on the latest figures available from Statbel. Another major revision concerned the estimate of property transactions by non-residents with resident households. New statistics from the land registry made it possible to estimate the net flow of property transactions (acquisitions - sales of existing dwellings) carried out by non-residents. The "quantity x price" method was applied to these transactions. Finally, the price indices are based on a new index estimated by Statbel, which takes into account only new housing (apartments).

Various data updates and one-off corrections were also made, particularly for intangible assets. The biennial survey of R&D expenditure conducted by the Federal Public Planning Service for Science Policy (Belspo) is the main source of data for compiling statistics on R&D assets in Belgium. The value of these assets has been updated

based on the latest information received from Belspo and as a result of certain one-off corrections. For a specific multinational group, corrections derived from analyses by the Large Cases Unit[1] relating to the years 2018-2022 were back-cast to 2009. With regard to the estimation of investment in software and databases, certain one-off corrections were made for a number of companies based on an analysis of their most recent data. Lastly, minor adjustments were also made to public investment (in tangible assets) over the period as a whole.

The third point concerned adjustments arising from revisions made in accordance with the production approach. The main adjustment was the revision of the value of own-account production of fixed assets, whose counterpart under the expenditure approach is gross fixed capital formation. Since production for own final use is, in accordance with corporate accounting practices, valued at cost price, a margin must be estimated for this type of capital good produced for own account. Gross fixed capital formation was therefore adjusted based on the revised margin.

An additional adjustment related to the revision of the value of company sales in accordance with the production approach. The total amount of purchased software to be reclassified from intermediate consumption to gross fixed capital formation was estimated based on the ratio, established per branch of activity, of purchased software recorded as intermediate consumption to turnover based on data from the Structural Business Survey (SBS), which was then applied to the turnover of the various branches of activity estimated in accordance with the production approach.

The revision has an impact on GDP ranging from -€648.8 to +€660.5 million (between -0.2 and +0.2% of GDP).

2.7 Capital stocks and consumption of fixed capital

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	+37.6	+45.8	+250.2	+248.6	+353.6
Percentage of GDP	+0.0 %	+0.0 %	+0.1 %	+0.1 %	+0.1 %

Capital stocks are defined as total fixed assets at a given point in time, in a given area. Consumption of fixed capital (CFC) indicates the decline in the value of fixed assets, over the course of a period, as a result of physical deterioration and foreseen obsolescence, including a provision for losses on fixed assets as a result of accidental damage.

The perpetual inventory method (PIM) is used to calculate capital stocks and CFC for national accounts purposes. The PIM enables gross capital stocks to be estimated based on historical series of gross fixed capital formation (GFCF), the average service life of fixed assets and the retirement distribution. If depreciation functions are also used, it is possible to estimate net capital stocks.

In the context of the 2024 benchmark revision, the average services lives (ASL) of a number of assets were aligned to Eurostat's recommendations. Together with the revision of gross fixed capital formation (see Section 2.6), this modified the level of gross capital stocks, the consumption of fixed capital and net capital stocks.

The revision of CFC has an impact on the production of the institutional sectors which, according to ESA 2010, must be calculated as the sum of costs (including CFC). These sectors include the central bank, general government and non-profit institutions serving households (NPISH). Consequently, GDP has been impacted by an amount equal to the revision of CFC for the general government sector and the NPISH sector. Since the central bank's production is assumed to be consumed by deposit-taking corporations except the central bank, the revision of CFC for this sector has no impact on GDP.

The revision has an impact on GDP ranging from -€49.8 to +€353.6 million (between -0.0% and +0.1% of GDP).

1 The Large Cases Unit (LCU) is a distinct unit within the Statistics Department of the National Bank of Belgium which monitors a select population of multinationals.

2.8 Inventories, changes in inventories and holding gains/losses

Inventories comprise stocks of raw materials and supplies intended to be used later as intermediate consumption in a production process, stocks of finished goods that have yet to be sold, goods purchased for resale as well as goods for processing which are not ready for delivery at the end of the accounting period. The change in inventories corresponds to the value of additions to inventories less the value of withdrawals from inventories.

Inventories generate holding gains when the market prices of the goods held rise and holding losses when they fall. In the national accounts, these holding gains and losses must be excluded from the measurement of production, since they do not result from a production process and therefore should not be included in GDP.

As part of the 2024 benchmark revision, some changes were introduced to estimate inventories, changes in inventories and holding gains/losses in accordance with the recommendations set out in the latest Eurostat-OECD compilation guide on inventories.

As regards the estimation of inventories, three conversion factors were applied to translate administrative aggregates (book values) into ESA aggregates:
– A factor that converts valuation from business accounting to national accounts accounting. Pursuant to business accounting principles, inventories are usually recorded at book value using several historical cost accounting methods, whereas national accounting requires valuation at current prices.
– A factor that converts businesses' work-in-progress and finished goods data to basic prices. When goods produced (either works-in-progress or finished goods) are put into inventories, they are valued at their production cost, not taking into account the surplus firms will record when they sell these goods. To value these goods at basic prices, a mark-up is therefore necessary.
– A final conversion factor takes into account the full population (a coverage multiplier).

The change in inventories can be estimated based on the difference between the book value of inventories at constant prices (applying the various conversion factors) at the beginning and end of the period. The volume change in inventories is then multiplied by an average price index for the current accounting period to obtain an estimate of the change in inventories at current prices.

Impact on GDP (expenditure approach)	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	+296.8	-2 061.1	-1 341.9	-512.0	-6 507.2
Percentage of GDP	+0.1 %	-0.5 %	-0.3 %	-0.1 %	-1.3 %

Pursuant to Eurostat's recommendations, holding gains and losses can be estimated as the difference between the book value of inventories and the estimated change in inventories. Holding gains are estimated for both produced goods and inputs. This has a direct impact on the production approach to GDP and is integrated into the second phase in the compilation process. In the case of holding gains, value added will be adjusted downwards. For holding losses, value added will be adjusted upwards. In the past, holding gains/losses were only estimated on the change in inventories, thus not on the total level of inventories.

Impact on GDP (production approach)	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	+0.0	-648.6	+1 197.5	+1 268.8	-6 932.3
Percentage of GDP	+0.0 %	-0.2 %	+0.3 %	+0.3 %	-1.4 %

The revision of holding gains/losses has an impact on GDP (under the production approach), ranging from -€6 932.3 to +€1 603.5 million (between -1.4% and +0.4% of GDP). The revision of changes in inventories also impacts the level of GDP (under the expenditure approach). This impact is between -€6 507.2 and +€1 180.0 million (between -1.3% and +0.3%) over the period in question.

The impact is far from negligible, especially in years marked by high inflation.

2.9 Financial intermediation services indirectly measured (FISIM)

Impact on GDP	2009	2015	2019	2020	2021
Millions of euros	+0.0	-282.3	-10.6	-833.1	-1 198.5
Percentage of GDP	+0.0 %	-0.1 %	-0.0 %	-0.2 %	-0.2 %

Negative interest rates started to be introduced in 2014. This raised a fundamental accounting question for financial institutions: does a negative interest rate lead to the payment of interest (recorded as a positive amount on the liabilities side of the balance sheet) or the acquisition of a negative sum (recorded as a negative amount on the assets side)? The recording of this item in the financial accounts (and hence Scheme A reporting) significantly impacts the interpretation of aggregate results. For example, reported interest received could originate from either (a) “pure” (positive) interest received, (b) positive interest received offset by negative interest received, or (c) a combination of positive interest received and negative interest paid.

Initially, financial institutions developed their own approach to booking and reporting negative interest. This rendered interpretation of their accounting aggregates very difficult and posed significant challenges to the compilation of interest and FISIM statistics consistent with the ESA 2010 methodology.

When the regulatory authorities started issuing guidance on how to approach this matter, diverging views emerged:
– On the one side, the International Financial Reporting Standards (IFRS) considered that interest revenue cannot be negative and therefore must be booked as an expense (and vice versa for negative interest expense)[1]. The regulatory authorities endorsed this interpretation. Once a rule was set at EU level, the NBB published a circular in 2021 to align Scheme A reporting with the IFRS approach[2].
– On the other side, the IMF Committee on Balance of Payments Statistics concluded in 2016[3] that negative interest received should be accounted for solely on the assets side, so as to simplify the compilation of aggregated interest statistics.

The period prior to the introduction of a unified Scheme A reporting approach (2014-2021) was characterised by enhanced uncertainty and difficulties interpreting and aggregating the reported data, which were aggravated by the fact that the National Accounts Institute relies heavily on Scheme A reporting for interest estimation purposes.

Furthermore, the Scheme A approach proposed in 2021 reflects the IFRS position, namely that negative interest income should be booked as an interest expense and vice versa. This approach conflates the source of interest expense and income, despite the fact that this distinction is necessary for interest and FISIM calculations. Nonetheless, considerable efforts were made to keep aggregate interest rates and amounts in line with the information obtained from major Belgian banks and consistent with balance of payments (BoP) data. Further efforts were made to temper the amplified effect of interest variability on FISIM stability, mostly via the reference rate.

Dealing with this phenomenon and its impact on interest and FISIM calculations has been a progressive exercise in which direct interaction with financial institutions, the NBB’s prudential supervision departments, and other stakeholders has proved invaluable. Initially, this resulted in ad hoc arbitration of the reference rate when deemed appropriate and a breakdown of interest flows into positive, negative on the right side, and negative on the opposite side.

In 2021, the NBB was able to assemble additional data that shed light on the nature of interest, taken from prudential returns. These data, available as from year 2017, allow us to assign interest to four possible categories: interest income on assets, interest income on liabilities (negative interest paid), interest expense on liabilities, and interest expense on assets (negative interest received).

As the regular national accounts revision process only permits adjustments to the most recent years, this new data

1 See the IFRS Staff Paper, available at https://www.ifrs.org/content/dam/ifrs/meetings/2015/january/ifrs-ic/ias-39-financial-instruments/ap4-negative-interest-rates.pdf.
2 See https://www.nbb.be/doc/cp/nl/2021/20210601_nbb_2021_11.pdf.
3 This conclusion resulted from the committee’s 29th meeting. For a summary of the discussions, see https://www.imf.org/external/pubs/ft/bop/2016/pdf/16-18.pdf.

source could only be leveraged in the statistics for year 2019 onwards. In the 2024 revision, the new data and methodology could be applied to the full period. For years prior to 2017, when negative interest rates were already prevalent but data on the nature of interest flows was lacking, the percentage of negative interest on each side of the balance sheet[1] was determined through back-casting.

The revision has an impact on GDP ranging from -€1 198.5 to +€416.2 million (between -0.2% and +0.1% of GDP).

2.10 Insurance and reinsurance

Impact on GDP	2009	2015	2019	2020	2021
Millions of euros	+519.2	+291.7	+425.1	+314.0	+28.3
Percentage of GDP	+0.1 %	+0.1 %	+0.1 %	+0.1 %	+0.0 %

In recent years, a number of factors have affected the process of compiling insurance and reinsurance statistics for the national accounts.

The first factor concerns branches of foreign insurance companies, whose weight in the Belgian landscape has increased. For these units, the only source of data was the annual structure survey.

The second factor concerns reinsurance. Until now, reinsurance was dealt with in the national accounts using the Eichmann method. This method, based on the assumed existence of “pure” reinsurers within the country, allowed the deduction of all reinsurance transactions using various ratios. This method is no longer applicable, given the observed activities of national reinsurers in recent years.

The final factor impacting insurance and reinsurance concerns consistency with BoP statistics through the introduction of an integrated global approach.

These various factors formed the object of methodological improvements, which are presented below.

Activities of Belgian branches of foreign insurance companies

Pursuant to the supervisory laws, (Belgian) branches of foreign insurance companies are not subject to supervision by the supervisory authority of the host country, but rather by the authority of the country where their head office is located.

As a result, the National Accounts Institute does not have access to detailed administrative data on these branches, as it does for companies incorporated under Belgian law.

These branches are therefore subject to a specific structure survey, to gather data on their simplified profit and loss account and balance sheet needed for national accounts estimates.

The 2024 benchmark revision made it possible to supplement the results of this survey with new prudential data sources. These data allow the level of premium income of branches of foreign insurance companies operating in Belgium, particularly for year t-1, as well as the type of non-life insurance product concerned to be determined with greater precision.

The value of the production of non-life insurance services and its allocation to the consumer sectors (households, businesses and exports) can therefore be estimated more accurately.

Production and consumption of reinsurance

Reinsurance is basically insurance for insurance companies and refers to the process by which an insurer takes out an insurance policy to protect itself against certain risks.

1 Based on the applicable policy rates.

To do so, the insurer transfers a portion of its premiums to the reinsurer. If the risk occurs, the reinsurer will compensate the insurer. In return for this transfer of premiums, the (direct) insurer generally receives commissions from the reinsurer and/or may be entitled to a share of the latter's profits.

Due to the specificities of the reinsurance business, Belgian direct insurers often rely on foreign reinsurance companies. This poses a particular difficulty when it comes to estimating the value of reinsurance services consumed by the insurance sector, given the lack of access to administrative data for foreign reinsurance companies.

To overcome this difficulty, the method used up to now consisted of estimating the value of reinsurance produced and consumed using extrapolation, based on data from specialist reinsurance companies operating in Belgium.

Since its introduction in 2014, however, this method has proved less and less effective, due to a drop in the number of reinsurers active in Belgium and their specific characteristics. In addition, it did not factor in administrative data (from annual accounts and the structure survey of insurance companies) on direct insurance companies, relating to their reinsurance production and consumption.

A new estimation method was therefore introduced further to the 2024 benchmark revision, meaning estimates of reinsurance production and consumption are now based more directly on administrative data.

Reconciliation of imports, exports and current transfers of insurance transactions between the balance of payments and the national accounts

Since the introduction of BPM6, for the balance of payments, and ESA 2010, for the national accounts, there has been no conceptual difference between the two statistical domains with regard to insurance transactions. Exports and imports of services, as well as current transfers of insurance premiums and claims, should thus be recorded in a perfectly consistent manner in the balance of payments and national accounts. In practice, however, due to the use of different sources and compilation methods, some discrepancies have been observed between these two types of statistics.

As part of the 2024 benchmark revision, all sources and methods used for these estimates were compared, resulting in a single, centralised estimate of all exports, imports and current transfers relating to insurance activities.

Due to the more limited balance of payments revision policy, full harmonisation could only be achieved as from reference year 2019.

The revision of insurance and reinsurance has an upward impact on GDP ranging from €28.3 to €519.2 million (between +0.0 and +0.1% of GDP).

2.11 Non-observed economy

Impact on GDP	**2009**	**2015**	**2019**	**2020**	**2021**
Millions of euros	+0.0	+0.0	+322.0	-82.0	+1 970.1
Percentage of GDP	+0.0 %	+0.0 %	+0.1 %	-0.0 %	+0.4 %

The non-observed economy (black economy) covers legal activities but which are illegally conducted, such as repair work paid in cash and not declared to the tax authorities.

So far, the extrapolation used for estimating the non-observed economy, which is part of one of the transitional adjustments of the administrative aggregates to ESA 2010 aggregates in the production approach, was based on an overall adjustment by industries/sector calculated by applying percentages to turnover and purchases for non-financial corporations and unincorporated businesses separately. This was done for industries considered relevant,

with a differentiated adjustment by activity. The extrapolation coefficients were determined in 2014 and have only changed punctually since then. However, the non-observed economy continues to move and develop, which was currently not always reflected in the coefficients.

The benchmark revision provided an opportunity to review the estimation of these coefficients. An analysis was carried out to determine the gap between the VAT actually collected and the theoretical VAT, i.e. the VAT that would be collected if all VAT-registered units paid VAT in accordance with the law. In collaboration with FPS Finance, a theoretical VAT matrix has been drawn up. This matrix is then applied to intermediate consumption, private household consumption and gross fixed capital formation in the supply and use tables to calculate the theoretical amount of VAT that should have been collected by the authorities.

This revision has been implemented from 2016 and impacts the production, the intermediate consumption and the value added. The impact on GDP ranges from -€1 140.0 and +€1 970.1 million (between -0.2% and +0.4% of GDP).

2.12 Excise duties

Impact on GDP	2009	2015	2019	2020	2021
Millions of euros	-367.5	-518.7	-615.0	-558.7	-896.2
Percentage of GDP	-0.1 %	-0.1 %	-0.1 %	-0.1 %	-0.2 %

In the national accounts, production must be valued at basic prices[1]. Excise duties are classified as taxes on products and must therefore be deducted from the value of production. However, in firms' annual accounts (and on VAT returns), turnover is valued at production prices excluding VAT and includes excise duties. The latter are also recorded as a cost under "Operating taxes" (annual accounts item 640) and/or "Purchases of goods and services" (annual accounts item 600/8+61).

To translate business accounting values into ESA 2010 national accounts values, it is therefore necessary to deduct excise duties from turnover to obtain the value of production and from costs to calculate intermediate consumption. At the level of costs, the adjustment is determined based on responses to the SBS and applied to accounting items 640 and/or 600/8+61, depending on how they are recorded by companies. When an adjustment is applied to accounting item 600/8+61, it affects the level of purchases of goods and services and therefore the value of intermediate consumption.

The total amount of excise duties is available per type of product in the general government accounts. Combining this information with the results of the SBS made it possible to break down excise duties into a few specific branches of economic activity[2].

Since 2020, the customs authorities have provided more detailed data on excise duties, making it possible to determine who pays them, how much is paid and which products are involved. These new data have been integrated into the 2024 benchmark revision, in order to obtain a better breakdown by industry. The branches of activity concerned have been extended, while the total amount of excise duties remains unchanged.

This change in industry breakdown has no impact on production, since the total adjustment to turnover is identical. On the other hand, the inclusion of additional industries modifies the adjustment to purchases of goods and services, which in turn changes the total adjustment to intermediate consumption.

The revised breakdown of excise duties per industry has been introduced as from year 2021 and backcast to 2009. The result is an upward revision of intermediate consumption, ranging from €264.9 to €896.2 million, with a negative impact on GDP (between -0.2 % and -0.1 % of GDP, depending on the year).

1 The basic price is the price receivable by the producers from the purchaser for a unit of a good or service produced as output minus any tax (i.e. taxes on products) payable on that unit as a consequence of its production or sale, plus any subsidy (i.e. subsidies on products) receivable on that unit as a consequence of its production or sale (ESA 3.44)

2 SUT industries 11A/11B Manufacture of beverages, 12A Manufacture of tobacco products, 19A Manufacture of coke and refined petroleum products, 46A/46B Wholesale trade except motor vehicles and motorbikes, 52A Warehousing and transport supporting activities.

2.13 Household production of domestic services

Impact on GDP	2009	2015	2019	2020	2021
Millions of euros	+13.1	-118.4	-200.0	-245.9	-261.3
Percentage of GDP	+0.0 %	-0.0 %	-0.0 %	-0.1 %	-0.1 %

In the national accounts, domestic services produced by households correspond to the activities of households as employers of domestic personnel. The assumption is that the output of domestic services by households is equal to the compensation of employees, with no intermediate consumption. Persons employed in this context are largely undeclared and are therefore not included in the NSSO data used to estimate the number of employees and the associated hours worked and wages.

To estimate the production of domestic services by households, the preferred source is the HBS. The results of this survey allow total household expenditure on domestic services, including service vouchers and LEA (local employment agency) cheques, to be estimated. The production of domestic services by households is obtained by deducting from this item of expenditure purchases of service vouchers and LEA cheques. These expenses can be derived from administrative data.

The benchmark revision presented an opportunity to adapt the use of the HBS by taking into account only data relating to household expenditure on domestic services, excluding service vouchers and LEA cheques. This change was necessary as it was found that the HBS systematically underestimated expenditure on these items. The revision also incorporated the results of the 2018, 2020 and 2022 waves of the HBS.

Thanks to this revision, the trend in household production of domestic services is more plausible in view of the expected substitution effect of the service voucher system.

These adjustments imply a revision not only of household production of domestic services (ranging from -€261.3 to +€36.5 million, i.e. between -0.1% and +0.0% of GDP) but also of wages paid by households to domestic personnel and household final consumption of domestic services. The number of employees and the corresponding hours worked were also revised to ensure consistency with the revision of the compensation of employees.

2.14. Tax reclassifications

Impact on GDP	2009	2015	2019	2020	2021
Millions of euros	-310.3	-389.7	-951.9	-1 104.3	-1 197.4
Percentage of GDP	-0.1 %	-0.1 %	-0.2 %	-0.2 %	-0.2 %

Two tax reclassifications have a negative impact on GDP :

- Change to the recording of revenue relating to “Article 81” contracts for pharmaceutical products

With regard to coverage by the National Institute for Health and Disability Insurance (NIHDI) of the cost of pharmaceutical products, this measure consists of a reimbursement to pharmaceutical companies by NIHDI, in accordance with the terms and conditions set out in the individual agreements concluded with these companies.

A prepayment and settlement system is intended to ensure that the (gross) expenditure by NIHDI on pharmaceutical products covered by these contracts in a given year is offset by “Art 81/111 repayments” that same year.

In the current accounts, NIHDI’s contribution to the cost of medicines is recorded under social transfers in kind while the corresponding reimbursements from pharmaceutical companies under Article 81 are recorded as taxes on products.

In view of the growing importance of this measure and its application, it seems more appropriate to record the reimbursements received by NIHDI as a reduction in social transfers in kind. This will ensure that the recording in the accounts better reflects economic reality.

As a result, the abolition of product tax registration led to a downward revision of GDP as from year 2012.

- Packaging duty

This duty was previously recorded under taxes on products. However, as it is only partly based on the nature or quantity of the product and is mainly determined by the nature of the packaging, it is now recorded under taxes on production. The revision was carried out for the entire period, with a negative impact on GDP.

The reclassification of these two taxes has a negative impact on GDP on the whole period (ranging from -€1 197.4 million to -€310.3 million, between -0.2% and -0.1% of GDP).

3. Revision points with an impact on GNI

It should be recalled that GNI is calculated by adding to GDP the balance of primary income from/to the rest of the world, i.e. :
– Net wages received from the rest of the world
– Subsidies less net taxes received from the rest of the world
– Net property income received from the rest of the world

The revisions mentioned in this section are expressed in current prices and as a percentage of GNI prior to the benchmark revision.

3.1 Wages of cross-border workers

Impact on GNI	2009	2015	2019	2020	2021
Millions of euros	+135.8	+140.8	+83.3	+149.0	+181.9
Percentage of GDP	+0.0 %	+0.0 %	+0.0 %	+0.0 %	+0.0 %

The wages of cross-border workers are recorded in the rest of the world account, as supplies and uses. For example, a Belgian resident who works in France receives a salary from a non-resident company (a use from the rest of the world – a supply for Belgium). Conversely, a French resident who works in Belgium receives a salary from a resident company (a supply from the rest of the world – a use for Belgium).

Historically, data on the wages of cross-border workers recorded in the national accounts have been fully consistent with the balance of payments data. Nevertheless, observation in the balance of payments of mirror data with neighbouring countries revealed differences between the bilateral flows of wages paid to and received by these workers. Contacts were thus established with the statistical offices responsible for compiling these data in France and Germany, with a view to recording consistent bilateral flows[1].

For incoming cross-border workers, the wages paid are estimated based on information provided by INAMI (National Institute for Health and Disability Insurance) on the number of incoming workers per country and an average wage calculated on the basis of NSSO data. The related social security contributions can also be estimated.

This information has been passed on to the statistical offices in France and Germany, which in return now provide us with their estimates for flows of wages and social security contributions relating to Belgian residents who work in their countries.

The revision point has a limited impact on GNI, ranging from +€83.3 to +€181.9 million.

1 Such an exchange of information was already in place with Luxembourg.

3.2 Flows of interest with the rest of the world

Impact on GNI	2009	2015	2019	2020	2021
Millions of euros	+0.0	-460.3	+100.5	-508.7	+671.7
Percentage of GDP	+0.0 %	-0.1 %	+0.0 %	-0.1 %	+0.1 %

Interest received and paid to the rest of the world has been revised. This revision was driven by three main factors:

– The revision of FISIM (see Section 2.9) implied a revision of the flows of interest recorded in the national accounts which must be recorded net of FISIM according to ESA 2010.
– The use of new data sources and the updating of existing ones.
  ◦ The new data sources used for the FISIM revision were also used to revise the flows of interest.
  ◦ The benchmark revision enabled data for the entire period to be updated, which is not possible in a regular revision.
– For interest flows with the rest of the world, a reconciliation procedure with the BoP was carried out to ensure consistency between these statistics from year 2019 onwards, as the BoP was not revised for earlier years.

The revision of flows of interest with the rest of the world has an impact on GNI ranging from -€676.7 to +€671.7 million (between -0.2% and +0.1% of GNI).

3.3 Income from real estate abroad

Impact on GNI	2009	2015	2019	2020	2021
Millions of euros	+21.0	-12.3	-10.8	-33.0	+15.4
Percentage of GDP	+0.0 %	-0.0 %	-0.0 %	-0.0 %	+0.0 %

Dwellings owned by non-residents in Belgium as well as dwellings owned by Belgian residents abroad generate income. As prior estimates were deemed insignificant for Belgium, this income was not reported in the national accounts or the balance of payments.

ESA 2010 and BPM6 provide that ownership of a resident dwelling by a non-resident is recorded as a direct holding in a notional resident unit. The notional resident unit is considered the owner of the dwelling. The non-resident holds the shares of this notional resident unit, rather than directly owning the dwelling. The notional resident unit produces an operating surplus which is recorded under primary income as “withdrawals from income of quasi-corporations”.

A method has now been developed to estimate such property income, making use of new data sources while also improving the manner of estimating production related to these dwellings[1]. The revision led to the recording of “withdrawals from income of quasi-corporations” under uses and resources in relation to the rest of the world, which impacts GNI. This revenue has been included in the BoP from year 2019 onwards.

The net impact of this revision point on GNI is marginal (ranging from -€33.2 to +€21.0 million).

1 The new data sources and the revision of the production estimate are presented in Section 2.3: Dwelling services.

3.4. Investment income attribuable to insurance policy holders

Impact on GNI	2009	2015	2019	2020	2021
Millions of euros	212.1	280.2	125.6	30.3	-33.5
Percentage of GDP	+0.1 %	+0.1 %	+0.0 %	-0.0 %	0.0 %

Investment income attributable to insurance policy holders corresponds to total primary income received from the investment of insurance technical provisions. This investment income should be consistent with the estimate of output, imports and exports of direct insurance and reinsurance. Therefore, investment income attributable to insurance policy holders has also been revised in parallel with the estimate of direct insurance and reinsurance output, imports and exports.

The revision of the flow of this investment income with the rest of the world has an impact on GNI ranging from -€115.8 to +€472.7 million (between -0.0% and +0.1% of GNI).

4. Revision points with an impact on employment

4.1 Distribution of self-employed persons by branch of activity

Impact on employment (domestic concept)	2009	2015	2019	2020	2021
Thousands of reclassified persons (among self-employed persons)	47.9	113.6	128.6	132.2	139.8
Percentage of employment	1.1 %	2.5 %	2.6 %	2.7 %	2.8 %

In the national accounts, the total number of self-employed persons is derived based on statistics from the National Institute of Social Security of the Self-Employed (INASTI), corrected to meet the ESA 2010 definitions. This total number is then broken down by branch of activity. The breakdown is obtained by combining data from VAT returns for industries subject to VAT with data from, amongst other sources, INASTI, for industries not subject to VAT (such as financial activities and the liberal professions). As this combination does not cover all self-employed persons, the information from VAT returns serves as a distribution key for the number of self-employed persons subject to VAT.

Activities not subject to VAT include those performed by self-employed company administrators, the number of which is determined based on INASTI source data.

In the framework of the benchmark revision, a new source was used to estimate the number of company administrators from 2009 onwards, namely personal income tax data. This approach improves the consistency between value added and labour market statistics since personal income tax is also used to estimate value added for this category of self-employed persons.

The use of this new data source led to an upward revision in the number of company administrators from year 2009 onwards. Therefore, as the total number of self-employed persons was not revised, the number of self-employed persons associated with branches of activity other than company administrator was revised downwards by the same magnitude.

5. Revision points with an impact on government statistics

5.1 Revision points with an impact on the government budget balance and/or debt

5.1.1 Further clarification on the recording of lump-sum payments by corporations in the context of a transfer of pension obligations to government

The Manual on Government Deficit and Debt (MGDD), 2022 version, clarifies the method to be used to record transfers of pension obligations and the associated payments of lump sums to the government. This method changed when ESA 2010 was introduced, and further clarifications resulted in changes with a significant impact on the budget balance for past and future years.

Under ESA 1995, payments made by a corporation to the government in the context of a transfer of obligations under a funded or unfunded pension scheme, set up by the business for its own employees, were recorded as government revenue and therefore had a positive effect on the budget balance in the year of transfer. In both cases (funded and unfunded schemes), the amount received by the government was counterbalanced by a transaction without a counterpart classified as a capital transfer, and the pension obligations assumed by the government were not recorded as liabilities within the meaning of ESA 1995.

Since the introduction of ESA 2010, these same payments have been considered a financial advance, in other words an upfront payment of miscellaneous current transfers, recorded under government revenue at a later date, when the corresponding pension benefits are paid and until the prepaid amounts are exhausted. Consequently, the lump-sum payment has no impact on the general government budget balance the year in which the obligations are transferred[1], while the balance for subsequent years improves (compared with the situation under ESA 1995).

Pursuant to the abovementioned method, sums paid in the period 2003-2005 were recorded as a financial liability, which was reduced by identified pension expenditure on the former employees. The corresponding annual amount was considered a miscellaneous current transfer, thereby offsetting the impact of higher pension expenditure on the government budget balance. By 2021, the total amount had been used up, and pension expenditure was no longer being offset by a charge to miscellaneous current transfers.

MGDD 2022 further clarifies that the transferred amounts are expressed in net present value, based on the assumptions used for expected pension expenditure (derived from mortality tables, inflation, the underlying population, etc.) and the discount rate over the expenditure period. The Manual states that it is important to more closely follow this approach. The amount of the financial liability received (F.8) should thus be increased annually by imputed interest (based on the interest rate used for discounting pension cash flows), which increases the government's annual expenditure, and the miscellaneous current transfers received annually should correspond to the expected pension expenditure, according to the initial file, and therefore should not equal actual expenditure.

The underlying pension files have not been retrieved by the government. For the file with the greatest impact on the budget, namely the pension fund of the public telecom operator, the 2003 parliamentary documents allow some assumptions to be drawn:
– discount rate of 5.4%
– MR-FR mortality table + 22% linear decrease at 1% annually
– retirement age of 60-65
– (real) wage growth of 1.25%
– equalisation rate of 0%
– inflation rate of 2%

MGDD 2022 cannot be applied in full due to the absence of initial pension expenditure expectations underlying the calculation of the transferred amounts. Therefore, as a second-best approach, actual pension expenditure is still used.

1 ESA 2010, paragraph 20.275.

Table : Summary of entries in the government accounts[1]

Millions of euros	2009	2015	2019	2020	2021
Outstanding amount of the lump-sum transferred -public telecom operator	5200	4862	4292	4123	3933
Imputed interest expenditure on the outstanding amount	281	269	240	232	218
Actual pension payments	278	384	393	400	408
Imputed current transfers received to compensate pension expenditure	278	384	393	400	408
Impact on the budget balance	-281	-269	-240	-232	-218

These changes led to a downward revision of the budget balance over the period 2003 to 2021; from 2022, there is an upward revision of the budget balance since, under the former method, the outstanding amount of the transferred lump-sum had become zero.

Given limitations in the revision period of the statistics, the adjustment for interest expense for the period 2004-2008 has been postponed.

5.1.2 Recording of receipts from European Emissions Trading System (EU ETS) auctions

MGDD 2022 further harmonises the recording of receipts obtained by European countries from the auctioning of emission allowances. The government auctions off allowances that give the right to emit a tonne of carbon dioxide equivalent.

The required number of allowances, corresponding to the greenhouse gases emitted the previous year in Belgium, must be surrendered each year.

The new rules only change in a limited way the time of recording. Revenue received by the government from ETS auctions is still recorded as taxes on production, not at the time the allowances are auctioned but rather at the time they are surrendered.

ESA 2010 requires that the cash/proceeds received by the government match the level of tax revenue recorded over the long run. Two methods are currently foreseen in the MGDD.

Method 1: Tax revenue in T = [Number of allowances surrendered in T] x [Associated average price of the stock of allowances]

Associated average price: total stock of auction proceeds divided by nationally issued allowances not yet surrendered.

Method 1 does not properly account for the cross-border nature of the ETS, as it does not correct for Belgian allowances that can be surrendered in other countries. In Belgium, the application of this method results in a mismatch between the proceeds received by the government in the medium term and the level of tax revenue recorded.

Therefore, since 2016, the MGDD has provided for an alternative method that allows cash receipts to be shifted over time before being recorded as tax revenue. In Belgium, this method was applied, and auction proceeds between May in year T and April in year T+1, due to the surrender deadline, were recorded as tax revenue in the government accounts in year T+1.

1 The impact on the budget balance does not take into account the federal government's lower interest expense due to the transfer of funds in 2003 and a lower financing requirement.

To ensure a more harmonized recording between countries, from this publication onwards, Method 2.a in the MGDD is followed, which requires that cash receipts in year T be recorded in year T+1, i.e. a shift of a full calendar year.

However, this simplified method should not give rise to distortions in tax revenue, for example through the auction of many more allowances in some years than in others. In that case, ad hoc adjustments will be necessary.

5.1.3 Capital increases in multilateral development banks

Capital increases in multilateral development banks, which provide mainly concessional loans and transfers, are recorded as capital transfers. Participating countries can spread the actual payments over a number of years. MGDD 2022 (Section 4.7.3.7, Encashment period) clarifies that a capital transfer should be recorded at the time the instrument of commitment is signed and approved by the Member State.

5.1.4 Minor adjustments to past entries

In regular revisions, data updates are limited to the last four years of the reporting period. During a benchmark revision, longer-term series are revised so as to integrate certain updated data without this implying a methodological change.

For example, the entities that were reclassified into the government sector in recent years and for which data had not yet been integrated into the government accounts are now included in the general government sector from 2009 onwards.

5.1.5 Impact of the revisions on the government budget balance

Impact on financing balance:	**2009**	**2015**	**2019**	**2020**	**2021**
1.Federal government :	-275	-243	-130	-575	-78
Lump sum payments to cover pension obligations	-281	-269	-240	-232	-200
ETS	0	0	-2	1	-5
Capital increases in multilateral development banks	0	22	113	-344	126
Other	5	4	0	0	0
2.Communities and regions	1	-5	-37	7	-26
Of which ETS	0	-4	-23	7	-26
3.Local government	148	21	-108	0	0
4.Social security	0	1	-1	0	0
General government	-127	-227	-276	-568	-104
Impact in % of GDP	-0.0%	-0.1%	-0.1%	-0.1%	-0.1%

The changes applied have only a limited impact on the government budget balance, with an annual deterioration of no more than 0.2% of GDP.

The changes do not have an impact on government debt.

5.2 Revision points with no impact on the budget balance

5.2.1 Change to the recording of revenue relating to “Article 81” contracts for pharmaceutical products

Millions of euros	2009	2015	2019	2020	2021
Taxes on products	0	-55	-605	-733	-876
Social transfers in kind	0	-55	-605	-733	-876
Impact on the budget balance	0	0	0	0	0

This change is explained in Section 2.14 above. In short, reimbursements received by NIHDI are now recorded as a reduction in social transfers in kind instead of a unilateral tax applied. This will ensure that the recording in the accounts better reflects economic reality.

This revision point has no impact on the general government budget balance.

5.2.2 Recording of second-line legal assistance

In the framework of second-line legal assistance (formerly known as “pro bono services”), a lawyer provides services entirely or partly free of charge, depending on the recipient’s level of income. Such legal assistance was previously recorded under transfers to households, but given that it is dependent on the recipient’s income, recording it as a social transfer in kind purchased from market producers is more appropriate.

5.2.3 Packaging duty

This duty was previously recorded under taxes on products. However, as it is only partly based on the nature or quantity of the product and is mainly determined by the nature of the packaging, it is now recorded under taxes on production.

5.2.4 Contributions to the National Office for Annual Holidays

During the Covid-19 pandemic, the federal government contributed in certain cases to funding annual holiday pay. This funding took the form of contributions paid to the National Office for Annual Holidays; these contributions had no impact on the holiday pay received by workers but led to lower contributions by employers. The contributions were recorded in the national accounts as subsidies to employers given that holiday pay forms part of the wage bill. To ensure consistency with the treatment of these contributions, federal government contributions previously recorded as current transfers are now recorded as subsidies from this publication onwards.

Annex

A1. Action points “A” requested by Eurostat in the 2020-2024 GNI verification cycle

Action point A1 : HFCE estimate

HFCE estimate is currently based on the extrapolation of HBS data for the reference year 2010. Belgium should update this benchmark for all years 2018 onwards. It is noted that Belgium plans to address this issue in the benchmark revision 2024.

Action point A2 : Holiday homes

In the 2015-2019 verification cycle Belgium showed that the impact of property income flows (paid and received) on holiday homes was non-material. Belgium is currently analysing this topic with the view to possibly compile flows concerning holiday homes in a consistent way between national accounts, balance of payments, IIP and financial accounts. The objective is to obtain some results for the 2024 benchmark revision. As a result of this work, Belgium should either include in the GNI data the impact of the residents' holiday homes abroad and non-residents' holiday homes in Belgium for years 2018 onwards or demonstrate that it is non-material.

Action point A3 : Dwelling services

Some assumptions and benchmarks used in the estimate of dwelling services are outdated and need to be reviewed:

- 2010 HBS results are used for the estimate of Intermediate Consumption of dwellings services
- Results of 2014 survey conducted by WES Research are used to estimate second homes held by households for recreational purposes in Belgium.
- The estimate of the share of furnished housing is obtained from Census 2001 results.

Action point A4 : Outdated benchmarks

Belgium should update benchmarks used in the exhaustiveness adjustments that are older than 5 years, in particular:

- Undeclared wages paid by households for employing domestic personnel based on 2016 HBS data
- Prostitution services currently based on a detailed study conducted for the reference year 2015
- The production of vegetables by households in their own garden, currently based on 2016 HBS data
- Furthermore, the estimation model for the production and consumption of drugs, developed in 2014, is based on many hypothesis and expert estimates. This model should be reviewed in the context of the 2024 benchmark revision.

Action points “B”

Action point B3 : Implementation of recommendations from TF FIXCAP

Belgium plans to review the recommendations from the Task Force on fixed assets and estimation of consumption of fixed capital under ESA 2010 (TF FIXCAP). Based on this review, Belgium will revise its estimate of consumption of fixed capital. Belgium should explain in more detail which elements of the PIM model (e.g. service lives, functional forms, breakdowns by asset, industries and sectors, price indices, data on gross fixed capital formation, initial stock levels) will be revised in the benchmark revision 2024 and, if possible, what will be the expected impact on GNI.

Action point B8 : New method for production approach (NAPA)

Belgium plans to improve its imputation system for missing data at individual business unit level in the production approach. Currently missing data are estimated based on the ratio of a given transaction known from other similar units. Belgium plans to introduce a regression-based approach, hence making use of all data available for the given unit to estimate the missing information. This change will be implemented in the benchmark revision 2024. Belgium should provide a description of the change in methods and report on the expected impact on GNI.

Action point B10&B11 : Changes in inventories

The method to estimate holding gains/losses (HGL) as demonstrated in Table 5.11.5 is not in line with Eurostat-OECD compilation guide on inventories guidelines nor with the reply to question Q101 a)-b). In Table 5.11.5 changes in inventories are deflated by average annual price index to the base period prices, instead of deflating stocks by relevant deflator to constant prices of the base period and then revaluing resulting changes of inventories in constant prices to the average prices of the reference year (as instructed by the formula). Relevant deflators should correspond to the periods reflecting inventories prices. In case of FIFO, it is acceptable to assume that inventories are mostly valued at prices of the last month of the year. Hence, for closing stock should be deflated by December index of reference period t and opening stocks by December index of reference period t-1.
It remains not fully clear what is the current practice to derive HGL adjustment in Belgium. If current practice is as presented in Table 5.11.5, then it should be corrected in line Eurostat-OECD compilation guide on inventories or demonstrated that correction would not be material. If current practice corresponds to Eurostat-OECD compilation guide on inventories, then Table 5.11.5 should be corrected to reflect the actual practice (deflating stocks and revaluing changes at constant prices to the average prices of the reference year).

Action point B12 : Incorporation of Census 2021 (included in AP A1 and A2)

Belgium will inform Eurostat about the planned changes in sources and methods and in the GNI data relating to the incorporation of the results of the 2021 Population and housing census in national accounts. The following aspects should be reported on (if applicable), including numerical evidence for the years 2018 onwards:
- the revision of dwelling services based on the new stock and rentals data, including the back-casting techniques;
- the revision of the HFCE estimates following the grossing-up to the new level of total population, including the back-casting techniques;
- the revision of any other estimates based on the Population and housing census, as appropriate.

A2. Summary table of revision points and their impact on GDP and/or GNI

Revision point	Variables impacted	Impact on GDP	Impact on GNI[1]
Household final expenditure	Final consumption expenditure	Yes	No
Illegal economy	Production, intermediate consumption, value added, final consumption expenditure, export and import of goods and services	Yes	No
Dwelling services	Production, intermediate consumption, value added, final consumption expenditure	Yes	No
Real estate abroad	Export and import of services, withdrawals from income of quasi-corporations	Yes	Yes
Missing data in firms' annual accounts	Production, intermediate consumption, value added	Yes	No
Gross fixed capital formation	Gross fixed capital formation	Yes	No
Capital stocks and consumption of fixed capital	Production and final consumption expenditure (non-market sectors)	Yes	No
Inventories, changes in inventories and holding gains/losses	Production, intermediate consumption, value added, changes in inventories	Yes	No
FISIM and interests	Production, intermediate consumption, value added, final consumption expenditure, export and import of services, interest	Yes	Yes
Insurance and reinsurance	Production and intermediate consumption, value added, final consumption expenditure, export and import of services, investment income attributable to insurance policy holders	Yes	Yes
Non-observed economy	Production, intermediate consumption, value added	Yes	No
Excise duties	Intermediate consumption, value added	Yes	No
Domestic services	Production and value added of the household sector, compensation of employees, final consumption expenditure	Yes	No
Tax reclassifications	Taxes on products, taxes on production, social transfers in kind	Yes	No
Cross-border wages	Compensation of employees	No	Yes

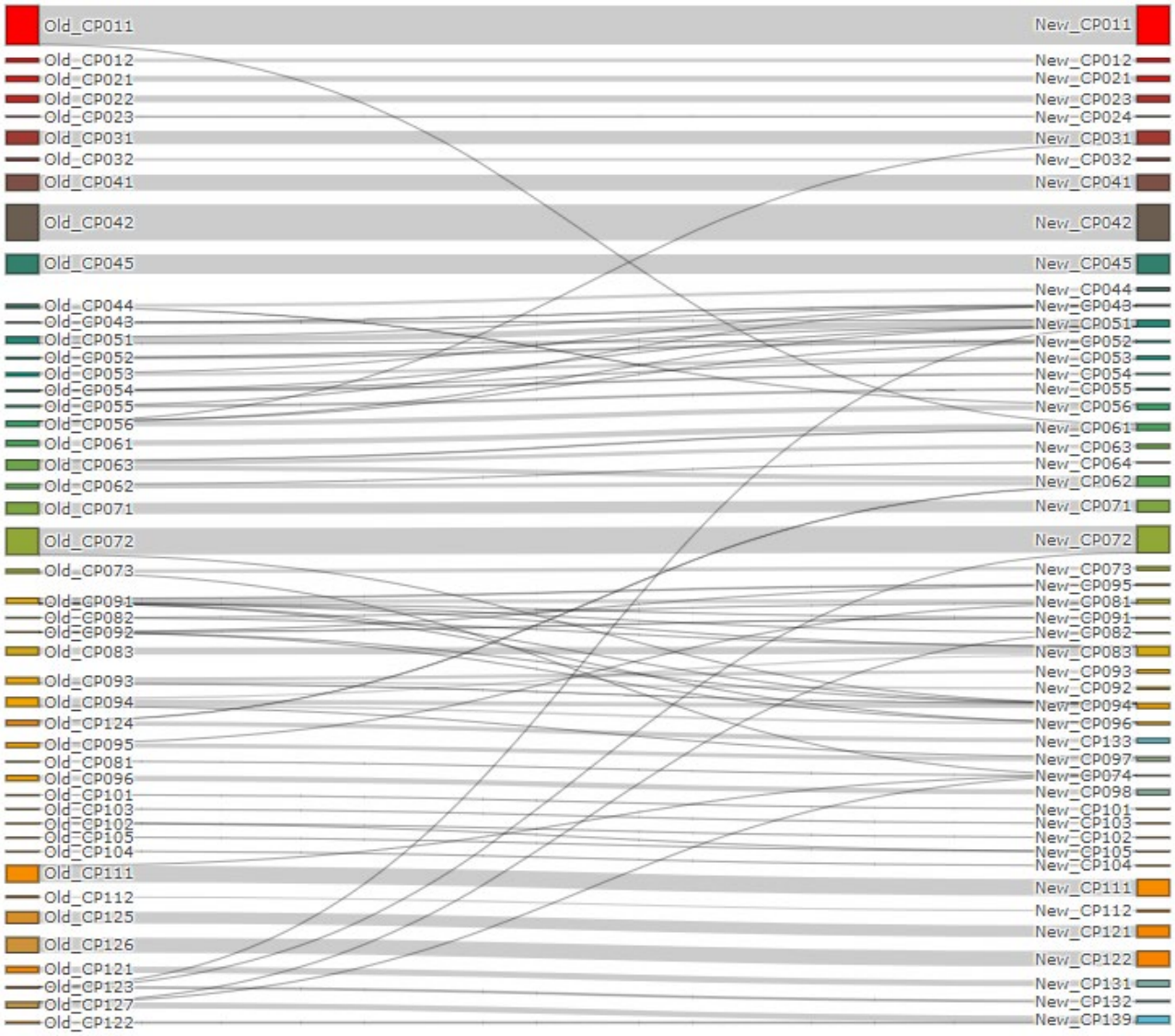
1 This only relates to revisions of net primary income with the rest of the world.

A3. Classification of individual consumption by purpose

ECOICOP	Class
01	Food and non-alcoholic beverages
02	Alcoholic beverages, tobacco and narcotics
03	Clothing and footwear
04	Housing, water, electricity, gas and other fuels
05	Furnishings, household equipment and routine household maintenance
06	Health
07	Transport
08	Communication
09	Recreation and culture
10	Education
11	Restaurants and hotels
12	Miscellaneous goods and services

COICOP 2018	Class
01	Food and non-alcoholic beverages
02	Alcoholic beverages, tobacco and narcotics
03	Clothing and footwear
04	Housing, water, electricity, gas and other fuels
05	Furnishings, household equipment and routine household maintenance
06	Health
07	Transport
08	Information and communication
09	Recreation, sport and culture
10	Education services
11	Restaurants and accommodation services
12	Insurance and financial services
13	Personal care, social protection and miscellaneous goods and services

ECOICOP – COICOP 2018 household final consumption expenditure flow
(expressed to 2 digits; 2008)



A4. Impacts

Figures 1 and 2 illustrate the impact of the benchmark revision on GDP growth (in current prices and in volume terms).

Figure 1:
Impact on GDP growth at current prices
(in %)

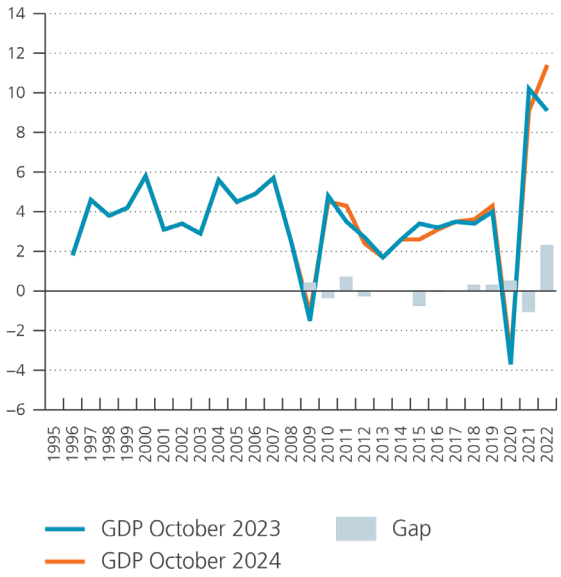
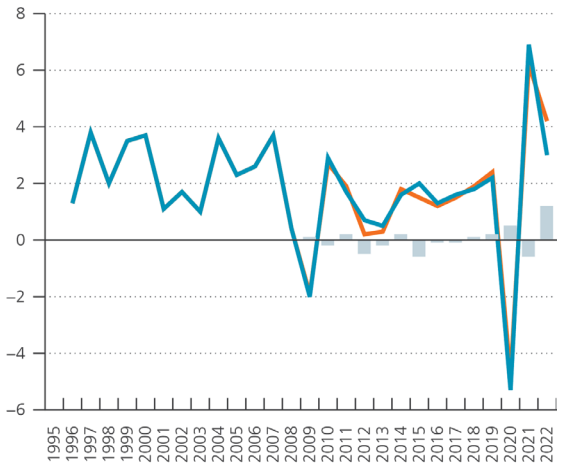


Figure 2:
Impact on GDP growth in volume
(in %)



Figures 3 to 6 illustrate the impact of the revision on the level of GDP by revision item on the one hand, and according to the three approaches on the other hand (production, expenditure and income). The impact is expressed in current prices, as a percentage of GDP prior to the benchmark revision (as measured in the latest annual accounts of October 2023).

Figure 3:
Impact on GDP level (value added) by revision item
(in %)

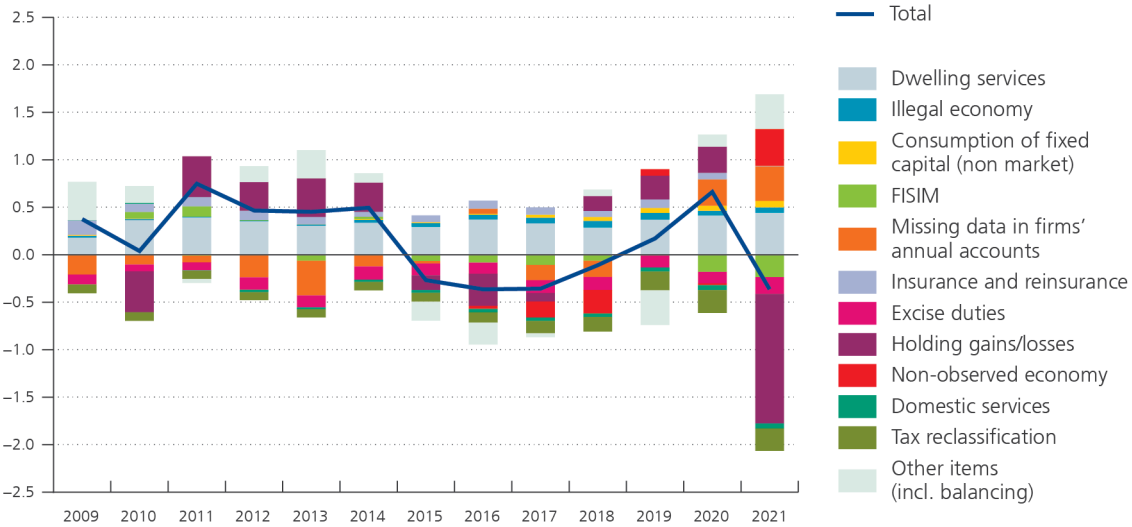


Figure 4:
Impact on GDP level (value added) by institutional sector
(in %)

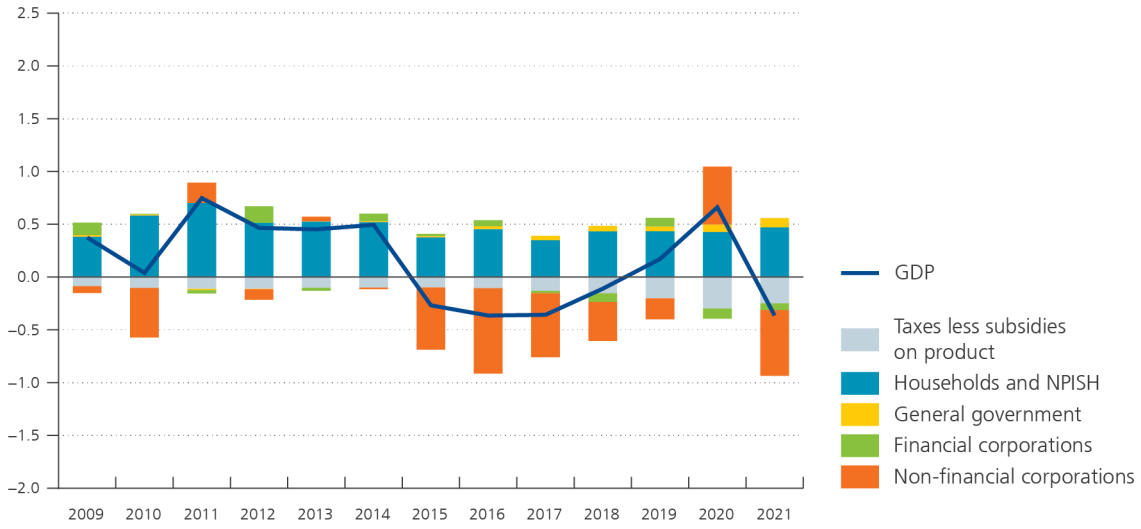


Figure 5:
Impact on GDP level by type of expenditure
(in %)

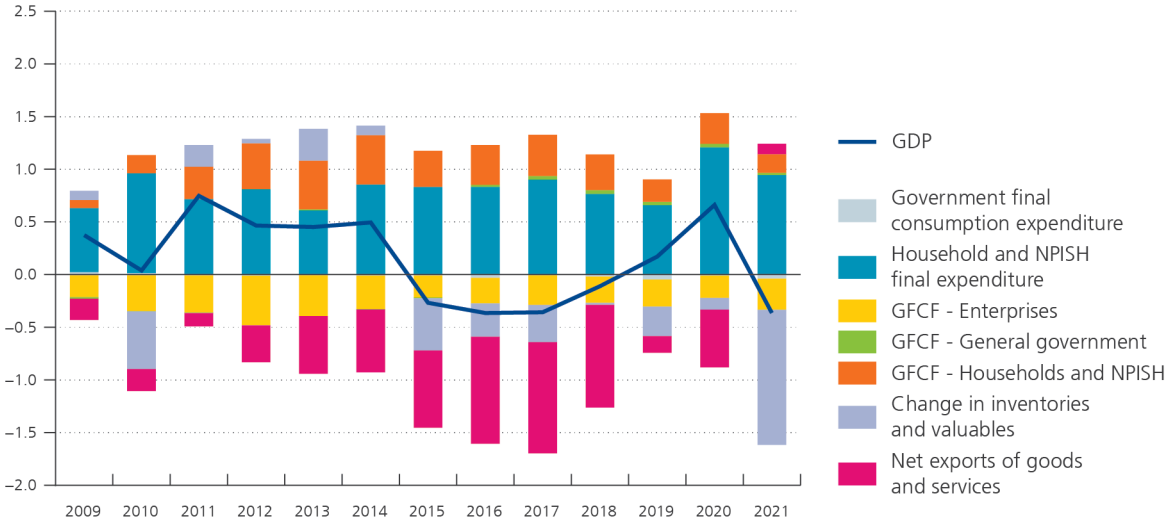
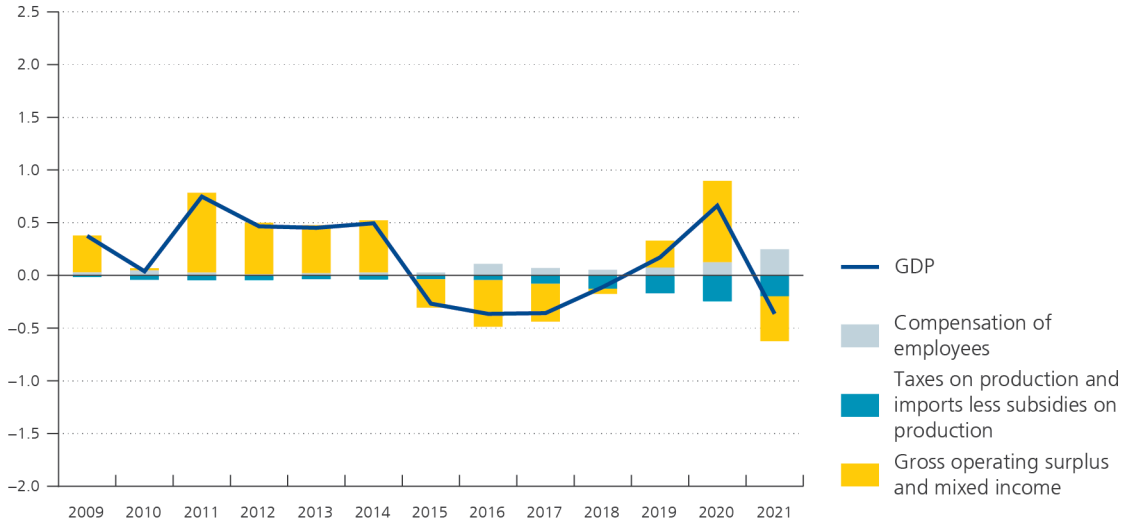


Figure 6:
Impact on GDP level according to the income approach
(in %)



Figures 7 illustrates the impact of the revision points on the level of household final expenditure. The impact is expressed in current prices, as a percentage of GDP prior to the benchmark revision (as measured in the latest annual accounts of October 2023).

Figure 7:
Impact on household final expenditure by revision item
(in %)

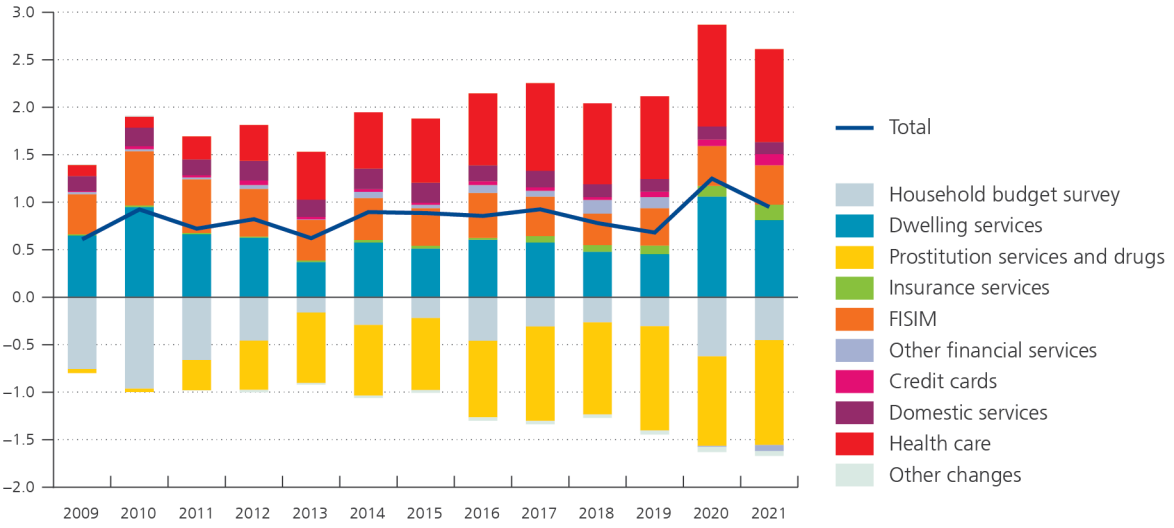
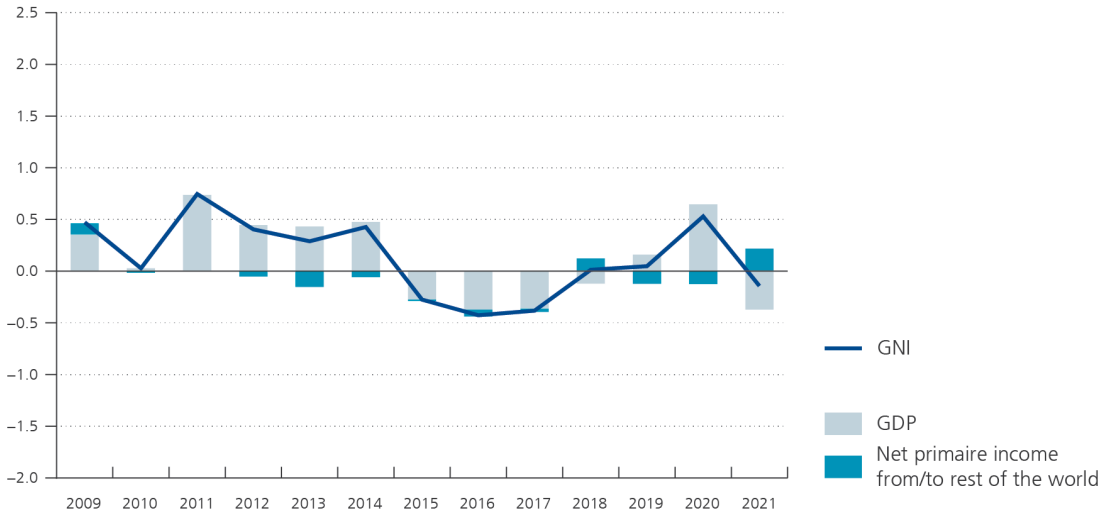


Figure 8 illustrates the impact of the benchmark revision on GNI as a percentage of GNI prior to the benchmark revision (as measured in the latest annual accounts of October 2023).

Figure 8:
Impact on GNI level
(in %)



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Registered office: boulevard de Berlaimont 14 — BE-1000 Brussels
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Layout: NBB General Statistics
Cover: NBB AG — Prepress & Image

Published in October 2024