

Information of the Statistics Poland on the revision of national accounts in 2010-2020

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Impact of changes on the main macroeconomic aggregates

On 5th October 2022, the Statistics Poland published revised annual data on gross domestic product (GDP) in 2010–2020, information on the most important changes and their impact on the growth and nominal level of GDP.

National accounts statistics is produced in accordance with the principles of the Regulation of the European Parliament and of the Council No. 549/2013 of 21 May 2013 on the European system of national and regional accounts in the European Union (ESA2010). The data currently presented has changed compared to those published so far as a result of:

- using new data sources and updating existing data sources,
- reclassification to the general government sector public units that do not meet the market criterion, according to ESA 2010,
- adjusting the methods of implementing Eurostat recommendations as a part of the harmonization of the system of national accounts in the European Statistical System.

The revision covered annual and quarterly data for the period 2010–2020, in all applicable classifications. In accordance with the adopted work schedule, quarterly data will be published on the Statistics Poland website in the second half of October 2022. The preliminary annual data on gross domestic product in 2021, published on October 5th 2022, has been compiled in a consistent manner, i.e. using the updated sources and compilation methods presented in this information.

The next planned revision is the benchmarking revision of national accounts, which will be carried out in 2024 and will cover the entire range of national accounts data according to the ESA2010 methodology, i.e. since 1995.

The list of the most important changes introduced to the national accounts statistics as a result of revision in 2022.

Introduction of changes to algorithms and the use of new or updated data sources is a regular activity in national accounts statistics. The current changes also take into account the recommendations of the European Commission (Eurostat), which are the result of the gross national income (GNI) verification cycle for the period 2010 onwards. In order to maintain the comparability of a time series, in particular the GDP growth rates, these changes were also developed for the year 2009, for the purposes of determining the GDP growth rate in 2010.

The revision of the national accounts impacted the statistical data in all kinds of activity (NACE Rev.2 sections) and all institutional sectors. The largest methodological changes concerned the statistics of the household sector with regard to the measurement of household final consumption expenditure and selected areas of the unobserved economy, as well as the statistics of the financial institutions sector. The adjustments in export and import were also important and resulted from the elimination of transactions carried out by non-residents. Ultimately, as a result of the implementation of the remaining changes and the GDP balancing process, the data on other institutional sectors were also revised.

The key changes implemented to national accounts in the period 2010–2020 include:

1. The estimation of the value of dwelling services in the household sector

The change in the estimation of the output of household dwelling services resulted from the need to further align the algorithms and data sources with the ESA2010 methodology and the European Commission Regulation 2021/1949 on the principles for estimating dwelling services for the purposes of Council Regulation 2019/516 on the harmonisation of gross national income at market prices.

Changes have been introduced to both, the method for estimating actual rents and the method for estimating imputed rents.

The method of estimating actual rents required the determination of the usable area and price per m² of rented apartments owned by natural persons in provincial and district cities. Based on estimated data on the usable floor area of rented apartments and information on rental prices per m² of usable floor area, the value of annual actual rents was estimated for years 2010-2020.

The value of imputed rents was recalculated taking into account changes consisting in: revision of the range of dwellings stock, estimation of the value of land under the dwellings stock, introduction of an adjustment to the algorithm for calculating insurance premiums for the above dwellings stock, inclusion of adjustments for empty dwellings, secondary residences and holidays homes, garages and parking spaces associated with dwellings.

The results of the 2011 National Population and Housing Census¹ were used to prepare the estimate of actual and imputed rents, household budgets surveys, data from the Statistics Poland publications "Real estate sales" and "Housing economy and municipal infrastructure", data from the National Bank of Poland on the prices of rented dwellings, statistical data on dwellings stocks, data from the Urban Development Institute and the Property Management Institute, and also data on insurance from the Polish Financial Supervision Authority.

The estimated new value of dwellings services for the period 2010-2020 reduced output, as well as gross value added in the household sector and consequently GDP.

2. The estimation of the value of non-observed output

Statistics concerning non-observed economy is an integral part of national accounts statistics, as it provides a complete picture of the national economy in those areas not covered by statistical reporting and administrative data sets. Changes in the non-observed economy concerned the following areas:

- exhaustiveness adjustment due to producers not required to register;

According to the ESA2010 methodology, the own-account construction by households (activities that do not require registration) should be reflected in the sector's output and gross fixed capital formation. The update of the estimates in this area consisted of taking into accounts the output of households for renovations and major repairs of an investment nature. Dedicated specialized studies on construction and data from the Time Use Survey were used as data sources. Additionally, under exhaustiveness adjustment the value of the output due to households employed paid staff was estimated, for example nannies. In order to determine the value of this output, data from the Social Insurance Institution were used, in particular data on the value of contributions paid on wages and salaries and the number of people for whom these contributions were paid.

- exhaustiveness adjustment due to unregistered work;

The algorithm for estimating the value of output due to unregistered work is based on data on the number of people working without formal employment. The data source in this case is the regularly conducted LFS module survey. The main area of analysis concerned the updating of the number of employees not registered by employers (in full-time equivalents) and the determination of their salaries, which ultimately influenced on changes in output due to unregistered work.

¹ The results of the 2021 National Population and Housing Census will be used in the next cycle of compilation of national accounts, i.e. during compilation of the final annual GDP estimate, which will be published in April 2023.

- exhaustiveness adjustment due to misreporting in small units (up to 9 employees)

This type of exhaustiveness adjustment concerns registered entities and is one of the largest adjustment within the non-observed economy. Its main purpose is to offset the impact of under-reporting of revenues and/or over-reporting of operating costs on the final level of gross domestic product and its components.

The changes in this area mainly concerned the revision of assumptions in the algorithms for estimation of output and intermediate consumption, as well as compensation of employees as a result of distorted reporting data.

Changes concerning selected areas of the non-observed economy covered a range of data from 2010 onwards. As a result of the changes and their balancing process, gross domestic product in nominal values decreased between 2010 and 2013, while it increased between 2014 and 2020.

3. Estimates of household final consumption expenditure (HFCE)

Changes in the estimates of household final consumption expenditure mainly concerned the development of a new method of determining the structure of expenditure on goods. As a result of analytical work, the assumptions used to determine which part of retail sales does not constitute final consumption expenditure of households but should be recorded as business purchases and constitute intermediate consumption or gross fixed capital formation, were redefined. Such analyzes were carried out also for data on catering activity sales and open market sales. The new assumptions are based on the supply and use tables.

As a result of the European Commission's recommendation, the data for the period 2010-2013, concerning the structure and value of expenditures of residents abroad and non-residents in Poland was also reviewed. These data are used for the correct transition from the domestic concept of household final consumption expenditures (i.e. all consumption expenditures spent on the Polish economy territory) to the national concept (i.e. consumption expenditures of Polish residents on any economic territory) which is used in the process of compiling GDP from the expenditure side. In the context of this work, data on private foreign travels were used, derived from the balance of payments statistics, as well as the results of the research: "Participation of Polish citizens (residents) in trips" and "Trips made by non-residents to Poland. The movement of vehicles and persons at the Polish border with the countries of the European Union".

As a part of the work on improvements of household final consumption expenditure estimates, the base-year, which was the basis for estimates of the value and structure of households expenditures on services, was also reviewed. Recalculations have been made based on the data from the supply and use tables.

In line with the recommendations of the European Commission, the scope of adjustments in HFCE due to the non-observed economy was analyzed. In addition, a new method has been developed to estimate the value of output of agricultural processed products that households produce and keep for their own consumption. The method was developed on the basis of data on self-supply in agriculture and the Time Use Survey.

The EC recommendations also included the necessity of inclusion in the HFCE the value of second-hand cars that households purchase from enterprises and which are not included in the retail trade sales statistics (i.e. excluding second-hand car dealerships and car dealers).

In the works described above, Statistics Poland increased the scope of use of the existing data sources, as well as acquired new data sources (statistical and administrative), in particular:

- supply and use tables,
- Report on the activity of shops, pharmacies and petrol stations (H-01a),
- Participation of Polish citizens (residents) in trips (PKZ),
- Trips made by non-residents to Poland. The movement of vehicles and persons at the Polish border with the countries of the European Union (PDP),
- Private foreign travels in the balance of payments,
- Administrative data on natural persons who are personal income tax payers,
- Data on the number of students accommodated in dormitories,

- Administrative data from the Central Register of Vehicles and Drivers (CEPiK),
- Time Use Survey.

The introduction of the described changes in the household final consumption expenditure in 2010-2020 was reflected both in the production side of GDP as well as in the expenditure side of GDP. Ultimately, these changes contributed to a reduction of the nominal GDP over the entire analyzed period.

4. Financial services, including FISIM

The revision of the national accounts in the area of financial services also covered the method of calculating the output and intermediate consumption of units of the financial corporations sector, i.e. in line with Eurostat recommendations. The activities carried out in this area consisted of:

- exclusion of "other operating income" and "other operating costs" from output and intermediate consumption of financial units, respectively, correction of the algorithm of brokerage houses as well as allocation of unsold output of the NBP and allocation of output of banks, brokerage houses and investment fund management companies.

The exclusion of "other operating income" and "other operating costs" from the algorithms was due to the fact that in many cases this type of revenues are not related to the provision of services by the financial corporations and these costs are not always part of intermediate consumption. The corrections affected the value of output and intermediate consumption of the financial corporations sector, intermediate consumption of the non-financial corporations sector as well as intermediate consumption and final consumption expenditure of the households sector.

- implementation of Eurostat recommendations with regard to the method of calculating the output of investment funds and its allocation to institutional sectors.

As a result of work on the activities of investment funds (investment funds other than money market funds), the algorithm for estimating the output of these funds was changed, i.e. the cost method was applied taking into account FISIM (financial intermediation services indirectly measured).

The revised output of investment funds has been allocated to domestic institutional sectors. The change affected the output of the financial institutions sector and intermediate consumption of all domestic institutional sectors, as well as household final consumption expenditure.

- including FISIM in the output of Credit Unions (SKOK) and verification of the algorithm of output and intermediate consumption in SKOK, in particular the exclusion of interest income/costs.

The change affected the nominal value of output and intermediate consumption of the financial corporations sector, intermediate consumption of the non-financial corporations sector and the household final consumption expenditure.

- developing a new method of estimates concerning small financial units (up to 9 employees).

The changed method of estimating accounts for small financial units (section K according to NACE Rev.2) was based on data obtained on the basis of statistical reports: SP-3 for small units (employing up to 9 people) and F-01/I-01 - *Income report, costs and financial result as well as capital expenditure on fixed assets*, for large and medium-sized entities with full accounting. The changes affected output, intermediate consumption of the financial corporations sector and intermediate consumption of the non-financial corporations sector, as well as intermediate consumption and final consumption expenditure of households.

- updating the method of allocating the output of insurance companies to institutional sectors purchasing insurance services. The new method was based on data on the value of gross premiums written by institutional sector. The change affected the intermediate consumption of the institutional sectors and the households final consumption expenditure.

Revision of data in this area was introduced to the national accounts for the period 2010-2020 and had an impact on the output and intermediate consumption of the financial corporations sector, as well as on transactions in other institutional sectors. GDP in nominal terms decreased in 2010-2013 and increased in 2014-2020.

5. Changes in the foreign trade balance due to the elimination of transactions carried out by non-residents

Changes in exports and imports leading to a decrease in the foreign trade balance are the result of analytical work on the activities of a specific group of entities registered in Poland, and belonging to global multinational enterprises. In accordance with the ESA 2010 methodology, these entities were recognized as non-residents of the country and, as a consequence, the way of registering their activities in the national accounts statistics was revised.

To compile the value of transactions reported by non-residents in the foreign trade statistics, the Statistics Poland used data from the international trade of goods statistics (Extrastat and Intrastat) and VAT declarations as well as the national accounts statistics for 2010-2020.

As a result of the implementation of new data in the export and import of goods and the GDP balancing process, the other transactions have also changed, i.e.: intermediate consumption, gross value added, household final consumption expenditure, gross fixed capital formation, inventories and gross operating surplus. Ultimately, the change in this area resulted in an increase in GDP in nominal terms in 2011-2012 and a decrease in GDP in the remaining years covered by the revision process.

The results of analytical work and estimation have been included in the consistent way both in national accounts statistics and balance of payments statistics.

6. Other changes

The other specific changes introduced in the revision of national accounts did not have such a significant impact on the main macroeconomic aggregates, but ultimately also contributed to the growth of gross domestic product (with the exception of 2016, when GDP fell down by 0.1%). Some of the changes presented below, due to marginal values, have been introduced into the national accounts statistics starting with the data for 2021.

These changes include:

- a. The value of entertainment, literary and artistic originals

Statistics Poland verified the completeness of data on the value of the originals of entertainment, literary and artistic activities produced². According to obligatory European Commission's recommendations, at least the following product categories had to be included in the entertainment, literary and artistic originals: films, stock radio and television programmes, literary works and musical works.

The value of originals of films, radio and television programmes should be measured by production costs taking into account an appropriate margin. In contrast, the value of literary, musical and photographic/images originals should be measured by modelling the flow of royalties.

To estimate the value of film originals and radio and television programs, statistical data sources were used, respectively K-06 - Report on film production and services and SP - Annual

² This category is included in the intellectual property products, as well as the results of research and development activity, outlays on mineral exploration, computer software and data bases. In national accounts, it is presented in gross fixed capital formation item.

enterprise survey. New data sources were used for other types of originals, estimated on the basis of royalty flows.

Due to marginal impact of the adjustment in the approach to estimating the value of originals on the overall value of GDP and GNI, this change will be introduced on an ongoing basis from 2021 onwards.

b. Transition from producer prices to base prices

The verification of the algorithm for estimating output at basic prices was carried out in accordance with Eurostat recommendations and ESA 2010 requirements in order to ensure consistency between the data on taxes and subsidies used in the algorithm of transition from producer prices to basic prices and data on taxes and subsidies from administrative sources used in the algorithm counting gross domestic product.

According to ESA 2010 (paragraph 3.43), the base price is equal to the producer's price less taxes on products plus subsidies on products. The revision of the approach used in national accounts required the analysis of all taxes recognized by ESA 2010 as taxes on products and a detailed analysis of data obtained on SP - Annual enterprise survey, which is the primary source of data on revenues from the sale of goods and services. In particular, the accounting principles of enterprises and the method of showing revenues from sales in the SP survey were analyzed.

The verification of the transition algorithm required detailed analyzes, including:

- analysis of financial statements of the largest entities on the energy market obtained from the National Court Register, in connection with specific energy charges (temporary fee, cogeneration fee, OZE payment) recognized in national accounts as taxes on products. In this case, the scope of data concerning revenues from sale was compared with the scope of information disclosed in the SP statistical report.

- identifying potential differences in the approach to recognizing revenues from sale in the position of taxes and fees collected on behalf of third parties (e.g. excise duties, charges related to the energy market and other taxes) between companies that prepare financial statements according to international accounting standards and those that prepare financial statements according to national accounting standards.

The changes directly affected the algorithm for calculating the output of market producers, i.e. units belonging to the non-financial corporations sector and the household sector, and were introduced starting from the data for 2021.

c. Estimates of output for trading activities

In section G (Wholesale and retail trade; repair of motor vehicles, including motorcycles), the global production algorithm was analyzed in the context of taking into account the change in the stock of goods, i.e. in accordance with paragraph 3.56 of ESA 2010. As a result of the work, the method of calculating output for commercial activities was verified. In particular, data on losses in commercial goods not included in the inventory in the change in stocks have been taken into account.

In order to obtain the necessary information and as part of the work on improving the algorithm, Statistics Poland extended the scope of the SP - Annual enterprise survey by the following items:

- goods purchased for resale and consumed by the enterprise for its own needs or transferred to employees (SP 2018 – P&L row 29),

- losses in commercial goods not included in the inventory in the change of inventories (SP 2018 - P&L row 77).

Changes introduced to national accounts in the years 2010 onwards, slightly affected output, gross value added and, consequently, GDP and GNI in nominal terms.

d. Estimates of output and intermediate consumption in construction (NACE F)

In the field of construction, detailed analyzes were performed to verify the scope and time of recording data on the production of construction services, for which statistical reports are the main source of data. For this purpose, a more detailed analysis of the accounting principles of construction companies in Poland was carried out, in particular construction entities implementing long-term contracts. The approach to recognition of the results of construction activities was also compared, depending on whether the final recipient (buyer of construction production) is known to the manufacturer or not. In the scope of work in progress (valued basing on the cost method), for which the buyer is unknown, the value of the mark-up constituting the operating surplus was additionally taken into account.

Detailed analyzes were based on data obtained from statistical reports (SP - Annual enterprise survey, SP-3 - Yearly report on the economic activity of the enterprise, B-01 - Report on sale of construction and assembly production of construction enterprises, B-02 - Report on sale of construction products - assembly of non-construction enterprises, P-01 - Report on production). The results of the conducted analyzes showed that the potential changes had a marginal impact on gross value added, gross operating surplus, GDP and GNI. Therefore, appropriate changes in the algorithms of global production and intermediate consumption were introduced starting from the data for 2021.

e. Costs of ownership transfer on non-produced assets

The change resulted from the need to adapt the current algorithms to Eurostat's recommendations, which indicate that the costs of transferring ownership of non-produced assets should be treated as gross fixed capital formation. Non-produced assets are, according to the definition, assets that were not produced in the production process, but are used in the production of goods and services. According to the ESA2010 methodology, there are three types of transactions in the field of non-produced assets: 1) acquisition less disposal of natural resources; 2) acquisition less disposal of contracts, leasing agreements and licenses; 3) purchase less sale of goodwill and marketing assets.

The costs of ownership transfer have been estimated for the land item (NP.1), which is in line with the solutions adopted at the European level. These costs include fees incurred in the acquisition of land property (tax on civil law transactions, notary fees, VAT on notarial fees, court fees, fees paid to estate agents, VAT on intermediary fees).

To prepare the estimate, statistical data sources on the value of land were used, as well as information on the amount of required fees incurred by the buyer when purchasing land property. In addition, the values of land property being the subject of transaction in subsequent years were obtained from the Register of Prices and Property Values.

The estimated value of the ownership transfer costs on non-produced assets was included in the gross fixed capital formation of individual institutional sectors and then capitalized. The estimated consumption of fixed capital increased the production of the general government sector and the non-profit institutions sector serving households.

f. Valuables

The change was due to the need for using new data sources that enable the implementation Eurostat recommendations for estimation method "acquisitions less disposals of valuables".

According to the definition (ESA 2010, 3.154) valuables are non-financial goods that are not used primarily for production or consumption, do not deteriorate (physically) over time under normal conditions and are acquired and held primarily as stores of value. There are three

groups of valuables non-financial assets which include the following goods: 1) precious stones and metals, such as diamonds, non-monetary gold, platinum, silver, etc.; 2) antiques and other art objects, such as paintings, sculptures, etc.; 3) other valuables, such as jewellery fashioned out of precious stones and metals and collectors' items.

The data for delivery of goods and the provision of services in the territory of the country (JPK_VAT), as well as information about the taxpayer and his contractor, sale of gold and silver collector coins and gold ounce coins from NBP; sale of works of art and antiques, the value of the import and export of valuables and other data were used to prepare the estimate. Statistics Poland has collected new data on the sale of works of art and antiques as well as issued and distributed gold and silver collector coins.

The verified value of the item Acquisitions less disposals of valuables was introduced in the national accounts on an ongoing basis, i.e. in September 2022 for year 2021.

g. Research and development

The aim of the work carried out in this area was to examine the possibilities of estimating net purchases of research and development (R&D) between the domestic sectors, in order to ensure the correct allocation of gross fixed capital formation broken down by institutional sectors.

The basis for estimating the value of R&D was the data collected in the statistical report on research and development (PNT-01 - Report on research and development (R&D) activity) based on the methodology contained in the Frascati 2015 Manual: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities³. An additional question has been included in the statistical report since 2017 to enable the estimation of net purchases between domestic sectors.

Estimates based on additional information from PNT-01 statistical report have shown that R&D expenditures covering net purchases between domestic sectors have an impact on the level of investments in individual institutional sectors. However, the impact of consumption of fixed capital (CFC) of non-market producers on GNI in 2017-2020 was well below the materiality threshold. Therefore, net purchases value will be included in the final estimate of R&D expenditure in 2021, i.e. in March 2023.

h. Changes resulting from delimitation for the purpose of government accounts statistics.

As required by the European Commission, all public units are regularly monitored to determine the nature of their activities, i.e. whether they are market units. If a public unit is a non-market for a period of three years or meets the qualitative criteria described in the Manual on Government Deficit and Debt⁴, the unit is reclassified to the general government sector.

During the revision data for historical years have been updated due to ongoing changes in the EDP notification resulting from monitoring the scope of the general government sector.

i. Detailing the rules of classification of employment - related costs for transaction Wages and salaries and Employers' social contributions

As a result of conducted analyses on the method of classification of employment related costs, which are included in transactions Wages and salaries and Employers' social contributions, the changes were introduced in recording of social contributions. The information on contributions are reported on statistical reports as an element of social insurance costs, but according to ESA2010 requirements, they should be recognized as taxes on production. The revised estimates were based on data obtained from statistical reports (SP - Annual enterprise

³ [Frascati Manual 2015](#)

⁴ [Manual on Government Deficit and Debt – Implementation of ESA 2010 – 2019 edition](#)

survey, SP-3 - Yearly report on economic activity of enterprise, F-01/I-01 Report on revenues, costs, financial results and investment outlays) and information concerning payments to social security funds, Solidarity Fund and Guaranteed Employee Benefits Fund.

Due to the small impact on individual ESA2010 transactions, the new solution was implemented starting from 2020.

j. Registration of daily allowances

The verification of registration of daily allowances (per diem) received by employees on business trips was conducted basing on a guidance note prepared by Eurostat, in the consultation with EU member states.

According to EU recommendations, per diems should be recorded in the following way:

- the narrow type of per diem (designed to cover basic costs, i.e. meals, extra remuneration for working later or on free day) - as wages and salaries;
- broad per diems (basic costs and other costs connected with business trips, such as hotel, transport etc.) which have the characteristics of payments made to the employee in order to cover expenses in the course of duties during business trip – as intermediate consumption or split into wages and salaries (for the part of narrow type of per diem) and intermediate consumption.

In order to implement recommendations, data sources for business trips in all institutional sectors were analysed as well as the current approach used in national accounts. In the Polish system of accounting for expenditure on business trips the broad per diems is applied (the second approach). It was decided that in Polish national accounts this kind of expenditure will be split into two transactions, following to Eurostat's recommendations.

Due to minor values of changes, modified algorithms for financial corporations sector and households sector have been implemented starting from 2021 year.

k. Margins on trading financial assets

The change is horizontal in the European Union, i.e. it should be introduced in the statistics of all EU countries. Adjustments in national accounts were based on recommendations of a dedicated working group for estimating margins on financial assets held for trading (the Working Group on the estimation of margins on buying and selling financial instruments), as part of the European Central Bank working group - WGES - Working Group on External Statistics.

The purchase and sale of financial assets and liabilities in the financial markets is one of the ways of providing and paying for financial services under the ESA 2010. According to par. 3.73 ESA 2010 "When a financial institution offers a security (e.g. bill or bond) for sale, a service charge is levied. The purchase price (the ask price) is equal to the estimated market value of the security plus a margin. Another charge is levied when a security is sold, the price offered to the seller (the bid price) being equal to the market value minus a margin. Margins between buying and selling prices apply also to equities, investment fund shares and foreign currencies. These margins are for the provision of financial services".

Margins between buying and selling prices have been included in the output of institutions trading in financial instruments and allocated appropriately to institutional sectors.

As the changes due to the inclusion of margins on financial assets held for trading in the output of financial institutions (banks) had a marginal impact on the GDP and GNI data, the corresponding adjustments were introduced to the national accounts statistics starting from the data for 2020.

Impact of the 2022 revision on GDP and GNI data

The impact of the introduced changes on the absolute level of gross domestic product in 2010-2020 ranged from -1.01% in 2013 to +0.23% in 2018. The decrease in GDP expressed in current prices is observed in all years covered by the revision, except 2018. The changes that caused the greatest decrease in GDP were: a change in the approach to estimating the output of dwelling services and households' final consumption expenditure, as well as adjustments in exports and imports of goods related to the elimination of transactions carried out by non-residents of the country. On the other hand, the increase in GDP was due to changes in the

estimation of the value of financial services and non-observed output. The other revisions had a relatively smaller impact on GDP, ranging from -0.02% to 0.04%.

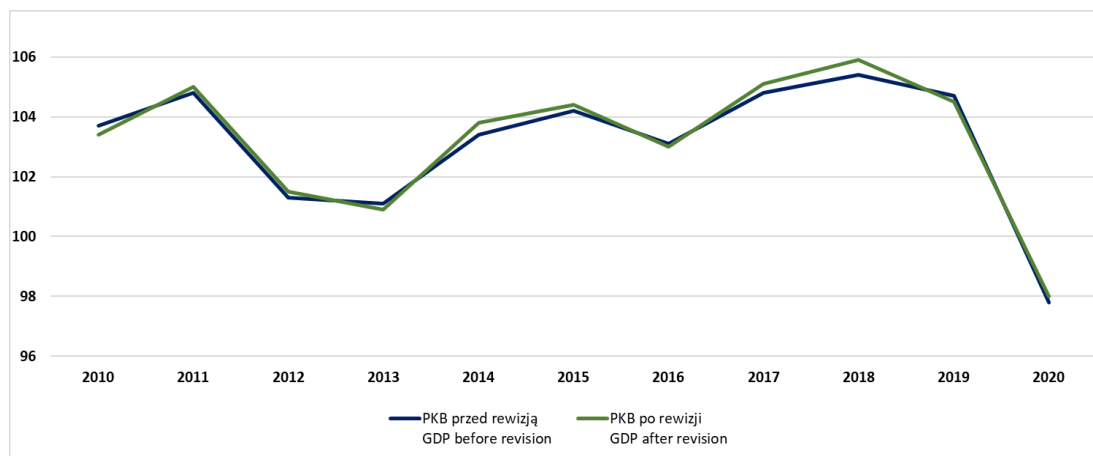
Table 1. The impact of revision on the absolute level of GDP
Tablica 1. Wpływ zmian z tytułu rewizji na poziom absolutny PKB

Wyszczególnienie Specification	2010	2015	2016	2017	2018	2019	2020
PKB przed rewizją (mln zł) GDP before revision (m PLN)	1 446 844	1 801 112	1 863 487	1 989 835	2 121 555	2 293 199	2 338 996
PKB po rewizji (mln zł) GDP after revision (m PLN)	1 434 368	1 798 471	1 853 205	1 982 794	2 126 506	2 288 492	2 337 672
Ogółem zmiana absolutna PKB (mln zł) Absolute change of GDP (m PLN)	-12 476	-2 641	-10 282	-7 041	4 951	-4 707	-1 324
Zmiana % PKB Change in % of GDP	-0,86	-0,15	-0,55	-0,36	0,23	-0,21	-0,06
z tego: of which:							
Szacowanie wartości pro- dukcji usług mieszkani- owych w sektorze gospo- darstw domowych Estimating the output of dwelling services in the household sector	-0,28	-0,15	-0,15	-0,13	-0,09	-0,04	-0,06
Szacowanie wartości pro- dukcji nieobserwowanej Estimating the value of non-observed output	-0,08	0,39	0,51	0,65	0,70	0,39	0,63
Usługi finansowe, w tym FISIM Financial services, includ- ing FISIM	0,15	0,03	0,08	0,10	0,25	0,21	0,29
Poprawa szacunków w ra- mach spożycia w sektorze gospodarstw domowych Improved estimates in household final consump- tion expenditure	-0,55	-0,18	-0,64	-0,68	-0,28	-0,43	-0,51
Zmiany w saldzie handlu zagranicznego z tytułu eli- minacji transakcji realizo- wanych przez nierezyden- tów Changes in the foreign trade balance due to elimination of transac- tions carried out by non- residents	-0,11	-0,24	-0,34	-0,30	-0,34	-0,37	-0,42
Pozostałe zmiany Other changes	0,01	0,00	-0,01	0,01	0,00	0,04	0,01

Changes in real GDP growth ranged from -0.3 pp. up to +0.5 pp. The largest drop in dynamics was recorded in 2010, while the largest increase in 2018.

Chart 1. Real dynamic reviewed GDP compared to data previously published for 2010–2020, previous year = 100

Wykres 1. Dynamika realna zrewidowanego PKB w porównaniu do danych wcześniej publikowanych za lata 2010–2020, rok poprzedni = 100



Substantial changes are also noted in real growth of gross value added according to NACE Rev. 2. In the entire period covered by the revision of the national accounts, significant changes were registered in Manufacturing (section C), which has the largest share in gross value added of the Polish economy. As a result of changes in the methodology of compiling data and data sources, and finally, as a result of balancing procedure of national accounts, the largest increase in the real growth in section C (+3.3 pp.) was recorded in 2014, while in the remaining years the changes were within the range of -3.7 pp. in 2013 to 2.3 pp. in 2019. The revision of the data for Manufacturing also affected the results in the entire industry. The largest positive change in real growth took place in 2014 (+2.3 pp.), while the largest negative correction in the real growth in industry was recorded in 2013 (-2.6 pp.).

In terms of section G – Wholesale and retail trade; repair of motor vehicles and motorcycles (the second largest section NACE Rev. 2 in the share of the gross value added), the largest increase in real growth was recorded in 2017 (+2.7 pp.). In the remaining years, changes were noted, both positive and negative, ranging from -3.7 pp. in 2014 to 2.1 pp. in 2011.

The only area of activity in which there was no change in real growth was Public administration and defence; compulsory social security.

From the point of view of expenditure GDP approach, the greatest changes in real growth occurred in exports, imports and gross capital formation, including gross fixed capital formation. The increase in the real growth of gross capital formation is noticeable in almost the entire time series, with the largest positive changes recorded in 2018 and in 2020 (by 3.3 pp. and 2.7 pp. respectively). A decline in real growth was recorded in 2012 and 2017 (0.3 pp. and 2.0 pp. respectively). The same direction of changes was recorded in the case of gross fixed capital formation.

The elimination of the transactions reported by non-residents of the country from the value of exports and imports also contributed to a change in growth of these aggregates. The changes contributed to a decrease in real growth of these two variables in 2015 (a decrease in exports by 1.4 pp. and a decrease in imports by 1.3 pp.) and in 2020 (a decrease in exports by 1.1 pp. and imports by 1.3 pp.).

It should be noted that in the final consumption expenditure in 2017, an increase was recorded in real growth by 1.2 pp., in the remaining years the changes ranged from -0.6 pp. up to 0.6 pp. The other macroeconomic aggregates, from the point of view of expenditure GDP approach, decreased or increased at a level not exceeding 1 pp.

The changes presented above are due to the recommendations of the European Commission and dedicated working groups, which resulted in changes in the algorithms for estimating selected transactions in national accounts and data sources used to compile national accounts.

Table 2. Produkt krajowy brutto
Tablica 2. Produkt krajowy brutto

Wyszczególnienie Specification	2010	2015	2016	2017	2018	2019	2020
	ceny bieżące w mln zł current prices in m PLN						
Spożycie ogółem Final consumption expenditure	1 167 479	1 383 647	1 422 908	1 529 699	1 626 870	1 734 712	1 766 884
Spożycie w sektorze gospodarstw domowych Individual consumption expenditure	876 622	1 046 356	1 075 649	1 163 922	1 232 646	1 303 144	1 299 737
Spożycie w sektorze instytucji rządowych i samorządowych Public consumption expenditure	276 268	324 081	332 667	350 835	375 343	412 432	445 409
Akumulacja brutto Gross capital formation	300 890	377 383	374 762	396 979	456 137	469 061	438 531
w tym: of which:							
Nakłady brutto na środki trwałe Gross fixed capital formation	282 894	367 238	342 290	348 374	398 407	432 916	428 090
Eksport towarów i usług Exports of goods and services	575 058	853 380	931 575	1 032 157	1 121 690	1 217 371	1 238 754
Import towarów i usług Imports of goods and services	609 059	815 939	876 040	976 041	1 078 191	1 132 652	1 106 497
Popyt krajowy Domestic demand	1 468 369	1 761 030	1 797 670	1 926 678	2 083 007	2 203 773	2 205 415
Produkt krajowy brutto Gross domestic product	1 434 368	1 798 471	1 853 205	1 982 794	2 126 506	2 288 492	2 337 672
w tym: of which:							
Wartość dodana brutto Gross value added	1 260 546	1 595 387	1 636 005	1 740 484	1 862 434	2 011 356	2 059 056
z tego: of which:							
Rolnictwo, leśnictwo, łowiectwo i rybactwo Agriculture, forestry and fishing	42 092	45 017	49 024	59 689	51 347	54 225	60 051
Przemysł Industry	322 241	421 471	442 515	443 732	464 192	499 518	508 938
Górnictwo i wydobywanie Mining and quarrying	31 367	27 956	27 212	32 334	32 488	32 966	30 682
Przetwórstwo przemysłowe Manufacturing	234 424	321 370	342 563	338 879	356 270	387 327	385 068
Wytwarzanie i zaopatrywanie w energię elektryczną, gaz, parę wodną i gorącą wodę Electricity, gas, steam	40 877	52 236	51 510	50 191	51 432	53 780	64 491

and air conditioning supply							
Dostawa wody; gospodarowanie ściekami i odpadami; rekultywacja Water supply; sewerage, waste management and remediation activities	15 573	19 909	21 230	22 328	24 002	25 445	28 697
Budownictwo Construction	103 410	138 126	127 680	128 550	147 334	155 827	153 753
Handel; naprawa pojazdów samochodowych Wholesale and retail trade; repair of motor vehicles and motorcycles	229 115	262 666	264 375	288 805	303 699	323 025	328 740
Transport i gospodarka magazynowa Transportation and storage	77 200	107 935	111 086	123 291	137 149	144 386	137 987
Zakwaterowanie i gastronomia Accommodation and catering	13 605	20 315	20 667	25 905	26 287	29 954	23 356
Informacja i komunikacja Information and communication	45 205	62 196	65 252	70 778	78 695	84 861	93 983
Działalność finansowa i ubezpieczeniowa Financial and insurance activities	53 267	63 371	67 193	75 737	80 485	86 805	86 756
Obsługa rynku nieruchomości Real estate activities	65 479	78 063	84 196	85 737	89 853	113 612	118 922
Działalność profesjonalna, naukowa i techniczna Professional, scientific and technical activities	62 431	92 286	90 393	102 050	114 290	118 615	123 135
Administrowanie i działalność wspierająca Administrative and support service activities	26 811	40 399	43 519	50 928	54 698	65 031	64 970
Administracja publiczna i obrona narodowa; obowiązkowe zabezpieczenia społeczne Public administration and defence; compulsory social security	77 824	89 284	92 884	97 476	101 660	110 962	119 524
Edukacja Education	65 350	75 806	76 358	79 476	85 934	93 941	101 384
Opieka zdrowotna i pomoc społeczna Human health and social work activities	54 171	68 103	70 326	75 819	90 534	93 708	98 552
Działalność związana z kulturą, rozrywką i rekreacją Arts, entertainment and recreation	11 594	12 563	13 681	13 488	15 654	15 860	16 607

Pozostała działalność usługowa Other service activities	10 682	17 592	16 655	18 809	20 411	20 826	22 208
Gospodarstwa domowe zatrudniające pracowników oraz wytwarzające produkty na własne potrzeby Activities of households as employers and product-producing activities of households for own use	69	194	201	214	212	200	190

Table 3. Indices of gross domestic product volume
Tablica 3. Dynamika wolumenu produktu krajowego brutto

Wyszczególnienie Specification	2010	2015	2016	2017	2018	2019	2020
	w % in %						
Spożycie ogółem Final consumption expenditure	102,2	103,5	103,3	105,4	104,4	104,1	98,5
Spożycie w sektorze gospodarstw domowych Individual consumption expenditure	101,6	103,8	103,6	106,3	104,4	103,5	96,4
Spożycie w sektorze instytucji rządowych i samorządowych Public consumption expenditure	103,6	102,4	102,0	102,7	103,5	106,5	104,9
Akumulacja brutto Gross capital formation	111,8	105,6	98,3	105,6	113,8	100,5	92,5
Nakłady brutto na środki trwałe Gross fixed capital formation	100,7	106,9	92,4	101,6	112,6	106,2	97,7
Eksport towarów i usług Exports of goods and services	112,7	106,6	109,0	109,0	106,8	105,3	98,9
Import towarów i usług Imports of goods and services	114,2	105,6	107,7	109,9	107,5	103,2	97,6
Popyt krajowy Domestic demand	104,1	103,9	102,2	105,4	106,3	103,3	97,3
Produkt krajowy brutto Gross domestic product	103,4	104,4	103,0	105,1	105,9	104,5	98,0
Wartość dodana brutto Gross value added	103,4	104,5	102,8	105,0	105,9	104,3	98,0
z tego: of which:							
Rolnictwo, leśnictwo, łowiectwo i rybactwo Agriculture, forestry and fishing	99,0	91,5	100,4	101,5	90,4	97,8	115,3
Przemysł Industry	109,2	104,2	104,5	101,9	105,0	104,7	96,5
Górnictwo i wydobywanie Mining and quarrying	97,4	107,2	97,1	93,1	97,3	98,2	89,9
Przetwórstwo przemysłowe Manufacturing	108,4	107,1	105,3	101,9	105,8	106,2	94,5
Wytwarzanie i zaopatrywanie w energię elektryczną, gaz, parę wodną i gorącą wodę Electricity, gas, steam and air conditioning supply	125,2	86,4	103,9	106,2	103,9	99,2	110,5

Dostawa wody; gospodarowanie ściekami i odpadami; rekultywacja Water supply; sewerage, waste management and remediation activities	105,6	103,7	103,4	102,6	106,8	103,0	105,4
Budownictwo Construction	105,5	111,6	95,0	98,8	108,5	99,2	92,0
Handel; naprawa pojazdów samochodowych Trade; repair of motor vehicles	104,7	105,9	104,0	108,4	103,5	103,8	97,7
Transport i gospodarka magazynowa Transportation and storage	102,3	98,7	102,3	112,3	109,4	102,6	90,3
Zakwaterowanie i gastronomia Accommodation and catering	89,8	100,2	100,4	122,0	96,7	100,8	74,2
Informacja i komunikacja Information and communication	94,5	109,7	113,0	110,7	109,6	106,6	107,9
Działalność finansowa i ubezpieczeniowa Financial and insurance activities	98,4	115,3	103,9	102,7	122,2	110,1	87,0
Obsługa rynku nieruchomości Real estate activities	106,6	100,2	106,3	100,5	102,2	118,2	104,2
Działalność profesjonalna, naukowa i techniczna Professional, scientific and technical activities	94,2	111,6	98,0	111,7	110,5	103,7	102,1
Administrowanie i działalność wspierająca Administrative and support service activities	105,0	108,6	109,7	113,7	103,8	109,8	94,5
Administracja publiczna i obrona narodowa; obowiązkowe zabezpieczenia społeczne Public administration and defence; compulsory social security	98,2	100,8	100,0	100,2	100,6	105,5	103,7
Edukacja Education	99,3	102,4	100,5	103,3	104,9	103,8	104,2
Opieka zdrowotna i pomoc społeczna Human health and social work activities	103,0	95,3	103,1	105,8	112,9	98,7	102,5
Działalność związana z kulturą, rozrywką i rekreacją Arts, entertainment and recreation	91,6	106,6	107,8	95,7	111,7	99,8	101,7
Pozostała działalność usługowa Other service activities	100,7	101,1	93,6	110,4	105,9	97,9	99,9
Gospodarstwa domowe zatrudniające pracowników oraz wytwarzające produkty na własne potrzeby Activities of households as employers and product-producing activities of households for own use	96,5	101,5	103,3	104,5	97,2	92,5	91,8

Along with the change in gross domestic product, other balancing items, including gross national income⁵ (GNI), also changed accordingly. Moreover, the value of GNI in the entire time series has been revised due to other changes that do not affect GDP as they are reflected in the allocation of primary income account. The largest change in the entire analysed period resulted from the implementation of changes in the estimation of the value of reinvested earnings on foreign direct investment.

⁵ Gross national income is the basis for calculating one of the four elements of the Member States' contribution to the EU budget (the so-called fourth own resource based on gross national income). It is calculated as the sum of gross domestic product and the balance of foreign income, which includes the balance of compensation of employees, the balance of property income, subsidies received from the institutions of the EU, and taxes on production and imports paid to the institutions of the EU.

As part of the 2016-2019 GNI verification cycle, Eurostat verified the accuracy of the compilation of reinvested earnings on foreign direct investment data in all Member States. During the verification it was found that most Member States estimated the reinvested earnings on foreign direct investment on the basis of individual company's data. Thus, the operating profit of enterprises' direct investment measured by the concept of current operating efficiency was the starting point for estimating reinvested earnings on foreign direct investment. While operating profit allowed for a relatively precise estimate of the amount of the net operating surplus when estimating reinvested earnings in accordance with the ESA 95 methodology framework, this concept ignored some of the methodological changes introduced in ESA 2010. The methodological change with the potentially greatest impact on reinvested earnings on foreign direct investment was the treatment of research and development (R&D). As a result of R&D capitalization, the following factors influence the net operating surplus: recognition of R&D expenditure as gross fixed capital formation, not as intermediate consumption; recognition of own-account R&D in output and gross fixed capital formation and depreciation of fixed assets based on R&D assets.

In order to implement Eurostat's recommendations, a number of actions had to be taken, including: verifying the available data sources used in compilation of reinvested earnings on foreign direct investment, determining an adjustment for R&D capitalization for units involved in foreign direct investment, and then determining the value of the adjustments in reinvested earnings. These changes were reflected in allocation of primary income account of reinvested earnings and had a direct impact on gross national income.

The remaining changes incorporated to primary income account (transition from GDP to GNI) resulted from the revision of the balance of payments, which is a direct source of data for the rest of the world sector.

The level of GNI in 2010–2020, in absolute terms, before and after the revision, is presented in Table 4.

The implementation of changes related to European Commission recommendations, including the use of new and updating of existing data sources, contributed to the reduction of gross national income in the years covered by the revision of the national accounts. The exception was 2018, when the GNI increased by PLN 3.1 billion. The largest decrease was recorded in 2013, amounting to over PLN 17.5 billion. In the remaining years, the changes ranged from PLN -4.0 billion in 2015 to PLN -13.0 billion in 2010.

Table 4. Gross national income
Tablica 4. Dochód narodowy brutto

Wyszczególnienie	2010	2015	2016	2017	2018	2019	2020
Specification	ceny bieżące w mln zł current prices in m PLN						
DNB przed rewizją GNI before revision	1 395 274	1 735 477	1 790 107	1 907 275	2 033 872	2 199 171	2 260 625
DNB po rewizji GNI after revision	1 382 229	1 731 513	1 778 261	1 898 758	2 036 989	2 192 953	2 249 765


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[Information of Statistics Poland on the revision of national accounts in 2010–2020](#)

Data available in databases

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Terms used in official statistics

[Gross domestic product](#)

[Gross value added](#)

[Gross capital formation](#)