

Major (Benchmark) Revision of the National Accounts 2018–2023

The State Statistical Office conducted a major (benchmark) revision of the national accounts for the period 2018–2023, with the aim of ensuring higher quality, improved comparability, and full compliance of the national accounts with the latest European and international statistical standards.

The revision was carried out in accordance with the Data Revision Policy and the recommendations of the Harmonised European Revision Policy for coordinated benchmark revision of national accounts within the European Statistical System. These coordinated major revisions are conducted on a regular basis in order to incorporate improved methodologies, enhanced data sources, and alignment with international statistical standards. The previous major revision of the national accounts at the State Statistical Office was carried out in 2014.

Benchmark revisions enable the State Statistical Office to integrate new data and methodological changes, thereby ensuring higher quality and relevance of the system of national accounts and significantly better alignment with the European System of Accounts (ESA 2010).

In parallel with the revision of the time series, the reference year for calculations at constant prices was also changed (reference year = 2021).

Table 1. Gross domestic product at current prices, revised data

million denars

	2018	2019	2020	2021	2022	2023
Published GDP data before revision	660 878	692 683	669 280	729 445	816 084	902 905
Revised GDP data	670 912	707 839	690 085	761 561	869 852	954 068
Differences in %	1.5	2.2	3.1	4.4	6.6	5.7

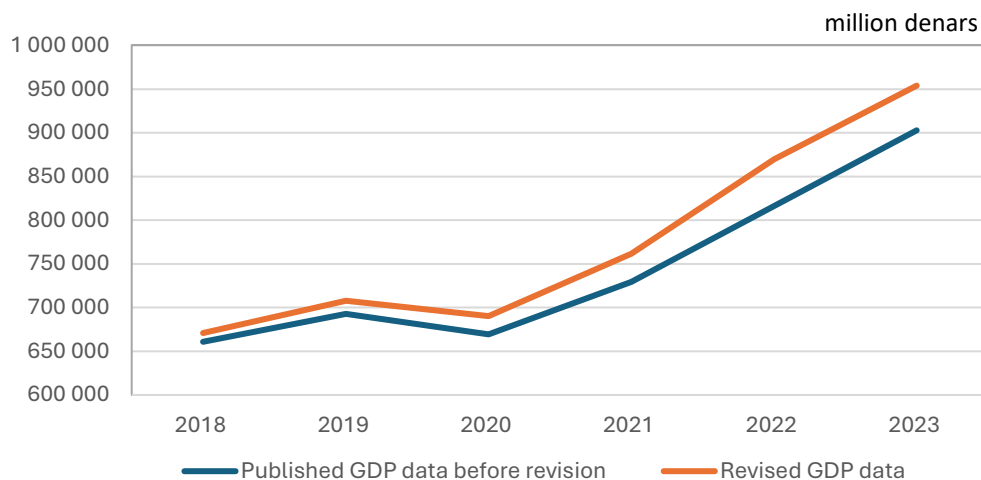


Table 2. Gross domestic product by the production approach, by NACE Rev. 2

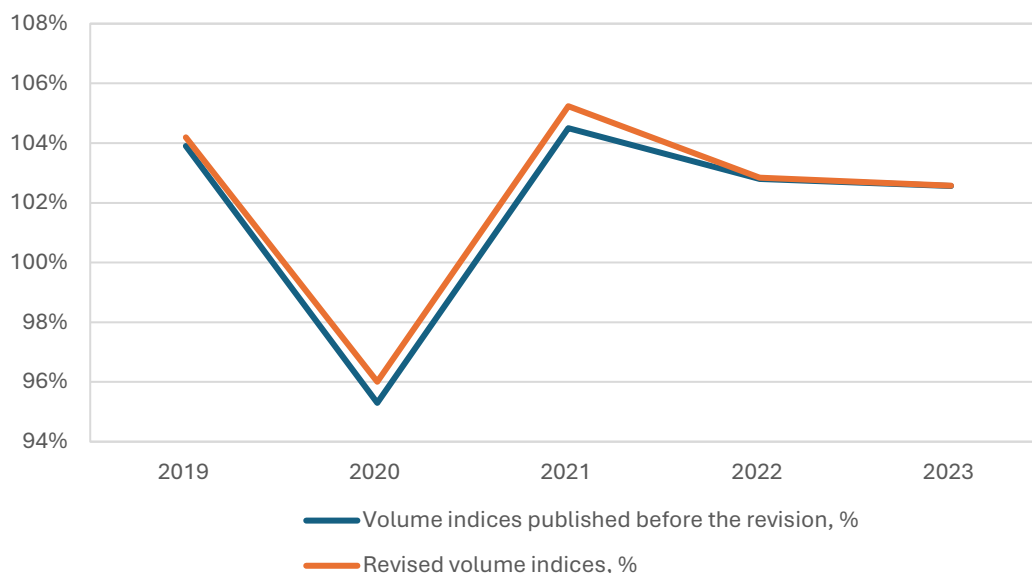
Revised data	current prices (million denars)					
	2018	2019	2020	2021	2022	2023
Gross domestic product	670 912	707 839	690 085	761 561	869 852	954 068
Value added	584 013	616 333	609 973	662 289	761 078	838 209
A Agriculture, forestry and fishing	55 701	55 155	53 944	51 078	59 572	55 133
B, C, D and E Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities	123 766	125 308	120 693	130 461	148 207	169 435
F Construction	39 224	42 665	40 569	45 551	56 085	62 990
G, H and I Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities	136 625	149 192	141 736	159 689	182 573	195 841
J Information and communication	22 568	24 532	27 145	31 492	39 648	44 700
K Financial and insurance activities	19 375	20 792	21 325	22 816	23 675	27 041
L Real estate activities	65 244	67 341	70 949	75 771	92 762	102 157
M and N Professional, scientific and technical activities; Administrative and support service activities	24 761	27 275	25 177	29 585	36 148	42 509
O, P and Q Public administration and defence; compulsory social security; Education; Human health and social work activities	77 105	82 637	89 381	93 770	96 832	108 708
R, S and T Arts, entertainment and recreation; Other service activities; Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	19 644	21 436	19 054	22 076	25 575	29 696
Net taxes on products	86 898	91 506	80 112	99 272	108 775	115 859
Differences in %	2018	2019	2020	2021	2022	2023
Gross domestic product	1.5	2.2	3.1	4.4	6.6	5.7
Value added	1.8	2.5	3.7	5.1	7.6	6.5
A Agriculture, forestry and fishing	-0.5	-2.1	-5.9	-2.0	0.3	-2.0
B, C, D and E Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities	0.5	0.1	3.4	5.0	6.6	4.7
F Construction	9.7	9.4	14.2	12.6	14.8	14.7
G, H and I Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities	3.7	6.3	8.6	11.7	18.8	16.5
J Information and communication	-0.2	0.7	1.5	2.1	3.8	1.8
K Financial and insurance activities	0.5	7.8	3.3	2.8	2.5	3.5
L Real estate activities	-1.4	-1.3	1.4	0.8	1.4	1.4
M and N Professional, scientific and technical activities; Administrative and support service activities	3.9	3.7	3.8	4.0	5.8	5.7
O, P and Q Public administration and defence; compulsory social security; Education; Human health and social work activities	0.2	0.5	0.5	0.6	1.0	0.3
R, S and T Arts, entertainment and recreation; Other service activities; Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	6.4	6.2	8.5	7.9	8.2	12.0
Net taxes on products	-0.1	0.3	-1.3	0.0	0.0	0.0

Table 3. Gross domestic product by the expenditure approach

	current prices (in million denars)					
Revised data	2018	2019	2020	2021	2022	2023
Gross domestic product	670 912	707 839	690 085	761 561	869 852	954 068
Final consumption	552 060	574 400	572 324	634 739	724 605	787 513
Households	451 477	470 442	455 231	512 149	593 374	643 278
NPISH's	6 054	6 666	5 627	7 000	8 281	9 378
General government	94 529	97 292	111 465	115 590	122 949	134 857
Gross capital formation *	188 053	219 522	199 630	229 658	296 787	261 626
Gross fixed capital formation	140 822	154 396	153 029	183 994	212 967	239 399
Changes in inventories *	46 793	64 632	46 045	44 986	83 084	21 443
Net acquisition of valuables	438	493	557	679	736	784
Exports of goods and services	436 221	465 840	409 085	513 724	638 624	658 034
Export of goods	318 114	344 281	305 853	385 607	468 035	465 223
Export of services	118 107	121 559	103 232	128 117	170 589	192 811
Imports of goods and services	505 422	551 923	490 953	616 560	790 164	753 105
Import of goods	407 131	448 725	408 485	516 323	665 622	607 699
Import of services	98 291	103 198	82 468	100 237	124 542	145 406
Differences in %	2018	2019	2020	2021	2022	2023
Gross domestic product	1.5	2.2	3.1	4.4	6.6	5.7
Final consumption	4.2	4.3	3.3	4.1	5.0	4.6
Households	5.2	5.2	4.3	5.1	6.1	5.7
NPISH's	0.0	0.0	0.0	0.0	0.0	0.1
General government	0.1	0.3	-0.5	0.1	0.3	0.0
Gross capital formation *	-12.0	-7.5	-0.3	-2.3	1.0	-2.2
Gross fixed capital formation	6.4	5.9	5.9	7.5	8.6	7.5
Changes in inventories *	-42.1	-29.1	-16.6	-29.0	-14.6	-51.4
Net acquisition of valuables	1.5	10.4	11.1	24.8	15.6	14.7
Exports of goods and services	9.3	7.8	5.8	7.6	7.5	8.1
Export of goods	6.0	5.2	2.9	4.3	3.8	4.4
Export of services	19.5	15.9	15.4	19.2	19.4	18.4
Imports of goods and services	5.0	4.6	4.1	4.0	3.7	3.7
Import of goods	0.0	0.0	0.0	0.1	0.0	0.0
Import of services	32.2	30.6	30.9	30.4	29.0	23.2

Table 4. Gross domestic product, volume indices before and after the revision

	2019	2020	2021	2022	2023
Volume indices published before the revision, %	103.9	95.3	104.5	102.8	102.6
Revised volume indices, %	104.2	96.0	105.2	102.8	102.6



The revision improved the methods used for data compilation across all parts of the national accounts system. The process incorporated improved and new data sources, as well as additional information on specific economic activities and institutional sectors.

Particular attention was paid to the revision of gross domestic product by the production and expenditure approaches, their reconciliation through the supply and use tables, as well as the reconciliation of sector accounts and transactions with the Rest of the World account.

The methodological basis for the revision of the national accounts is in accordance with the principles and methodological requirements of the European System of National and Regional Accounts (ESA 2010) and the System of National Accounts (SNA 2008). The revision process applied the principles of completeness, consistency, comparability, transparency, and data traceability.

Improvement in the area of the non-observed economy

1. Estimation of employment based on the 2021 Census of Population, Households and Dwellings

Employment estimates are incorporated into the national accounts with the aim of improving the coverage of economic activities that are not fully registered or captured by regular statistical sources. Improvements were made based on the revised data from the Labour Force Survey for the period 2018–2023, harmonised with the data from the 2021 Census of Population, Households and Dwellings.

Improvements in the calculation of employment were made based on an enhanced labour force balance methodology through the implementation of the Full-Time Equivalent (FTE) concept. The revised figures provide a more realistic representation of employment trends.

2. Improvement in the area of the non-observed economy regarding unrealistic data reporting

Adjustments were made regarding unrealistic data reporting for registered business entities whose revenues are underestimated, i.e. where the value of output is not realistically reflected in the available data, as well as for overestimated intermediate consumption. These adjustments have a direct impact on the estimation of gross value added and gross domestic product.

The adjustments are based on an analytical approach using available direct and indirect data sources, relevant economic indicators, structural information, and international methodological practices. The estimation is based on a model aligned with the framework for ensuring the exhaustiveness of national accounts in accordance with ESA 2010.

In developing and applying the model, particular attention was paid to clearly distinguishing these adjustments from other exhaustiveness components, especially adjustments arising from the Labour Input Method (LIM). This distinction was made to avoid overlapping adjustments and double counting of economic activity. The results of the calculations were allocated to the relevant institutional sectors and integrated into the sector accounts.

3. Data improvement regarding statistical data gaps

An estimate of tips was made based on revised employment data.

Table 5. Total non-observed economy adjustments

Total NOE	% of gross domestic product		
	Published data before revision	Revised data	Differences
2018	18.5	19.7	1.2
2019	18.0	19.4	1.4
2020	17.1	19.5	2.4
2021	16.7	18.8	2.1
2022	15.0	19.7	4.7
2023	13.2	17.4	4.2

Improvement in the calculation of gross output of pension fund management companies

The data source was changed, as were the methodology and the components included in the calculation of the gross output of pension fund management companies.

Dwellings and housing stock

Significant improvements were made to estimates related to dwellings and the housing stock.

Estimates of the housing stock and housing services were revised, including imputed and actual rents. The Perpetual Inventory Method (PIM) was applied to estimate the value of the housing stock and consumption of fixed capital for residential structures, using revised data on gross fixed capital formation in residential construction for the entire 2018–2023 series.

The revision also covers owner-built housing construction and renovations, with data from the 2021 Census of Population, Households and Dwellings used in the estimates.

A revised calculation of the housing stock was made through a new calculation of gross fixed capital formation in dwellings, based on a comparison of the results of the 2021 Census with those of the 2002 Census. A new system for estimating dwellings was established based on available data sources from 2022 onward.

Improvement in the calculation of gross fixed capital formation – machinery and equipment

As part of the revision, a methodological improvement was made to the calculation of gross fixed capital formation in machinery and equipment. The improvements concern a more precise treatment of trade margins and customs duties, as well as the redefinition and refinement of the coverage of product categories according to the Classification of Products by Activity (CPA) included in fixed capital formation.

The methodological improvements were implemented in the annual estimates, where more detailed and comprehensive data are available, and contribute to improving the quality and consistency of gross fixed capital formation estimates.

Improvements in household final consumption expenditure

The most significant change introduced by the revision of household final consumption expenditure is the implementation of the new version of the Classification of Individual Consumption by Purpose (COICOP 2018).

With the implementation of COICOP 2018, the structure and classification of household final consumption expenditure have been aligned with the current international classification framework, improving the detail, consistency and comparability of the data.

In parallel with the implementation of the new classification, methods for individual consumption categories were revised and improved, data sources were updated, and additional statistical and administrative sources were introduced. In addition, the compilation process was improved through more consistent use of information from supply and use tables and improved data balancing.

Incorporation of data based on revised balance of payments

The bridge table between the balance of payments and the rest-of-the-world account (from the annual sector accounts) was improved based on the revised data series from the National Bank (balance of payments).

The data are used to improve the estimation of external transactions and to ensure consistency between national accounts data and the balance of payments. The revised balance of payments data series is new, more detailed and consistent data series provided by the National Bank, thereby improving the estimation of external transactions and consistency between the national accounts and the balance of payments.

The revision of the balance of payments time series affects GDP calculated by the expenditure approach through the revised data on exports and imports of goods and services, i.e. net exports as a component of the expenditure approach to GDP. By incorporating the revised data into the national accounts, full consistency is ensured between the balance of payments data and the corresponding components of GDP according to the expenditure approach.

Application of accrual-based adjustments

The model for data adjustment in accordance with the accrual principle was applied to the following items: taxes on production and imports, current taxes on income and wealth, capital taxes, compensation of employees, net social contributions, and gross fixed capital formation.

GDP reconciliation and balancing

The two approaches to GDP compilation were reconciled through the balancing of supply and use tables.

The supply and use tables were used as an instrument for systematically linking and reconciling data on output, imports, intermediate consumption, final uses, gross capital formation and exports, thereby ensuring consistency between the production and expenditure approaches to GDP.

The balancing process also took into account adjustments related to the incomplete recording of revenues, output and intermediate consumption of registered business entities. Their impact on value added was appropriately reflected in the expenditure approach, particularly through household final consumption expenditure and gross fixed capital formation.

In this way, the production and expenditure approaches were reconciled within a single national accounts system.

Revision of deflators

As part of the benchmark revision of the national accounts, the deflators were revised to ensure greater methodological harmonisation, accuracy and consistency of the time series. The revision was carried out in accordance with the new methodological recommendations and the principles and requirements of ESA 2010, as well as relevant Eurostat recommendations.

Improved calculation methods and updated data sources were applied, including additional checks of the underlying price indices, their structure and their application in the calculation of GDP at current and constant prices. Particular attention was paid to ensuring consistency between the production and expenditure approaches and to aligning the deflators with the revised values of the corresponding GDP components.

This improves the quality of GDP volume estimates and ensures greater consistency between data at current and constant prices for the period covered by the benchmark revision.

Other methodological improvements in the system of sector accounts

In addition to the changes described above, the revision also included other methodological and technical improvements, including:

- Improvement of estimates for the sectoral allocation of dividends, reinvested earnings from foreign direct investment, investment income attributed to insurance policyholders, investment income payable on pension entitlements, and investment income attributed to holders of units in collective investment funds.
- Ensuring consistency of the annual sector accounts with government finance statistics, supply and use tables, and gross fixed capital formation.
- Correction of flows between pension funds and the companies managing them, affecting the item Adjustment for the Change in Pension Entitlements.
- Development and integration into the accounts of estimates for social transfers in kind – non-market production and social transfers in kind – market production purchased by the general government sector and non-profit institutions serving households (NPISHs).