

QUALITY REPORT FOR STATISTICAL SURVEY

Turnover Indices of Service Activities in 2024

Organisational unit: Business Statistics Directorate/Service Statistics Department

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October 2025

0. Basic information

- Purpose and subject matter

Data collected in this survey are used in observing, month after month, the dynamics of changes in service activities turnover at the level of the Republic of Croatia as well as at the level of individual activities. It is an important statistical indicator applied in analyses of economic situation and for calculation of a quarterly gross domestic product. With the increase in the share of service activities in national economies, there has also been an increased interest in adequate statistical monitoring of this sector and development work in the field of services is the basis for achieving better and more realistic short-term business indicators, while the requirements for obtaining more comprehensive and up-to-date data on this fast-growing sector of the economy are increasing. The survey collects monthly data on total business income and business income from the predominant activity generated in the reporting month and in the same month of the previous year. Operating income comprises the value of all goods and services sold on the market in a particular month, regardless of whether they are paid for or not. In Croatia, service activities (G-NXK) cover about 100 thousand units, or more than 72% of the total number of all business entities engaged in service activities. The sector employs more than 58% of a total number of employed persons in the non-financial business economy. The share of turnover generated in the service sector is also significant, almost 60% of total turnover, while its share in total value added is more than 56% (STS survey data).

- Reference period

Month

- Legal acts and other agreements

The survey methodology is based on Regulation (EU) 2019/2152 of the European Parliament and of the Council of 27 November 2019 on European business statistics, repealing 10 legal acts in the field of business statistics and Commission Implementing Regulation (EU) 2020/1197 of 30 July 2020 laying down technical specifications and arrangements pursuant to Regulation (EU) 2019/2152 of the European Parliament and of the Council on European business statistics repealing 10 legal acts in the field of business statistics.

The survey is carried out pursuant to the Official Statistics Act (NN, Nos 25/20, 155/23 and 124/25 – corr.).

- Classification system

National Classification of Activities, 2007 version (NKD 2007)

- Concepts and definitions

The survey collects monthly data on total business income and business income from the predominant activity generated in the reporting month and in the same month of the previous year. Operating income comprises the value of all goods and services sold on the market in a particular month, regardless of whether they are paid for or not. Turnover (business revenue) is the value of all goods sold and services provided on the market during the reference period, irrespective of whether they are paid for or not. Value added tax is excluded. Business entities on the Monthly Report on Service Activities report their total turnover (business revenue) generated from both their main and secondary activities as well as business revenue generated only from their main activities. The turnover indices calculated from the value added tax databases have been obtained from the data on total deliveries (both taxable and non-taxable ones). Deliveries recorded in the value added tax databases may differ from the definition of turnover applied in statistical surveys, which affects the comparability of data.

- **Statistical unit**

The statistical unit of the services turnover index is a kind-of-activity unit. The most significant multi-industry enterprises have been divided into kind-of-activity units to improve the homogeneity of results of statistical surveys by activities, as well as their international comparability.

- **Statistical population**

The target population encompasses business entities (legal entities, tradesmen and freelancers) whose main activity is one of activities prescribed by Regulation (EU) 2019/2152 of the European Parliament and of the Council of 27 November 2019 on European business statistics, repealing 10 legal acts in the field of business statistics and Commission Implementing Regulation (EU) 2020/1197 of 30 July 2020 laying down technical specifications and arrangements pursuant to Regulation (EU) 2019/2152 of the European Parliament and of the Council on European business statistics repealing 10 legal acts in the field of business statistics.

Framework for unit identification in the population is the Statistical Business Register. In 2024, population covered 135 003 units. The total sample consists of about 14 000 units, of which about 1 000 are included in the regular Monthly Report on Service Activities (USL-M form).

1. Relevance

1.1. Data users

The main users are ministries and state administration bodies (the Ministry of Economy, the Croatian Chamber of Economy), financial institutions (Croatian National Bank), economic analysts, the media, researchers, students, enterprises and users within the Croatian Bureau of Statistics (National Accounts Department).

1.1.1. User needs

The main users are ministries and state administration bodies, financial institutions, economic analysts, the media, researchers and students, enterprises and users within the Croatian Bureau of Statistics who mostly use data series on turnover indices of service activities by divisions.

1.1.2. User satisfaction

The first user satisfaction survey of the Croatian Bureau of Statistics was conducted in 2013, then in 2015 and 2022, and the last one at the end of 2024. The results can be checked out on the website of the Croatian Bureau of Statistics <https://dzs.gov.hr/highlighted-themes/quality/user-satisfaction-surveys/686>.

There is a good cooperation with the main users such as the Croatian National Bank, the Croatian Chamber of Economy and the Ministry of Economy.

The Croatian Bureau of Statistics replies on time to users' inquiries.

1.2. Completeness

Indicators are fully in line with concepts and definitions given in the methodology based on the Regulation (EU) 2019/2152 of the European Parliament and of the Council on European business statistics. Series of indices, published at the national level and submitted to Eurostat, are complete, without gaps or missing data.

1.2.1. Data completeness rate

The indicator is not applicable.

2. Accuracy and reliability

2.1. Sampling error

Due to the application of the cut-off method for sample selection, standard error and variation coefficient are not measured.

2.1.1. Sampling error indicators

The indicator is not applicable.

2.2. Non-sampling error

In September 2024, the following (unweighted) indicators were calculated:

- Response rate, 100%
- Nonresponse rate, 0%
- Overcoverage rate, 1.29%.

Indicators are the same at the time of national publishing as well as at the time they are sent to Eurostat. Response rate is 100% thanks to the fact that two sources are combined: electronic questionnaire and administrative data (database of added value tax data kept by the Tax Administration). Nonresponse to the variable is not a relevant indicator due to the fact that forms that are filled in online already contain installed controls for preventing that forms are sent without the requested data. When filling in forms, intervention of a statistical unit or administrator is required to eliminate basic errors. If they do not do so, data cannot be entered into the database. Data entered are logically verified in the Survey Processor programme, which enables statisticians to check and, if needed, correct them. Measures taken to reduce nonresponse are reminders sent by e-mail and contacting reporting units by phone. A sample selection framework is the main source of nonsample errors. In an attempt to get the framework updated and establish feedbacks for the Statistical Business Register, every reporting unit is assigned one of the following statuses during the survey: 0 – In operation, refused to submit report, 1 – In operation, report submitted, 2 – Not in operation, ceased business operations, 3 – Not engaged in service activities, 4 – Dormant, 5 – In bankruptcy, liquidation, 6 – Questionnaire not delivered, 7 – Service activity not registered accurately, 8 – Not a kind-of-activity unit (JVD) in a current month, 9 – Other reasons (merger and other organisational changes).

2.2.1. Coverage error

A gap between target population and the framework occurs mainly because the Statistical Business Register is not updated regularly. Eligibility of units can be determined only on the selected sample. Units not included in the sample are not contacted and it is impossible to determine actual status of their business operation.

2.2.2. Overcoverage rate

The indicator is not applicable.

2.2.3. Measurement error

In 2024, a total of 99.35% responses were recorded (response rate concerning field units).

Overcoverage rate of the overall dataset was 1.29%.

Imputation rate of the overall dataset was 5.37%.

Measures to reduce nonresponse include written reminders and contacting reporting units by phone.

2.2.4. Nonresponse error

In 2024, a total of 99.35% responses were recorded (response rate concerning field units). Measures to reduce nonresponse include written reminders and contacting reporting units by phone. If a reporting unit does not submit the report in time even after reminding and contacting them, statisticians will carry out the imputation manually. An administrative source (VAT datafile) is used to determine the imputation value.

2.2.5. Unit nonresponse rate

The indicator is not applicable.

2.2.6. Item nonresponse rate

The indicator is not applicable.

2.2.7. Processing error

Data collected in the survey are checked by means of logical controls. Each entry is checked and, if errors emerge, data are either corrected or tolerated if found accurate. There are errors that can be approved and tolerated as well as those that cannot be tolerated and have to be corrected. The list of errors in the survey is given below:

- A001 Status in the address book differs from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. This cannot be tolerated.
- A004 Predominant activity does not belong to a trade or service domain, but there is a figure in the field Turnover, current. This cannot be tolerated.
- A004 Predominant activity does not belong to a trade or service domain, but there is a figure in the field Turnover excluding VAT generated in the reference month. This cannot be tolerated.
- A005 If the status in the address book differs from 1, then the field Turnover excluding VAT generated in the reference month must be 0. This cannot be tolerated.
- A005a If the status in the address book differs from 1, then the field Turnover excluding VAT generated in the same month of the previous year month must be 0. This cannot be tolerated.
- A006 If the status in the address book is 1, then the field Turnover excluding VAT generated in the reference month must be greater than 0. This cannot be tolerated.
- A006a If the status in the address book is 1, then the field Turnover excluding VAT generated in the same month of the previous year must be greater than 0. This cannot be tolerated.
- A007 NKD from the received material different in relation to population. This cannot be tolerated.
- A010 Inaccurate kind of activity. This cannot be tolerated.
- There is a value entered in the field Turnover, the same month of the previous year, but there is no value entered into the field Turnover, current or the value is 0. This cannot be tolerated.
- X004 There is a value entered in the field Turnover, current, but there is no value entered into the field Turnover, the same month of the previous year or the value is 0. This cannot be tolerated. In this case, turnover for the base period have to be imputed.
- X010 Inaccurate year or reference month. This cannot be tolerated.
- A002 Enterprise size is 1, and the field Turnover, current exceeds 100 000. This can be tolerated.
- A002a Enterprise size is 1, and the field Turnover, the same month of the previous year exceeds 100 000. This can be tolerated.
- A003 Status from received material is different in relation to population. This can be tolerated.
- A011 Value in the form field PrometRef must be greater than the value in the field Turnover divided by 1 000. Turnover should not be entered in thousands of euro, but in full amount.

- X001 Value in the field Turnover, current should not exceed 13 200 000. This can be tolerated.
- X002 Value in the field Turnover, the same month of the previous year should not exceed 13 200 000. This can be tolerated.
- X005 Turnover, current is 50% greater or lower than Turnover, the same month of the previous year. This can be tolerated.

Check rules in relation to administrative data.

- X008 Turnover, current was NOT entered in the current turnover in the VAT file. This can be tolerated.
- X008a Turnover, current is 40% lower or greater in relation to turnover entered in the current turnover in the VAT file. This can be tolerated.
- X009 Turnover, the same month of the previous year entered in the form for the current month is NOT entered in Same month of the previous year in the VAT file. This can be tolerated.
- X009a Turnover, the same month of the previous year entered in the form for the current month is 40% greater or lower than the same turnover entered in Same month of the previous year in the VAT file. This can be tolerated.
- X011 Turnover, current month is greater in relation to turnover entered in Turnover in the same month in the VAT file (for turnover VAT = 1). This can be tolerated.
- X012 Turnover, the same month of the previous year is greater than the same turnover entered in the same month of the previous year in the VAT file (for turnover VAT = 1). This can be tolerated.

2.2.8. Imputation rate

The indicator is not applicable.

2.2.9. Model assumption error

Not available.

2.3. Data revision

2.3.1. Data revision – policy

The users of statistical data are informed about revisions on the website of the Croatian Bureau of Statistics, on the link [https://dzs.gov.hr/General Revision Policy of the CBS](https://dzs.gov.hr/General%20Revision%20Policy%20of%20the%20CBS).

Data revision policy of the Croatian Bureau of Statistics is based on the following documents:

- European Statistics Code of Practice
- Quality Assurance Framework of the European Statistical System
- ESS Guidelines on Revision Policy for PEEIs.

Corrections of published data caused by technical, calculation, language errors and the like are not subject to revision policy of the Croatian Bureau of Statistics. Changes to already published statistics should be clearly indicated during dissemination if they relate to corrected data (due to technical or calculation errors) or revised data. After publishing revised data, in order to achieve their transparency and availability, the Croatian Bureau of Statistics make available previously published (original) data to users via the media in which it can be done.

De facto revision policy used in this survey includes:

- Main revisions (such as change of a base year) – all series are recalculated, but changes are not announced in advance. Explanations are provided after the publication of new data.

- Routine revisions (such as changes in SA and WDA data series) – revised data are published when new data are as a rule published without classifying changed data as revised. There is only methodological explanation concerning using SA and WDA tools and their impact on changes on previously published data.
- If errors emerge, corrected data are published in the shortest time possible or in the next version of the publication. The same policy is applied at the national level and when sending data to Eurostat. An available historical dataset database does not exist.

2.3.2. Data revision – practice

Revision for this survey includes:

- Main revisions (major changes in the methodology, change of a base year) – all series are recalculated, but changes are not announced in advance. Revisions are announced in the First Release at the time when changes are introduced, accompanied with explanations after new data are published.
- Routine revisions (such as changes in SA and WDA data series) – revised data are published every month in the First Release for the entire data series, when as a rule new data are published, without classifying changed data as revised. There is only methodological explanation concerning using SA and WDA tools and their impact on changes on previously published data. Since 2016, in the process of seasonal adjustment, the software package JDemetra+, 2.0.0 version, has been applied (process of identification and assessment of seasonal and working-day effects). Having in mind that there are two available options in Jdemetra+, i.e. TRAMO-SEATS (using Seats method to assess seasonal effects) and X13 (using the X11 method to assess seasonal effects), while seasonal and working-day adjustments are done using the X13 ARIMA method. Random component effect is excluded in the process of seasonal adjustment of index series.

Due to characteristics of the seasonal adjustment method applied, the extension of index series by adding new monthly observations for every month may lead to subsequent corrections of already published seasonally and working-day adjusted indices on one hand and of only working-day adjusted indices and trend on other hand for several previous months.

Elimination of errors: if errors emerge, corrected data are published in the shortest time possible or in the next version of the publication. The same policy is applied at the national level and when sending data to Eurostat.

An available historical dataset database does not exist.

2.3.3. Data revision – average size

The indicator is not applicable.

2.4. Seasonal adjustment

Nominal turnover indices for a current month, in gross, unadjusted form, are calculated in relation to the base year average, and then in relation to the same month of a previous year. Indices are presented in gross, unadjusted form, but also as seasonally adjusted, working-day adjusted ones and as a trend. Since 2016, in the process of seasonal adjustment (identification and assessment of seasonal and working-day effects), the software package JDemetra+ has been used. Having in mind that there are two available options in Jdemetra+, i.e. TRAMO-SEATS (using Seats method to assess seasonal effects) and X13 (using the X11 method to assess seasonal effects), seasonal and working-day adjustments are done using the X13 ARIMA method. Random component effect is excluded in the process of seasonal adjustment of index series. Due to the characteristics of the seasonal adjustment method applied, addition of new monthly observations for every month may lead to changes in seasonally and working-day adjusted indices for previous periods. An official list of holidays and non-working days in the Republic of Croatia is used in assessment of components of working days and holidays.

Detail level: nominal and real series – base indices of various aggregates/subgroups of the National Classification of Activities 2007 (NKD 2007), based on NACE Rev. 2, at the following levels:

- H 49, H 50, H 51, H 52, H 53
- I 55, I 56
- J 58, J 59, J 60, J 61, J 62, J 63
- L 68
- M 69, M 71, M 702, M 73, M 74
- N 77, N 78, N 79, N 80, N 81, N 812, N 82
- G, H, I, J, M, N, L
- G_TO_N, G_TO_N_X_G47, H_TO_N_X_K.

Use of default/national calendar: the calendar of Croatian holidays is used in the X13 ARIMA method.

Adjustment for the effects of moving holidays (e.g. Easter): each series is adapted to effects of holidays, such as Easter and the Feast of Corpus Christi (automated procedure in the X13 ARIMA method); the effect is significant for a part of time series.

Leap year effect: effect of a leap year is tested as one of calendar regressors; it is significant in a part of time series.

Lack of working-day adjustment: working-day adjustment exists, i.e. working-day effect of Croatian holidays is tested for all series.

Type of a working-day adjustment (e.g. regARIMA): working-day adjustment is done by means of automated identification procedure in the X13 ARIMA method, starting with seven regressors and reducing their number if they are not important for the series in question.

Type of detected outliers: level shifts are tested (Level Shifts, LS), additive outliers (Additive Outliers, AO) and transitory changes (Transitory Changes, TC); LS and AO are the most frequent. Automated procedure is used in the X13 ARIMA method.

Known economic outliers: at the moment, there are no known economic explanation for the existence of outliers.

Software and its version as well as the method of seasonal adjustment: JDemetra+, 2.2.2 version, X13 ARIMA method.

Manual/automated model or filter selection: automated model selection procedure is used for most series; as for problematic series, various models within the detailed analysis module are tested until an optimum model is found.

Horizontal revision depends primarily on revisions of original series, but it is done, as a rule, once a year.

Additive/multiplicative decomposition of seasonal adjustment: multiplicative decomposition is applied for most series.

Model adequacy verification: adequacy of a model is checked by using built-in diagnostic indicators in X13 ARIMA after every entry of a newly observed value.

Critical value and automatization of outlier detection: a previously defined critical value is used in automated outlier detection procedure (X13 ARIMA).

Method for filter length selection: automated procedure in X13 ARIMA is used for seasonal filter length.

Seasonal adjustment using known breaks in time series: there are no breaks in time series for the time being.

Indirect seasonal adjustment and checks for remaining seasonality: direct approach to seasonal adjustment is not applied.

Consistency of different aggregation levels is not applied.

Critical value for detection of outliers: 4

Filter length (automated selection/definition by user): seasonal filters are fixed throughout a year (or revised at the end of the year, if necessary).

Checks for remaining seasonality and at which detail level aggregation starts: QS test i F-test of remaining seasonality are run for each series.

3. Timeliness and punctuality

3.1. Timeliness

Results are published at the national level approximately 60 days after the end of a reference period, monthly and quarterly in Excel tables and STS databases as well as in the First Release.

Since January 2019, results have been submitted to Eurostat 60 days after the end of a reference month and quarter. Data are collected by using an online application (CAWI). Reporting units enter data directly into the USL-M form, which is available on the website of the Croatian Bureau of Statistics at <https://web.dzs.hr/Obrasci.asp?url=%22https://webobraci.dzs.hr/eSurveyUSL%22>. Collection period, as a rule, lasts from 1st to 20th day in a month for data from a previous reference month. Deadline for receiving VAT data from the Tax Administration is 45 days after the reference month.

The survey, as a rule, ends 60 days after the reference month.

3.1.1. Timeliness – first results

The indicator is not computed.

3.1.2. Timeliness – final results

The indicator is not computed.

3.2. Punctuality

Data are submitted in line with a calendar published in advance and there is no discrepancy between actual submission of data and target date of data submission.

3.2.1. Punctuality – delivery and publication

The indicator is not computed.

4. Accessibility and clarity

Brief Notes on Methodology are given in the First Releases, which is available on the website of the Croatian Bureau of Statistics.

Direct link to published First Releases: <https://podaci.dzs.hr/en/statistics/trade-and-other-services/service-activities/>

4.1. News release

Service activities

4.2. Online database

Time series of turnover indices of service activities since 2010, base year 2021 = 100, are published on dissemination portal of the Croatian Bureau of Statistics in the STS databases (short-term business statistics database) in the domain of Services under the title Turnover Indices of Service Activities – Monthly Data and at the link Statistics in Line under the title Economy – Basic Indicators.

4.3. Microdata access

Conditions under which certain users can have access to microdata are regulated by the [Ordinance on the Conditions and Terms of Access and Use of Confidential Statistical Data of the Croatian Bureau of Statistics for Scientific Purposes](#) (NN, No. 5/23). Microdata are not released.

4.4. Documentation on methodology

Brief notes on methodology are available in the First Release that can be found on the website of the Croatian Bureau of Statistics in the domain of Service activities.

Data are presented as turnover indices: month on previous month, month on month of the previous year and month on base year average (2021).

Indices are published as gross indices, seasonally and working-day adjusted indices and working-day adjusted indices.

5. Coherence and comparability

5.1. Asymmetry for mirror flows statistics

Not applicable.

5.2. Comparability over time

Time series from the first quarter of 2010 to the fourth quarter of 2017 have been compiled by integrating data from two sources: administrative source and statistical surveys. Since January 2017, the Croatian Bureau of Statistics has supplemented the quarterly dynamics of conducting this survey with a monthly dynamic of turnover changes in service activities. Data are comparable over time.

5.2.1. Length of comparable time series

The indicator is not computed.

5.2.2. Reasons for break in time series

Not applicable.

5.3. Coherence – short-term and structural data

The indicator is not computed.

5.4. Coherence – national accounts

The indicator is not computed.

5.5. Coherence – administrative sources

The indicator is not computed.

6. Cost and burden

6.1. Cost

Costs of the Croatian Bureau of Statistics amount to approximately 3 200 hours a year.

6.2. Burden

Burden on reporting units has been available only since 2018, when the survey started to be carried out by using an online questionnaire. Reporting units provide information on the time they spent on completing the online questionnaire only for the first month of a year. Average time that respondents spent on completing the USL-M questionnaire is approximately 0.10 hours a month. In order to reduce burden on reporting units, administrative sources are used for this survey.