



REPUBLIC OF CROATIA
CROATIAN BUREAU OF STATISTICS



QUALITY REPORT FOR STATISTICAL SURVEY

Retail Trade Turnover Indices in 2024

Organisational unit: Business Statistics Directorate/Service Statistics Department

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October 2025

0. Basic information

- Purpose and subject matter

Purpose of statistical survey on retail trade turnover is monthly statistical monitoring the dynamic of turnover changes (income from sales of goods) in this activity. Monthly compilation of turnover indices has been introduced to simplify monitoring of changes in economic growth. It is applicable in short-term observations and analyses of economic growth. Basic aim is measuring of the dynamics of changes of phenomenon, not its level. Observation units are business entities (legal entities, tradesmen and freelancers) classified in the Statistical Business Register into division 47 of the NKD 2007 according to their main (dominant) activity as well as business entities registered outside division 47 but engaged in retail trade activities. According to structural business statistics, within the entire business non-financial sector, a share of division 47 in the total number of business entities is 11%, then 27% in total turnover, 17% in total value added and 21% in total number of persons employed. In section G, Retail trade comprises 40% of the total number of business entities, 40% of total turnover and 43% of value added.

- 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 observed statistical variable is turnover. Data on turnover that includes value added tax for a reference month are collected, and it is broken down to turnover from retail trade activities and turnover from other activities of a business entity. Data on stocks in retail trade in a reference month are also collected.

Indices are published only in nominal and real terms.

Nominal indices present turnover changes in current prices.

Real indices are calculated by deflating nominal indices by retail price index of goods (excluding electricity and distribution of water) according to consumer price index.

- **Statistical unit**

Since January 2024, the new observation unit is a kind-of-activity unit (KAU).

- **Statistical population**

Statistical population includes all business entities (legal entities, tradesmen and freelancers) classified in the Statistical Business Register into division 47 of the NKD 2007 by its main activity. Selected business entities registered in other activities if performing retail trade activities are included as well. The most significant multi-industry enterprises have been divided into so-called kind-of-activity units to improve the homogeneity of the results of statistical surveys by activity, and thus the international comparability of these results.

The Statistical Business Register is used for forming the framework.

For 2024, the framework for G 47 covers 17 697 units and a sample has 4 783 units.

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 retail trade turnover indices and by trade branches.

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 computed.

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, 0.67%.

Overcoverage rate includes the following units:

- Ceased operating, 0.33%.
- Not engaged in retail trade, 0.23%.
- The Croatian Bureau of Statistics does not dispose of information on reporting unit (unsubmitted form), 0.0%

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 fiscalisation 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. Basic errors should be eliminated by a reporting unit or administrator while filling in the questionnaire. If they do not do so, data cannot be successfully entered in the database.

Data entered are logically verified in the Survey Processor programme. Data are checked and corrected by a statistician, if necessary.

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 distributive trade;
- 4 – Dormant;
- 5 – Bankruptcy, liquidation;

- 6 – Questionnaire not delivered;
- 7 – Not covered by the survey (not engaged in retail trade, but engaged in other trade activities);
- 8 – Budgetary users;
- 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

Overcoverage rate is 0.61%. Observation units are kind-of-activity units, i.e. units engaged in retail trade.

2.2.3. Measurement 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 so they have to be corrected.

The list of errors in the survey:

- A001 Status in the address book differs from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. This cannot be tolerated.
- A002 If the status in the address book is 1 and the field in the form field Turnover from retail trade, current month exceeds 0, then one of the codes from the Codebook of Trade Branches should be assigned to the address book field Trade branch. This cannot be tolerated.
- A003 If the status in the address book differs from 1, then the form field Turnover from retail trade, current month must be 0. This cannot be tolerated.
- A003a If the status in the address book differs from 1, then the form field Turnover from other activities, current month must be 0. This cannot be tolerated.
- A003b If the status in the address book differs from 1, then the form field Value of stocks in retail trade, current month must be 0. This cannot be tolerated.
- A004 If the status in the address book differs from 1, then the form field Turnover from retail trade, current month must exceed 0. This cannot be tolerated.
- A005 Last two digits of the code in the reporting units address book field NKD2007Glavna does not match the code in the address book field Trade branch, and the first two digits of NKD 2007 are 47. This can be tolerated.
- A006 If the first two digits of the code NKD2007Glavna in the address book differ from 47, then the form field Turnover from other activities, current month must be 0. This cannot be tolerated.
- A006a If the first two digits of the code NKD2007Glavna in the address book differ from 47, then the form field Turnover from other activities, December must be 0. This cannot be tolerated.
- A007 If the code in the address book field VelicZaposlSif is 0 or 1, then the value in the form field Turnover from other retail trade activities, current month should not exceed 100 000. This can be tolerated.
- A007a If the code in the address book field VelicZaposlSif is 0 or 1, then the value in the form field Turnover from other activities, current month should not exceed 100 000. This can be tolerated.
- A007b If the code in the address book field VelicZaposlSif is 0 or 1, then the value in the form field Value of stocks in retail trade, current month should not exceed 100 000. This can be tolerated.

- A008 If the code in the address book field VelicZaposlSif is 5, 6 or 7, and the first two digits in the address book field NKD2007Glavna = 47, then the value in the form field Turnover from retail trade, current month should not be less than 10 000. This can be tolerated.
- A009 Trade branch code in the form differs from the Trade branch code in the address book. This can be tolerated.
- A010 The status in the form differs from the status in the address book. This can be tolerated.
- X001 Value in the field Turnover from retail trade, current month should not exceed 13 200 000. This can be tolerated.
- X001a Value in the form field Turnover from other activities, current month should not exceed 13 200 000. This can be tolerated.
- X001b Value in the form field Value of stocks, current month should not exceed 13 200 000. This can be tolerated.
- X002 Value in the form field Turnover from retail trade, December should not exceed 13 200 000. This can be tolerated.
- X002a Value in the form field Turnover from other activities, December should not exceed 13 200 000. This can be tolerated.
- X003 Value in the form field Number of shops should not exceed 999. This can be tolerated.
- X004 Form field Number of shops = 0, while value in the form field Turnover from retail trade, December exceeds 1 and Trade branch code is not 81 to 99. This can be tolerated.
- X005 Form field Number of shops is 0, while value in the form field Turnover from retail trade, December is 0. This cannot be tolerated.
- X006 If value in the form field Turnover from other activities, current month or in the form field Value of stocks in retail trade, current month exceeds 0, then value in the form field Turnover from retail trade, current month must exceed 0 as well. This cannot be tolerated.
- X007 Value in the form field Turnover from retail trade, current month should not be 50% greater or lower from value in the same field reported in the previous month. This can be tolerated.
- X008 Value in the form field Turnover from other activities, current month should not be 50% greater or lower from value in the same field reported in the previous month. This can be tolerated.
- X009 Value in the form field Value of stocks in retail trade, current month should not be 50% greater or lower from value in the same field reported in the previous month. This can be tolerated.
- A010 If the code in the address book field Trade branch = 11 – 79, then value in the form field Number of shops should be greater than 0. This can be tolerated.
- A011 If the code in the address book field Trade branch = 81, 82, 89, 91, 99, then value in the form field Number of shops should be greater than 0. This can be tolerated.
- X012 Wrong reference month. This cannot be tolerated.

2.2.4. Nonresponse error

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 (fiscal datafile) is used to determine the imputation value.

2.2.5. Unit nonresponse rate

%

Unweighted nonresponse rate: Domain	Domain value	Notice	January	February	March	April	May	June	July	August	September	October	November	December	On average
Retail trade G 47 of NKD 2007			0.36	0.48	0.47	0.58	0.67	0.53	0.51	0.39	0.58	0.33	1.51	0.58	0.58

2.2.6. Item nonresponse rate

The indicator is not computed.

2.2.7. Processing error

The most frequent processing errors relate to stating inaccurate prevailing activity of the reporting unit. This occurs because the Statistical Business Register, which serves as a framework for sample selection, is not updated regularly. In order to put it right, all information gathered during the survey that relate to any organisational changes is delivered to the Statistical Business Register Department.

2.2.8. Imputation rate

The indicator is not computed.

2.2.9. Model assumption error

Not available.

2.3. Data revision

2.3.1. Data revision – policy

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.

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_Revision_Policy_of_the_CBS).

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 used (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

In 2024, the base year 2015 was changed to 2021 and the first data on 2021 basis was published as late as in January 2024. Monthly real retail trade index (G 47 of NKD 2007) changed in 12 subsequent months in 2024 by 0.02 on average.

2.4. Seasonal adjustment

Seasonal and working-day effects are eliminated from index by using the X13 ARIMA method in JDemetra+, 2.0.0 version. Models are thoroughly checked every year, taking available period into consideration. Indirect method of seasonal and working-day adjustment is used, which means that only indices calculated in relation to the base year average are seasonally and working-day adjusted.

Detail level: nominal and real series – base indices of various aggregates/subgroups of the National Classification of Activities 2007 (NKD 2007) at the following levels: 47, 47.11 + 47.2, 47.19 + 47.4 + 47.5 + 47.6 + 47.7 + 47.8 + 47.9, 47.3, 47 – 47.3.

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.

The effect of a leap year is tested as one of calendar regressors and it is significant for 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 (Level Shifts, LS), additive outliers (Additive Outliers, AO) and transitory changes (Transitory Changes, TC) are tested, of which LS and AO are the most frequent ones. 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: at the moment, JDemetra is used, 2008 edition, 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.

Reestimation of the model and its parameters: models and its parameters for monthly series remain unchanged during a calendar year.

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 is checked by using built-in diagnostic indicators in ARIMA X13 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 SA and checks of residual seasonality: the direct SA approach is applied.

Consistency of different aggregation levels: not applicable.

3. Timeliness and punctuality

3.1. Timeliness

First and final results are published within 30 days after the end of a reference month. When data are collected via an online application, the deadline for submitting data is 20 days after the end of a reference month.

The survey is concluded 23 days after the end of a reference month.

3.1.1. Timeliness – first results

Timeliness of first results is $T + 30$.

3.1.2. Timeliness – final results

Timeliness of final results is $T + 30$.

3.2. Punctuality

Data are published according to the release calendar announced in advance and there is no time lag between the actual data submission date and the date they were planned to be submitted.

3.2.1. Punctuality – delivery and publication

All data were published on time and the value of this indicator is 100%.

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/retail-trade/>

4.1. News release

Retail Trade

4.2. Online database

Data are available on the website of the Croatian Bureau of Statistics in two databases:

- PC-Axis
- STS databases.

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 Retail Trade.

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.

On the website of the Croatian Bureau of Statistics there are Notes on Methodology for the Monthly Report on Retail Trade (TRG-1 form), which provides quite a detailed description of the survey.

5. Coherence and comparability

5.1. Asymmetry for mirror flows statistics

Not applicable.

5.2. Comparability over time

Data series for the retail trade turnover (division G47, groups and classes 47.11 + 47.2, 47.19 + 47.4 + 47.5 + 47.6 + 47.7 + 47.8 + 47.9, 47.3, 47 – 47.3) have been available since 2000.

5.2.1. Length of comparable time series

Length of comparable time series is: Domain	Domain value	Notice	January	February	March	April	May	June	July	August	September	October	November	December
G 47 of NKD 2007	Month	Data have been available since January 2000.	289	290	291	292	293	294	295	296	297	298	299	300

5.2.2. Reasons for break in time series

There is no break in time series.

5.3. Coherence – short-term and structural data

The indicator is not applicable.

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 4 800 hours a year.

6.2. Burden

Burden on reporting units is approximately 14 minutes per respondent a month.