REPUBLIC OF CROATIA
CROATIAN BUREAU OF STATISTICS

150 YEARS OF CROATIAN STATISTICS

QUALITY REPORT FOR STATISTICAL SURVEY

European Comparison Programme

for 2022

Organisation unit: Croatian Bureau of Statistics, Macroeconomic Statistic Directorate, Price Statistics and European Comparison Programme Department, European Comparison Programme Unit

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February, 2025

0. Basic information

- Purpose, goal, and subject of the survey

  The aim of the project is to collect a high quality data set for calculating parity, first from the lowest levels (SPD level) to basic groups (BHs) to obtain an indicator for calculating GDP by Purchasing power parity.

- Reference period

  Calendar year

- Legal acts and other agreements

  On European level:

  - Regulation (EC) No 1445/2007 of the European Parliament and of the Council of 11 December 2007 establishing common rules for the provision of basic information on Purchasing Power Parities and for their calculation and dissemination;

  - Commission Regulation (EU) No 2015/1163 of 15 July 2015 implementing Regulation (EC) No 1445/2007 of the European Parliament and of the Council as regards the list of basic headings used for Purchasing Power Parities;

  - Regulation (EU) No 549/2013 (ESA 2010 Regulation) of 21 May 2013 on the European system of national and regional accounts in the European Union.

  On National level:

  - Official Statistics Act (NN, Nos 25/2020) - Programme of Statistical Activities of the Republic of Croatia - Annual Implementation Plan of Statistical Activities of the Republic of Croatia

- Classification system

  COICOP - Classification of Individual Consumption according to Purpose

  COFOG - Classification of the functions of government

  CPA - The standard classification of Products by activity within the European Economic

  COPNI - Classification of the purposes of non-profit institutions serving households

- Statistical concepts and definitions

  The statistics variables are price level indices (PLI) and volume Index (VI). Price level index are the ratios of Purchasing power parities (PPPs) to exchange rates. They provide a measure of the differences in price levels between countries by indicating for a given aggregation level or analytical category the number of units of the common currency needed to buy the same volume of the aggregation level or analytical category in each country. At the level of Gross domestic product (GDP), they provide a measure of the differences in the general price levels of countries. Also referred to as comparative price level Index. Volume Index is weighted of the relative levels in the quantities of a specified set of goods and services between two countries, The quantities have to be homogeneous while the relative levels for the different goods and services must be weighted by their economic importance as measured by their values in one or other or both.

- Statistical units

  The statistic unit is Purchasing power standard (PPS), the artificial common reference currency unit used in the EU to express the volume of economic aggregates for the purpose of spatial comparisons in such a way that price level differences between Member States are eliminated.

- Statistical population

  The expenditure side of national accounts, as defined in European system of national and regional accounts 2010 (ESA2010), defines the statistical population.

1. Relevance

1.1 Data users

The users at the international level are: International Monetary Fund (IMF), Organisation for Economic Co-operation and Development (OECD), United Nations (UN) and World Bank (WB) also nationally users are government agencies, faculties and research institutes, public and private companies, financial institutions, the press and individuals.

1.1.1 User needs

The European Commission uses the Purchasing power parities (PPP) when allocating Structural Funds resources to Member States. Structural Funds have been set up to reduce economic disparities between Member States. The main indicator that determines whether a region can apply for funding from the Structural Funds is the regional Gross domestic product (GDP) per capita within the country, which is deflated by the use of PPPs. The International Monetary Fund (IMF) uses the PPP when deciding on its members' quota. The country's quota, among other things, determines the financial resources that the country is obliged to pay to the IMF. International organisations, government, agencies, universities and research institutes use PPPs as inputs into economic research and policy analysis involving cross-country comparisons of macroeconomic aggregates. Public enterprises apply PPPs when comparing their prices and operating costs with those of similar public enterprises in other countries. Private firms operating in different countries apply PPPs for the purposes of comparative analysis involving prices, sales, market shares and production costs. Banks employ PPPs in economic analysis and in the monitoring of exchange rates. Individuals often refer to PPPs in salary negotiations when moving from one country to another.

1.1.2 User satisfaction

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

1.2. Completeness

All indicators are calculated and published for all the 37 participating countries.

1.2.1 Data completeness rate

The data completeness rate is: 100%

2. Accuracy and reliability

2.1. Sampling error

Not applicable.

2.1.1 Sampling error indicators

Indicator for this survey is not applicable.

2.2. Non-sampling error

In the consumer goods price surveys, measurement errors can occur due to non-compliance with the strict definition of the products in the product sample, for instance regarding package sizes or quality parameters. While the validation process aims at eliminating these errors by carefully comparing the price material provided by each country and evaluating its plausibility, some of these errors can be hard to identify, especially those related to quality. Similar problems can occur in other surveys as well, like the annual survey on compensation of public sector employees. Here, the problem stems from the heterogeneity of data sources across countries. While non-response from one particular statistical unit can usually be easily overcome by replacing that unit and normally has a very limited impact at the level of the published categories anyway, a special problem does occur where no prices are available for a given product in one or more countries. In these cases, a price relative is imputed based on the price relatives for other products. If a country does not report prices for any sample product in each basic heading, the gaps are typically filled using the Purchasing power parities (PPP) of either a "similar", or of a hierarchical, basic heading.

2.2.1. Coverage error

Not applicable.

2.2.2. Over-coverage rate

Indicator for this survey is not applicable.

2.2.3. Measurement error

All errors can be corrected in validation phase.

2.2.4. Non-response error

Data sets (prices) are collected according to a predetermined list (by Eurostat) according to a narrow product specification in order to allow comparability of products and average prices between the countries participating in the project. If there are deviations from the geometric mean that are above 125% or less than 80%, a data check is required, followed by a confirmation of the collected data or a correction. If we have to make a price correction it is possible that reported prices were for wrong quantities or we reported price for wrong product.

2.2.5. Unit non-response rate

Unweighted unit non-response rate: Domain	Domain value	Comment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
			0%												0%

2.2.6. Item non-response rate

Unweighted item non-response rate: Variable	Domain	Domain value	Comment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
				0%												0%

2.2.7. Processing error

The input data into the Purchasing power parities (PPP) compilation process comes from several sources, specifically, from special PPP price surveys and from national accounts. This makes it impossible to calculate any meaningful, numerical measure of error margins for PPP. We can say that the higher the

level of aggregation, the errors are minimal, and errors at a lower level of aggregation are eliminated through several control cycles and are mostly always minimal errors.

2.2.8. Imputation rate

Unweighted imputation rate: Variable	Domain	Domain value	Comment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
				0%												0%

2.2.9. Model assumption error

In the consumer goods price surveys, measurement errors can occur due to non-compliance with the strict definition of the products in the product sample, for instance with regard to package sizes or quality parameters. While the validation process aims at eliminating these errors by carefully comparing the price material provided by each country and evaluating its plausibility, some of these errors can be hard to identify, especially those related to quality. Similar problems can occur in other surveys as well, like the annual survey on compensation of public sector employees. Here, the problem stems from the heterogeneity of data sources across countries. While non-response from one particular statistical unit can usually be easily overcome by replacing that unit, and normally has a very limited impact at the level of the published categories anyway, a special problem does occur where no prices are available for a given product in one or more countries. In these cases, a price relative is imputed on the basis of the price relatives for other products. If a country does not report prices for any sample product in a given basic heading, the gaps are typically filled using the Purchasing power parities (PPP) of either a "similar", or of a hierarchical, basic heading.

2.3. Data revision

2.3.1. Data revision – policy

Following the calculation of the final Purchasing power parities (PPPs) for a given reference year, PPPs are no longer revised. However, in order to maintain the highest possible degree of coherence with national accounts, the entire time series of PPPs is rescaled to the latest national accounts aggregates twice a year, in June and December, and the database updated accordingly. In December 2016, following the introduction of ESA 2010, the full time series of PPPs was revised.

2.3.2. Data revision – practice

Survey does not disseminate preliminary results and that's the reason why the regular data revision does not exist.

2.3.3. Data revision – average size

Indicator for this survey is not applicable.

2.4. Seasonal adjustment

Not applicable.

3. Timeliness and Punctuality

3.1. Timeliness

Purchasing power parities (PPPs) for a given year (t) are published in four steps:

- After t+6 months: First preliminary results, based on all new data for year t that are available at that time, complemented by extrapolations from year t-1;
- After t+12 months: Preliminary results, incorporating all new price and expenditure data of year t;
- After t+24 months: Revised, preliminary results, incorporating the most recent expenditure estimates;
- After t+36 months: Final results for year t.

These results are "final" in the sense that there will be no further updates when countries revise their National Accounts estimates

3.1.1. Time lag – first results

Time lag - first results is: T + 1

3.1.2. Time lag – final results

Time lag - final results is: T + 3

3.2. Punctuality

There were no deviations in the data release. The data were released according to the release calendar.

3.2.1. Punctuality – delivery and publication

Delivery and publication is: 100%

4. Accessibility and clarity

The data are available on Eurostat website in electronic form in the data base and in form of new releases and on the Croatian Bureau of Statistics (CBS) website in the form of annual release.

4.1. News release

Eurostat published in 2022:

- "Actual individual consumption per capita in 2021" (20 June 2022)
https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220620-1

- “Consumer price levels in 2021” (21 June 2022)
https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220621-1

- "Check out how expensive your country is” (23 June 2022)
https://ec.europa.eu/eurostat/web/products-eurostat-news/-/wdn-20220623-1

- “Consumption per capita in purchasing power standards in 2021” (15 December 2022)
https://ec.europa.eu/eurostat/en/web/products-eurostat-news/w/ddn-20221215-1

Croatian Bureau of Statistics (CBS) published in 2022:

- "Gross Domestic Product and Actual Individual Consumption in Purchasing Power Standard, 2021 (15 December 2022)

https://podaci.dzs.hr/2022/en/29155

4.2. On-line database

Data are available on the Eurostat website in the database, Database - Eurostat:

- National accounts - annual national accounts - auxiliary indicators - main Gross domestic product (GDP) indicators per capita (nama_10_pc);

- Prices - purchasing power parity, price index level and real expenditure for ESA2010 aggregates (prc_ppp_ind)

4.3. Micro-data access

The conditions under which certain users can have access to microdata are regulated by the Ordinance on conditions and terms of using confidential statistical data for scientific purposes.

4.4. Documentation on methodology

The basic methodological concepts are explained at the end of the first release "Gross Domestic product and Actual Individual Consumption in the Purchasing Power Standard, 2021".

5. Comparability over time

5.1. Asymmetry for mirror flows statistics

Not applicable.

5.2. Comparability - over time

The interpretation of a time series that includes Purchasing power parities (PPPs) should be guided by the purpose of the analysis. The "perfect", multi-purpose indicator that simultaneously captures both spatial and temporal aspects adequately simply does not exist. For example, a time series of price level indices does not provide a reliable measure of the development of prices in a given country. For that purpose, the consumer price index should be applied instead. Similarly, if we want to compare the rate of price change in two or more countries, the Harmonized Index of Consumer Prices (HICP) is readily available, at least for most European countries. Accordingly, a time series of price level indices (PLIs) shows, for each consecutive year, the various countries' price levels in relation to each other, and provides a rough indication of how these relative price levels have developed. PPPs are primarily used to convert expenditures in different countries into a common currency and a common price level in order to ensure comparability. A current price time series of, for instance, Gross domestic product (GDP) per capita, deflated by the current PPP of each year, ensures comparability of relative volumes across countries for each single year. However, the growth rates will not reflect real growth, since the expenditures are expressed in common, current prices. Still, when presented in index form and per capita terms, they can be used as an analytical tool in temporal comparisons, but with caution. On the other hand, a time series of GDP per capita in fixed prices, deflated by the PPP of the base year, would produce both real volumes expressed in the same price level for all countries, as well as real growth rates. However, in many cases this approach is highly problematic, because price structures and price relatives across countries do change over time. The assumption of a fixed price relative (the PKM of the base year) is thus not a realistic one, especially in long time series.

5.2.1. Length of comparable time series

Length of comparable time series is: Domain	Domain value	Comment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Croatia	Since 1995		100											

5.2.2. Reasons for break in time series

There no break in series.

5.3. Coherence – subannual and annual statistics

Coherence - short-term and structural data is: Statistic	Domain	Domain value	Comment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
				100												

5.4. Coherence – national accounts

Unweighted values: Statistic	Domain	Domain value	Comment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
				100												

5.5. Coherence – administrative sources

Unweighted values: Statistic	Domain	Domain value	Comment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
				100												

6. Cost and burden

6.1. Cost

The project is funded by a Eurostat grant. All costs are planned in detail for each activity within the EG21 grant - "Purchasing Power parities, data collection in 2022".

6.2. Burden

Since most National statistical institutes (NSIs) use price collectors to obtain price data, and most other input data required are extracted from existing sources at the NSIs, no additional response burden is created for businesses.