

Lithuania

A: Identification

Title of the CPI: Consumer Price Index

Organisation responsible: Lithuanian Department of Statistics (Statistics Lithuania)

Periodicity: Monthly

Price reference period: 2005 = 100

Index reference period: 2005 = 100

Weights reference period: 2008 Household Budget Survey (HBS)

Main uses of CPI: Indexation of wages, pensions and/or social security payment, indexation of rents, contracts and/or other payments, main inflation indicator used for monetary policy, deflate household expenditures in national accounts, macroeconomic modelling and other analytic uses.

B: CPI Coverage

Geographical Coverage

Weights: Nation-wide

Price collection: Nation-wide

Population coverage: Resident households of nationals.

Population groups excluded: Institutional households other than persons living in care institutions for the elderly and disabled adults (0.3%).

Consumption expenditure includes:

- Food consumed away from home;
- Housing maintenance, minor repairs;
- Purchase of gifts of goods and services given to others outside the household;
- Second hand goods purchased (second hand cars only);
- Financial services (including fees for financial advice, brokerage fees);
- Interest payments (excluding mortgage interest payments);
- Non-life insurance premiums (e.g. vehicle, housing, other property, medical), gross of claims;
- Gambling expenditure, gross of winnings

Consumption expenditure excludes:

- Foods produced for own final consumption;
- Other goods produced for own final consumption;
- Services produced for own final consumption;
- Income in-kind receipts of goods;
- Income in-kind receipts of services;
- In-kind goods received as gifts;
- In-kind services received as gifts;
- Purchase of owner-occupied housing;
- Mortgage repayments;
- Mortgage interest;
- Major repairs, conversions and extensions to owner occupied housing;
- Luxury goods;
- Life insurance premiums;
- Licences and fees (e.g. driver's licence, hunting licence, vehicle registration);
- Investment-related expenditures (e.g. purchase of shares/stocks);
- Occupational expenditures;
- Other business-related expenditures;
- Social transfers in-kind of goods and services from government and No-profit institutions serving households;
- Expenditures abroad

C: Concepts, definitions, classifications and weights

Definition of the CPI and its objectives: CPI is a relative indicator reflecting the overall change in prices for consumer goods and services purchased by households to satisfy their consumption needs over a certain period of time. Its objective is to measure the inflation rate in the country and estimate the country's macroeconomic indicators at constant prices.

Definition of consumption expenditures: Consumption expenditure is defined as the value of goods and services acquired by households during a year to satisfy consumption needs. Goods and services purchased for production, profit and capital formation are not included. The acquisition approach is used.

Classification: COICOP (Classification of individual consumption by purpose) at 4-digit level

Weights include value of consumption from own production: No

Sources of weights: Household expenditure surveys, domestic trade, transport and services, energy statistics and information from other enterprises.

Frequency of weight updates: Annual

Price updating of weight reference period to the index reference period: The weights from the weight reference period are not adjusted to the index reference period but they are price updated to the price reference period (December of the previous year) using respective price indices. Annual chain linking method is used for the CPI. The critical weights are reviewed and adjusted using most recent statistical data (domestic trade, transport and

services, energy statistics) as well as the information from other enterprises. Data for the weights reference period are updated to December of the previous year.

Weights for different population groups or regions: Each territorial unit in which prices are surveyed is attributed a certain zone of the country. A specific weight of the population of each zone in the total population of the country is determined. A long-term price ratio at the national level is calculated as a weighted arithmetic mean of long-term price ratios of territorial units, using population weights.

D: Sample design

Sampling methods:

Localities: Judgmental sampling

Outlets: Judgmental sampling

Products: Judgmental sampling

Frequency of sample updates:

Localities: The sample of localities remains the same and updated when needed.

Outlets: Annual

Products: Annual

If sample updates are irregular indicate when last updates were introduced: 2006

Criteria used for determining the optimal sample sizes and the coverage of localities, outlets, items and variety samples: Localities (territorial units) are selected based on the number of population, administrative division of the country, geographical location, transport, communication, the number and turnover of trade and service enterprises. Selected territorial units (10 counties and 8 regional centres out of 60 municipalities) represent the whole country. There is no strict stratification but prices are collected in small and medium towns and 5 big cities containing a population from about 6000 (in small towns) to 540000 (in big cities) inhabitants.

Outlets are selected based on the retail turnover, revenues from the provision of services to the population, geographical location, specialisation, and popularity. Outlets of all forms of ownership, types, sizes, different specialization are selected. 8–10 outlets are selected in major cities, 6–8 in medium-sized towns, 4–6 in small towns. In rural areas, 10 outlets (one per county) are selected to collect prices for food, non-alcoholic and alcoholic beverages and tobacco.

Representative products are selected based on their popularity. The main criteria to determine the list of representative products is as follows: i) share of a product in the total monetary consumption expenditure, the relative share of expenditure for the product in total household monetary consumption expenditure makes up not less than 0.01 per cent; ii) continuous

availability in the market, the products have to be available on the market for a relatively long time; and iii) high demand among consumers. In each outlet, for each representative product, one specific variety is selected on the basis of stable and significant sales.

Criteria used for selecting an item variety in the outlet in case of loose specifications provided by the central office: Specific varieties of the products are selected by price collectors in collaboration with the retailers following the descriptions given in the list of representative products and on the basis of stable and significant sales.

E: Data Collection

Approximate number of localities, outlets and price observations: Localities: 18, Outlets: 3,900, Price observations: 68,000

Frequency with which prices are collected: Monthly

Reference period for data collection: The main part of prices for all products is collected on 1–14 working days of the month. Every 5 days (4 days in the case of the third period) about one-third of all price quotations are collected. Every price collection period covers products belonging to all divisions of the COICOP. Additionally, prices for seasonal food products and fuel are collected on 15–19 working days.

Methods of Price Collection

- Personal data collection for most of the items.
- Mailed questionnaires for insurance services.
- Telephone interviews for selected services.
- Internet for cars, data processing equipment; package holidays, air transport, telephone services; some health, education, financial and other services.
- Official tariffs for electricity, gas, heat energy, water; rent of social dwelling, refuse and sewerage collection, postal, notary, social protection services; some transport, financial services; some other goods and services (e.g. some pharmaceuticals).

Treatment of:

Discounts and sales prices: Sales prices and other reductions available to all potential consumers are included in CPI. Special sales stock (which will normally be of lower quality or quantity) is not included.

Black market prices: Not collected.

Second hand purchases: Included for second-hand motor cars only. Net weights are used.

Missing or faulty prices: Missing prices are estimated by either: i) a short-term price ratio of the same product computed on the basis of the prices recorded in other outlets or territorial

units, i.e. the price of the previous month is multiplied by the short-term price ratio of the reporting month; or ii) a short-term price ratio of a similar product or product group, i.e. the price of the previous month is multiplied by a short-term price ratio of the reporting month of a similar product or the short-term price ratio of a higher level. When prices are quite stable, the previous observed price might be carried-forward. Faulty prices are corrected or estimated.

Period for allowing imputed missing prices: The price is estimated for two months only; after which, a new variety of the product is selected to replace the product variety that is no longer available. The replacement product must have similar consumption characteristics.

Disappearance of a given type or quality from the market: When a product disappears from the outlet shelves the price collector replaces it with the most similar product available. The price of the replaced product in the previous month is adjusted by eliminating the impact of the change in quality.

Quality differences: Quality adjustment methods used are: explicit (i.e. quantity adjustment, option pricing, expert judgment, hedonic) and implicit (bridged overlap). Small changes in characteristics which are not believed to influence prices are ignored and prices for the replaced products and their replacements are compared directly.

Appearance of new items: A list of products is updated each year. New products are added to the list, unpopular and disappearing products are deleted from the list. Prices of new products are recorded during the year aiming to have price indices for price updating and the reference price of the new product in December.

Treatment of seasonal items and seasonality

Items that have a seasonal character and their treatment: Seasonal items: fresh fruit and vegetables, clothing, footwear, tires, washer fluid for car. In the out-of-season period, prices of seasonal products are estimated by applying the minimum standards for the treatment of seasonal products in the harmonised indices of consumer prices (HICP), set in Commission Regulation (EC) No 330/2009 of 22 April 2009. Prices of seasonal products that are out-of-season are estimated using two methods i.e. counter-seasonal estimation and all-seasonal estimation. Estimation is carried out in the following ways: i) In the first month of the out-of-season period, the monthly typical price index for each seasonal product in each territorial unit is calculated. For this purpose, the long-term price index as an arithmetic mean of price indices of all months in the in-season period is obtained taking the price reference period December $t-1$ as an index reference period. Then, the short-term price index for the first month of the out-of-season period is calculated. ii) From the second month of the out-of-season period, the estimated monthly price index is used for each product in each territorial unit. The weighted arithmetic mean sub-index for each more detailed level than the subdivision of COICOP is calculated using long-term price indices (with December $t-1$) and expenditure weights of products. The expenditure weights of products used for the sub-index calculation in each territorial unit are the same as those used for the calculation of the total CPI. Depending on the method – counter-seasonal estimation or all-seasonal estimation – the price sub-index is calculated on the basis of prices for all available seasonal products that are in-season in the same sub-index or for all available products in the same sub-index. To obtain the price index for estimation, only prices for products available in the current and previous months are used; iii) In the first month of the new in-season period, available prices are

observed by price collectors and the reporting month price for a product-offer in each outlet is compared with the estimated price of the previous month. The same price index is used for the estimation of prices for product-offers in the territorial unit's outlets. However, the price indices for each territorial unit vary.

Seasonal food items: Seasonal food items are included in the CPI using fixed weights approach: the weights are kept constant over the year, while prices of out-of season products are estimated or imputed.

Seasonal Clothing: Seasonal clothing items are included in the CPI using fixed weights approach: the weights are kept constant over the year, while prices of out-of season products are estimated or imputed.

Method to impute the price of seasonal items: Prices are imputed using price development of in-season products.

Treatment of housing

Treatment of owner-occupied housing: Owner occupied housing is not included in the CPI.

Types of dwellings covered by the rent data: Rent data includes two types of dwellings i.e. social housing and private housing. Private housing is separated into: one-room flat, two-room flat and three-room flat in apartment buildings. Houses are not covered. Prices are collected monthly. Data sources for rents in social housing are the official records of local authorities while rents in the private sector are collected from websites of real estate agencies, advertisements in the internet and newspapers and through interviews with private persons.

F: Computation

Formula used for calculation of elementary indices: The ratio of arithmetic mean prices (Dutot index) (Chained form)

Formula to aggregate elementary indices to higher level indices: Individual price indices of representative products at the national level are aggregated into higher level price indices and the country's CPI according to the modified Laspeyre's formula.

Formula of aggregating regional/population group indices into national index: A long-term price ratio, i.e. an elementary price index of each representative product at the national level, is calculated as a weighted arithmetic mean of long-term price ratios of 18 territorial units, using population weights (relative shares of the number of inhabitants). Each territorial unit in which prices are surveyed is attributed a certain zone of the country's territory. A relative share of the population of each zone in the total population of the country is determined. The long-term price ratio of the i -th representative product of a certain territorial unit in the reporting month m is calculated by multiplying a short-term price ratio of the i -th representative product in the reporting month m by a long-term price ratio of the previous month $m-1$. A short-term price ratio of the i -th consumer representative product of the previous month m is calculated as a ratio of the arithmetic means of retail prices for each i -th representative product in each territorial unit, i.e. by comparing the arithmetic mean of prices of the reporting month m with the arithmetic mean of the prices of the previous month $m-1$.

Monthly and annual average prices: Average retail price of a product in a certain territorial unit is calculated as the arithmetic mean of retail prices for representative products in a particular territorial unit. Estimated prices are also taken into calculation of average price. A price of representative product at the national level is calculated as the weighted arithmetic mean of average retail prices of product in 18 territorial units, using the specific population weights. Annual average price of a product is the arithmetic mean of twelve months average prices.

Seasonally adjusted indices: No seasonal adjustment.

Software used for calculating the CPI: Microsoft Excel 2010.

G: Editing and validation procedures

Control procedures used to ensure the quality of data collected: Checking functions have been installed in the hand-held computer software. When 'errors' (e.g. change in price from the previous month is more than 10%) are detected during the collection, the price collector either corrects the data or accepts it providing some explanation. The software also enables sorting of the selected goods and services; protection from missing or duplication of the product or outlet; display history of price quotes for each product; and transmits the entered price data to the central database. Price collectors have access to the central database and can check the transmitted data. A price is identified for checking if the change in price from the previous month is more than 10%. Price collectors provide explanations and reasons for unusual price changes. The copies of the documents passed by local authorities on fixing the prices and tariffs for goods and services falling within their regulatory powers are faxed or sent by e-mail. The staffs from the Price Statistics Division periodically visit the territorial units to carry out follow-up checks in outlets to confirm reported prices.

Control procedures used to ensure the quality of data processed: Received price data are checked by the staff of the Price Statistics Division. Verification of the data received is conducted using the data control program designed for monthly checks against error and mistakes. Computerized and manual checks are undertaken at various stages of index compilation. The verification sheets contain information on the price data and information related to the reporting and previous months; ratios of prices and reasons of price changes, indicated by price collectors, for all price quotations in each trade and service outlet, covering all goods and services and territorial units; the period of the last change of the price observed; the smallest and the biggest prices; the coefficient of variation. Errors and suspicious entries are marked by certain symbols. A price is identified for checking if the change in price from the previous month is more than 10%. Particular attention is paid to quality changes, to prices that do not change for a very long time, to the lowest and the highest prices. In some cases, the suspicious price changes are checked by reference back to the outlet. Price changes may also be checked with domestic producers and suppliers of goods and services where suspicions remain. The staffs of the Price Statistics Division clarify all uncertainties with the price collectors via telephone and e-mail.

H: Documentation and dissemination

Timeliness of dissemination of the CPI data: CPI is disseminated on the 6th working day after the end of the reference month, (or the 10th working day for January).

Level of detailed CPI published

Paper publication: All items CPI, Division-level (12 Divisions), Group-level app. 40 groups and Average prices

Online: All items CPI, Division-level (12 Divisions), Group-level app. 40 groups, Class-level (100 classes), Average prices

Restricted Access: Basic items, Average prices

Separate indices published for specific population groups: No

Type of products for which average prices are calculated and disseminated: Some homogenous food products, petrol, diesel, liquefied automobile gas (monthly), some alcoholic beverages, cold and hot water, heat energy, liquefied gas for cooking, cigarettes (prices for December). Prices for other products are provided on request.

Documentation

Publications and websites where indices can be found: Press release:

<http://www.stat.gov.lt/en/pages/view/?id=1586>; The Database of Indicators of Statistics Lithuania:

<http://db1.stat.gov.lt/statbank/SelectTable/omrade0.asp?SubjectCode=S2&PLanguage=1&ShowNews=OFF>; The monthly bulletin Economic and Social Development in Lithuania:

http://www.stat.gov.lt/en/catalog/list/?cat_y=1&cat_id=1; The Statistical Yearbook of Lithuania: http://www.stat.gov.lt/en/catalog/list/?cat_y=1&cat_id=1.

Publications and websites where methodological information can be found: Summary methodology describing CPI calculation in English is available at:

http://www.stat.gov.lt/en/methodology/view/?id=95&pq_id=1586; A complete methodology (in Lithuanian only) is also available at:

http://www.stat.gov.lt/uploads/docs/2009_162metodika.doc.

I: Other Information

Reported by the country in 2012.