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HICP Compliance Monitoring

Report – Belgium

1. Introduction

In November 2023, Eurostat reviewed the compilation of the harmonised index of consumer prices (HICP) for Belgium. The review was done against the existing legal framework, established HICP recommendations, and other guidelines and good practices in the field of consumer price indices (CPI).

The current report is based on:

- The 2023 inventory containing details of data sources, definitions and methods used in the HICP for Belgium.
- The discussions at the compliance monitoring virtual meeting, which was held on **20 November 2023**.
- The information note on the previous compliance monitoring exercise published in March 2014.

For the main methodological topics related to the HICP, this report briefly summarises the compilation practices of the Belgian statistical office (STATBEL hereafter), followed by Eurostat's appraisal of compliance and, if applicable, recommendations for improvement. The report concludes with an overall assessment of compliance of the HICP for Belgium.

2. Release policy

On the day of the release of the Belgian HICP, a press release is published on the home page of STATBEL's website and sent out to a list of subscribers. The Belgian Observatory of Prices, the Federal Planning Bureau, and the National Bank of Belgium have pre-access.

The HICP is published at the 5-digit European Classification of Individual Consumption according to Purpose (ECOICOP) level.

The flash estimates of the all-items HICP are published together with the national CPI.

3. Coverage and classification

The target universe of the Belgian HICP follows the household final monetary consumption expenditure (HFMCE) concept as defined in Article 2 (20) of Regulation (EU) 2016/792 (framework regulation) and in the Annex of Regulation (EU) 2020/1148 (implementing regulation).

In line with this concept, the HICP reflects consumption expenditure by all households. These definitions follow the concepts of the European System of Accounts (ESA 2010).

The HICP comprises all purchases by households within the economic territory of the country by resident and non-resident households (i.e., domestic concept). The HICP covers actual prices paid for goods and services in monetary transactions.

The product categories listed in Article 5 (8) of the framework regulation 2016/792, as well as owner-occupied housing expenditures are excluded from coverage in the Belgian HICP.

The HICP covers the entire area of Belgium.

STATBEL classifies products and calculates the HICP according to ECOICOP since January 2016.

STATBEL includes in the HICP all ECOICOP categories whose expenditure share lies above the one part per thousand threshold defined in Article 5 (7) of the framework regulation.

Compliance

The coverage and classification in the Belgian HICP are in line with the legal requirements.

4. Weights

The weights in the Belgian HICP are updated annually using the national accounts (NA) as the main data source. In September each year, the National Bank of Belgium (NBB) transmits to STATBEL the HFMCE figures of year t-2 and the rates of change of the quarterly national accounts (QNA) pertaining to the first three quarters of t-1 at the ECOICOP 5-digit level. Later in January, the flash estimates of the QNA for the fourth quarter are available at the ECOICOP 5-digit level as well.

Below the ECOICOP 5-digit level, the HICP weights are further disaggregated using several other data sources, mainly data from the Household Budget Survey (HBS). The HBS is conducted every two years.

The weights are price-updated to the previous year's December price level (price reference period).

Population, turnover of the outlets, or EU - SILC[1] data are used to derive the weights of the geographical locations. Where population weights are used, Eurostat suggests using expenditure weights. STATBEL will investigate the possibility and the impact of obtaining these data from the regional accounts.

Outlets are weighted with turnover obtained from the VAT data and annual accounts of the previous year, while outlet types are weighted based on HBS data.

STATBEL has started the preparatory works for the implementation of COICOP 2018. The HBS 2022 will be fully in line with COICOP 2018.

Compliance

The compilation of weights in the Belgian HICP is in line with the legal requirements.

Recommendation

STATBEL should investigate the possibility and the impact of using expenditure weights where population weights are used.

5. Sampling and representativity

In the Belgian HICP, sampling is done with respect to regions, outlets, and products.

Local price collection is carried out in a sample of 40 regions covering the whole territory of Belgium. Localities within the regions are chosen with respect to consumption expenditures, population figures and geographical distribution.

For local price collection, the sample of outlets is mainly determined by the price collectors under guidance of the statistical office. For some products, it is determined directly by the statistical office (e.g., when the pricing policy is known to be national). Outlets are chosen based on their popularity with consumers, their relevance in terms of turnover, and the availability of the products in the consumption basket. Wholesalers, thrift shops, and factory outlets are currently excluded.

For central price collection, the sample of outlets is reviewed annually using turnover data (VAT and annual accounts). Outlet types are reviewed every year using mainly HBS data. However, if other sources (e.g. VAT, e-commerce data, market research, etc.) show that an important outlet type has come on the market those are added to the sample and are used to

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(1)   EU statistics on income and living conditions - Microdata - Eurostat (europa.eu).

redistribute the HBS information. Online outlets that deliver to Belgium are included in the sample.

The sample of representative items and newly significant goods is reviewed at least annually. For the segments where transaction or scraped data are available the review is automatically monthly. When new shops open and they are part of transaction data, they are included immediately in the sample.

Compliance

The sampling in the Belgian HICP is fully in line with the legal requirements.

6. Price collection

Approximately 30 percent of prices are collected locally by price collectors, 30 percent are obtained from scanner data and web scraping, and the remaining 40 percent are obtained from administrative datasets or directly from private companies.

A national statistic law for the delivery of transaction data, other types of automated data transmission and web scraping is currently being examined.

For consumer electronics and housing appliances, the data are bought from a market research company since the web scraped data lack detailed characteristics.

Data for clothing and footwear are web scraped. Homogeneous products are created for each retailer and product group with a regression to identify the significant characteristics; these characteristics are then used to define the products. This approach leads to a match with products that are on sale and then go off the market, for any reason. Otherwise, a downward drift in the index would occur.

Food products in transaction data are identified by the GTIN code. Thus, the match of the products for replacements (to capture relaunches and changes in package size) is done semi–automatically. The software identifies potential candidates to be matched, and a price collector verifies whether the link should be made or not. STATBEL is currently conducting research on using hedonic methods with the GEKS index to deal automatically with relaunches and changes in package size.

Prices are collected monthly in line with Implementing Regulation 2020/1148, except for insurances for motor vehicles and insurances connected with the dwelling, both of which are collected quarterly (see section 11).

The price concept being followed for motor vehicle insurance is an average gross premium, thus this sub-index is compiled with a unit value. Since the unit value is not calculated on homogeneous products, this practice is not fully in-line with the regulations.

Compliance

The frequency of price collection for insurances for motor vehicles and insurances connected with the dwelling is not fully in line with Article 8(2) of Implementing Regulation 2020/1148.

The use of unit prices for motor vehicle insurance is not fully in line with Article 2(5) of Implementing Regulation 2020/1148.

Requirements

- STATBEL should obtain monthly prices in a timely fashion for insurances for motor vehicles and for insurances connected with the dwelling.
- STATBEL should compile the sub-index for motor vehicle insurance with individual gross premiums.

7. Replacement and quality adjustment

Treatment of missing prices

Locally collected prices that are missing due to the unexpected closure of a shop, or the temporary unavailability of a product are imputed for no longer than one month. The imputed price is derived by multiplying the last observed price with the index evolution of the available items in the same stratum. Centrally collected prices that are missing are directly replaced and, therefore, not imputed.

Replacements

Replacements are only used for locally collected prices. Product definitions serve the price collectors to find a proper replacement item. Where possible, STATBEL attempts to select the replacement in the first month the item is missing.

Quality adjustments

Bridged overlap is mainly used for quality adjustment according to the recommendations on bridged overlap. For cars, option pricing is used, while direct price comparison is normally used for products such as video games, CDs, DVDs, books, and clothing and footwear. Hedonics are used for used cars and consumer electronics. The overall number of quality adjustments made during a production round are not currently recorded, although they could be used for the impact assessment advised by Eurostat's recommendation on bridged overlap.

Discounts

For supermarket scanner data, all price reductions including loyalty cards are included in the HICP. For all remaining prices, only the non-discriminatory price reductions are considered, and loyalty cards are excluded.

Compliance

The treatment of missing prices, replacements, quality adjustments and discounts in the Belgian HICP is in line with the legal requirement.

Recommendations

STATBEL should regularly check the rate of quality adjustments, imputations, and replacements for price indices compiled with a bilateral index.

8. Treatment of seasonal products

For fresh fish, fruits, and vegetables, STATBEL applies a GEKS Törnqvist multilateral method with scanner data and compiles the HICP sub-index at elementary product group level as a strict annual weights index.

For clothing and footwear, STATBEL uses distinct samples with an equal number of segments for summer and winter. Counter-seasonal estimation or all-seasonal estimation is used to impute the prices of out-of-season products.

Currently, the coverage of seasonal package holidays is made with a summer sample and a winter sample. That method is not fully in line with the regulations. STATBEL has plans to use the all-season estimation method from 2025.

Compliance

The treatment of seasonal package holidays is not fully in line with the with Article 14 of Implementing Regulation 2020/1148 as neither the seasonal imputation method nor the seasonal weights method is currently used.

Requirement

STATBEL should implement the seasonal imputation method or the seasonal weights method for the treatment of seasonal package holidays.

9. Index calculation

Index calculation is carried out in multiple aggregation steps. At the elementary level, STATBEL uses the Jevons index for most products, except hospital services where the Dutot index is used. Supermarket scanner data and web scraped data for clothing and footwear are processed with the multilateral GEKS-Törnqvist index using mainly a 25-month window and the half splice on published indices. These three indices are compliant with Article 12 of Implementing Regulation 2020/1148. All higher-level sub-indices follow the Laspeyres-type formula, where December of the previous year acts as the price reference period. Using

product expenditure shares or HICP item weights, the sub-indices are aggregated stepwise into higher-level indices up to the all-items HICP.

All indices are chain-linked using the index for December of the previous year and expressed in the index reference period 2015=100, except for sub-indices that are integrated after the index reference period (see Article 13 of Implementing Regulation 2020/1148). The indices are calculated with 12 decimals and published with two decimals.

Compliance

The index calculation in the Belgian HICP is in line with the legal requirements.

Recommendation

STATBEL should use the Jevons index instead of the Dutot index for hospital services.

10. HICP at constant tax rates and administered prices

STATBEL compiles the HICP at constant tax rates (HICP-CT) following the methodology defined by Eurostat. Tax changes in the HICP are generally included from the month when the tax comes into force. New tax rate changes introduced later than the first day of a given month are reflected in the HICP-CT of the following month.

During the application of the temporary tax system on motor fuels, known as the *'cliquet system'*, STATBEL calculated a monthly weighted average tax considering the number of days for which each rate of the specific tax was valid.

Concerning tobacco products, STATBEL makes estimates using the price with the old and the new tax rates in cases where they are sold simultaneously under both, new and old tax rates.

The classification of administered prices (HICP-AP) is reviewed and updated annually. The list for the compilation of the HICP-AP is delivered to Eurostat in line with the established transmission practice.

Compliance

STATBEL compiles and transmits regularly the HICP-CT, the HICP flash estimate, and provides information on administered prices in line with the legal requirements.

11. Special products

Rents

For private rents paid by tenants, STATBEL uses administrative data from the Ministry of Finance ('Land Registry'). These data have a monthly frequency and cover the full Belgian market. The data are stratified according to Belgian provinces, where an index is computed

with the Time-Product-Dummy (TPD) method using a rolling window of 8 years and a window splice. The indices at the provincial level are aggregated to the national level following the Laspeyres principle, where expenditure weights are defined by the average rent times the number of renters. Since no characteristics of the dwellings are included in the data, no hedonic regression or explicit quality adjustment is carried out. However, as for housing price statistics, dwelling characteristics are generally available at the Ministry of Finance. At the moment STATBEL is working on matching the dataset with the dwelling characteristics to the rents dataset.

For social rents paid by tenants, STATBEL uses a monthly web survey at the social housing companies. The market coverage of the survey is around 90 % but expected to be exhaustive from 2024 on. For each housing company, type of dwelling, and type of household (e.g., 3-bedroom house for a family of 4) an average rent is computed, which is then aggregated into a price index for each housing company. The overall price index for social rents follows the Laspeyres principle, where the weights for the housing companies are derived from annual accounts.

Actual rents paid by tenants for secondary residences are covered through student rooms in the Belgian HICP since 2019. Data on student rooms are collected via web scraping for all Belgian cities with universities. Price indices are calculated for each stratum (e.g., type of room, room size) within each city, which are then aggregated into indices for each city using annually updated strata weights. The resulting city indices are aggregated into the overall index using weights based on the student population. Expenditure weights should be used instead, defined for example by the number of students with origin (main address) in other cities multiplied with the average price of a student room.

Garage rents and other rents paid by tenants are collected locally from real estate companies on a monthly basis. A Jevons index is computed for each region and then aggregated to the overall index.

Accommodation services

The weight for accommodation services in Belgium is significantly lower than expected when compared to the neighbouring countries. STATBEL should further investigate if expenditures could be underestimated.

Package holidays

Prices for package holidays are currently collected manually. Eurostat suggests obtaining transaction data. STATBEL has reported difficulties in obtaining transaction data either from Amadeus or directly from tour operators. Web scraping could be an alternative. Since a national law on data provision is being examined, this will facilitate direct negotiations with the tour operators to obtain transaction data.

Financial services

The financial services sub-index is compiled according to the profile approach. Four profiles are designed covering the use or not of e-banking. These profiles cover the use of a credit card, cash withdrawals, wire transfers, and the fees for general account management. Data are obtained from commercial banks on prices and on number of clients within each profile. Detailed profiles specifications and profile shares are updated annually. Eurostat suggests investigating the weight of other costs, namely those associated with financial investments. STATBEL has begun the work on pension funds and is investigating the possibility of including other financial institutions such as investment banks.

Energy products

STATBEL collects prices for electricity and natural gas from the websites of the electricity and natural gas companies using consumer profiles. Weights according to the profiles and tariffs are obtained from regulators at a regional level. STATBEL calculates an index for each profile at a regional level and uses the standard Laspeyres index formula to compile the indices for electricity and natural gas.

STATBEL collects prices for motor fuels as administrative data via the Ministry of Economy.

Existing contracts for gas and electricity are not currently covered in the HICP indices.

Flights

The sampling includes only economy class tickets and considers the cheapest two options for flights including luggage and relevant fee, thus capturing low-cost-carriers. However, flights departing from regional airports are not currently covered in the Belgian HICP, although they represent more than 20% of the weight. STATBEL has plans to include the regional Charleroi airport from 2025.

STATBEL covers 30 representative destinations for which prices are collected using virtual reservations on websites. The price collection is currently done manually, however automated internet price collection (web scraping) is being examined and tested.

STATBEL derives the weight for airfares from the National Accounts and estimates the expenditures from tickets bought from airlines and tour operators. Tickets bought by non-residents in Belgium are estimated from credit card transactions and the Balance of Payments data.

Health

STATBEL considers prices net of reimbursements and net expenditures that are based on the National Accounts.

STATBEL currently collect only tariff prices for all the items of ECOICOP 6.1.1, 6.2 and 6.3, except for accommodation in a hospital in an individual room (prices in a room for 2 or more

patients are set by government). In practise, prices above the maximum price set by government are not covered due to lack of data. Moreover, when physicians or specialists charge prices above the 'official price' in their private practice, those prices are not covered either. STATBEL is currently exploring the possibility of cooperating with sickness funds and relevant organisations to collect those prices.

Insurance

The Belgian HICP covers five categories of insurance: insurances connected with the dwelling, private insurance connected with health, motor vehicle insurance, travel insurance, and civil liability insurance. The five sub-indices are aggregated with the market shares that are updated every year.

Data are obtained from the Federation of Insurance Companies (FIC) for the insurance connected with the dwelling and for motor vehicle insurance. After negotiations with the FIC, the frequency of data delivery was increased from twice per year to quarterly. These data contain both new and existing contracts.

Insurance companies use the so-called 'ABEX' index to adjust the gross premiums of the insurance connected with the dwelling. It tracks the evolution of construction prices, with an indexation twice per year.

FIC transmits an average gross premium of motor vehicle insurance per insurance company, meaning that this sub-index is compiled with a unit value of non-homogeneous products.

The gross premium for basic health insurance is obtained from the sickness funds. Prices are updated annually in January and fixed for the whole year.

Compliance

The treatment of special products is in line with the legal requirements.

Recommendations

- STATBEL should investigate the expenditures on accommodation services.
- STATBEL should obtain transaction data for package holidays.
- STATBEL should investigate the weight of other financial costs and consider the inclusion of brokerage fees and other financial institutions such as investment banks.
- STATBEL should include the existing contracts in the gas and electricity HICP indices compilation.
- STATBEL should include Charleroi airport in the sample.
- STATBEL should automate price collection for flights (e.g., via web-scraping).
- STATBEL should check with the Ministry of Finance if the dwelling characteristics can be added to the data.
- STATBEL should define the share of students with origin (main address) in other cities.
- Collect actual prices for hospital services and doctors.

12. Follow-up from the previous compliance report

The main findings from the previous compliance monitoring exercise were published in
March 2014. Since then, STATBEL has improved the stratification and weighting system of the
outlets and outlet types. Regional airports are not sampled but STATBEL has plans to do so
from 2025. The sub-index for insurance did not improve. A potential new national law on data
provision may facilitate data collection for insurance.

13. Overall Assessment

Based on the information listed in section 1 and obtained during the compliance monitoring
exercise, Eurostat assesses that the Belgian HICP is in line with most legal requirements.
STATBEL should improve compliance by implementing the requirements formulated in
sections 6 and 8. Notwithstanding these issues, Eurostat assesses the HICP for Belgium to be
comparable to that of the other EU Member States. If STATBEL follows up on the
recommendations given, the comparability of the Belgian HICP will improve further.