

Summary of Mission Outcomes and Priority Recommendations

1. **In response to a request from the National Bureau of Statistics of the Republic of Moldova (NBS) a technical assistance (TA) mission was conducted June 27–July 1, 2022 to review and recommend improvements for the consumer price index (CPI) methodology.** While the current methods are largely aligned with the international standards set in the Consumer Price Index Manual: Concepts and Methods (CPI Manual), improvements to sampling and the pricing of airfares, telecommunications and rents were recommended. The mission also provided guidance on the first steps to be taken towards modernization of the CPI through the use of new data sources.
2. **Currently the CPI has urban coverage with eight cities being covered both by price and expenditures data collection.** The mission recommended to assess the feasibility and pertinence of extending the coverage to rural areas (villages). In addition, the cities sample should continue being made using population data as expenditures data are not available at this level.
3. **The product and variety samples are currently selected with non-probability techniques.** Although these techniques are widely used, the mission recommended the use of other data such as scanner data to have more accurate knowledge of the products and varieties to be sampled.
4. **The CPI is currently compiled with software that needs some improvements.** The software only processes monthly indices for the 12 COICOP classes, for the 4-digit level and for the elementary aggregates. All other outputs, namely the rates of change and special aggregates, are compiled with excel. The software should process all indicators needed for publication, including the year-on-year rates of change, the contributions of the expenditure categories, core inflation measures and the special aggregates.
5. **Prices for public transportation services are regulated and a new pricing schema will be implemented from July 1.** A new weighted average of the regulated prices will be put into place, with the expenditures for each type of pass sold through July 30 as the weights. These weights will remain fixed during 2022. In January 2023, these weights should be updated with data for the six previous months.
6. **Improvements can be made in the samples of airfares, telecommunications and rents.** Data available from the tourism statistics program can be used to statistically select airlines and destinations. Telecommunication services can be expanded to cover bundled package prices using the profile approach. Data on rents should be requested from the tax authorities.
7. **To support progress in the above work areas, the mission recommended a detailed one-year action plan with the following priority recommendations carrying particular weight to make headway in improving the CPI:**

TABLE 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
September 2022	<i>Implement new weighted average methodology for public transportation services.</i>	NBS

Target Date	Priority Recommendation	Responsible Institutions
December 2022	Update the current methodology paper to reflect recent improvements.	NBS
December 2022	Modify the compilation software to complete all calculations needed for the monthly release.	NBS

8. Further details on the priority recommendations and the related actions/milestones can be found in the action plan under Detailed Technical Assessment and Recommendations.

Section I. Detailed Technical Assessment and Recommendations

Priority	Action/Milestone	Target Completion Date
Outcome: Improve the methodology for the CPI		
H	Implement new weighted average methodology for public transportation services.	September 2022
M	Investigate the existing data for rents with the tax authority.	September 2022
H	Modify the compilation software to complete all calculations needed for the monthly release.	December 2022
L	Start engaging with major retailers to obtain scanner data.	December 2022
H	Update the CPI methodology paper with the recently implemented changes.	December 2022
M	Incorporate seasonal Expand the seasonal annual calendar for all seasonal products.	December 2022
M	Expand the compilation of core inflation measures and special aggregates having clear indication of which ECOICOP classes are included.	January 2023
M	Use the profile approach to expand the coverage of telecommunication services to include packages.	January 2023
M	Improve samples of airfares with data available from the tourism statistics	January 2023
H	Update the instructions manual for price collection	December 2023
L	Assess the feasibility and pertinence of extending the coverage to rural areas	December 2023

A. BACKGROUND, SAMPLING, INDEX CALCULATION, AND DISSEMINATION

9. Moldova is currently facing annual inflation of approximately 30 percent and the main users of the CPI have raised questions on its methodology. While the current methodology is in line with international standards, the mission provided recommendations towards continuous improvement.

10. The CPI has been published since 1991 and ECOICOP has been implemented since January 2021. The index reference period is 2015. Weights are updated annually and kept fixed for the year, according to the recommendations of the CPI manual. Weights at the COICOP 4-digit level are from national accounts, while additional detailed weights to the 6-digit level are from the HBS.

11. Currently the CPI has urban coverage with prices and expenditure data covering eight cities. The NBS should assess the feasibility and pertinence of extending coverage to rural areas (villages) by selecting the most relevant in terms of population and turnover or number of the shops in the villages, if data are available. In addition, the cities sample should continue being made using population data as expenditure data are not available at this level.

12. Several special aggregates are published for core inflation. The publication of the three “traditional” special aggregates – food, non-food and services - should be continued to facilitate comparability with other countries within the region. Other aggregates should be compiled for comparability with other European countries. The special aggregates should have clear indication of which ECOICOP classes are included. Examples were provided on the information that should be published together with these special aggregates’ measures. Core inflation indicators are compiled and provided to the Central Bank as shown in Figure 1.

Figure 1. Measures of Core Inflation Published by NBS

Core inflation indices, calculated by excluding certain components from CPI by Excluded goods and services, Years, Months and Reference periods			
	2022		
	February		
	Previous month=100	December previous year=100	Corresponding month of the previous year=100
Total CPI excluding food and beverages, energy products, products and services with regulated prices	101.45	102.81	111.68
Total CPI excluding food and beverages	101.65	103.95	115.80
Total CPI excluding products and services with regulated prices	102.39	105.10	118.27
Total CPI excluding fuels	101.81	104.44	117.53

Source: NBS website.

13. The NBS should modify its currently published CPI methodology paper to reflect recent improvements. The CPI methodology paper published on the NBS web site should be a living document and continually updated when new methods are introduced. In that regard the mission recommended to update the current document as soon as any change takes place. The instructions manual for price collection should be similarly updated whenever methods are changed.

14. The product and variety samples are made with non-probability techniques. Price collectors consider the location of the goods in the store and the quantity available as indicators of the importance of a product and variety. The mission recommended the use of other data such as scanner data to have more accurate knowledge of the products and varieties to be sampled.

15. The CPI is currently compiled with software that needs some functionalities to be added. The software only processes monthly indices for the 12 COICOP classes, for the 4-digit level and for the elementary aggregates. All other outputs, namely the rates of change and the special aggregates are compiled with excel. The software should process all indicators needed for publication, including the year-

on-year rates of change, the contributions of the expenditure categories, core inflation measures and the special aggregates.

Recommended Actions:

- Expand the compilation of core inflation measures and special aggregates, clearly identifying the ECOICOP classes included in each aggregation.
- Update the CPI methodology document on the website.
- Update the instructions manual for price collection.
- Assess the feasibility and pertinence of extending the coverage to rural areas.
- Update the index calculation software.

B. PRICE COLLECTION

16. The NBS is applying price discounts only if they are universal, refer to a single product, and are received immediately or shortly after purchase. The NBS is not including discounts for products which are damaged or sold close to the expiration date, since these are products with lower quality and therefore not directly comparable. This practice is in line with international best practices.

17. Missing prices are correctly being estimated. When a product is missing its price is estimated by multiplying the previous price by the observed monthly rate of change of the other products within the same elementary aggregate. Simply carrying forward of the last observed price is not recommended since it induces a bias towards zero change in the index.

18. Price collection for seasonal products follows an annual calendar only for food. The same should be made for clothing and other seasonal products. During the off-season period the prices should be estimated using the “typical” or average price of the in-season period. Extreme prices, low or high, should be disregarded. The index calculation software should be modified to allow for prices other than the last observed price to be used in these cases.

19. Prices for gas and heating services were subsidized from November 2021 through March 2022. In April the subsidies were discontinued. As a result, there was an increase in consumer prices for these services. This effect is difficult for some data users to understand— inflation increasing when the consumption of a product declines. However, according to the recommended CPI methodology, the weights (obtained from the annual expenditures) should be kept stable for the year. A counter-seasonal weights approach cannot be used for this product since within the same ECOICOP level there is no counter-seasonal product. Treating gas as a seasonal product would not be entirely correct since one of the two distribution systems is available for consumption in non-winter months. In addition, if gas was treated as a seasonal product, imputation would be applied leading to the same price increase. The carry forward method of assuming no price change is not recommended.

20. Prices for public transportation services are regulated and a new pricing schema was implemented from July 1. Currently, there are two types of tickets: monthly and single trip. Discounts are given to seniors and students. Starting from July, a quarterly and a bi-annual ticket will also be available, while prices for single tickets will go from two to six lei. Exceptions and discounts are expected to cover a larger portion of the population; however, the specifics of this framework were not yet available at the time of the mission. The current national classification (below ECOICOP level) has a product

definition for monthly ticket and another for single ticket. The word “monthly” should be removed from the product definition for the passes. A new weighted average of the regulated prices should be put into place, with the expenditures for each type of pass sold through July 30 as the weights. These weights will remain fixed during 2022. In January 2023, these weights should be updated with data for the six previous months.

21. Improvements can be made in the samples of airfares with data available from tourism statistics. The major airline companies should be sampled, and within those the most popular destinations selected. Each transaction should be for a ticket in a specified class of service, for a specified origin and destination, for a flight on a particular day of the week, purchased at a specified time before the flight. Prices for flights taking place on the last days of the month, can be collected during the first days of the month. The timing of the price recording for services is the date of when the service commences, not when the ticket is bought. Note that seasonality can play a role in flights. Some destinations are very popular only in certain periods of the year and may be unavailable during other periods. These should be treated as seasonal products. Prices for airfares are currently collected online, which is a good practice.

22. Telecommunication services are included but without bundled packages – subscriptions that include data, national and international calls. A profile approach is recommended to cover this type of service. Examples were shown on how to select packages.

23. Scanner data should be obtained to assist the sampling of varieties in a first stage, and to integrate this data source into the CPI at a later stage. Data from at least two retailers should be obtained for the past twelve months. Guidance was provided on how to obtain data, namely the detailed data specifications, and establishing a memorandum of understanding with the data provider. After obtaining the data the first step will be to classify the products to the ECOICOP. A learning data set should be built and the mission explained how to perform this first step. An additional recommendation is to focus on food products and guarantee automated data transmission.

24. Data sharing among institutions is a good practice but care must be taken on data sharing with private individuals or companies. Institutions such as the NSO, the Central Bank, the Ministry of Finance, tax office, etc. are committed to confidentiality, thus this should not be a concern. In addition, it would ease respondents’ burden who are often asked the same information by the different institutions, a practice that can be also interpreted as a lack of cooperation, or poor governance of the country. The same does not apply to data requests from private companies or individuals. Only aggregated data should be shared with these users, to guarantee that all confidential information is not revealed. Individual prices should never be shared with private entities.

25. Data for rents should be requested from the tax office. The sampling frame, i.e., a list of all the dwellings being rented with information about the specific address, type of dwelling and other available characteristics such as number of bedrooms, size, etc., should be obtained to draw a sample and prepare a survey. However, ideally data on the rents should be electronically transmitted every month on all dwellings being rented.

Recommended Actions:

- Adopt the seasonal annual calendar for all seasonal products
- Use of additional data sources namely scanner data sample the varieties.

- Cover all new types of bus passes.
- Improve the samples of airfares with data available from the tourism statistics.
- Investigate existing data for rents with the tax authority.
- Use the profile approach to expand the coverage of telecommunication to include packages.

C. OFFICIALS MET DURING THE MISSION

Name	Institution
Oleg Cara	<i>General Director, NBS</i>
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