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**PRACTICAL ISSUES IN MAINTAINING A REPRESENTATIVE  
SAMPLE FOR COMPILING THE CONSUMER PRICE INDEX  
IN THE KYRGYZ REPUBLIC**

**Paper submitted by the National Statistical Committee of Kyrgyzstan \***

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\* Prepared by Ms. Nailya Ruslanovna Butabayeva, Chief, Price Statistics Division.

## **Summary**

1. The construction of a consumer price index (CPI) is a complex process which involves accomplishing a number of key tasks. One of the basic tasks of the organizers of a sample survey is that of making a representative selection of goods and services.<sup>1</sup> The results of a survey of consumer expenditures serve as the basis for the determination of weights and the selection of goods. These survey results help to decide on the number of goods and methods of selecting them for the index, as well as methods of replacing them and making an adjustment for prices not available during the period recorded.

### **Coverage of consumer goods and services**

2. Information for making a representative selection of goods is drawn from household survey data and data on the structure of retail trade turnover. Consumer expenditures by households include all goods obtained for consumption, with the exception of expenditures related to households' commercial activities, contributions to pension funds and social insurance funds, income tax, savings, gifts and goods for which there is no real retail price (own consumption of agricultural produce from private subsidiary holdings). The structure of consumer expenditures is determined for the "total population" category.

### **Selection of goods**

3. The following criteria are applied when selecting goods for the CPI:

- The good must have a significant weight in households consumption;
- The good must have a precise specification;
- The good must be capable of measurement;
- The good must be a basic product used over a lengthy period even when it does not have a significant weight in household consumption.

4. Included in the selection are goods in large consumer demand, and also some non-essential items (motor cars and vehicle maintenance, jewellery, etc.). Goods with insignificant weights in the structure of consumption are necessary for making up subgroups (for example, postage rates).

5. The formation of a sample of goods in the Republic may be described as a combination of threshold and purposive sampling. The selection of goods is undertaken at the republican level and involves a two-stage procedure. In the first stage a certain number of product subgroups are selected on the basis of household expenditures. The specifications of the goods,

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<sup>1</sup> The term "good" is used here to mean any goods and services as defined for the purpose of collecting prices.

especially durable consumer goods, are of a general nature, thus making it easier to determine those items in the greatest demand at each outlet. The criteria for this specification are the unit of measurement and certain technical characteristics.

6. In the second stage a sample of representative goods, consisting of specific goods from each subgroup, is formed taking into account the views of specialists on prices of other agencies. Additional information on the structure of retail trade turnover is used to determine the specific weight of detailed headings. The criteria for determining the number of prices to be collected for different goods is their weight in expenditures and any variation in prices. More prices are collected for goods characterized by a high price variation and frequent consumption. Regional price collectors at local level furnish a general description of the most representative goods within the product subgroups.

7. In all, the CPI covers 347 goods. The index contains three sub-sets: *food goods*, which account for 34% of all types of goods in the general index; *non-food goods*, which account for 51%; and *services*, which represent 15%. The index is furthermore divided into 10 main groups by sphere of activity following the system of national accounts (SNA).

**Table**

Main groups	Number of goods	Percentage by type of goods
01. Food, beverages and tobacco	117	34
02. Clothing and footwear	85	24
03. Housing, water, electricity, gas and other fuels	15	4
04. Furnishings, household equipment and routine maintenance	41	12
05. Health	14	4
06. Transport	17	5
07. Recreation and culture	23	7
08. Education	4	1
09. Hotels, cafes and restaurants	6	2
10. Miscellaneous goods and services	25	7
Total	347	100

8. The sample is fixed for a year. Brands, size and other characteristics may be changed, but the basic definition of a good has to remain unchanged unless there is information pointing to significant changes in the good. About 40,000 prices are collected each month.

#### **Special methods of valuation for selected product groups**

9. Special methods of valuation are employed when collecting information on prices for some groups of products to be included in the CPI.

### *Cost of housing*

10. A method based on the equivalent of a rental payment is used in the compilation for housing in the CPI. The approach takes into account expenditures on repairs and maintenance. The CPI calculation calls for a representative sample of five types or sizes of rental accommodation. The specifications of such accommodation must remain unchanged, and price data must be requested monthly from the organizations concerned. A price per m<sup>2</sup> of living (usable) space is established. Prices for real property and its rehabilitation are not included in the CPI calculation, this being investment of capital in order to live in an apartment and not consumption as such.

### *Private transport*

11. Account is taken in the CPI calculation of prices for acquiring new goods in the shops. The CPI basket does not include expenditures by consumers on the purchase of used vehicles, since the value of such transactions is reflected only to a limited extent in the declared incomes of the persons selling these used vehicles, the difference between the respective sums constituting the income of probable intermediaries, and this is hard to determine. An estimation of the market prices of "used" vehicles will be applied in future for calculating the index.

### *Health care*

12. Prices are collected in public and local authority clinics. The price recorded is the actual price of the service for an adult that has been paid by him in cash or charged to his personal account. Prices are not collected for services provided to employees of enterprises or organizations and paid for by those enterprises as a non-cash transfer (under contractual arrangements).

### *Fruit and vegetables*

13. Fruit and vegetables sold individually are not excluded from the consumer basket sample. These goods are weighed to determine the average weight of each item. For example, if an average-sized lemon is priced at 4 soms, the combined weight of two lemons, divided in half, is established and then the price per kilogramme is found from the price of one item based on the average weight obtained.

### *Refundable Deposits*

14. The deposit paid for empty bottles is not included in the CPI calculation since the consumer buying a beverage can simply throw the empty bottle away or may have to return it for less than its cost. There is at present no information about consumer expenditures in this respect.

### **Updating of the sample**

15. The sample of goods is updated each year when there is a change in the reference year weights. The CPI relies on the results of continuous observation of the sample of prices for particular goods. If products disappear they have to be replaced by new ones, since the sample

will otherwise not be representative. New goods are included in the sample when their weights in the CPI become significant. In the case of non-seasonal goods any adjustment made for missing price data will depend on the length of the period of absence. If data are unavailable for one or two months, the results of the previous price collection are used, while in the event of a longer gap the data are estimated by means of extrapolation of the previously recorded price, using the average change in the prices reported for a similar good.

### Example

16. A sample set of representative goods may lose its representativeness with time either because of a change in household consumption, or on account of technological progress, or else for other reasons. The goods in such cases are replaced. The removal of outdated types of goods and the inclusion of a new good should not directly affect the index. If the new good is comparable with the old one in terms of the characteristics that influence its price, i.e. there is no difference in quality, the price series will still be continued after the replacement. In the event of substantial differences in quality between old and new goods, a direct comparison must be avoided. In this case a new price series, beginning from the reference period, is established. For example, a “Gorizont” colour television, priced at 3,000 soms, was observed on the market in February of year *A*. The index for February of year *A* based on the average annual price of year *A-1* was:

$$102.7\% = 3000/2920.$$

In March of year *A* the price collector had to introduce a “Raduga” colour television, selling for 3,500 soms, in the survey owing to the disappearance for a long period of the “Gorizont” television, and this differs from the previous brand in respect of the diameter of the television tube and other technical characteristics. The same price increase compared with the reference period is ascribed to the new good as to the old one, i.e. the price index for the “Raduga” television in March of year *A* equals the February index, i.e. 102.7% on the basis of year *A-1* = 100. The “Raduga” television is therefore assigned the estimated reference price:

$$(3500*100)/102.7 = 3407.98$$

and a new price series is established. With the increase in the number of homogenous product groups, the problem of goods substitution is lessened.

17. If the “quality” component is excluded from the data for a good by means of a special adjustment, the series can be continued. The pure price change will then have an influence on the index. In order to apply a special adjustment, however, it will be necessary to make the fullest possible use of all the sources of information available concerning the good, having reference to experts from various branches of the economy. At present this method is highly complicated and the requirements for information and costs of data processing are very considerable. This option may be taken up in the future.

**Conclusion**

18. A sample of goods and services is a representative set of those goods and services most frequently used by the public, and standard for all regions of the Republic. It also includes selected non-essential goods and services (jewellery, motor cars, etc.). The sample of representative goods is constituted at the republican level. Primary information for the centralized selection of goods is provided by data from household surveys, showing the allocation of expenditures by families for obtaining goods and services under the “total population” category, and data on the circulation of a good. The selection process combines purposive and threshold sampling. The sample of goods is updated annually when the reference-year weights are changed. A priority for future work is the conversion to a structure of weights differentiated by region in the CPI calculation and an estimation of market prices for used motor vehicles, which poses the added difficulty of finding comparable models for different periods of time, as well as providing training for price collectors to identify and evaluate used vehicles of constant quality.

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