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**CONSUMER PRICE INDEX COMPILATION IN THE RUSSIAN FEDERATION  
IN THE CONTEXT OF HIGH (DECELERATING) INFLATION**

Document submitted by the State Committee on Statistics  
of the Russian Federation

1. At the previous Joint ECE/ILO Meeting on consumer price indices the Russian delegation submitted a report on refinement of procedures for the monitoring of prices for goods and services and CPI calculation in the Russian Federation. The report contained a general account of the current procedure for compilation of the consumer price index (CPI) developed by the Russian State Committee on Statistics in the light of recommendations from international organizations and the practical experience of the Russian State statistical bodies in the monitoring of consumer prices in a period of economic reform.

**I. Introduction**

2. A feature of the Russian economy in the past two years has been the achievement of a substantial slowdown in inflation. The consumer price index for 1996 in Russia stood at 122.8%. The expected growth in consumer prices in 1997 should not exceed 12-15%. However, while these inflation rates constitute a significant achievement for Russia, they would be substantial for many countries, where growth in prices stands at around 3% a year. Consequently efforts to refine procedures for monitoring prices in Russia continue to be based on the assumption of significant price rises.

3. The Russian statistical system uses methods for collecting price data and compiling price indices which are recognized by many countries and correspond to world standards, but in developing a national methodology

additional difficulties are encountered which arise from structural changes. In these circumstances the composition of the consumer basket must be revised fairly frequently in order to reflect changes in the range of goods and services available, and in the structure of household consumption.

4. The material prepared for the present session is an elaboration of the methodological propositions examined at the previous session. Necessary modifications were introduced in the existing methodology for calculation of the consumer price index during 1996-1997; these modifications were designed to take into account as much as possible specific changes in the Russian economy and the expectations of management bodies.

## **II. Stages in the refinement of the CPI methodology**

5. The principal purpose of monitoring the level of prices and tariffs on the consumer market is to gather information for use in calculating the consumer price index both for the Russian Federation as a whole and for individual republics, territories, oblasts and autonomous areas (89 units in all).

6. Given the federal structure of the Russian Federation, monitoring of changes in prices and tariffs is conducted in all the constituent entities of the Federation. Price information is collected in all the capitals of republics (within the Federation), territories, oblasts and autonomous areas and also, through sampling, in district centres selected in the light of their representativeness in reflecting the socio-economic and geographical situation in the regions and the availability of goods and services on the consumer market - a total of 350 towns and cities. Starting in 1997 the consumer price index has also been calculated in autonomous areas (10 in all), necessitating some changes in the calculation schedule.

7. The consumer price index (CPI) is calculated using information derived from two sources:

(a) Data on price changes collected by means of monthly recording of prices and tariffs on the consumer market;

(b) Data on the breakdown of actual consumer expenditure by the population over the preceding year, calculated using indicators derived from sample surveys of households.

8. Recording of prices and tariffs on the consumer market and calculation of consumer price indices in the Russian Federation are effected in accordance with regulations concerning the procedure for monitoring changes in prices and tariffs for goods and services and establishing a consumer price index. These regulations were adopted by the Russian State Committee on Statistics by decision No. 79 on 29 June 1995.

9. After four years during which price information was collected weekly, the slowdown in inflation rates made it possible to shift from weekly to monthly recording of prices. At the same time, the range of goods and

services was broadened from 280 to 382, because with slower growth in prices more precise and subtle tracking of price changes was necessary. From 1997 the 382 items include 100 food items, 201 non-food items and 81 items relating to paid services to the population.

10. Under the Federal Act governing the procedure for establishing the compensation for inflation due on the guaranteed debt of the Russian Federation, the State statistical bodies carry out, besides monthly recording of prices for the full list of goods and services, weekly recording of prices and tariffs for goods and services which fall in the basket of essential items, and calculate their reference value (37 items in all). In addition, the value of a selection of the 25 most important food products (replacing a selection of 19 items) is calculated once a week, and information is collected on prices for alcohol products.

11. The process of monitoring of prices of goods and paid services on the consumer market and calculating the consumer price index includes the following operations:

- Selection of core enterprises in trade and services
- Selection of representative goods and services
- Recording of prices and tariffs
- Establishment of a system of weights for calculation of the index of prices on the consumer market
- Calculation of the consumer price index
- Calculation of average prices and tariffs for goods and services
- Determination of the value of, and changes in the value of, a selection of 25 basic food items forming part of the minimum subsistence level (replacing the selection of the 19 most important food items calculated up to 1997)
- Calculation of the reference value of the basket of essential items (37 items).

12. For the purpose of recording prices, large, medium-sized and small enterprises engaged in trade and services are selected in each town and city, located both in the centre and on the outskirts, so that monitoring covers enterprises operating in a variety of conditions.

13. The monitoring coverage is representative and embraces trading enterprises, including franchise shops, service enterprises displaying all types of ownership and legal structure (State, municipal, private, mixed and voluntary associations and organizations), and urban markets for food and non-food consumer items. Prices are also recorded at semi-wholesale and retail fairs and markets. The recorded price information for each good and service is noted on a separate sheet in the record of consumer prices for goods and services.

14. In a situation where the supply of goods and services on the consumer market in large and small towns and cities in Russia is irregular, the range of consumer goods and services used for price recording is divided into two levels. Collection of price information on the full list of monitored goods and services (382 items) is organized only in regional administrative centres. For the most important everyday goods and vital services (61 items) price monitoring is carried out in all the remaining towns and cities in the sample.

15. Prices are recorded as follows:

(a) In the capitals of constituent republics of the Federation, territories, oblasts and autonomous areas: once a week for 37 representative goods and services in the basket of essential items, and once a month for 382 representative goods and services;

(b) In other towns and cities in the sample: once a week for 37 representative goods and services in the basket of socially essential items. For the range of towns and cities from which price information is used in calculating the consumer price index at the federal level: once a month for 61 representative goods and services.

16. Given the federal structure of the country, the management of local State statistical bodies has the right to broaden the list of goods for which prices are recorded once a week and once a month. In this case the recorded price information for goods which are not included in the established obligatory list (of 37 and 61 items) is not taken into account in calculating the consumer price index at the regional and federal levels.

17. This method makes it possible to retain the representativeness of the district level in calculating price indices for the most important goods and services as well as the composite index of consumer prices as a whole by region, and at the same time to substantially reduce the likelihood that this indicator will be distorted as a result of the addition of many estimates to replace missing information when the supply of goods in small towns and cities is unstable.

18. An important feature of the consumer basket in calculation of the CPI is a degree of flexibility in defining it. The basket used for calculation of the CPI is a representative sample of groups of goods and services which feature most frequently in public consumption; there is a single sample for all the regions of the Russian Federation.

19. The basket includes goods and services which are the subject of mass consumer demand, plus individual non-staple goods and services (passenger vehicles, gold jewellery articles, passenger vehicle maintenance, etc.). Items are selected in the light of their relative importance in public consumption, their representativeness in reflecting price dynamics for homogeneous goods and their steady availability for sale. This selection is made at the federal level and remains unchanged for a considerable period (generally not less than a year).

20. At the regional level, specialists provide an overall description of the group of goods on the basis of representative goods with specific consumer characteristics that occupy an important position on the consumer market in the town or city concerned and are expected to be offered for sale over a lengthy period.

21. In a context of continuing substantial growth in prices, the monthly recording of prices for representative goods and services is carried out at the end of the reporting month (between the 23rd and the 25th). For goods and services whose prices and tariffs are not subject to sharp changes, recording is carried out at an earlier stage, but no more than one or two days before the established date. This method of information collection at the end of the month permits fuller evaluation of price rises over the month as a whole.

22. Prices for goods and services in the basket of essential items are recorded once a week on Mondays. For goods and services whose prices and tariffs are not subject to sharp changes, recording may be carried out on the Friday of the previous week. For goods and services whose prices and tariffs rise unevenly and more rapidly, recording is strictly limited to Mondays.

23. It should be noted that the price information recorded each week for representative goods and services in the basket of essential items creates additional difficulties in recording of prices at the end of each month for the full list of representative goods. Consequently it is important that this recording should be carried out at the same surveyed units. In this context, where the dates of the two types of recording coincide, the weekly information is included in the corpus of monthly information.

24. In a context of decelerating inflation rates, requirements as to the quality of the price information gathered are greater, and as a result the rules governing price recording are stricter, as well as requirements governing substitutions of goods and trading enterprises where prices on the list of monitored goods are recorded.

25. Monitoring of price levels and movements was expanded to cover paid education services starting in 1997; until recently paid education did not exist in Russia. In addition, systematic monitoring of prices has been organized for the primary (new) and secondary (resold) housing market. The expansion of price monitoring to cover new sectors makes it possible to evaluate price dynamics more precisely.

26. The CPI is calculated each month and each quarter, and also as a running total from the beginning of the year. Calculations are made each month of the CPI in relation to the previous month, the corresponding month of the previous year and December of the previous year, and as a running total from the beginning of the year compared with the corresponding period of the previous year. Price indices for the quarter, the half-year and the period since the beginning of the year are prepared by means of a "chain" calculation, i.e. by multiplying the monthly consumer price indices.

### **III. Reference value of the basket of essential items**

27. The reference value of the basket of essential items is calculated for the Russian Federation as a whole using price information for the range of towns and cities involved in the calculation of the consumer price index at the federal level. The reference value of the basket of essential items for a given week is its average value for the Russian Federation assessed on the basis of the prices and tariffs prevailing in the preceding week.

28. The reference value of the basket of essential items is calculated each week, and for a given week is defined as the sum of the products of average Russian prices and tariffs for the preceding week for each good and service item included in the basket of essential items, multiplied by the average per capita volume of consumption over a year.

29. The food portion of the basket of essential items corresponds fully to the selection of 25 basic food products used to define the minimum diet, which is the subject of a standard drawn up by the Academy of Medical Sciences Nutrition Institute together with the Russian Academy of Science Institute of Socio-economic Population Problems and the Russian Federation Ministry of Labour. This makes it possible to monitor weekly changes in the value of the selection.

### **IV. Seasonal correction of the CPI**

30. One of the most important problems which the Russian State Committee on Statistics has addressed in compiling the consumer price index is that of the seasonal component corresponding to seasonal products. Observation of prices and tariffs on the consumer market has shown that the prices of certain goods and services, especially specific types of fruit and vegetables, are subject to significant seasonal variations during the year. These variations are generally cyclical in nature.

31. The Russian State Committee on Statistics is already using a number of seasonal correction techniques in calculating the consumer price index (CPI), one of them being the substitution of goods. This method is used when prices for seasonal goods which are lacking at certain times of the year are replaced in due proportion by the prices of similar or equivalent goods in the corresponding group which are available at the time in question. For example, prices for particular types of seasonal goods falling in the clothing and footwear groups are recorded only during the periods of heavy sales of these goods. In off-season periods of the year the last available price from the period of heavy sales of the good is reused without any change until the beginning of the next season, or else the price is indexed on the basis of changes in prices for similar types of equivalent summer or winter items of clothing or footwear, or else it is indexed on the basis of the growth rates in overall prices in the group of goods in question.

32. Besides the technique of substitution of goods, one of the methods of seasonal correction currently used is calculation of the average weighted price for potatoes. In this case the average weighted price of potatoes is calculated on the basis of the gradually rising total volume of sales of potatoes (during the summer period), the proportion of new potatoes and,

correspondingly, the falling proportion of potatoes from the previous year's crop. The price of new potatoes is included in the calculation of the weighted average only from the start of the period of large sales. This method makes it possible, to a certain extent, to establish a link between the prices of potatoes from the current year's crop and the prices of potatoes from the previous year's crop.

33. During the period of high inflation rates in the Russian Federation, exacerbated by sharp and irregularly spaced leaps in prices, it was impossible to identify trends and patterns in the seasonal price variations or to compile indices or seasonal coefficients.

34. In view of the fact that the first year following the period of high inflation that accompanied price liberalization was 1994, during which prices rose by a factor of 3.2, compared with 26.1 in 1992 and 9.4 in 1993, the experimental calculations which reveal the nature of the trends in price movements and also define the seasonal coefficients (indices) were produced for the period 1994-1996, and also for January-April 1997.

35. In the proposed method for seasonal correction, the price indices which even out the influence of the seasonal factor are calculated for individual goods as the ratio between the price index for the reporting month and the seasonal coefficient for that month for each specific item. The seasonal coefficient for each reporting month of the current year is defined as the ratio between the average monthly price index for the base year for each item and the monthly price indices for the same year. The average monthly price index for each item is calculated as the geometric average value of the twelfth root of the annual average price index for the same item.

36. For the purpose of developing an algorithm for seasonal price correction, and thereby indices for the fruit and vegetables group of products, as well as to compile a CPI corrected for seasonal factors, consumer price indices have been calculated experimentally for seasonal types of fruit and vegetable output. Monthly price indices for individual goods, corrected using the seasonal coefficient, were calculated for the entire period under review (1994-1996 and January-April 1997) and for the whole range of monitored types of fruit and vegetable output.

37. The movement of the price indices, and that of the seasonal indices (coefficients) for individual types of fruit and vegetable output, show that pronounced seasonal variations in price indices occurred in individual months during the years under review.

38. The use of seasonal indices in calculating consumer price indices produces a CPI which excludes the seasonal bulge, i.e. seasonal variations in prices are evened out, and this is particularly important in a context of moderate inflation.

39. Experimental CPI calculations carried out using seasonal indices developed for the fruit and vegetable product group show that, for example, applying the seasonal index in January 1996 would lower the CPI value

from 104.11% to 103.12%, or 0.99 points; for August of the same year the CPI would be raised from 99.79% to 101.56%, or 1.77 points. In this context it is important to note that the in-year correction of price indices for the seasonal component maintains the value of price rises as a whole for the year.

40. During the process of development of the seasonal coefficients, the movement of prices on the consumer market for the entire range of representative goods and services was analysed. As a result of the analysis, 38 items were selected from the overall range of representative goods and services; for these items the seasonal factor has so far not been taken into account, or has been taken into account only partially, in calculation of the consumer price index.

41. Work on analysing the dynamics of price information and identifying the influence of the seasonal component for individual types of goods and services on the value of the composite consumer price index shows that it is changes in prices for the fruit and vegetable product group which have the greatest influence on changes in the CPI as a result of the seasonal factor. It has also been established that in this same group of products there are definite patterns in the cycle of seasonal variations in prices, and hence in the indices, which are repeated from one year to the next.

42. At the same time, the nature of the price dynamic for individual types of food product (apart from fruit and vegetable products), as well as non-food goods and services, shows that in a context of more extensive application of the method of substitution of individual types of good and service, it is also possible to even out the seasonal factor which influences the overall level of the consumer price index.

43. In this way it has been established that the influence of seasonal variations in the prices of selected goods and services, apart from fruit and vegetable products, on the seasonal component of the composite consumer price index is insignificant, and the use of the method of calculation of seasonal indices or coefficients for the CPI for these items is undesirable.

## **V. Conclusion**

44. The Russian State Committee on Statistics is continuing its work on refining the current methodology for gathering price information and calculating the consumer price index. The most important avenue to be pursued in the short term is the updating of the sample of towns and cities, trading enterprises and representative goods for price recording, the continuation of work on evaluating the seasonal factor in CPI calculation, and the incorporation of changes in quality in specific goods and services.

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