

Distr.
GENERAL

CES/AC.49/2003/5
24 September 2003

ENGLISH
Original: FRENCH

STATISTICAL COMMISSION and
ECONOMIC COMMISSION FOR EUROPE

INTERNATIONAL LABOUR
ORGANIZATION (ILO)

CONFERENCE OF EUROPEAN STATISTICIANS

Joint UNECE/ILO Meeting
on Consumer Price Indices
(Geneva, 4-5 December 2003)

CONSUMER PRICE INDICES FOR DIFFERENT POPULATION GROUPS

CONTRIBUTED PAPER SUBMITTED BY THE SWISS FEDERAL STATISTICAL OFFICE*

I. INTRODUCTION

1. The Swiss consumer price index (CPI) was revised in May 2000 (base=100). With that revision, the Federal Statistical Office abandoned the notion of a “single” index in favour of a system consisting of the CPI **central module** and certain extensions, as represented by a limited number of **supplementary modules**.

2. The main purpose of creating a modular system is to respond better to the growing demand from users for differentiated statistical information. Thus, different indices will be calculated, each forming part of a specific module.

* Prepared by Ms. Agnès Schüpbach, Economy and Prices Division.

3. Two supplementary modules are now already available: the “index of medical insurance premiums” module and the “consumer price indices for different population groups” module, which is the subject of this paper.¹ The first module provides information supplementing that on price rises, and more specifically on the influence of the evolution of health insurance premiums on changes in household disposable income, this being an important source of information for the definition of incomes policy. The “indices for different population groups” module is a direct response to two parliamentary motions of 1998 which called for the necessary conditions to be created to obtain detailed information on the evolution of the “cost of living” for different socio-economic groups, particularly households including economically active persons, families with children, single-parent families and retirees.

4. The purpose of this second module, as with the Swiss CPI, is to measure price rises; however, it differs from the CPI in terms of its **reference population**. As for the use to which these indices may be put, their main purpose is to compensate for price rises.

5. The calculation of specific consumer price indices for different population groups is the corollary of the widely held thesis in economic and statistical theory that movements in prices are not the same for all population groups, since these groups may have different consumption patterns. The main objective of this paper is to analyse these movements.

6. After presenting the structure of consumption of different population groups (section II), we shall study the movement in the consumer price indices for these groups (section III). Section IV will highlight the limitations and restrictions of our analysis: any conclusion based on the increase in the cost of living measured by such indices will have to take account of these restrictions.

II. STRUCTURE OF CONSUMPTION

7. The population groups covered in this analysis include economically active persons, self-employed persons, pensioners, couples with a child or children and single-parent families. The **definitions**² of these groups are taken from the Household Budget Survey (HBS) and are compatible with International Labour Organization (ILO) standards and those of the 2000 Swiss Population Census. A distinction is made between the different groups depending on whether they are defined by reference to economic criteria (economically active persons, self-employed persons, pensioners) or demographic criteria (couples with a child or children, single-parent families). It is very important to stress that these groups and their weightings and indices are not “additive”, meaning that they overlap with one another (a couple with a child or children may also be included as economically active persons), but that, when taken together, they do not represent all Swiss households.

8. The household budget surveys for 1998, 2000 and 2001 served successively as a basis for calculating the **weightings** of each population group. The household budget survey is carried out using a representative sample of the Swiss population and records the incomes and consumption expenditures of private households. This survey has been conducted annually since 2000.

9. The Household Budget Survey (HBS) is used to obtain differentiated **weighting schemes** that reflect the specific **consumption behaviours** of each type of household. The system of classification (COICOP, 12 groups) and the structure of the **standard basket** used for the different groups are identical to those of the CPI.

10. The weightings obtained for the different population groups are set out in annex I. As may be noted, there are groups of products that reflect certain differences in household consumption behaviours. The noteworthy elements are presented by product group in the paragraphs that follow.

Clothing and footwear

11. Of the types of households considered, pensioners account for the smallest share of expenditures and couples with a child or children for the largest. Household size (the number of persons per household) is certainly at the root of these differences.

Housing and energy

12. For this group of products, single-parent families have the largest share of expenditures, while pensioners have the smallest share. This deviation can be attributed to expenditures on rent. The proportion of renters compared to homeowners and the number of persons per household are factors of primary importance for the interpretation of these differences. Single-parent families are mostly renters and require accommodation that is large enough to house an adult, as well as one or more children. Pensioners, on the other hand, tend to be smaller households and a larger proportion of them are home owners. During the period under review, all types of household saw their weights for the main group of housing and energy decline, largely as a result of a reduction in the weights of energy and rent.

Household equipment and routine household maintenance

13. It is single-parent families that spend the least, proportionately, on this group of products. This deviation is largely to be explained by expenditure on household appliances and home furnishings. These differences can be accounted for by lower income levels and the existence of a large proportion of renters among single-parent families. During the period observed, the weight of this main group declined for the majority of the groups considered.

Health

14. Pensioners represent the households with the highest spending on health. This comes as no surprise, since they constitute the households most likely to require medical care. Health expenditure per capita among pensioners is on average twice as high as for the other groups. Throughout the period considered, health expenditures continued to increase, both in Swiss francs and in percentage terms, for all groups.

Transport

15. As regards expenditures on transport, pensioners and single-parent families are the households that tend to spend the most on public transport rather than on private motor vehicles. Among the self-employed, the share of expenditures on private vehicles is low. The use of company vehicles for private use partially explains this result.

Communication

16. Mobile telephones and Internet access services are in full expansion. If the weightings of all groups are on the rise, single-parent families account for a significantly higher share of expenditures. Pensioners follow this movement, but to a lesser degree.

Recreation and culture

17. In the recreation and culture group, the weightings of economically active persons and couples with a child or children are close to those of the 2000 CPI, while those of self-employed persons, pensioners and single-parent families are lower. Factors such as financial considerations, interest, the amount of free time available and the use of company goods (newspapers, computers, etc.) for private ends can be put forward as arguments to explain these differences in consumption habits. The weightings also show that single-parent families devote the bulk of their expenditure to goods needed for day-to-day living, rather than leisure items and goods that would require from them a large monetary outlay. In general terms, the weight of the recreation and culture group declined for all types of household during the period under review.

Education

18. With pensioners, the low share of expenditure on education reflects the small proportion of persons of school age or in vocational training in this type of household. For single-parent families, the combination of high spending in terms of Swiss francs and of low total expenditure on consumption results in a much higher share of spending on education than for the other groups.

Restaurants and hotels

19. Among the groups covered in this study, it is pensioners and single-parent families that spend the least, proportionately, in restaurants and hotels. Their level of income is certainly one explanatory factor, as is the number of individuals per household among pensioners. Overall, within expenditures for the restaurants and hotel group, restaurants are losing out to hotels.

III. MOVEMENT OF THE INDICES

20. The movement of the indices obtained on the basis of the preceding weightings is illustrated in annexes II and III.

Remarks:

- The **analysis period** extends from May 2000 to August 2003.

- The **weightings** were updated successively on the basis of the household budget surveys (1998, then 2000 and 2001) and, as with the CPI, the new indices were chained.
- The **prices** included in the calculation of the consumer price indices for different population groups are the same as those collected for the Swiss CPI. No separate collection was undertaken.
- As with the CPI, the **geometric mean** and the **Laspeyres index** are used. The base month for the indices is May 2000=100.

21. As annexes II and III clearly show, **the indices for the different population groups basically follow the same trend as, and differ only very slightly from, the CPI**. The impact of the updating of the weightings and the subsequent chaining is, however, fairly clear each time. The configuration of the curves for the different indices changes with each new link before returning to a more stable pattern. Since the movement of the index for economically active persons is very close to that for the 2000 CPI, this group will not be mentioned in the analysis by period that follows.

22. The analysis of the index movements for different population groups has been broken down into three periods, corresponding to the updating of the weightings and to the chaining of the indices. The differences in the movements of these indices can largely be explained by the following items of expenditure: **fuel, rent for housing, heating oil, clothing, air travel and hotel stays**. The relative weightings of these items of expenditure are shown in annex IV.

May 2000 to December 2001

23. **Pensioners** experienced lower inflation than the other groups, chiefly because they are less affected (lower weight, see annex IV) by increases in fuel prices and rents. **Single-parent families** suffer from higher inflation than the other groups, mainly because they are more sensitive (higher weight, see annex IV) to increases in rents, even if this phenomenon was partially offset by decreases in heating oil prices and increases in fuel prices.

January to December 2002

24. The index for **pensioners** and that for **single-parent families** fluctuated in accordance with the clothing cycle (periods with and without sales). Since these two types of household spent proportionately less on clothing (see annex IV) than the others, the variations for them are of a lesser magnitude. Households consisting of **couples with children** experienced the lowest inflation, particularly during the sales periods, because of the relatively large weight of clothing for these households (see annex IV). The index for the **self-employed** sometimes saw the largest increases, when fuel and/or air travel prices rose, since they lend greater weight to these items of expenditure (see annex IV) than the other types of household.

January to August 2003

25. In January 2003, the combination of higher prices for hotel stays and clothing sales pulled down the index for **couples with children** and that for **single-parent families**, while having the opposite effect on the index for **pensioners** and that for the **self-employed**. In July, during the clothes sales, pensioners saw their index fall to a relatively smaller degree, because they attribute less weight (see annex IV) to clothing than the other population groups.

Overall period

26. Throughout the entire period (May 2000-August 2003), **the consumer price indices for the different types of household diverged at various times from the CPI**, except as regards the index for **economically active households**, which closely followed the CPI.

27. For **pensioners** three completely different periods can be identified. In 2000-2001, their index was generally lower than that for other types of household. In 2002, the fluctuations in their index were smaller in magnitude, because they were primarily dictated by variations in clothing and, since pensioners give less weight than the other types of household to these kinds of goods, they are less affected by variations in their prices. In 2003, the index for pensioners was consistently higher than most of the other indices.

28. During the period 2000-2001, the index for the **self-employed** followed a similar pattern to that of the 2000 CPI. In 2002, the index was at times slightly higher, due in particular to price variations in the transport group. In 2003, after the weightings had been updated, the index for the self-employed was generally higher than that for most of the other types of household.

29. During the period 2000-2001, the index for **couples with a child or children** moved in a similar way to that of the 2000 CPI. In 2002, there were larger fluctuations in their index, which were due mainly to variations in clothing and the fact that, since couples with a child or children give greater weight to these kinds of goods than the other types of household, they are more affected by variations in their prices. In 2003, the index for couples with a child or children was consistently lower than that for the other types of household.

30. Up to the end of 2002, the index for **single-parent families** tended to be higher than the other indices. In 2003, after the weightings had been updated, that trend was reversed, with the index for single-parent families falling slightly below the CPI, as well as most of the indices for the other groups.

IV. LIMITATIONS AND RESTRICTIONS OF THE ANALYSIS

31. As may have been noted, the indices for the different population groups that we have considered essentially follow the same trend and diverge only very slightly from the CPI. However, it is important to underscore the limitations and restrictions of our analysis and its results.

Specific prices

32. In order to arrive at even more meaningful indices, it would also be necessary to carry out specific price surveys, since the choice of products and sales outlets can vary according to the type of household. However, it would be costly to gather information on the specific consumption habits of particular groups of households and to do the actual work of individual price collection. This ideal case must therefore be abandoned for the moment and efforts must be limited to the application of differentiated weightings.

Heterogeneity of the population groups

33. Among the various population groups covered by this study, pensioners probably constitute the most heterogeneous households in terms of incomes and consumption habits. A more in-depth analysis will be made to improve the representativeness of the results obtained for this type of household.

Reduction of the sample

34. As of 2000, the Household Budget Survey (HBS) has been carried out annually. One main consequence has been a reduction in the size of the sample of households interviewed. From 9,300 households interviewed during the 1998 survey, the 2000 HBS included no more than about 3,650 households. This reduction is bound to affect the results obtained on the basis of the indices for different population groups, since the weightings for the 2000/2001 index were calculated using an "old" sample of nearly 9,600 households, while the next two series used for the 2002 and 2003 indices were prepared from a restricted sample. Any interpretation of the variations in weightings between 2000-2001 and 2002, as well as in the related indices, therefore has to take account of this change in the sample size.

Proportion of the different household groups relative to the total number of households

35. The proportion of the different household groups relative to the total number of households interviewed can affect the reliability of the results obtained. Indeed, it may be that the quantity of data usable to calculate the weighting of certain types of goods is too low to guarantee a sound result. Certain types of goods, such as durable goods, are particularly affected by this phenomenon. It is therefore important to exercise due caution with this type of problem when interpreting the results obtained on such bases.

Analysis period

36. The analysis period, which runs from May 2000 to August 2003, already helps to yield some interesting data, but a longer-term study of the movement in the indices for the different population groups is needed before any conclusion may be drawn regarding them.

Notes

¹ A first brochure on consumer price indices for different population groups for the period May 2000-December 2001 is already available (Federal Statistical Office, “Indices des prix à la consommation pour différents groupes de la population, premiers résultats” (Consumer price indices for different population groups: preliminary results), FSO News, Neuchâtel, 2003).

² Economically active: households in which the reference person is an economically active person, whether or not employed. Unemployed persons (economically active persons not in employment) are also included in this definition.

Self-employed: households in which the reference person had one or more remunerated activities of at least one hour per week during the week preceding the interview and has the occupational status of a self-employed person, with or without an employee, a family worker or a salaried person working in his own business.

Pensioners (recipients of old-age, disability or survivors' benefits): households in which the reference person did not have a remunerated activity of at least one hour per week during the week preceding the interview and whose main activity is that of a pensioner.

Couples with a child or children: households of at least three persons, consisting of a couple (including the reference person) and other members all having a relationship of filiation with the reference person.

Single-parent families: households of two or more persons, consisting of a single reference person and other members all having a relationship of filiation with the reference person.

Annex I

Weighting of the standard basket for different population groups

DATA ON HOUSEHOLDS	CPI 2000			Economically active			Self-employed			Pensioners			Couples with a child (children)			Single parent families		
	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003
Consumption expenditure (in Swiss francs)	4 654	4 799	4 993	4 898	5 049	5 363	5 059	5 054	5 201	3 774	3 954	3 942	5 596	5 707	6 141	4 065	4 488	4 743
Mean household size (persons)	2.4	2.4	2.5	2.6	2.7	2.7	3.1	2.9	3.0	1.7	1.7	1.7	3.9	3.9	4.0	2.5	2.6	2.6
Proportions in the HBS (%)	100.0	100.0	100.0	78.3	76.3	74.4	10.4	11.3	11.6	19.1	20.9	24.5	33.4	33.4	34.7	4.4	4.5	3.8
WEIGHTINGS OF THE STANDARD BASKET	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003	2000/01	2002	2003
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1. Food and non-alcoholic beverages	11.5	11.7	11.8	11.4	11.8	11.6	12.5	13.4	13.0	12.0	11.8	12.4	13.6	13.8	13.3	12.8	12.1	12.3
2. Alcoholic beverages and tobacco	2.0	1.9	1.8	2.0	1.9	1.8	1.9	1.9	1.8	1.9	1.7	1.9	1.8	1.8	1.6	1.6	1.8	1.8
3. Clothing and footwear	5.1	4.5	4.9	5.2	4.8	5.1	5.0	4.8	5.3	4.8	3.5	3.9	5.3	5.0	5.3	5.1	4.0	5.3
4. Housing and energy	26.5	26.0	25.4	26.9	26.5	25.5	27.7	26.2	25.8	24.6	23.5	24.3	25.6	25.3	24.3	30.2	28.8	28.2
5. Household equipment and routine household maintenance	5.1	4.6	4.5	5.0	4.6	4.4	6.0	4.7	4.2	5.7	4.8	4.7	5.1	4.6	4.9	3.8	6.3	4.2
6. Health	13.4	14.5	15.2	12.4	13.2	13.7	13.4	13.2	14.4	18.2	19.8	21.7	13.2	14.0	14.1	13.3	13.4	15.2
7. Transport	9.4	9.8	9.8	9.7	9.5	10.5	7.1	7.4	8.3	7.6	10.7	7.5	9.8	8.7	10.3	7.2	6.2	6.6
8. Communication	1.8	2.4	2.5	1.8	2.5	2.6	1.8	2.5	2.6	1.6	1.8	1.8	1.7	2.6	2.6	2.3	3.0	3.8
9. Recreation and culture	10.3	9.6	9.4	10.4	9.7	9.7	9.4	9.3	8.8	9.4	9.2	8.2	10.2	9.9	9.7	9.3	10.4	8.9
10. Education	0.5	0.6	0.5	0.6	0.7	0.6	0.5	1.0	0.4	0.1	0.2	0.1	0.6	0.9	0.8	1.4	1.0	1.2
11. Restaurants and hotels	9.5	9.4	9.4	9.8	9.9	9.7	10.0	10.7	10.7	8.2	7.4	8.6	8.3	8.3	8.1	7.7	8.0	7.3
12. Miscellaneous goods and services	4.9	5.0	4.8	4.8	4.9	4.8	4.7	4.9	4.7	5.9	5.6	4.9	4.8	5.1	5.0	5.3	5.0	5.2

Source: Household Budget Survey, 1998, 2000 and 2001.

Annex II

Consumer price indices: May 2000-August 2003

	May 00	June 00	July 00	Aug. 00	Sept. 00	Oct. 00	Nov. 00	Dec. 00
CPI 2000	100.0	100.4	100.4	100.2	100.7	100.6	101.1	101.0
Economically active	100.0	100.4	100.5	100.2	100.7	100.6	101.1	101.0
Self-employed	100.0	100.4	100.4	100.2	100.7	100.6	101.1	101.0
Pensioners	100.0	100.3	100.4	100.2	100.7	100.6	101.0	100.9
Couples with a child or children	100.0	100.4	100.5	100.2	100.7	100.5	101.0	100.9
Single-parent families	100.0	100.3	100.4	100.2	100.7	100.6	101.2	101.1

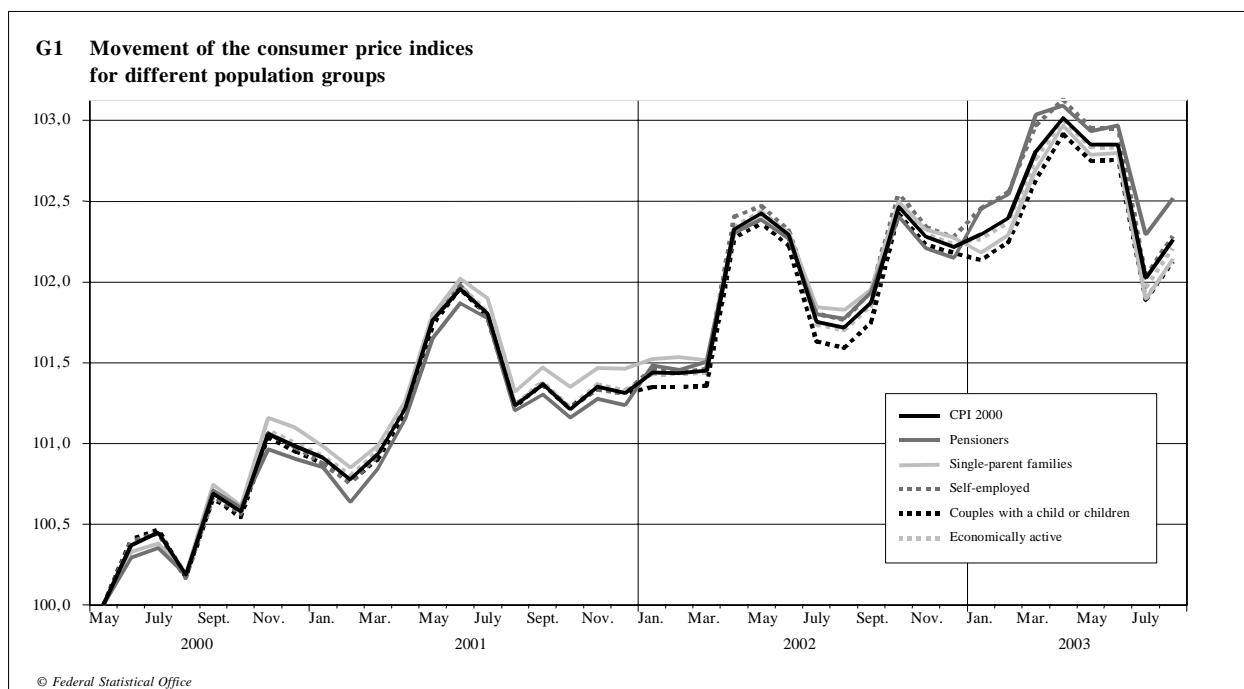
	Jan. 01	Feb. 01	Mar. 01	Apr. 01	May 01	June 01	July 01	Aug. 01	Sept. 01	Oct. 01	Nov. 01	Dec. 01
CPI 2000	100.9	100.8	100.9	101.2	101.8	102.0	101.8	101.2	101.4	101.2	101.4	101.3
Economically active	100.9	100.8	101.0	101.2	101.8	102.0	101.8	101.2	101.4	101.2	101.4	101.3
Self-employed	100.9	100.8	100.9	101.2	101.8	102.0	101.8	101.2	101.4	101.2	101.3	101.3
Pensioners	100.9	100.6	100.9	101.2	101.7	101.9	101.8	101.2	101.3	101.2	101.3	101.2
Couples with a child or children	100.9	100.8	100.9	101.2	101.7	102.0	101.8	101.2	101.4	101.2	101.3	101.3
Single-parent families	101.0	100.9	101.0	101.3	101.8	102.0	101.9	101.3	101.5	101.3	101.5	101.5

	Jan. 02	Feb. 02	Mar. 02	Apr. 02	May 02	June 02	July 02	Aug. 02	Sept. 02	Oct. 02	Nov. 02	Dec. 02
CPI 2000	101.4	101.4	101.5	102.3	102.4	102.3	101.8	101.7	101.9	102.5	102.3	102.2
Economically active	101.4	101.4	101.4	102.3	102.4	102.3	101.7	101.7	101.9	102.5	102.3	102.2
Self-employed	101.5	101.4	101.5	102.4	102.5	102.3	101.8	101.8	101.9	102.5	102.3	102.3
Pensioners	101.5	101.5	101.5	102.3	102.4	102.3	101.8	101.8	101.9	102.4	102.2	102.1
Couples with a child or children	101.3	101.3	101.4	102.3	102.4	102.2	101.6	101.6	101.8	102.4	102.2	102.2
Single-parent families	101.5	101.5	101.5	102.3	102.4	102.3	101.8	101.8	102.0	102.5	102.3	102.3

	Jan. 03	Feb. 03	Mar. 03	Apr. 03	May 03	June 03	July 03	Aug. 03
CPI 2000	102.3	102.4	102.8	103.0	102.8	102.9	102.0	102.3
Economically active	102.3	102.4	102.8	103.0	102.8	102.8	102.0	102.2
Self-employed	102.5	102.5	103.0	103.1	102.9	103.0	102.0	102.3
Pensioners	102.5	102.6	103.0	103.1	103.0	103.0	102.3	102.5
Couples with a child or children	102.1	102.2	102.6	102.9	102.8	102.8	101.9	102.1
Single-parent families	102.2	102.3	102.7	103.0	102.8	102.8	101.9	102.1

Annex III

Consumer price indices for different population groups



Annex IV

Weightings of some expenditure items for different population groups

Expenditure items	CPI 2000	Economically active	Self-employed	Pensioners	Couples with a child or children	Single-parent families
2000/2001						
Rent	20.1	20.9	20.8	15.8	19.8	24.1
Heating oil	1.3	1.2	1.3	1.5	1.2	1.4
Fuel	2.9	3.2	3.2	2.0	3.2	2.4
2002						
Articles of clothing	3.3	3.4	3.3	2.5	3.6	2.9
Fuel	2.8	2.9	3.0	2.0	3.0	2.0
Air travel	0.5	0.5	0.9	0.1	0.3	0.4
2003						
Articles of clothing	3.6	3.8	4.0	2.8	4.0	4.0
Hotels	1.0	1.0	1.9	1.4	0.6	0.8
