

## COMMUNICATION TO THE EUROPEAN MONETARY INSTITUTE

Reference: Proposed Commission Regulation concerning Harmonised Indices of Consumer Prices giving measures on initial coverage, treatment of newly significant goods and services, minimum standards for procedures of quality adjustment, minimum standards for prices, price indices for elementary aggregates and minimum standards for sampling

### Justification

1. Under the Treaty establishing the European Community (Article 109j) the European Monetary Institute (EMI) and the Commission are required to report to the Council on the progress made in fulfilment by the Member States of their obligations regarding the achievement of economic and monetary union. One criterion of such progress is a high degree of sustainable convergence in price stability as apparent in the rate of inflation in comparison with the three best performing Member States. Inflation has to be measured by means of the consumer price index on a comparable basis. The CPIs of Member States currently differ in concepts, methods and practices and a programme of harmonisation is therefore necessary to produce comparable indices. CPIs are politically, socially and economically sensitive statistics and cannot be readily changed. It will therefore be necessary to construct distinct CPIs which are comparable. The indices will be referred to as Harmonised Indices of Consumer Prices (HICPs).
2. The harmonisation project is, in two steps: first the framework Council Regulation (EC) No. 2494/95 of 23 October 1995 published in the Official Journal No. L 257 on page 1; followed by a series of Commission Regulations containing detailed technical guidelines for progressing implementation in stages from March 1996 to January 1998 and thereafter if necessary. This draft Regulation deals with:
  - a) the initial coverage of goods and services of the HICPs. The HICPs from January 1997 will cover every 3-digit category of the COICOP/HICP and nominated sub-groups listed in Annex I of the draft Regulation. Further additions will be defined in future Commission Regulations.
  - b) the treatment of newly significant goods or services in the construction of HICPs. It is aimed at ensuring that all HICPs take account of the price movements of newly significant goods and services such as mobile phones and other technologically developed products as well as products which are already existing in the market and not in the index but the expenditure on which becomes significant. It will require Member States to add newly significant goods and services to the index within twelve months of when they are identified as reaching a

threshold proportion of one part per 1000 of consumer's expenditure. National Statistical Institutes currently monitor new developments in consumer goods and services and Eurostat will build on this work to assist the process of identification.

- c) minimum standards for procedures of quality adjustment. The draft proposes that Member States agree to report adjustments to Eurostat which will maintain a database for access by the Member States. Eurostat will not itself estimate adjustments or arbitrate on them but would simply act as a clearing-house. In the event of an estimate being required but not available Eurostat might provide one after discussion with one or more Member States as deemed appropriate. This system will help to ensure that Member States adopt similar methods for quality adjustment.
- d) minimum standards for prices used in the HICPs. It will require Member States to maintain the target sample from month to month where monthly collection is the requirement, or from period to period where less frequent collection is planned. When prices are not observed, prices must be estimated by an appropriate estimation procedure. Simply carrying forward previous prices would not normally be appropriate. The "target sample" is for Member States to determine in the first instance.
- e) price indices for elementary aggregates. The fact that national CPIs can differ on account of the formulae used for combining basic price data at the lowest level of aggregation, where there are no weighting data, has long been known, and Member States accept that this is an undisputed source of non-comparability. However, no formula is ideal. Therefore, the draft Regulation seeks harmonisation by allowing the choice among acceptable formulae, the test of acceptability being that the results do not differ systematically.
- f) minimum standards for the sampling of prices data for the HICPs. It will require Member States to use sufficiently reliable samples in the construction of the HICP from January 1997. This will involve an assessment of present sampling arrangements and if necessary an improvement in the design in terms of the distribution of prices sampled across strata. The initial assessment will be a matter for Member States guided by Eurostat. It will be largely qualitative and will not require a great deal of detailed information. Eurostat, in co-operation with Member States, will develop appropriate measures of reliability, the computation of which should likewise, not place a heavy burden on Member States. The setting of minimum standards will be subject of the Review of HICPs which the Commission (Eurostat) is required to present by October 1997, under the terms of Art. 15 of the Council Regulation.

### Draft Regulation

3. The EMI is invited to give its opinion on the draft Commission Regulation.

## EXPLANATORY MEMORANDUM

to the  
proposed Commission Regulation concerning Harmonised Indices of Consumer Prices giving measures on initial coverage, treatment of newly significant goods and services, minimum standards for procedures of quality adjustment, minimum standards for prices, price indices for elementary aggregates and minimum standards for sampling

### 1. Initial coverage (in particular Article 3 of the Regulation):

- 1.1. Article 3 of Council Regulation (EC) No. 2494/95 defines the scope of the Harmonised Indices of Consumer Prices (HICPs) as all goods and services available for purchase; the aim should be to have the actual coverage of HICPs as close as possible to their scope. There has been a broad consensus in both the Statistical Programme Committee and the HICP Working Party that a common coverage of goods and services is important for the comparability of the HICPs. The main criticism of the interim indices is that important items such as housing, health and education have been excluded from coverage. However, it is realised that institutional differences between Member States in the delivery of such services raise considerable difficulties for the construction of comparable price indices.
- 1.2. The aim of this Regulation is to define the initial coverage of the HICPs starting with the index for January 1997. It requires Member States to include in their HICPs a weight and an appropriate price index for any of the categories listed in Annex I of the Regulation where the weight, if included, would amount to one part per thousand of the total expenditure covered. The categories correspond as far as possible to those laid down in the COICOP classification. The coverage of the HICPs is thus defined by Annex I, subject, for particular HICPs, to the 1 per 1000 qualification above. Further additions to the coverage will necessitate future Commission Regulations.
- 1.3. This Regulation does not define the price indices which should be transmitted to Eurostat (other than under Article 9a to demonstrate compliance) or those which should be published. These matters have yet to be agreed with Member States based on Annex I.

### 2. Newly significant goods and services (in particular Article 4 of the Regulation):

- 2.1. Article 4 of Council Regulation (EC) No. 2494/95 requires the Commission (Eurostat) to adopt rules to be followed to ensure the comparability of HICPs, and Article 5.3 requires that the relevance of HICPs be maintained. If some Member States add new goods and services as they become important to

consumers whereas others do so only when new weights are taken into the index, this can lead to important differences in measured rates of inflation. It is necessary to ensure that these are not so large as to lead to non-comparability. The Regulation recognises that between Member States there will continue to be differences in the frequency of updating the weights of the HICPs, at least in the short run.

- 2.2. The aim is to meet both the "comparability" requirement and the "relevance" requirement. These are not separable. HICPs must be kept broadly in step with each other and with market developments. The Regulation is not concerned with whether particular long standing goods or services are represented in the Consumer Price Index (CPI) or whether old goods or services are dropped when they are no longer significant in current consumption.
- 2.3. A requirement to take in every new product as it becomes available would be costly and cannot be justified on the grounds of comparability. There will be a threshold at which failure to update will affect an HICP. This will depend on both the weight and the price movement. However, a threshold in terms of the weight is the only practicable option and this is suggested. A threshold of one part per thousand (Article 2b) is consistent with the requirement for the initial coverage of the HICP (Article 3).
- 2.4. Member States are required to monitor market developments so that newly significant goods and services are identified. The adjustment of weights necessary for their inclusion is left to the Member State to decide. A newly significant good or service can be added either within an existing category of COICOP/HICP by assigning part of the weight to the new good or service but without increasing the overall weight of the category or assigning an appropriate additional weight to the new good or service and adding this to the category (re-scaling all weights). The Regulation shall not be interpreted as a requirement to update weights in general.
- 2.5. The Regulation requires Member States to report additional goods and services which they plan to include in their HICPs. Eurostat will ask other Member States to consider whether these are "newly significant goods and services" as defined, that is whether they are not included in their HICPs and the expenditure on them is above the threshold. Eurostat will also seek information on additions to the index where expenditure is not above the threshold.

### **3. Minimum standards for procedures of quality adjustment (in particular Article 5 of the Regulation):**

- 3.1. Article 4 of Council Regulation (EC) No. 2494/95 requires the Commission (Eurostat) to adopt rules to be followed to ensure the comparability of HICPs. Evidence suggests that quality adjustment is a major source of non-comparability between CPIs; the HICP Working Party has made this a priority issue. A large part of the differences can be attributed to the frequent use of "all" or "nothing" default adjustments in the absence of information on

the "value" of quality changes identified. The application of minimum standards will thus contribute significantly towards improved comparability. Further improvements should be achieved as existing practices will be subjected to a greater degree of scrutiny than at present

- 3.2. The Regulation requires Member States to examine quality adjustment procedures and to avoid the assumptions that quality changes either have no price or that they account for the whole of any price difference when these are not justified. Member States will be free to determine the methods of evaluating quality, helped by pooled information on the specific adjustments that have been made by other Member States. The HICP Working Party has supported the suggestion of sharing information on the quality adjustment of high-tech goods such as motor vehicles and electronic goods. Eurostat has accepted that it should gather such information so that it is readily available to National Statistical Institutes seeking quality adjustments in these areas. It is also hoped that information obtained under Article 9c will be a source for determining and disseminating good practice.
- 3.3. Although "quality change" is defined in Article 2c it is left to Member States to decide whether a particular change in specification should be regarded as a "quality change" for the purpose of constructing the HICP. The definition given in the European System of Accounts (ESA) 1995 (paragraph 10.16) may be of some assistance.

#### 4. Minimum standards for prices (in particular Article 6 of the Regulation):

- 4.1. Article 8 of Council Regulation (EC) No. 2494/95 requires that HICPs be compiled each month with monthly price collection but lets Eurostat allow less frequent collection as long as the results are comparable. Without this Regulation monthly collection would be mandatory. Less frequent collection arises in practice in national CPIs when prices are procedurally required monthly but cannot be or are not obtained. It is also used when procedures do not require observation every month. In either case some implicit or explicit estimations are made. Particular practices for estimation can lead to non-comparability, as will differences in the extent of missing observations between Member States.
- 4.2. The Regulation will require Member States to maintain the target sample from month to month where monthly collection is the requirement, or from period to period where less frequent collection is planned. When prices are not observed they must be estimated by an appropriate estimation procedure. Simply carrying forward previous prices would not normally be appropriate. The "target sample" is for Member States to determine in the first instance. The Regulation will also require Member States to keep track of the extent of missing prices and to cease "automatic carry-forward" and other inappropriate methods of estimation. If the extent of estimation is too high, steps will need to be taken to improve standards of price collection in order to reduce the number of missing observations or to seek replacements.

- 4.3. The aim of the Regulation is to set a minimum standard for the prices used in order to ensure that HICPs are comparable by limiting the extent to which Member States depart from their own plans for monthly, or other frequency of, price observation. It requires appropriate estimates to be used where prices are missing and prohibits the practice of carrying forward previous prices in the absence of observation where such a practice cannot be justified. The Regulation applies to all goods and services including seasonal goods and services and rents but does not, in itself, require Member States to increase the number of prices collected beyond that used for the national CPI. Plans for price collection, the target sample, may be changed by the Member State as it deems appropriate, or where estimation procedures are shown to be inappropriate, or in order to meet the requirements of other parts of Regulation, such as for example Article 8 on sampling. "Appropriate estimates" and the "appropriate limit" on missing observations will be determined by deciding what is inappropriate in consultation with Member States in the light of the quality control information obtained. The "minimum standard" will in effect be raised in the light of what is learned from the quality control information (Article 9d) provided by Member States.

**5. Price indices for elementary aggregates (in particular Article 7 of the Regulation):**

- 5.1. The aim of the Regulation is to establish the formulae for combining basic price data at the lowest level of aggregation where there are no weighting data. Restricting the formulae that may be used to compile these price indices of elementary aggregates will ensure the comparability of HICPs.
- 5.2. The fact that different formulae for compiling elementary aggregate indices can result in different CPIs has long been known and the technical experts of National Statistical Offices accept that this is a source of non-comparability. However, no single formula commands universal support and the Regulation therefore nominates the two most used formulae and formulae not differing systematically from these, and prohibits the use of a formula currently used by a number of Member States which has been shown to give systematically higher results.

**6. Minimum standards for sampling (in particular Article 8 of the Regulation):**

- 6.1. Article 4 of Council Regulation (EC) No. 2494/95 says that "HICPs which differ on account of differences in the concepts, methods or practices used in their definition and compilation shall not be considered comparable", and Article 5.3 requires HICPs of adequate reliability. There are major differences in sampling methods and practices used in the construction of CPIs between Member States. It is, therefore, necessary to assess what effects these will have on the accuracy of the HICPs and to reduce the more serious errors in order to assure their comparability.

- 6.2. The aim of this Regulation is to improve, where necessary, both the reliability and comparability of HICPs by reducing errors that arise from different sample designs and practices. That is, to assess and set appropriate limits on the errors which arise in the process of selecting prices from which to construct the HICPs. The methods of selection may give rise to bias (systematic differences from the desired result) while the precision of the HICP will depend on the sizes of the actual samples taken. The Regulation does not address the errors that arise from the subsequent processing and estimation procedures nor errors which occur from the use of sampling or otherwise in the construction of weights.
- 6.3. The sample of price changes used to compile the HICP should be adequately representative of the population and of an appropriate precision to yield estimates of overall price change which are sufficiently reliable for the purposes for which the HICPs are intended; namely international comparisons. There should be appropriate limits to the size of both bias and sampling errors allowed for HICPs but before formal limits can be set it is necessary to provide an assessment of the scale of existing biases and sampling errors. The limits which are then set will have to be justified in terms of the purposes and approved by the Statistical Programme Committee. Meanwhile, Member States would make their own assessments of the samples of prices to be used for the HICP which are known as the "target samples" (Article 2e). Where their assessment showed the accuracy of samples to be poor, Member States would agree informally with Eurostat what improvements might be appropriate.
- 6.4. Article 9f requires Member States to provide data on which assessments of reliability can be made. Eurostat will specify the kind of data that are appropriate having due regard to what is available in different Member States and the work involved in providing it. Such data will be used by Eurostat to evaluate compliance and possibly to compute standard errors and statistics measuring the representativity of the HICP, but pilot studies will be necessary in order to develop satisfactory statistics. Urgency is given to this work by committing Eurostat to providing some assessment of reliability for inclusion in the first Review, due in October 1997.

COMMISSION REGULATION (EC) No [xx/96]  
of [date]

**implementing Council Regulation (EC) 2494/95 concerning  
Harmonised Indices of Consumer Prices giving measures on  
initial coverage, treatment of newly significant goods and services,  
minimum standards for procedures of quality adjustment, minimum  
standards for prices, price indices for elementary aggregates and  
minimum standards for sampling**

The Commission of the European Union,

Having regard to the Council Regulation (EC) N° 2494/95<sup>1</sup> (Basic Regulation) and in particular Articles 4 and 5 (3),

Whereas each Member State is required to produce a Harmonised Index of Consumer Prices (HICP) starting with the index for January 1997;

Whereas Article 3 of the Basic Regulation requires that the scope of the HICP shall be the goods and services available for purchase in the economic territory of the Member State for the purposes of directly satisfying consumer needs;

Whereas the coverage of the existing Consumer Price Indices produced by the Member States, or practices followed for the inclusion of newly significant goods and services, or procedures for adjusting prices for quality changes of the items priced, or methods of combining prices to form price indices for elementary aggregates, or sampling methods and practices for obtaining prices differ between Member States to the extent that the resulting Consumer Price Indices produced by the Member States fail to meet the comparability requirement necessary for the production of the HICP;

Whereas the practice of using previous prices as substitutes for the current monthly prices differs from the use of prices collected to the extent that the resulting Consumer Price Indices produced by the Member States fail to meet the comparability requirement necessary for the production of the HICP;

Whereas it is necessary to include newly significant goods and services in both HICPs the weights of which are updated annually and those the weights of which are updated less frequently;

Whereas implementing measures are necessary for ensuring comparability of HICPs in accordance with Article 5.3 of the Basic Regulation,

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<sup>1</sup> OJ N° L 257 of 27.10. 1995, p. 1



Whereas in accordance with Article 15 of the Basic Regulation, the Commission (Eurostat) is required to submit a report to the Council on the reliability of the HICPs and their compliance with the comparability requirements;

Whereas the Statistical Programme Committee (SPC), established by Council Decision 89/382/EEC<sup>2</sup>, has reached a favourable conclusion on the draft Regulation;

Whereas the European Monetary Institute has been consulted in conformance with Article 5.3. of the Basic Regulation and has given a positive opinion;

HAS ADOPTED THIS REGULATION:

## I. GENERAL PROVISIONS

### Article 1

#### Aim

The aim of this Regulation is to establish for the purpose of the production of a comparable Harmonised Index of Consumer Prices (HICP) produced by each Member State:

- the initial coverage of goods and services as well as comparable practices for updating the coverage to include newly significant consumer goods and services.
- minimum standards for the procedures of quality adjustment.
- minimum standards for the prices used.
- the formula for compiling price indices for the elementary aggregates.

The aim is also to ensure that the sampling of prices is such that the HICPs are sufficiently reliable for the purpose of international comparisons and to provide information from which to set minimum standards for sampling.

### Article 2

#### Definitions

For the purpose of this Regulation:

- (a) "Initial coverage of goods and services of the HICP" is defined as those 3-digit categories and sub-categories specified in the COICOP/HICP<sup>3</sup> classification given in Annex I.

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<sup>2</sup> OJ N° L 181 of 28.6.1989, p. 47

<sup>3</sup> Classification of individual consumption by purpose adapted to the needs of HICPs

- (b) "Newly significant goods and services" are defined as those goods and services the price changes of which are not explicitly included in a Member State's HICP and the estimated consumers' expenditure on which has become at least one part per thousand of the expenditure covered by that HICP.
- (c) "Quality change" occurs whenever the Member State judges that a change in specification has resulted in a significant difference in utility to the consumer between a new variety or model of a good or service and a good or service previously selected for pricing in the HICP for which it is substituted. A quality change does not arise when there is a comprehensive revision of the HICP sample.
- (d) "Quality adjustment" is the procedure of making an allowance for a quality change by increasing or decreasing the observed current or reference prices by a factor or an amount equivalent to the value of that quality change.
- (e) "Target sample" is defined as the set of prices of goods and services which the Member State plans to obtain for the production of the HICP from January 1997 or plans at some subsequent date in order to meet the Member States' own or any European standard for reliability or comparability.
- (f) "Observed price" is a price actually confirmed by the Member States.
- (g) "Estimated price" is a price which is substituted for an observed price and is based on an appropriate estimation procedure. Previously observed prices shall not be regarded as estimated prices unless they can be shown to be appropriate estimates.
- (h) "Replacement price" is an observed price for a good or service which is taken as a direct substitute for a good or service the price of which was in the target sample.
- (i) "Elementary aggregate index" is a price index for an elementary aggregate comprising only price data.
- (j) "Elementary aggregate" refers to the expenditure or consumption covered by the most detailed level of stratification of the HICP and within which reliable expenditure information is not available for weighting purposes.
- (k) "Sampling" relates to any procedure in the construction of the HICP where a subset of the population of the prices faced by consumers is used to estimate the price change for some category of the goods and services covered by the HICP.
- (l) "Reliability" shall be assessed according to "precision" which refers to the scale of sampling errors and "representativity" which refers to the lack of bias.

## II. MEASURES FOR ENSURING COMPARABILITY, RELIABILITY AND RELEVANCE OF THE HICP

### Article 3 Initial coverage

HICPs which include price indices and weights for each category given in Annex I accounting for more than one part in a thousand of the total expenditure covered by all these categories, shall be deemed comparable.

### Article 4 Newly significant goods and services

Member States shall:

- a) systematically seek to identify newly significant goods and services, and
- b) check the significance of goods and services reported to be newly significant in other Member States.

The HICP shall be compiled to include the price changes of a newly significant good or service, where the good or service has been estimated as falling within the definition in Article 2 (b). This shall be accomplished within twelve months of their identification either by adjusting the weights of or within the relevant category of COICOP/HICP classification given in Annex I to this Regulation or by assigning part of the weight specifically to the newly significant good or service.

### Article 5 Minimum standards for procedures of quality adjustment

- (1) HICPs for which appropriate quality adjustments are made shall be deemed to be comparable. Where quality changes occur, Member States shall construct price indices by making appropriate quality adjustments based on explicit estimates of the value of the quality change. In the absence of national estimates, Member States shall use estimates based on information provided by the Commission (Eurostat) where these are available and relevant.
- (2) Where no estimates are available, price changes shall be estimated as the difference between the price of the selected substitute and that of the item it has replaced. In no case should a quality change be estimated as the whole of the difference in price between the two items, unless this can be justified as an appropriate estimate. Where replacements have to be made after goods or services have been offered at reduced prices, those replacements should be selected according to their similarity of utility to the consumer and not according to similarity of price.

**Article 6**  
**Minimum standards for prices**

- (1) Member States shall produce HICPs using the observed prices of the target sample, cf. Article 2 (e).
  - (a) Where the target sample requires monthly observation, but observation fails due to non-availability of an item or for any other reason, estimated prices may be used for the first or second month but replacement prices shall be used from the third month.
  - (b) Where, exceptionally, the target sample requires observations less frequently than monthly, estimated prices shall be used for those months where observed prices are not required. Estimated prices may also be used on the first occasion on which price observation fails. Where observation fails for a second consecutive occasion, replacement prices shall be used.
- (2) Where, in the circumstances referred to in this Article, replacement prices are not available, estimated prices may continue to be used, provided that the extent of their use is limited to a level appropriate for achieving comparability.

**Article 7**  
**Price indices for elementary aggregates**

HICPs shall be compiled using either of the two formulae given in paragraph 1 of Annex 2 to this Regulation or an alternative comparable formula which does not result in an index which differs systematically from an index compiled by either of the given formulae by more than one tenth of one percentage point on average over one year against the previous year.

**Article 8**  
**Minimum standards for sampling**

HICPs constructed from target samples which, for each category of COICOP/HICP and taking into account the weight of the category, have sufficient elementary aggregates to represent the diversity of items within the category and sufficient prices within each elementary aggregate to take account of the variation of price movements in the population shall be deemed reliable and comparable.

**Article 9**  
**Quality Control**

Member States shall:

- (a) provide the Commission (Eurostat) at its request with information on the expenditure of any exclusions from coverage, expressed as a proportion of the total expenditure covered by the HICP, sufficient to evaluate compliance with this Regulation.

- (b) report to the Commission (Eurostat) newly significant goods and services when they are identified and, if required, the grounds for the non-inclusion of any newly significant good or service sufficient to evaluate compliance with this Regulation.
- (c) monitor the incidence of quality changes and the adjustments made sufficient to demonstrate compliance with this Regulation and shall provide the Commission (Eurostat) at its request with such information.
- (d) establish and maintain a clear statement of the target sample and shall maintain checks of price observations and price estimates sufficient to ensure compliance with this Regulation. They shall provide the Commission (Eurostat) at its request with such information to evaluate and ensure compliance.
- (e) where a formula different from the formulae given in paragraph 1 of Annex 2 to this Regulation is used, provide the Commission (Eurostat) at its request with information on the effects of using that alternative formula for selected periods and selected elementary aggregates sufficient to evaluate compliance with this Regulation.
- (f) provide the Commission (Eurostat) at its request with details of the target samples sufficient to evaluate compliance with this Regulation and summary statistics of the representativity and precision of samples sufficient for Eurostat to make proposals for minimum standards for sampling for inclusion in the Review of HICPs required under Article 15 of the Basic Regulation due in October 1997.

### III. FINAL PROVISIONS

#### Article 10

This Regulation shall enter into force on the 20th day following its publication in the Official Journal of the European Communities.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

## ANNEX I

The initial coverage of goods and services of the HICP shall include the following categories and sub-categories:

Code	COICOP/HICP Heading
01.	<b>FOOD AND NON-ALCOHOLIC BEVERAGES</b>
01.1	Food
01.1.1	Bread and cereals
01.1.2	Meat
01.1.3	Fish
01.1.4	Milk, cheese and eggs
01.1.5	Oils and fats
01.1.6	Fruit
01.1.7	Vegetables including potatoes and other tubers
01.1.8	Sugar, jam, honey, syrups, chocolate and confectionery
01.1.9	Food products n.e.c.
01.2	Non-alcoholic beverages
01.2.1	Coffee, tea and cocoa
01.2.2	Mineral waters, soft drinks and juices
02.	<b>ALCOHOLIC BEVERAGES AND TOBACCO</b>
02.1	Alcoholic beverages
02.1.1	Spirits
02.1.2	Wine
02.1.3	Beer
02.2	Tobacco
02.2.1	Tobacco
03.	<b>CLOTHING AND FOOTWEAR</b>
03.1	Clothing
03.1.1	Clothing materials
03.1.2	Garments
03.1.3	Other articles of clothing and clothing accessories
03.1.4	Dry-cleaning, repair and hire of clothing
03.2	Footwear
03.2.1	Shoes and other footwear
03.2.2	Maintenance, repair and hire of footwear
04.	<b>HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS</b>
04.1	Actual rentals for housing
04.1.1	Actual rentals paid by tenants
04.1.2	Other actual rentals
04.3	Regular maintenance and repair of the dwelling
04.3.1	Products for the regular maintenance and repair of the dwelling
04.3.2	Services for the regular maintenance and repair of the dwelling
04.4	Other services relating to the dwelling
04.4.1A	Refuse collection - consumers pay according to consumption
04.4.2A	Sewerage services - consumers pay according to consumption
04.4.3A	Water supply - consumers pay according to consumption
04.4.4	Other services relating to the dwelling n.e.c.
04.5	Electricity, gas and other fuels
04.5.1	Electricity
04.5.2	Gas
04.5.3	Liquid fuels
04.5.4	Solid fuels
04.5.5	Hot water, steam and ice
05.	<b>FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE OF THE HOUSE</b>
05.1	Furniture, furnishings and decorations, carpets and other floor coverings and repairs
05.1.1	Furniture and furnishings
05.1.2	Carpets and other floor coverings
05.1.3	Repair of furniture, furnishings and floor coverings

Code	COICOP/HICP Heading
05.2	Household textiles
05.2.1	Household textiles
05.3	Heating and cooking appliances, refrigerators, washing machines and similar major household appliances, including fittings and repairs
05.3.1	Major household appliances whether electric or not
05.3.2	Small electric household appliances
05.3.3	Repair of household appliances
05.4	Glassware, tableware and household utensils
05.4.1	Glassware, tableware and household utensils
05.5	Tools and equipment for house and garden
05.5.1	Major tools and equipment
05.5.2	Small tools and miscellaneous accessories
05.6	Goods and services for routine household maintenance
05.6.1	Non-durable household goods
05.6.2	Domestic services and home care services
06.A	<b>HEALTH - goods paid by the consumer and not reimbursed</b>
06.1A	Medical and pharmaceutical products and therapeutic appliances and equipment - paid by the consumer and not reimbursed
06.1.1A	Pharmaceutical preparations and products - paid by the consumer and not reimbursed
06.1.2A	Other medical products - paid by the consumer and not reimbursed
06.1.3A	Therapeutical appliances and equipment - paid by the consumer and not reimbursed
07.	<b>TRANSPORT</b>
07.1	Purchase of vehicles
07.1.1A	New motor cars
07.1.1B	Second-hand motor cars
07.1.2	Motor cycles
07.1.3	Bicycles
07.2	Operation of personal transport equipment
07.2.1	Spares parts and accessories
07.2.2	Fuels and lubricants
07.2.3	Maintenance and repairs
07.2.4	Other services in respect of personal transport equipment - using ESA conventions <sup>4</sup>
07.3	Transport services
07.3.1	Passenger transport by railway
07.3.2	Passenger transport by road
07.3.3	Passenger transport by air
07.3.4	Passenger transport by sea and inland waterway
07.3.5	Other purchased transport services
08.	<b>COMMUNICATIONS</b>
08.1	Communications
08.1.1	Postal services
08.1.2	Telephone and telefax equipment
08.1.3	Telephone, telegraph and telefax services
09.	<b>RECREATION AND CULTURE</b>
09.1	Equipment and accessories, including repairs
09.1.1	Equipment for the reception, recording and reproduction of sound and pictures
09.1.2	Photographic and cinematographic equipment and optical instruments
09.1.3	Data processing equipment
09.1.4	Other major durables for recreation and culture
09.1.5	Games, toys and hobbies, equipment for sport, camping and open-air recreation
09.1.6	Recording media for pictures and sound
09.1.7	Gardening
09.1.8	Pets
09.1.9	Repair of equipment and accessories for recreation and culture

<sup>4</sup> European System of Accounts, ESA 1995

Code	COICOP/HICP Heading
09.2	Recreational and cultural services
09.2.1	Group recreational and cultural services
09.2.2	Other recreational and cultural services
09.2.3	Games of chance
09.3	Newspaper, books and stationery
09.3.1	Books
09.3.2	Newspaper and periodicals
09.3.3	Miscellaneous printed matters
09.3.4	Stationery and drawing materials
09.4	Package holidays - excluding travel insurance
09.4.1	Package holidays - excluding travel insurance
11.	<b>HOTELS, CAFES AND RESTAURANTS</b>
11.1	Catering
11.1.1	Restaurants and cafés
11.1.2	Canteens
11.2	Accommodation services - within the Member State
11.2.1	Accommodation services - within the Member State
12.	<b>MISCELLANEOUS GOODS AND SERVICES</b>
12.1	Personal care
12.1.1	Hairdressing salons and personal grooming establishments
12.1.2	Appliances, articles and products for personal care
12.2	Personal effects n.e.c.
12.2.1	Jewellery, clocks and watches
12.2.2	Other personal effects
12.4A	Insurance
12.4.2A	Insurance connected with the dwelling - Contents insurance
12.4.4A	Insurance connected with transport - Car insurance - excludes travel insurance
12.5A	Banking services n.e.c. - excluding interest payments and charges expressed as a proportion of the transaction value
12.5.1A	Banking services n.e.c. - excluding interest payments and charges expressed as a proportion of the transaction value
12.6	Other services n.e.c.
12.6.1	Other services n.e.c.

NB: EDUCATION - commonly paid by consumers in Member States is included in the appropriate categories above, for example in 09.2 "Recreational and cultural services", 09.3 "Newspaper, books and stationery", 11.1. "Catering", and 11.2 "Accommodation services".



## ANNEX 2

### Formula to be used in compiling elementary aggregates

1. When compiling price indices for elementary aggregates either the ratio of

arithmetic mean prices  $\frac{\frac{1}{n} \sum P^a}{\frac{1}{n} \sum P^b}$  or the ratio of geometric mean prices  $\frac{[\prod P^a]^{\frac{1}{n}}}{[\prod P^b]^{\frac{1}{n}}}$ ,

where  $P^a$  is the current price,  $P^b$  the reference price and  $n$  the number of such prices in the elementary aggregate, shall be used. An alternative formula may be used provided that it fulfils the comparability requirement laid down in Article 3.

2. The arithmetic mean of price relatives  $\frac{1}{n} \sum \frac{P^a}{P^b}$  should not normally be used, as it will in many circumstances result in failure to meet the comparability requirement. It may be used exceptionally where it can be shown not to fail the comparability requirement.

3. The price index for an elementary aggregate may be calculated as a chain index using one of the above two preferred formulae. For example using the ratio of arithmetic means:

$$I^{th} = \frac{\sum_{i \in s_t} P_i^t}{\sum_{i \in s_b} P_i^b} \cdot \frac{\sum_{i \in s_t} P_i^2}{\sum_{i \in s_1} P_i^1} \dots \frac{\sum_{i \in s_{t-1}} P_i^t}{\sum_{i \in s_{t-1}} P_i^{t-1}}$$

where  $P_i^t$  denotes the  $i^{th}$  price quotation for a given elementary aggregate in period  $t$  and  $s_t$  denotes the sample of prices obtained for the elementary aggregate in period  $t$ . This sample may in practice be updated monthly or, more usually, when prices cannot be obtained, over longer periods. If between base period  $b$  and period  $t$  there is no

replenishing at all  $I^{tb}$  becomes  $I^{tb} = \frac{\sum_{i \in s_b} P_i^t}{\sum_{i \in s_b} P_i^b}$ , the simple ratio of arithmetic means (or

similarly with the geometric formula described above). The arithmetic mean of price relatives must not be used where chaining is more frequent than annual.