

## **Annex 1 HARMONIZED INDICES OF CONSUMER PRICES (EUROPEAN UNION)**

### **1 Introduction**

The Harmonized Indices of Consumer Prices (HICPs) are a set of European Union consumer price indices (CPIs) calculated according to a harmonized approach and a single set of definitions. This annex outlines the aims and history of the HICPs, summarizes the most important harmonized standards and notes some key items on the agenda for further harmonization. The HICP development project is ongoing. This annex describes the state of development of the HICPs at mid-2003. The HICPs have a legal basis in that their production, and many elements of the specific methodology to be used, are stated in and required by a series of legally binding European Union Regulations. References for the full set of HICP legal standards are given at the end of this annex.

#### *1.1 The main HICPs*

The HICPs on which most attention is focused are:

- the Monetary Union Index of Consumer Prices (MUICP) – an aggregate index covering the countries within the euro-zone;
- the European Index of Consumer Prices (EICP) – for the euro-zone plus the other European Union countries;
- the national HICPs – for each of the Member States of the European Union (EU).

Beyond these are also the European Economic Area Index of Consumer Prices (EEAICP) and HICPs for the individual EEA countries.

There are also interim HICPs for Candidate and, in particular, Acceding Countries.<sup>1</sup> It is expected that once those countries accede to the EU their HICPs will be fully comparable to those of the existing Member States. The national HICPs are produced by the national statistical institutes, while the country-group aggregates are produced by Eurostat.

#### *1.2 Uses of the HICPs*

As explained elsewhere in this manual, CPIs have a variety of potential uses, for example for indexing social benefits or contracts, or as inputs to various types of economic analyses. The drive for the harmonization project has been the use of the HICPs as convergence criteria and the main measure for monitoring price stability in the euro-zone. The HICPs have been set up to provide the best measure for international comparisons of consumer price inflation within the EU and the euro-zone, for assessing price convergence and stability in the context of monetary policy analysis.

In the early stages of the project, the most important use of the HICPs was in the assessment of the price stability and price convergence required for entry into the European Economic and Monetary Union. More recently, the focus of interest has shifted towards country-group

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<sup>1</sup> The composition of the country-groups at the end of 2003 is as follows:

Euro-zone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain.

EU countries: Euro-zone countries plus Denmark, Sweden, United Kingdom.

European Economic Area countries: EU countries plus Iceland, Norway.

Acceding countries: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia.

Candidate countries: Acceding countries plus Bulgaria, Romania, Turkey.

When countries accede to the EU or the euro-zone, the composition of those aggregates is revised accordingly.

aggregates – and in particular the MUICP. This change of emphasis reflects the European Central Bank’s objective of price stability and the view that the HICPs are the most appropriate price measure for assessing price stability.

The focus of the HICPs on measuring price stability and convergence, and on international comparisons, does not mean that a wider range of users should not or cannot use HICPs for other purposes. Depending on the precise purpose the user has in mind, the HICPs may be the best available price statistics. All users of the HICPs should note, however, that the HICPs are revisable; the indices may change after the first results are published.

### *1.3 Brief history of the HICPs*

On 23 October 1995, the European Union’s Council of Ministers adopted a Regulation providing the legal basis for the establishment of a harmonized methodology for compiling consumer price indices in the Member States and European Economic Area Countries.

This Regulation<sup>2</sup> (hereinafter referred to as the HICP Framework Regulation) required HICPs to be produced and published, that they use a common reference base, employ a common coverage of consumer goods and services, and share a common classification. In the context of the HICP Framework Regulation, a series of specific implementing measures has been adopted.

As mentioned above, early in the harmonization project the most important use of the HICPs was for the application of the criterion of price stability in preparation for Economic and Monetary Union in Europe.

On 1 January 1999, Economic and Monetary Union began, with 11 countries participating in the single currency - the euro. From that date, there has been a common monetary policy, with common interest rates, operating within the euro-zone under the control of the European Central Bank (ECB).

The maintenance of price stability is the primary objective of the European System of Central Banks. The President of the ECB announced in October 1998<sup>3</sup> that it would be operating a flexible monetary policy strategy, ensuring price stability in the euro-zone based on a monetary reference value and a mix of other indicators. In this context, the Governing Council of the ECB stated: “Price stability shall be defined as a year-on-year increase in the Harmonized Index of Consumer Prices (HICP) for the euro area of below 2%. Price stability is to be maintained over the medium term.”

In 2003 the ECB reaffirmed its inflation target of October 1998, founded on the HICP for the euro-zone, and added that: “At the same time, the Governing Council agreed that in the pursuit of price stability it will aim to maintain inflation rates close to 2% over the medium term.”<sup>4</sup>

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<sup>2</sup> Council Regulation (EC) No. 2494/95.

<sup>3</sup> ECB press release of 13 Oct. 1998.

<sup>4</sup> ECB press release of 8 May 2003.

#### *1.4 Stepwise harmonization*

The HICP Framework Regulation laid down a stepwise approach to harmonization, whereby each step requiring specific implementing measures would be legislated in the form of further legally binding standards.

The HICP Framework Regulation established that the EU's Statistical Programme Committee would act as the so-called Regulatory Committee, and would therefore be responsible for adopting the further harmonization standards to be given legal force. The Statistical Programme Committee is the most senior statistical committee of the EU, comprising the directors of the national statistical institutes.

#### *1.5 Minimum standards*

The approach taken to harmonization has been to build, as far as possible, on the EU Member States' existing data sources and methodologies for their national CPIs. The legal standards typically take the form of minimum standards, whereby more than one solution to a harmonization issue may usually be allowed so long as comparability is not threatened.

Within this framework, by mid-2003, a series of 13 legally binding standards and some additional guidelines had been drawn up and implemented in collaboration with the EU Member States.

#### *1.6 Compliance monitoring*

Given the importance accorded to the accuracy, reliability and comparability of the HICPs in the EU, Eurostat operates a system of compliance monitoring to ensure that the legal framework is adhered to. This includes, in particular, compliance assessments on the basis of questionnaires and visits by Eurostat officials to the EU national statistical institutes to study in more detail their work on their HICPs.

## **2 Basic concepts and definitions**

### *2.1 Aim and scope of the HICPs*

The aim of the HICPs was stated to be to measure inflation on a comparable basis, taking into account differences in national definitions. This, however, requires an operational definition of the term "inflation".

Given the opinion and the needs of the HICPs' main users, it was decided to compute the HICPs as Laspeyres-type price indices, based on the prices of goods and services available for purchase in the economic territory of each EU Member State for the purpose of directly satisfying consumer needs.

Based on this concept and by reference to national accounts, specifically the European System of Accounts (ESA 95), the coverage in practice of the HICPs was taken to be household final monetary consumption expenditure<sup>5</sup> (HFMCE). This definition effectively prescribes the goods and services, the population and the geographic territory to be covered, as well as the prices and the weights to be used.

The HICP may thus be described as a Laspeyres-type "consumer inflation" or "pure price" index, which measures average price changes on the basis of the changed expenditure of

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<sup>5</sup> Council Regulation (EC) No. 1688/98.

maintaining the consumption pattern of households and the composition of the consumer population in the base or reference period.

The term “pure price index” indicates that it is only changes in prices that should be reflected in the HICP measure between the current and the base or reference period. The HICP is therefore not a cost of living index. That is, it is not intended to be a measure of the change in the minimum cost for achieving the same standard of living (i.e. constant utility) from two different consumption patterns realized in the two periods compared, and where factors other than pure price changes may enter the index.

## 2.2. *Household final monetary consumption expenditure*

The coverage of the HICPs is delimited by HFMCE, and so concerns that part of final consumption expenditure which is:

- by households irrespective of their nationality or residence status;
- in monetary transactions;
- on the economic territory of the EU Member State;
- on goods and services that are used for the direct satisfaction of individual needs or wants;
- in one or both of the time periods being compared.

The prices used in the HICP should be the prices paid by households to purchase individual goods and services in monetary transactions. The purchaser’s price is the price for the products that the purchaser actually pays at the time of purchase.

The weights of the HICP are the aggregate expenditures by households on any set of goods and services covered by the HICP, expressed as a proportion of the total expenditure on all goods and services within the coverage of the HICP.

The HICPs are classified according to the four-digit categories and sub-categories of the COICOP/HICP (Classification of Individual Consumption according to Purpose, adapted to the needs of HICPs).

## 2.3 *Links to national accounts concepts*

The concept of HFMCE not only specified the coverage, the prices and the weights for the HICP, but also established a link between HICPs and ESA 95 that has proved useful to analysts and policy-makers. HICP definitions follow ESA 95 wherever possible and when to do so is consistent with the aims and uses of the HICP.

That said, there are some differences between the coverage of the HICPs and that of household final consumption expenditure (HFCE) as defined by national accounts, in particular the treatment of owner-occupied housing. A full list of these differences is given below.

## 2.4 *Some basic requirements for HICPs*

The relative distribution of consumers’ expenditure on individual products varies from country to country. Hence, there is no uniform basket applying to all EU Member States. The weights used in the compilation of HICPs may relate to a reference period up to seven years prior to the current year. In practice, this results in a complete weight and sample revision of

national HICPs in at least five-yearly intervals, taking into account that a period of about two years may be needed to integrate results of a full consumer expenditure survey. Adjustments must nevertheless be made each year for any especially large changes in expenditure patterns, to minimize any disparities that could arise from different update frequencies.

To keep the HICPs broadly in step with each other and up to date, new products must be included when they achieve a significant relative importance. HICPs must also be shown to be based on appropriate sampling procedures, taking into account the national diversity of products and prices.

The samples must be kept up to date, in particular by banning the practice whereby missing prices are simply assumed to be equal to the last observed prices. In order to measure pure price changes, the prices included in HICPs need to be adjusted for changes in the quality of goods and services. Certain inappropriate quality adjustment practices, such as so-called automatic linking, may not be used.

HICP aggregates for country groups are calculated as the weighted averages of the national HICPs, using the weights of the countries and sub-indices concerned. The weight of a country is its share of HFMCE in the total. For the MUICP the weights are all naturally expressed in euros, whereas for the EICP and the EEAICP the aggregations use purchasing power standards. The MUICP is treated as a single entity within the EICP and EEAICP aggregates.<sup>6</sup>

### **3 Coverage**

#### *3.1 Goods and services*

The coverage of goods and services in the HICPs has been expanded over time. The HICPs now cover virtually all of HMFCE. The main difference to the ESA 95 concept of HFCE is the exclusion of imputed expenditures of owner-occupied housing.

The initial coverage of goods and services in the HICPs, although fairly comprehensive, reflected for the most part what was common to the national consumer price indices. Since then, with considerable effort and cooperation by EU Member States, coverage has been extended to virtually all consumers' expenditure, in the sense of HFMCE. In particular, the difficult areas of health, education and social protection services are now covered, as are insurance and financial services. These are included in the HICPs according to agreed definitions, thus ensuring comparability despite major institutional differences.

In the initial coverage of the HICPs,<sup>7</sup> some difficult categories such as health and educational services, where there are major institutional differences between EU Member States, were not fully covered. In 1998 a further legal standard<sup>8</sup> amended the initial coverage of goods and

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<sup>6</sup> For technical notes see:

Eurostat News Release 21/97 of 5 March 1997, *Harmonizing the way EU measures inflation*.

Eurostat Memo 8/98 of 4 May 1998, *New monetary union index of consumer prices (MUICP)*.

Eurostat Memo 02/00 of 18 February 2000, *Improved EU Harmonized Index of Consumer Prices: Extended coverage and earlier release dates for the HICP*.

Further details can be found in the Compendium of HICP reference documents :

<http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-AO-01-005--I-EN>

<sup>7</sup> Commission Regulation (EC) No. 1749/96.

<sup>8</sup> Council Regulation (EC) No. 1687/98.

services and laid down a staged procedure to extend the coverage of the HICP. Another legal standard extending the coverage entered into effect with the index for January 2000.<sup>9</sup> The next step took place with the publication of the January 2001 index.<sup>10</sup>

### 3.2 *Geographic and population coverage*

The HICP Framework Regulation required the HICPs to be based on the prices of goods and services available for purchase on the economic territory of the EU Member State for the purposes of directly satisfying consumer needs. As regards the economic territory and the consumers concerned, a harmonized definition of the geographic and population coverage of the HICP was necessary, both to achieve comparability and to avoid gaps or double counting when aggregating national HICPs.

In 1998 a legal standard<sup>11</sup> specified that the HICP should cover all HFMCE which takes place on the economic territory of an EU Member State. In particular, HICP coverage should include expenditure by foreign visitors and expenditure by individuals living in institutions, but should exclude the expenditure by residents whilst in a foreign country (the so-called domestic concept). All private households should be included, irrespective of the area in which they live or their position in the income distribution. Expenditure incurred for business purposes should be excluded.

The choice of the domestic concept reflected the role of the MUICP in measuring price stability in the euro-zone. Price changes in the euro-zone are measured by aggregating price changes taking place within the individual EU Member States. Expenditure and price changes to be measured within the economic territory should include those affecting foreign visitors and exclude those affecting residents whilst in a foreign country.

It is an HICP requirement that HICPs should be compiled using weights which reflect the HFMCE of all households. HICPs which cover only a subset of households should nevertheless be regarded as comparable if this difference in practice accounts for less than one part per thousand of the total expenditure to be covered by the HICP.

## **4 Weights, index formulae and price sampling**

### 4.1 *Weights*

The HICP Framework Regulation requires HICP weights to be sufficiently up to date to ensure comparability, whilst at the same time avoiding the cost of conducting household budget surveys more than every five years.

An HICP legal standard<sup>12</sup> gives minimum standards for the quality of HICP weights. It aims to guarantee the quality of weights used to construct the HICP and minimize the disparities between HICPs which might arise from different update frequencies.

Concerning the quality of HICP weights, the weights should be sufficiently up to date to ensure comparability whilst avoiding unnecessary costs. Differences in the frequency of updating of the weights could, but not necessarily would, lead to differences in measured

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<sup>9</sup> Commission Regulation (EC) No. 1749/1999.

<sup>10</sup> Commission Regulation (EC) No. 2166/1999.

<sup>11</sup> Council Regulation (EC) No. 1688/98.

<sup>12</sup> Commission Regulation (EC) No. 2454/97.

inflation and non-comparability. Imposing the cost of high precision for all weights or frequent updating of weights was not considered justified. On the other hand, it is difficult to be sure that an HICP using weights up to seven years old will provide a reliable and relevant measure of current inflation.

The legal standard on the quality of HICP weights requires a minimum action of review and adjustment to ensure that the quality of weights used to construct HICPs is sufficient. It establishes a comparability threshold to determine when weights must be reviewed and updated..

The review requirement involves checking each year those weights which are judged to be most critical for reliability and relevance and, hence, for the comparability of the overall HICP. These are primarily the weights for index components where significant market changes have accompanied atypical price movements. Where a weight is identified as deficient, EU Member States should make an improved estimate and introduce an appropriate adjustment, from the following January index, where this would exceed the threshold effect of 0.1 percentage points (on average for one year compared with the previous year). The aim is to ensure that the adjusted weights are the best estimates that can be made on the information available.

#### 4.2 *Index formulae*

The choice of the index formula to be used for the HICP is made at two levels:

- the level of the macro-formula; that is, the choice between a chained index with annual links and a fixed base index with links up to five years.
- the level of the micro-formula; within each level there is the issue of reference period, both for prices and for weights.

##### 4.2.1 Macro index formula

The HICP is required to be a Laspeyres-type index.<sup>13</sup> Although the HICPs produced by the EU Member States differ in detail, they can all be broadly described as Laspeyres-type indices. They are all price indices in which the month-to-month movements in prices are measured as an average of price indices using expenditure weights which are an appropriate reflection of the consumption pattern of the consumer population in the weight reference period.

In practice, there are three types of base period used in the construction of HICPs<sup>14</sup>:

- the base period to which the volumes of the current expenditure weights refer (“weight reference period”);
- the base period from which the current price change is measured, i.e. the time reference of the prices used for the valuation of the volumes in the current weights (“index reference period”);
- the period in which the index base is set to 100 (“index base period”).

The HICP is, depending on to the macro-formula applied in practice for its computation, potentially a chained index. It should be stressed that this is the equivalent chain form of the

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<sup>13</sup> Council Regulation (EC) No. 2494/95, Article 9.

<sup>14</sup> These definitions differ from those in this Manual's Glossary under the heading "base period".

fixed base index which simply allows chained and fixed indices to be expressed by a common formula. The chaining becomes effective if and only if there are changes to the weights currently used, for instance on the grounds of the review as required by the HICP standard on the quality of HICP weightings.<sup>15</sup>

In practice, some EU Member States compile fixed base HICPs, while others compute chain HICPs with annual weight updating. In order to obtain a set of HICPs with sub-indices allowing for consistent aggregations, it is necessary to present the HICPs as if they were all computed with the same formula. Hence, it was necessary to apply a common index base period and reference period.

By mid-2003, the HICP Framework Regulation defined the common index base period with 1996 = 100. In order to obtain also a common index reference period, the weights are “price updated” to each December.

#### 4.2.2 Elementary aggregates

An HICP legal standard<sup>16</sup> defines elementary aggregates by reference 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. An elementary aggregate index is a price index for an elementary aggregate comprising only price data.

For the HICPs the ratio of geometric mean prices or the ratio of arithmetic mean prices are the two formulae which should be used within elementary aggregates. The arithmetic mean of price relatives may only be applied in exceptional cases and where it can be shown that it is comparable.

#### 4.2.3 The level at which macro-aggregation changes into elementary aggregation

The level of elementary aggregation interacts with other design features such as sampling procedures and the availability of weighting information. Depending on the sources of the weights used, elementary aggregation may start at different levels in different countries in the product, geographic and outlet hierarchies.

Differences in national practices can affect the resulting HICPs but this issue was, in the first instance, not considered to be a priority for harmonization and no action has been undertaken up until now. This issue is likely to be taken up again as the harmonization process develops.

### 4.3 *Sampling of prices*

There are three important sampling dimensions to take into account:

- the item dimension;
- the outlet dimension;
- the regional dimension.

Each of these dimensions may in turn be divided into sampling stages.

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<sup>15</sup> Commission Regulation (EC) No. 2454/97.

<sup>16</sup> Commission Regulation (EC) No. 1749/96.



In the product dimension, a selection or sample of representative items is sometimes first made within the national statistical office, and then a further selection is made by price collectors in the field. In the outlet dimension, there is often first a selection of geographical areas, followed by a sample of outlets being taken within each of them.

Random sampling is not easily achieved when it comes to the collection of prices for a CPI and in practice most EU Member States follow purposive sampling procedures for their HICPs. Irrespective of the sampling method used, small effective sampling sizes may lead to random errors of a size that in itself may constitute a comparability problem.

For Member States using purposive sampling, the numbers of elementary aggregates and of prices within the elementary aggregates give an indication of the degree of coverage of the universe of outlets and items.

HICPs should be constructed from target samples which take into account the weight of each Classification of Individual Consumption according to Purpose (COICOP)/HICP category. HICPs which 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 are regarded as reliable and comparable.

Concerning the replacement of products and outlets, a replacement may take place because an item or an outlet has disappeared from the market or because an item or an outlet is no longer considered to be representative. Market developments with regard to products and outlets are likely to constitute an important source of non-comparability. However, there is an important interaction with the choice of the index formula and sampling practices here. For example, the use of tight as opposed to loose product specifications may lead to quite different issues in respect to quality adjustment.

## **5 Specific HICP standards**

### *5.1 Timing of entering purchaser prices into the HICP*

Differences between Member States in the time of entering purchaser prices into the HICP may be particularly important for products where there is a significant time difference between the time of purchase, payment, or delivery and the time of consumption.

An HICP legal standard<sup>17</sup> harmonized practices and made the compilation of the HICP more transparent by setting down detailed rules for the timing of entering purchaser prices into the HICP. It uses ESA 95 as the source of its definitions and it is consistent with the ESA 95 definitions in as far as they are consistent with the purposes of the HICP.

In particular, ESA 95 states that goods and services should in general be recorded when the payables are created, that is, when the purchaser incurs a liability to the seller. However, expenditure on services in ESA 95 is recorded when the delivery of the service is completed. In the HICP, volumes are generally valued at purchaser prices following the acquisition principle. This implies for the purposes of the HICP that prices for goods shall be entered into the HICP for the month in which they are observed, and that prices for services shall be entered into the HICP for the month in which the consumption of the service at the observed prices can commence.

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<sup>17</sup> Commission Regulation (EC) No. 2601/2000.

### 5.2 *The treatment of price reductions*

An HICP legal standard<sup>18</sup> lays down detailed rules for the treatment of price reductions. The standard reflects what was common practice in many EU Member States. The standard defines the general principles under which transient reductions in prices should be taken into account. It requires that price reductions must be: (i) attributable to the purchase of an individual good or service; (ii) available to all potential consumers with no special conditions attached; (iii) known to the buyer at the time when he or she entered into the agreement to buy the product concerned; and (iv) claimable at the time of purchase or within such a time period from the actual purchase that they might be expected to have a significant influence on the quantities buyers are willing to buy.

Further guidelines supplement the legal standard, giving advice on how various price reduction schemes should be treated, such as:

- sales prices (e.g. stock-clearing sales and closing-down sales, seasonal sales, end of range or line sales, and damaged, shop-soiled or defective goods);
- credit and payment arrangements: a zero-interest loan when buying a new durable;
- inducements in the form of extra quantities or gifts;
- discounts available only to a restricted group of households;
- regular rebates or refunds (e.g. bottle deposits);
- irregular rebates or refunds (e.g. loyalty rebates schemes and cards).

### 5.3 *Missing observations*

In order to ban practices which can lead to serious biases, EU Member States are asked to maintain and provide a statement of their target sample from month to month. Where prices are not observed, they must be estimated by an appropriate procedure.

A legal standard<sup>19</sup> deals with minimum standards for price observation. Where the target sample requires monthly price observation, but observation fails because of the non-availability of the 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.

### 5.4 *Quality adjustment*

For the HICPs, quality change is said to occur whenever the Member State judges that a change in specification has resulted in a significant difference in utility (or functionality) to the consumer between a new variety or model of a good or service and the good or service previously selected for pricing. A quality change does not arise when there is a comprehensive revision of the HICP sample.

Quality adjustment is defined as the procedure of making an allowance for a quality change by increasing or reducing the observed current or reference prices by a factor or an amount equivalent to the value of that quality change.

Under the HICP legal standard<sup>20</sup> EU Member States are required to examine their quality adjustment procedures and to avoid the so-called automatic linking method, which is

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<sup>18</sup> Commission Regulation (EC) No. 2602/2000.

<sup>19</sup> Commission Regulation (EC) No. 1749/96, Article 6.

<sup>20</sup> Commission Regulation (EC) No. 1749/96.

equivalent to the assumption that the difference in price between two successive models is wholly attributable to a difference in quality.

Where quality changes occur, EU Member States should make appropriate quality adjustments based on explicit estimates of the value of the quality change. In the absence of national estimates, EU Member States should use Eurostat estimates where these are available and relevant. Eurostat should assist in this process by setting up a database of quality change estimates provided both by Member States themselves and from other sources. Where no estimates are available, price changes should be estimated as the whole difference between the price of the substitute and that of the item it has replaced. Furthermore, Member States are required to monitor the incidence of quality changes and the adjustments made in order to demonstrate their compliance.

Despite the existing legal standards, differences between HICPs may arise because the same changes in the physical characteristics of an item are still perceived and treated in different ways in different countries. This is not to say that the same quality characteristic must be valued to the same extent in different EU Member States, only that the principles and procedures for valuation should be harmonized. In practice, differences in quality adjustment procedures between countries may not average out across the goods and services covered by the indices. On the contrary, they are likely to cumulate to differences well in excess of 0.1 percentage points.

Quality adjustment is one of the most, if not the most, intractable harmonization issues for the HICP. Eurostat and the EU Member States are currently involved in both general and conceptual discussions of methods and in the examination of the results of empirical studies of quality change and quality adjustment.

#### *5.5 Rejected price observations*

HICP guidelines concerning the rejection of price observations specify the procedures to be followed for the validation and adjustment of price observations. The guidelines require that, in general, the prices reported by the price collectors should be accepted. Rejection or adjustment of reported prices, for example the correction of an unusually high or low price change, should not be carried out by automatic procedures, but only by reference to specific information on the individual price observation, such as a repeated observation. If, following a validation procedure, the reported price has nevertheless still to be rejected, the rejected price should be treated according to the rules for missing observations.

The guidelines leave it to the EU Member States to apply methods other than the specified methods. Where an EU Member State does not use the described methods, Eurostat may request it to show that the resulting HICP does not differ systematically from an HICP constructed in line with the described methods by more than 0.1 percentage points on average, taking one year against the previous year.

#### *5.6 Newly significant goods and services*

What is meant by the term “new goods” is not always precise. In particular, there is no sharp dividing-line between new models and varieties of previously existing products and genuinely new innovative products which fulfil needs that could not be fulfilled before.

Neither the formulae used to calculate the index, nor the frequency of renewing the basket of goods and services, can fully address the basic problem: the risk of bias if the introduction of new models and varieties is used as an occasion to implement price increases or decreases.

The HICP Framework Regulation<sup>21</sup> contains a requirement to maintain the relevance of HICPs, meaning that steps must be taken to ensure that HICPs keep broadly in step with each other and are up to date in terms of market developments. The HICP legal standard concerning newly significant goods and services (NSGS) aims to ensure that new products are incorporated in the HICP as soon as they achieve a sales volume of one part per thousand of total consumers' expenditure in the EU Member State.<sup>22</sup>

The term “newly significant” can be interpreted in a wide sense, that is in the sense of being new to the index.

There are two ways whereby new products are introduced into the HICP if they have gained a significant part of consumption:

- replacement: the new product replaces an already existing product that has lost importance, so a more up to date representative is brought into the sample;
- addition: the new product is brought into the index in addition to the products which are already covered, as representative for a purpose not yet represented in the index.

The HICP standard on NSGS relates to additions, not to replacements.

Additions are brought into the index for two main reasons:

- a new product (e.g. mobile phones), which had not been represented in the index, and would not normally be considered as a replacement because it was radically different from the existing products. It would be added as a new category within an existing category;
- a product had been previously available, but not explicitly represented in the index because the consumption of the product was too low. Inclusion is not undertaken as a replacement within a category, but by adding a new category within an existing category.

In the case of additions, the price of the new product is collected in addition to the already observed products; and the minimum standard on NSGS offers the following treatments:

- either adjust the weights of the relevant category of COICOP/HICP; or
- adjust the weights within the relevant category of COICOP/HICP; or
- assign part of the weight specifically to the new product (i.e. below the 4-digit level of COICOP/HICP).

### 5.7 *Tariff prices*

Many tariff prices faced by consumers relate to products which are or have been regulated by government, or are or have been provided in a monopoly or a monopoly-like situation.

Changes are, however, taking place in many EU countries in such markets, as the markets are opened up, and it is important that the impact on consumer inflation is appropriately captured in the HICPs since such products account for a large proportion of the total expenditure.

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<sup>21</sup> Council Regulation (EC) No. 2494/95.

<sup>22</sup> Commission Regulation (EC) No. 1749/96, Article 2(b).

HICP sub-indices involving tariff prices are, in practice, often obtained centrally or directly from suppliers such as major retail chains, or computed by the Member States based on data on tariff prices and their underlying consumption patterns provided by suppliers.

The requirement for the HICP was not only to determine what statistical standards are required to ensure that EU Member States measure the same price change in a comparable and reliable way, but also to give such legal powers as are necessary to ensure that Member States are in position to have access to the data they need.

An HICP legal standard<sup>23</sup> lays down minimum standards for the treatment of tariffs:

- It clarifies the obligation of suppliers to provide Member States with the necessary data.<sup>24</sup>
- It defines the procedure to follow in the case of changes in the tariff structure. The HICP approach is based on the Laspeyres fixed basket concept, with consumption patterns as up-to-date as necessary to determine the immediate impact of the tariff change on the index population. The HICP should reflect the price change on the basis of the changed expenditure of maintaining the consumption pattern chosen by households prior to the given change in the tariff. The aim of this principle is to avoid showing the changes in the consumption pattern because of a change in a tariff.

### 5.8 *Insurance*

The initial coverage of the HICP included home-contents insurance and motor insurance. Since January 2000, the HICPs have also covered all insurance connected with the dwelling which is typically paid by the tenant, not only contents insurance, and private health, civil liability and travel insurance.<sup>25</sup> Life insurance is excluded from the coverage of the HICP, as it is considered as a household saving.

In 1997, an HICP legal standard<sup>26</sup> stated that the weights and prices for insurance should be measured net of claims. However, a price index for gross premiums may be used as a proxy or estimate for changes in the “prices” of net premiums.

As the initial legal standard still left scope for some procedural differences, a further standard<sup>27</sup> was adopted in 1999. Following the HFMCE concept, the standard retained the net concept for insurance, reflecting the use of the HICP as a measure of consumer price inflation in terms of prices actually charged.

EU household budget surveys cover all expenditure, including expenditure financed out of claims. Hence, the use of the net concept avoids the possibility of double counting or gaps. It also ensures that the overall HICP measures the change in the price for the insurance service, and that the other sub-indices, in particular those for the purchase and the repair of vehicles, major household appliances and other durables, measure the change in price for the repair and replacement of such products.

#### 5.8.1 Weights for insurance

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<sup>23</sup> Commission Regulation (EC) No. 2464/98.

<sup>24</sup> The legal basis is provided by Council Regulation (EC) No. 2494/95.

<sup>25</sup> Council Regulation (EC) No. 1687/98.

<sup>26</sup> Commission Regulation (EC) No. 2214/97.

<sup>27</sup> Commission Regulation (EC) No. 1617/1999.

According to the HICP legal standard,<sup>28</sup> weights should reflect the so-called service charge. This is defined as follows:

Gross insurance premiums (net of insurance tax)  
+/- Changes in the actuarial provisions other than for life-insurance risks  
= Actual premiums earned  
+ Premium supplements  
- Claims due  
+/- Changes in technical provisions against outstanding life insurance risks  
= Implicit service charge (net of insurance tax)  
(+ Insurance tax)  
= Implicit service charge

The actuarial provisions in the above definition are the technical provisions for outstanding risks which exist for almost any insurance type. The HICP legal standard also states that the weights should be based on average expenditure over three years. This is aimed at using more stable estimates of the service charge and minimizing the risk of negative weights.

According to ESA 95, payments as a result of claims are treated as current transfers from the insurance companies to policy-holders and other parties to the claim and, therefore, enter into households' disposable income. The HICP standard<sup>29</sup> on the treatment of insurance requires explicitly that the weights of other sub-indices (e.g. those for the purchase or repair of vehicles, for major household appliances and other durables) should include all expenditure financed out of claims where it is incurred by or on behalf of the household sector. If, for example, a damaged car is repaired then the expenditure should be reflected in the weight for car maintenance and repairs. The same holds true if the repair is paid directly by the insurance company, since the latter is considered to be acting on the policy-holder's behalf.

#### 5.8.2 Prices for insurance

As the net concept of insurance is not applicable at the individual consumer level for pricing in practice, and because the information is not available each month, gross premiums are followed. In practice, gross premiums (or the value of the insured good) are often indexed by the CPI or by other price or cost indices. This effect should be reflected in the HICP; the gross insurance premiums should not be adjusted to exclude this indexation.

Supplementary guidelines on insurance are in the process of being elaborated. They will aim at providing practical guidance on some further technically difficult areas.

#### 5.9 *Health, education and social protection services*

Several HICP legal standards concern health, education and social protection services.<sup>30</sup> The standards state that the purchaser prices of goods and services in the health, education and social protection sectors to be used in the HICP should, in accordance with the usual approach and with ESA 95, concern the amounts to be paid by consumers net of reimbursements. Reimbursements are defined as payments to households by government units, social security

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<sup>28</sup> Commission Regulation (EC) No. 1617/1999.

<sup>29</sup> Commission Regulation (EC) No. 1617/1999.

<sup>30</sup> Commission Regulation (EC) No. 1749/96, as amended by Council Regulation (EC) No. 1687/98, requires extended coverage in the health, education and social protection sectors. Council Regulation (EC) No. 2166/1999 defines the methodological details.

administrations or non-profit institutions serving households, that are made as direct consequences of purchases of individually specified goods and services, initially paid for by households. Payments of claims to households by insurance companies do not constitute reimbursements.

The HICP sub-indices concerned should be calculated using a formula consistent with the Laspeyres type formula used for other sub-indices, i.e., they should reflect the price change on the basis of the changed expenditure of maintaining the consumption pattern of households and the composition of the consumer population in the base or reference period. In accordance with the Laspeyres principle and the HICP standards on tariff prices, changes in purchaser prices, which reflect changes in the rules determining them, should be shown as price changes in the HICP, as should changes in the purchaser prices resulting from changes in purchasers' incomes.

If EU Member States choose to use a procedure which differs from that described above, they are required to describe the procedure before it is used so that it may be assessed against the legal standard.

#### *5.10 Financial services*

EU Member States had traditionally followed different practices in the measurement of prices for financial services in their national CPIs and applied different methods for defining the weights. There was scope for non-comparability by excluding service charges expressed as a proportion of transaction values. A harmonized methodology for the treatment of such charges was thus considered necessary.

The HICP legal standard concerning prices expressed as a proportion of transaction values<sup>31</sup> provides some clarifications, in particular with respect to the coverage of administrative charges of "private pension funds and the like" and "estate agent fees".

The standard says that where service charges are defined as a proportion of the transaction value, the purchaser prices should be defined as the proportion itself, multiplied by the value of a representative unit transaction in the base or reference period. The HICP should include charges expressed as a flat fee or flat rate but exclude interest payments and interest-like charges. Changes in purchaser prices which reflect changes in the rules determining them, as well as changes in the purchaser prices resulting from changes in the values of the representative unit transactions, should be shown as price changes in the HICP. The change in the values of the representative unit transactions may be estimated by the change in a price index which represents appropriately the unit transactions concerned.

Supplementary guidelines on financial services are in the process of being elaborated. These guidelines aim at providing practical guidance on some technically difficult issues in this area.

#### *5.11 Data processing equipment*

Prices for data processing equipment tend to differ very much from the development of the all-items HICP. At the same time, there has been a considerable increase in the relative importance of such equipment in HFMCE. In view of these circumstances and the significant

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<sup>31</sup> Commission Regulation (EC) No. 1920/2001.

differences in national practices in the treatment of data processing equipment, there was a need to establish some minimum common guidelines for the HICPs.

The HICP guidelines on data processing equipment specify that Member States should cover personal computers and associated items in their HICPs. Where direct sellers are a significant source of supply, they should be covered in addition to other outlets. Prices may be obtained from magazines instead of, or as well as, direct observation in retail outlets.

The HICP standards concerning the annual review of the weights<sup>32</sup> are extended to verifying the weights to the level of the major components of the sub-index for data processing equipment. Those major components should comprise a component index for personal computers.

#### *5.12 Owner-occupied housing*

Measurement of the services provided by owner-occupied housing is a notoriously difficult issue for CPIs. It is sometimes stated that these services are not an issue that should concern consumer price indices, and sometimes that they are an issue and so should be covered, but that practical solutions concerning how they should be measured are elusive.

In the HICPs, the imputed prices for the services provided by owner-occupied housing are currently excluded. The exclusion of imputed services relating to owner-occupied housing has removed a potentially very important source of non-comparability between HICPs. It should be noted that, for their national CPIs, EU Member States use a variety of methods – for example, some use an approach involving imputed rents, some include mortgage interest in their CPI, while others entirely exclude the shelter costs of owner-occupiers. Other monetary consumption expenditures related to owner-occupied housing, for example, expenditure on minor property maintenance and repairs, are included in the HICP.

Currently a price index based on the net acquisitions of housing by the consumers is being piloted for possible inclusion in the HICP in future. It will be compiled separately from the HICPs on an experimental basis before any decision is made to incorporate it within the HICPs.

#### *5.13 Revisions*

Since the main purpose of the HICP is to inform the monetary policy for the euro-zone by the ECB, and the HICP is a revisable index, a clear and transparent policy with respect to revisions is of paramount importance. Also, for the HICP harmonization process, a decision was necessary on how to implement improvements whilst at the same time minimizing the difficulties caused to users by introducing discontinuities into the published HICP series.

A legal standard<sup>33</sup> states that the published HICP series may be revised for mistakes, new or improved information, and changes in the system of harmonized rules. In particular:

- Mistakes should be corrected and any revisions that may result from such corrections should be implemented without unnecessary delay.

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<sup>32</sup> Commission Regulation (EC) No. 2454/97.

<sup>33</sup> Commission Regulation (EC) No. 1921/2001.



- New or improved information, for example a more up-to-date weighting structure, may result in revisions which should be implemented, provided that Eurostat does not oppose the timing of the revisions to be made.
- Changes in the system of harmonized rules should not require revisions of published HICPs unless otherwise stated in the particular implementing measure. The impact of such changes should be assessed. Only if it is likely that the impact is significant should the impact then be estimated for each of the 12 following months, starting with the index for January in which the change takes place.

## **6 Links between the HICP and National Accounts deflator of HFCE**

### *6.1 Monetary expenditures*

There are some differences between the concept of household final consumption expenditure (HFCE) used in national accounts and that of household final monetary consumption expenditure (HFMCE) used for the HICP. The HICP covers only the part of HFCE that is considered relevant to inflation measurement for monetary policy purposes, that is, only the part which involves actual monetary transactions. Imputed expenditures, in particular imputed services provided by owner-occupied shelter, are thus excluded from the HICP.

### *6.2 Domestic concept*

For the HICP, HFMCE is defined on the domestic concept, while HFCE in national accounts is defined on the national concept. Thus HFMCE in the HICPs excludes household final monetary consumption expenditure by residents abroad, outside the economic territory of the EU Member State, but includes household final monetary consumption expenditure by non-residents on the economic territory of the EU Member State. HFMCE includes extraterritorial enclaves such as embassies and foreign military bases situated within the EU Member State but excludes territorial enclaves situated in the rest of the world.

### *6.3 Imputed expenditures and owner-occupied housing*

As noted above, HFMCE excludes imputed services from owner-occupied housing. Also excluded are incomes in kind and own final consumption, to the extent that they are covered within HFCE, because they also do not involve monetary transactions.

### *6.4 Life insurance and pension funds*

HFMCE excludes the service charge of life insurance and the administrative charges of private pension funds.

### *6.5 Commissions*

HFMCE excludes commissions to estate agents in connection with the sale or purchase of non-financial assets. It includes payments for services of housing agents in connection with rental transactions.

### *6.6 Games of chance, prostitution and narcotics*

On price measurement grounds, HFMCE is defined to exclude games of chance, prostitution and narcotics.

### *6.7 Time of recording*

Both in HICPs and ESA 95, volumes are generally valued at purchaser prices, following the acquisition principle. However, expenditure on services in ESA 95 is recorded when the

delivery of the service is completed, whilst service prices are recorded in the HICP in the month for which consumption at the observed prices can commence.

#### *6.8 Household consumption deflator*

The points listed above can result in differences between the national accounts deflator of HFCE and the HICP. Furthermore, there are differences between these two price measures regarding the index formulae and the weighting schemes applied. While the HICP is defined as a Laspeyres type price index, national accounts deflators are Paasche type indices. Deflators are used to derive volume indices that are of the Laspeyres type.

## **7 Release and timeliness of the HICPs**

### *7.1 Full HICPs*

The full set of HICPs is published each month according to a pre-announced schedule – in general between 17 and 19 days after the end of the month in question. This schedule has advanced significantly since the HICP was first published, as a result of a series of improvements to timeliness made in both the EU Member States and at Eurostat.

### *7.2 Flash estimate of the MUICP*

Eurostat also publishes each month a flash estimate for the MUICP – the HICP for the euro-zone as a whole. This flash estimate is based on the results from the first countries to publish their national estimates and on energy price data. It gives an early indication of what the MUICP is likely to show when the full data set is available. The estimation procedure combines historical information with partial information on price developments in the most recent months to give a total index for the euro-zone. No detailed breakdown is available. Over the two years up to June 2003, the flash estimate exactly anticipated the full estimate 14 times, eight times differed by 0.1, and twice differed by 0.2 – the last time in April 2002. The MUICP flash estimate is generally released on the last working day of the month in question.

### *7.3 Data*

The HICP data which are released each month cover the price indices themselves, annual average price indices and rates of change, and monthly and annual rates of change. None of these are seasonally adjusted.

As well as the all-items HICPs, the full range of around 100 COICOP/HICP indices for different goods and services are made available. The main headings are as follows:

- food;
- alcohol and tobacco;
- clothing;
- housing;
- household equipment;
- health;
- transport;
- communications;
- recreation and culture;
- education;
- hotels and restaurants;

- miscellaneous.

In addition, a series of special aggregates is released, including, for example:

- the MUICP, excluding energy;
- the MUICP, excluding energy, food, alcohol and tobacco;
- the MUICP, excluding unprocessed food;
- the MUICP, excluding energy and seasonal goods;
- the MUICP, excluding tobacco.

The weights for the component goods and services and the individual countries are also made available.

All of the HICPs, including the complete list of component indices and special aggregates, are accessible via the Eurostat web site<sup>34</sup> and Euro-indicators web site.<sup>35</sup>

The Euro-indicators web site gives quick access to the latest headline figures and most important sub-indices. The Eurostat web site also gives access to the monthly news releases, more detailed data, and contact points in many countries through which comprehensive data can be obtained.

#### 7.4 Metadata

The Eurostat web site also gives access to the compendium of HICP reference documents,<sup>36</sup> which contains detailed reports on the functioning of the HICP, in addition to the HICP legal standards and guidelines, and some technical notes.

### 8 Agenda for further harmonization

The progress made on the harmonization of CPIs does not mean that development is at an end. There are several major issues where further harmonization will still be necessary. Currently, work is in progress on:

- Quality adjustment and sampling: Eurostat and the EU Member States are following up an action plan concerning this subject. The aim is to agree on some more concrete best practices for a range of specific goods and services, in particular for cars, consumer durables, books and CDs, clothing, computers and telecommunications services. The existing HICP standard which addressed this issue in 1996 was only a first step – it is not in itself a sufficient guarantee of full comparability.
- Owner-occupied housing: the imputed expenditures for the consumption of the service provided by owner-occupied housing are currently excluded from the HICPs. Pilot calculations are being carried out using an approach based on the acquisition prices of housing that is new to the household sector – mainly newly constructed dwellings. Indices will be compiled separately from the HICPs on an experimental basis before any decision is made to incorporate them within the HICPs.

<sup>34</sup> <http://europa.eu.int/comm/eurostat/>

<sup>35</sup> <http://europa.eu.int/comm/euroindicators/>

<sup>36</sup> [http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-AO-01-005-\\_-I-EN](http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-AO-01-005-_-I-EN)

Other issues currently on the agenda include:

- minimum sampling standards in the field of price collection;
- more comprehensive systems to assess EU Member States' compliance with the existing Regulations and other guidance. More comprehensive quality assurance of the HICP compilation process in the widest sense is needed;
- support for those countries seeking to join the EU, the Acceding and Candidate Countries, to ensure that their HICPs are fully comparable;
- the consolidation of the legal framework for HICPs, and the production in due course of a methodological manual to assist both compilers and users.

## **9 Regulations concerning HICPs (as at June 2003)**

Council Regulation (EC) No 2494/95 of 23 October 1995 concerning Harmonized Indices of Consumer Prices (OJ L 257, 27.10.1995, p. 1).

Commission Regulation (EC) No. 1749/96 of 9 September 1996 on initial implementing measures for Council Regulation (EC) No. 2494/95 concerning Harmonized Indices of Consumer Prices (OJ L 229, 10.9.1996, p. 3).

Commission Regulation (EC) No. 2214/96 of 20 November 1996 concerning Harmonized Indices of Consumer Prices: transmission and dissemination of sub-indices of the HICP (OJ L 296, 21.11.1996, p. 8).

Commission Regulation (EC) No. 2454/97 of 10 December 1997 laying down detailed rules for the implementation of Council Regulation (EC) No. 2494/95 as regards minimum standards for the quality of HICP weightings (OJ L 340, 11.12.1997, p. 24).

Council Regulation (EC) No. 1687/98 of 20 July 1998 amending Commission Regulation (EC) No. 1749/96 concerning the coverage of goods and services of the Harmonized Index of Consumer Prices (OJ L 214, 31.7.1998, p. 12).

Council Regulation (EC) No. 1688/98 of 20 July 1998 amending Commission Regulation (EC) No. 1749/96 concerning the geographic and population coverage of the Harmonized Index of Consumer Prices (OJ L 214, 31.7.1998, p. 23).

Commission Regulation (EC) No. 2646/98 of 9 December 1998 laying down detailed rules for the implementation of Council Regulation (EC) No. 2494/95 as regards minimum standards for the treatment of tariffs in the Harmonized Index of Consumer Prices (OJ L 335, 10.12.1998, p. 30).

Commission Regulation (EC) No. 1617/1999 of 23 July 1999 laying down detailed rules for the implementation of Council Regulation (EC) No. 2494/95 - as regards minimum standards for the treatment of insurance in the Harmonized Index of Consumer Prices and modifying Commission Regulation (EC) No. 2214/96 (OJ L 192, 24.7.1999, p. 9).

Commission Regulation (EC) No. 1749/1999 of 23 July 1999 amending Regulation (EC) No. 2214/96, concerning the sub-indices of the Harmonized Indices of Consumer Prices (OJ L 214, 13.8.1999, p. 1 — corrigenda published in OJ L 214, 13.8.1999, p. 1).

Council Regulation (EC) No. 2166/1999 of 8 October 1999 laying down detailed rules for the implementation of Regulation (EC) No. 2494/95 as regards minimum standards for the treatment of products in the health, education and social protection sectors in the Harmonized Index of Consumer Prices (OJ L 266, 14.10.1999, p. 1).

Commission Regulation (EC) No. 2601/2000 of 17 November 2000 laying down detailed rules for the implementation of Council Regulation (EC) No. 2494/95 as regards the timing of entering purchaser prices into the Harmonized Index of Consumer Prices (OJ L 300, 29.11.2000, p. 14).

Commission Regulation (EC) No. 2602/2000 of 17 November 2000 laying down detailed rules for the implementation of Council Regulation (EC) No. 2494/95 as regards minimum standards for the treatment of price reductions in the Harmonized Index of Consumer Prices (OJ L 300, 29.11.2000, p. 16).

Commission Regulation (EC) No. 1920/2001 of 28 September 2001 laying down detailed rules for the implementation of Council Regulation (EC) No. 2494/95 as regards minimum standards for the treatment of service charges proportional to transaction values in the Harmonized Index of Consumer Prices and amending Commission (EC) No. 2214/96. (OJ L 261, 29.9.2001, p. 46 – corrigenda published in OJ L 295, 13.11.2001, p. 34).

Commission Regulation (EC) No. 1921/2001 of 28 September 2001 laying down detailed rules for the implementation of Council Regulation (EC) No. 2494/95 as regards minimum standards for revisions of the Harmonized Index of Consumer Prices and amending Regulation (EC) No. 2602/2000 (OJ L 261, 29.9.2001, p. 49 – corrigenda published in OJ L 295, 13.11.2001, p. 34).

All these legal acts can be found on the following web site: <http://europa.eu.int/celex/>