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REPORT FROM THE COMMISSION TO THE COUNCIL

**ON HARMONIZATION OF CONSUMER PRICE INDICES
IN THE EUROPEAN UNION**

TABLE OF CONTENTS

Table of Contents	2
Abbreviations used in the Text	4
List of Tables	6
Executive Summary	7
1. Introduction	9
2. Costs	9
3. Background	10
4. Comparability and main differences	10
5. Approach towards establishing rules for Commission Regulations	11
6. Implementation of the Council Regulation	12
6.1. Stage 1 of the harmonization process: January 1996	12
6.2. Stage 2 of the harmonization process: January 1997	13
6.2.1. Initial coverage	14
6.2.2. Newly significant goods and services	14
6.2.3. Minimum standards for procedures of quality adjustment	15
6.2.4. Minimum standards for prices	16
6.2.5. Price indices for elementary aggregates	17
6.2.6. Minimum standards for sampling	17
6.2.7. Transmission and dissemination of sub-indices of the HICP	18
6.2.8. Common reference periods	19
6.3. The EICP and the MUICP	19
6.4. HICP data disseminated by the Commission (Eurostat)	20
7. Derogations from the provisions of the HICP Council Regulation	21
8. Further steps towards harmonization	22
8.1. Extended coverage	22
8.2. Minimum standards for the quality of HICP weights	24
8.3. Geographic and population coverage	24
8.4. Comprehensive Definition of HICPs	25
9. Enlargement of the EU	26
10. The HICP - a comparable measure of Consumer Price inflation	27
10.1. Improved comparability	27
10.2. Comparability and coverage	28
10.3. Differences between CPIs and HICPs	29

11.	Reactions from users, media, and Member States	30
11.1.	Opinion of the European Monetary Institute (EMI)	30
11.2.	Opinion of the Directorate General for Economic and Financial Affairs of the European Commission (DGII).....	31
11.3.	Summary opinion of Member States.....	31
12.	Compliance and quality control	32
12.1.	Specific changes made by Member States.....	33
12.2.	Coverage	34
12.2.1.	Interim indices launched 29 February 1996	34
12.2.2.	HICPs launched 7 March 1997	36
12.2.3.	HICP versus CPI coverage	37
12.3.	Weighting	40
12.3.1.	Quality of weights	40
12.3.2.	Weight reference period.....	40
12.4.	Sub-index weights.....	41
12.5.	Newly significant goods and services.....	42
12.6.	Elementary aggregate formula.....	43
12.7.	Quality adjustment	45
12.8.	Sample design and maintenance.....	48
12.8.1.	Sampling and comparability.....	48
12.8.2.	Statement of the target sample and maintenance	51
13.	Operation of the Procedure under Article 14 of Council Regulation (EC) No 2494/95 ("Comitology")	54
	Annex	56

ABBREVIATIONS USED IN THE TEXT

A.....	Austria
B.....	Belgium
BUL.....	Bulgaria
COICOP	Classification Of Individual COnsumption by Purpose
COICOP/HICP	COICOP adapted for the needs of HICPs
CPI	Consumer Price Index
CPIs.....	Consumer Price Indices
CYP	Cyprus
CZE	Czech Republic
D.....	Germany
DGII.....	Directorate General for Economic Affairs of the European Commission
DK.....	Denmark
E.....	Spain
EC	European Community
ECU.....	European Currency Unit
EICP.....	European Index of Consumer Prices
EL.....	Greece
EMI	European Monetary Institute
ESA 1995	European System of Accounts of 1995
EST	Estonia
EU	European Union
F.....	France
FIN.....	Finland
HFMCE	Household final monetary consumption expenditure
HICP.....	Harmonized Index of Consumer Prices
HICPs.....	Harmonized Indices of Consumer Prices
HUN.....	Hungary
I.....	Italy
IRL.....	Ireland
IS.....	Iceland
L.....	Luxembourg
LTU.....	Lithuania
LVA.....	Latvia
Member States	for the purposes of this report refers to the EU Member States (B, DK, D, EL, E, F, IRL, I, L, NL, A, P, FIN, S, UK) plus N and IS

MU Monetary Union
MUICP Monetary Union Index of Consumer Prices
N Norway
NL Netherlands
OECD Organisation for Economic Co-operation and Development
OJ Official Journal of the European Communities
P Portugal
POL Poland
ROM Romania
S Sweden
SPC Statistical Programme Committee
SVK Slovak Republic
SVN Slovenia
TEU Treaty on European Union
UK United Kingdom
UN-ECE Economic Commission for Europe of the United Nations

LIST OF TABLES

- Table 1: Overview of available HICP data
- Table 2: Assessment of compliance with HICP requirements in the Candidate Countries: Initial coverage
- Table 3: Expenditure excluded from national CPIs when computing the interim indices - approximate weights per 1000 (January 1996)
- Table 4: Categories which have been added to national CPIs when computing the interim indices
- Table 5: Categories which have been excluded from national CPIs when computing the interim indices
- Table 6: Sub-indices introduced for the compilation of the HICPs - approximate weights per 1000 (Annual 1996)
- Table 7: HFMCE covered by the HICP compared to national CPI coverage - approximate weights per 1000 (Annual 1996)
- Table 8: HICP weight reference periods and update frequencies in 1997
- Table 9: Newly significant goods and services since January 1997
- Table 10: Computation of elementary aggregates in the HICP
- Table 11: Sampling of geographical localities and outlets in Member States
- Table 12: Sampling of items and varieties in Member States
- Table 13: Monthly and less frequent price observation for the HICP as specified in the target samples of Member States
- Table 14: Total number of items and price observations for compiling the HICP as specified in the target samples of Member States
- Table 15: Sub-index weights of the HICP as part per 1000 (Annual 1996)

EXECUTIVE SUMMARY

As required by Council Regulation (EC) No 2494/95 and with the co-operation of Member States "Harmonized Indices of Consumer Prices" (HICPs) for each Member State are now produced and published monthly together with an aggregated index, the "European Index of Consumer Prices" (EICP). These indices have been accepted by both the Commission and the European Monetary Institute as providing satisfactory measures for the assessment of convergence. Although certain differences in their constructions remain to be fully harmonized considerable progress has been made in removing differences in the concepts, methods and practices followed by Member States in constructing their national Consumer Price Indices (CPIs). Those indices continue to be published in most cases and used in national contexts. Their construction will reflect improved practices developed in the harmonization process but their use for international comparisons is peripheral. The Commission and the European Monetary Institute are looking for further improvements in the quality and comparability of the HICPs for their use in monetary policy and the monitoring of inflation in the Economic and Monetary Union.

The HICPs have a common reference base 1996, common coverage of consumer goods and services and a common classification so that inflation can now be compared for around 100 categories of expenditure. The new indices are required to take account of inflation in new goods and services, particularly those resulting from technical innovation. Important sources of difference in the basic computational procedures have been removed. These relate to the representativity of the monthly collection of prices, the treatment of missing observations, allowance for changes in the quality of products available for pricing and to the formula used to combine the prices observed to give an overall measure.

Quality adjustment is widely accepted among experts as one of the most, if not the most, intractable problems in CPI construction. The problem is not widely appreciated and many observers share the mistaken impression that no allowances are made for improvements that have occurred in product quality thus leading to an overstatement of inflation. In practice many different adjustments have been made as index compilers have attempted to solve the problems in different ways and these may, just as likely, have resulted in an over compensation for such improvements. As a result, this remains the most important source of non-comparability among HICPs. Short term their comparability has been improved by banning one frequently used but inappropriate procedure for treating changing product quality. Further improvement can be expected as a result of a co-ordinated programme of work among Member States. This has already thrown much light on specific operational issues that must be resolved before comparable practices can be established.

The samples of prices used in the construction of HICPs differ widely in design and in the methods and practices followed. This gives rise to concern that the indices may be non-comparable on this count. It is however not possible to say that any particular HICP is unsatisfactory as there are no yardsticks by which to make such judgement. The Commission (Eurostat) is working with Member States on a programme of research designed to provide an empirical assessment of different sampling methods and to develop measures of the reliability of HICPs. The research is making good progress but is confronted with many difficult issues which have not hitherto been addressed. Meanwhile, Member States are required to ensure that their samples are representative of all categories of expenditure covered by the HICP and are maintained at the level of January 1997.

No single CPI or set of CPIs should be taken as a model for what HICPs should cover. The coverage of the HICPs is fairly comprehensive but some further extension is desirable. The incidence of very different institutional arrangements for the delivery of health and education has meant that it has not been possible to say at this stage how important this omission is in the provision of comparable measures of inflation as it affects consumers. Clearly individual consumers are unaffected when total costs rise if any payments they make are reimbursed. Other desirable extensions to coverage are social protection services and further insurance services which are not so far included. Harmonization of the geographic and population coverage is also being pursued as a matter of urgency. Some Member States have broadened their coverage from that of their CPIs to bring them into line with the majority but there remain questions over the coverage of tourist expenditure and institutional households.

The HICPs cover owner occupiers' repairs and maintenance costs, dwelling content insurance, refuse collection, sewerage services, water supply, and other services related to the dwelling. Work will be undertaken to develop an appropriate measure for inclusion but at this time only a few countries have the necessary data. The omission from the HICPs of imputed rents (the rent paid for an equivalent dwelling) included in some national CPIs or of mortgage interest payments included in other CPIs has been criticised but is justified on the grounds that neither of these represents the impact of inflation on owners; the first is an opportunity cost rather than an actual cost and the latter is the cost of borrowing rather than consumption.

1. INTRODUCTION

On 23 October 1995, the Council of Ministers adopted a regulation¹ setting the legal basis for the establishment of a harmonized methodology for compiling consumer price indices (CPIs) in EU Member States.

Council Regulation (EC) No 2494/95 concerning Harmonized Indices of Consumer Prices (HICPs) laid down a **stepwise approach in two stages**, each step requiring specific implementing measures which were and will be, where necessary, legislated in the form of Commission Regulations. Regarding the process for implementing HICPs it should be stressed that the Council Regulation foresaw a procedure with the Statistical Programme Committee (SPC) acting as Regulatory Committee.

Within this framework, rules as well as guidelines or non-obligatory statements of good practice have been drawn up in collaboration with Member States for the construction of HICPs. To date, two Commission Regulations² (EC) No 1749/96 and No 2214/96 have been adopted by the Commission. Further regulations are currently in various stages of preparation. Furthermore, a Community-wide index³ based on the HICPs as well as an index measuring the average inflation rate of the members of the Monetary Union⁴ have been defined. In doing so, due regard was and will be paid to the primary purpose of the HICPs to provide comparisons of inflation in the macro-economic context.

The production of a consumer price index is an elaborate and sensitive operation. Many of the necessary changes were agreed in lengthy discussions and required substantial preparation. The calculation of the HICP has in some cases required additional processing systems in order to avoid any risk of confusion with the existing CPI. The HICP Council Regulation and the number of specific implementing measures which have been legislated or submitted to the SPC during a period of only three years, provide enough evidence for the difficulty of the issues involved in the compilation of HICPs.

2. COSTS

The additional costs the Member States incurred in implementing the requirements laid down in the HICP Council Regulation, and specified in Commission Regulations, have been recognised by the Commission, and a Commission Decision (C(96) 2452) was adopted in September 1996 allocating 3 million ECU to the Member States over a two-year period for this purpose. This followed earlier disbursements to Member States amounting to 670000 ECU.

Although the Commission (Eurostat) took greatest account of cost-effectiveness and made full use of all possible budgetary resources to finance the HICP project, the funding might in some Member States not have covered two-thirds of the actual additional cost for the implementation of the HICPs as required in Article 13 of the HICP Council Regulation.

¹ Council Regulation (EC) No 2494/95, OJ No L 257/1, 27.10.95

² OJ No L 229/3, 10. 9. 1996, and OJ L 296/8, 21.11.1996 respectively

³ European Index of Consumer Prices (EICP)

⁴ Monetary Union Index of Consumer Prices (MUICP)

3. BACKGROUND

Protocol No 6 that develops Article 109 (j) (1) of the Treaty on European Union (TEU) states that "inflation shall be measured by means of a consumer price index on a comparable basis, taking into account differences in national definitions." This requirement is being met through the implementation of HICPs which are as far as possible based on national CPIs.

The compilation of any CPI consists of collecting and processing price and expenditure data according to specified concepts, definitions, methods and practices. Concepts relate to the essential aims of the CPI. The underlying conceptual basis of a CPI will usually be expressed in general terms (if it is expressed at all). CPIs are sometimes in some Member States referred to as "cost-of-living indices" or as "pure price indices". The latter may be seen as a general measure of consumer price inflation whereas the purpose of the former might be for establishing the purchasing power of incomes. In practice there are significant overlaps between the two concepts.

Recognising that HICPs cannot measure all aspects of inflation but only one of its components, the preamble to the HICP Council Regulation includes the following phrase: "... it is recognised that inflation is a phenomenon manifesting itself in all forms of market transactions including capital purchases, government purchases, payments to labour as well as purchases by consumers ...". Article 3 of the HICP Council Regulation defines that the "HICP shall be based on the prices of goods and services available for purchase in the economic territory of the Member State for the purposes of directly satisfying consumer needs." Hence, the HICP is a "pure price index" the aim of which is to measure consumer price inflation. HICP is designed to cover the actual prices of goods and services faced by consumers. The underlying concept of the HICP is therefore defined as "final monetary consumption expenditure of households".

The HICPs are not intended to replace national CPIs. Many Member States are likely to continue their existing CPIs for domestic purposes, such as indexation or wage bargaining, although the HICP may be used for such purposes. This is in line with what was recognised at the outset of the HICP Council Regulation, where it is stated that "comparable indices may be produced instead of or in addition to similar indices of consumer prices already produced or to be produced in future by Member States." In some Member States there are legal or institutional barriers to using indices other than the national CPIs for such purposes. For these countries change may be a long process, but national CPIs will nevertheless incorporate several technical improvements introduced for the HICPs.

4. COMPARABILITY AND MAIN DIFFERENCES

CPIs have been developed for domestic purposes by each Member State and while they have much in common there are important differences in concepts and methods on which there are few universal agreements. CPIs are neither "right" nor "wrong"; they serve the multiple purposes for which they were designed to a greater or a lesser extent. National CPIs are the tools which their users are used to. As the HICPs differ from national CPIs in their concepts, definitions, methods and practices it is misleading to compare directly national CPIs with the HICPs.

In the harmonization project the focus lies on comparability among the HICPs of the different Member States as well as their relative movements. The criterion for deciding when indices should be accepted as comparable and when not was written into the HICP Council Regulation as the "comparability requirement" (Article 4). It reads as follows:

"HICPs shall be considered to be comparable if they reflect only differences in price changes or consumption patterns between countries.

HICPs which differ on account of differences in the concepts, methods or practices used in their definition and compilation shall not be considered comparable.

The Commission (Eurostat) shall adopt rules to be followed to ensure the comparability of HICPs under the procedure laid down in Article 14."

The (draft) Commission Regulation(s)⁵ which lay down the detailed implementing measures define the comparability requirement in a more operational way as a "change in the HICP by more than 0.1 percentage points on average over one year against the previous year". This limit was accepted by Member States as a criterion for harmonizing non-comparable practices.

The HICPs can all be said to meet their purposes of "measuring inflation faced by consumers" to a degree which is unknown (and perhaps unknowable) because there is no reference by which to determine the extent of any bias. It is, however, possible to say whether the differences between two HICPs are due to differences in methods of compilation and it is sometimes possible to estimate how large the differences might be.

5. APPROACH TOWARDS ESTABLISHING RULES FOR COMMISSION REGULATIONS

Implementation has to take place taking account of cost-effectiveness (Article 13 of HICP Council Regulation), remaining proportional to the aim pursued (Article 3 (b) EC-Treaty, last sentence) and respecting subsidiarity (Article 3 (b) EC-Treaty).

As far as possible, the Commission Regulations which implement the detailed rules are based on the best of current practices allowing for precedent and legal and institutional circumstances existing in Member States. No single national CPI could be said to be the model that should be followed by all Member States. There is no right answer in the sense of a general agreement about what should be computed. Existing CPIs have been designed to meet a range of purposes and have been developed in different contexts.

The general approach to the implementing regulations could be characterised by the term "minimum standards". "Minimum standards" in the sense that banning acknowledged bad practices has the effect of not only achieving convergence on good practices but also raising the general level of standards and, on the other hand, in the sense that the regulations generally specify outputs rather than inputs. They say what is required rather than how to achieve the requirement, the detail of which is left to Member States, sometimes in agreement with the Commission (Eurostat).

More specifically, the criteria which are being followed in determining rules are:

- (a) **Necessity** - Rules should be made only where there is evidence that non-comparability may arise in the absence of such rules. Otherwise the principle of subsidiarity applies.

⁵ See Article 7 of Commission Regulation (EC) No 1749/96 and Article 3 (4) of the draft Commission Regulation concerning minimum standards for the quality of HICP weights

- (b) **Practicability** - Rules should be made only where National Statistical Institutes (NSIs) can generally accept them and are able to follow what is required. It should also be possible to monitor the application of the rules in order to ensure compliance.
- (c) **Specificity** - Rules should be clear, unambiguous and suitably restrictive in order to ensure comparability but should be sufficiently general as to allow variations in practices as long as these do not result in non-comparability.
- (d) **Coherence** - Rules should not conflict with or contradict other rules or guidelines.
- (e) **Completeness** - Taken together, rules and guidelines should cover all that has to be done in constructing HICPs. Where it is deemed unnecessary to harmonize existing practices the bounds of those practices should nevertheless be defined.
- (f) **Best practice** - Where possible, rules should follow the best of existing practices so long as these can be applied across the Union.
- (g) **Efficiency** - The costs of following the rules should not exceed what is necessary to achieve comparable HICPs. The cost, over and above existing costs, should be identified and arrangements for meeting such costs agreed between the Commission and NSIs before the rules are adopted.

6. IMPLEMENTATION OF THE COUNCIL REGULATION

Article 5 of the HICP Council Regulation committed Member States to a staged process of implementation as follows:

"(a) Stage I:

By March 1996 at the latest, the Commission (Eurostat) shall, in collaboration with Member States, produce for the purposes of the report referred to in Article 109 (j) of the Treaty ("convergence criteria") an interim set of consumer price indices for each Member State. These indices shall be based wholly on data underlying existing national consumer price indices, adjusted in particular as follows:

- i) to exclude owner-occupied housing;
- ii) to exclude health and educational services;
- iii) to exclude certain other items not covered or treated differently by a number of Member States;

(b) Stage II:

The HICP shall start with the index for January 1997. The common index reference period shall be the year 1996. The estimates of price changes for the twelve months to January 1997 and subsequent months shall be established on the basis of the indices for 1996."

6.1. Stage 1 of the harmonization process: January 1996

On 29 February 1996, the Commission (Eurostat) launched⁶ the interim set of CPIs referred to in Article 5 (1) (a) of the HICP Council Regulation. These **interim indices** were based entirely on existing national CPIs, adjusted solely so as to make the coverage of goods and services as similar as possible⁷. National CPIs were thus coincident with the corresponding interim indices

⁶ News Release No 15/96, Eurostat, 29 February 1996

⁷ Details are given in paragraph 12.2.1.

regarding methods, concepts and definitions apart from the coverage of goods and services. They therefore provided a better basis of comparison of consumer price inflation than the unadjusted national CPIs, and were used by the Commission and the European Monetary Institute in their first convergence reports to the Council in 1996.

Certain categories of expenditure were excluded where, in the time available, it was impossible to reach agreement on how best to construct comparable measures. In particular, the expenditure faced by owner occupiers' when acquiring housing, not covered in some countries, measured by imputed rents in others, and by mortgage interest payments in the rest, was entirely excluded. Expenditure on health and education was also excluded because of major institutional differences between countries in the ways in which consumers pay for such services, either directly or via taxes. As well as excluding certain items, some other categories of expenditure that are not in some national CPIs - in particular, alcoholic drink and tobacco - were included for all Member States.

The interim indices were compiled for just one year by all EU Member States, Iceland, Norway, and Switzerland⁸. As required by the Council Regulation, HICPs started with the index for January 1997.

6.2. Stage 2 of the harmonization process: January 1997

On 7 March 1997 the Commission (Eurostat) published the first set of **Harmonized Indices of Consumer Prices (HICPs)** as required by Article 5 (1) (b) of the HICP Council Regulation⁹. In contrast to the interim indices, the HICPs are harmonized in several methodological areas as well as coverage. The HICPs do not simply expand the interim indices, as the HICP is a new and different index.

The HICPs will in general be subject to **retrospective revisions**. However, during the crucial period for the decision on Stage III of Monetary Union, no revisions will be required in the calculation of the HICP and any revisions proposed by Member States to figures already published will not be applied by the Commission (Eurostat). Thus, with the publication of the index for December 1997 (in January 1998) until the publication of the index for December 1998, index figures once published will not be changed. Retrospective revisions are again permitted with the publication of the index for January 1999.

Under the HICP Council Regulation the Commission has so far adopted two detailed regulations establishing the specific implementing measures governing the production of the HICP; further draft regulations are in preparation.

- Commission Regulation (EC) No 1749/96 on initial implementing measures, covers six technical areas: initial coverage, newly significant goods and services, elementary aggregates, and minimum standards for quality adjustment, sampling and prices.
- Commission Regulation (EC) No 2214/96 relates to the HICP and its sub-indices that will be transmitted to and disseminated by Eurostat.
- A draft Commission Regulation sets minimum standards for the quality of HICP weights.

⁸ Liechtenstein does not calculate a national CPI and, hence, did not provide an interim index

⁹ Details about the available data are given in paragraph 6.4.

- A second draft Commission Regulation amends Commission Regulation (EC) 1749/96 with regard to the coverage of goods and services and proposes a staged procedure on how to extend the coverage of the HICP.
- A third draft Commission Regulation amends Commission Regulation (EC) 1749/96 with regard to the geographic and population coverage of the HICP.

6.2.1. Initial coverage

Article 3 of Commission Regulation (EC) No 1749/96 defines the initial coverage of the HICPs in terms of a relatively new international classification of consumers' expenditure known as COICOP (Classification Of Individual Consumption by Purpose). A version of this classification has been specially adopted for the HICPs, known as COICOP/HICP¹⁰. It is based on the draft COICOP as adopted at a joint UN-ECE/OECD/Eurostat meeting on National Accounts held in Geneva 30 April to 3 May 1996.

The weights assigned to each category of COICOP/HICP vary from country to country depending on the relative importance of consumers' expenditure on each good or service in each country. That means that there is no "uniform basket" applying to all Member States. This is in accordance with the comparability requirement set out in Article 4 of the HICP Council Regulation.

The additions to coverage as compared with the interim indices¹¹ of Stage 1 are, for example; insurances for cars and dwellings, package holidays, banking services, educational goods and services such as evening classes, and health goods that are obtainable without prescription¹². However, some difficult categories, including most health and educational services, are still not covered by the HICP.

A draft Commission Regulation amends Commission Regulation (EC) 1749/96 with regard to coverage and proposes to extend the coverage of the HICP in stages, starting in December 1998 to include difficult categories such as health and educational services, where there are major institutional differences between Member States¹³. Owner occupiers' shelter costs, expressed as imputed rents or mortgage interest payments, are not regarded as part of the inflationary process and hence excluded from the HICPs. However, consideration is being given to the inclusion of the net acquisition prices of new dwellings.

6.2.2. Newly significant goods and services

CPIs are frequently criticised for failing to include new products such as mobile phones and personal computers. The requirement in the HICP Council Regulation (Article 5 (3)) to "maintain the relevance of HICPs" means that steps must be taken to ensure that these criticisms cannot be levelled against the HICPs. If some Member States add new products when they become a significant part of consumption but others fail to do so, it could lead to significant differences in the measured rates of inflation.

¹⁰ See also paragraph 6.2.7.

¹¹ See paragraph 6.1.

¹² Details are given in paragraph 12.2.2.

¹³ See also paragraph 8.1.

Article 4 of Commission Regulation (EC) No 1749/96 ensures that HICPs keep broadly in step with each other and up-to-date in terms of market developments. In general, new products are incorporated in the HICP as soon as they achieve a sales volume of over 1 part per thousand of total consumers' expenditure in the Member State. Member States are required to build up a monitoring system for identifying newly significant goods and services from January 1997. Member States should make provision to identify new products and to report these to the Commission (Eurostat), which is acting as an information exchange, informing each country of the products newly included in other countries' HICPs¹⁴. It is not, however, a simple matter to define what newly significant items are or to formulate practicable procedures by which they can be identified. The requirement remains to be clarified in the process of its operation.

6.2.3. Minimum standards for procedures of quality adjustment

HICPs should measure "pure price change" unaffected by quality changes in the things which people buy. The prices taken for a HICP should therefore be adjusted for changes in the quality of the goods or services to which they relate. However, there is no universal agreement on just how this should be done and there are major differences between countries in actual practices. This is probably the largest single source of non-comparability¹⁵.

Differences between CPIs may arise because the same change in the physical characteristics of an item are treated in quite different ways from one country to another. This is not to say that the same quality characteristic should be valued to the same extent in different Member States, only that the principles and procedures for valuation should be the same. Differences in practice do 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. Studies, which are continuing, on the different treatments of quality changes in motor vehicles suggest that this factor alone might lead to CPI effects greater than 0.1 percentage point on annual rates.

Article 5 of Commission Regulation (EC) No 1749/96 requires Member States to examine quality adjustment procedures and to avoid "automatic linking", which is equivalent to the assumption that the difference in price between two successive "models" is wholly attributable to a difference in quality. If a Member State always assumes that a price increase from one "model" to another is due to a quality change and, therefore, reflects no price change in the CPI, this automatic linking may lead to underestimation of inflation and vice versa. Member States are required to change procedures to ensure that automatic linking is not used from January 1997. Non-automatic linking may continue to be used, i.e. where it can be justified that the price difference between the item and its replacement is equal to the quality difference. Furthermore, "overlap pricing" may be used, i.e. where a replacement is anticipated and prices are observed for the item and its replacement at the same time; the price difference in the overlap period is used as an estimate for the value of the quality difference.

Member States need to be able to demonstrate that automatic linking is not used. Selective monitoring of implicit and explicit quality adjustments is required to establish comparable good

¹⁴ Details are given in paragraph 12.5.

¹⁵ See for example the "Boskin Report": "Towards a more accurate measure of the cost of living", Final report to the United States Senate Finance Committee from the Advisory Commission to study the Consumer Price Index, Michael J. Boskin, Chairman et. al., 4 December 1996

practices¹⁶. The Commission (Eurostat) will assist in this process by setting up a database of quality change estimates provided both by Member States themselves and from other sources.

The problems of determining quality adjustments will require substantial further research. The Commission Regulation focuses attention on these problems as specific adjustments have to be made in the large number of situations where automatic linking has been used. The Commission (Eurostat) is supporting a programme of work to design appropriate adjustments for changes in the quality of goods and services the prices of which are used in the production of specific HICP sub-indexes. At present, research is concentrated on the development of quality adjustments for selected high-tech goods and the establishment of information for inclusion in a Eurostat central database of quality adjustments.

6.2.4. Minimum standards for prices

A widespread practice used in price estimation for CPIs is known as "carry-forward". Fieldwork price collection involves the observation of the price, usually each month, of a set of specified products in specified retail outlets. If, for any reason, a particular price cannot, or is not, collected, a common procedure is to simply use the price observed on the previous occasion - which may have been many months previously.

The banning of the practice of "carry-forward" - which can lead to serious biases - is the main concern of Article 6 of Commission Regulation (EC) No 1749/96 which requires Member States to maintain their target sample from month to month. Sample maintenance is important because the aim is to measure price changes rather than price levels per se. Where prices are not observed they must be estimated by an appropriate procedure, and not by automatically carrying forward the last observed price. Member States should provide a statement of the "target sample" which is essentially the present plan for the number of prices that should be obtained and summary information on the numbers of missing prices for which estimates are substituted and on the estimation procedures¹⁷.

Currently, the Commission Regulation leaves the following questions to be answered:

- What are "non-appropriate estimates" for missing (or non-observed) prices?
- What limit should be set on the number of estimates used (missing prices) to ensure comparability?

The Commission (Eurostat) will carry out studies of the effects of estimation and will define the appropriate limit for the numbers of estimated prices and permissible procedures. Studies should enumerate and evaluate the various procedures used when prices are missing and others that might be used. Evaluation should take account of item replacement and quality adjustment issues. Ideally it should assess the scale of errors in actual estimates for missing prices but this would require some idea of what the "right answer" should be. An alternative approach is to make a qualitative assessment of the assumptions that underlie different imputation procedures. It would, for example, be inappropriate to assume that the occurrence of missing prices is a random event, though this may not lead to unacceptable errors at least for one month.

¹⁶ Details are given in paragraph 12.7.

¹⁷ Details about the target samples are given in paragraph 12.8.2.

6.2.5. Price indices for elementary aggregates

Article 9 of HICP Council Regulation requires that the HICP shall be a Laspeyres-type index. Though the HICPs and CPIs produced by Member States may differ in detail, for example in the frequency of updating weights¹⁸, they can be broadly described as Laspeyres-type indices. That is, 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 pattern of consumption of, and the structure of prices paid by, the index population in the weight reference period.

However, the HICP Council Regulation does not define the formula to be used for the calculation of "elementary aggregates", which is the lowest level of detail for which expenditure weights are known. Elementary aggregates are computed by aggregating prices where there are no expenditure weights. Article 7 of Commission Regulation (EC) No 1749/96 concerns the formula to be used for the calculation of such elementary aggregates. Practices varied considerably between Member States, and the achievement of consensus was difficult. The arguments centred on two issues. The first was whether the detailed indices should be calculated by taking the ratio of the average price of items in a particular stratum, or whether to take the average of the ratios of those items. The second was how to define "average" in the above calculation: the arithmetic mean or the geometric mean¹⁹.

The Commission Regulation allows the use of the ratio of either arithmetic or geometric mean prices, but not the arithmetic mean of price relatives²⁰. Member States which use formulae other than the ratio of arithmetic mean prices or the ratio of geometric mean prices should be in a position to demonstrate that the alternative(s) used meets the comparability requirement. Member States were not required to change the formula for the calculation of elementary aggregates for the indices before January 1997, although they were encouraged to do so.

The decision to rule out the use of the average of price relatives formula was not taken on the grounds that it is generally accepted as wrong but rather that it does not give results which are "comparable" to those given by other formulae. Nevertheless, the decision means that future research can concentrate on the merits of these other formulae.

6.2.6. Minimum standards for sampling

Statistical theory suggests that random sampling is desirable in order to avoid bias in a statistic. However, this is not easily achieved when it comes to the collection of prices for a CPI and most Member States follow sampling procedures which are referred to as "purposive" or "representative". The decisions on which prices to collect may thus be determined by the degree of co-operation of retailers or by the inclinations of particular price collectors. While this may not seem to be good practice it is not easy to demonstrate that the resultant indices are non-comparable on this account.

Studies commissioned by the Commission (Eurostat) into these matters indicated that different sampling techniques provide considerable scope for non-comparability. They suggested that representative versus probability sampling could give large differences for item groups, but these were not significant on average. Furthermore, the studies indicated that the number of

¹⁸ See also paragraph 8.2.

¹⁹ The United States' Bureau of Labor Statistics (BLS) is also investigating this following the Boskin report

²⁰ Details are given in paragraph 12.6.

elementary aggregates could have short term effects on comparability. In contrast, differences in the regional coverage of CPIs did not seem to lead to non-comparability, since the differences between the regional indices and the overall index seem to be entirely random. From the studies it was clear that a rule which changes current practices towards improved comparability was needed.

The aim of Article 8 of Commission Regulation (EC) No 1749/96 is to improve, where necessary, the reliability and comparability of HICPs by reducing errors that arise from different sample designs and practices. It requires that Member States should check their samples of prices as to their adequacy for the HICP and adjust sampling procedures as they judge necessary. Member States should not simply assume that their target sample is adequate but are required to provide some evidence²¹.

The extensive use of purposive sampling means that there is no adequate theoretical frame by which to judge the reliability (representativity and precision) of HICPs. Only a few Member States make any attempt to compute sampling errors for their CPIs and none has any measure of bias. Such errors would also be an aid to more efficient sample design. Studies are being carried out to assess both sampling error and bias in HICPs and these will be used later to set appropriate limits on such errors. It is necessary to establish what combination of the numbers and specifications of elementary aggregates and the number of prices required within each elementary aggregate will provide a HICP of sufficient reliability.

6.2.7. Transmission and dissemination of sub-indices of the HICP

The HICP Council Regulation requires a specification of the sub-indices to be produced and published along with the HICPs. Whilst the assessment of price stability under the convergence criterion primarily concerns the "all items" HICPs, the analysis of sources of inflationary pressure requires a sub-division of the HICP into component parts relating to different product groups. Commission Regulation (EC) No 2214/96 defines a set of sub-indices of the HICP with common coverage that the Member States are required to transmit to the Commission (Eurostat). The sub-indices are based on the classification COICOP/HICP²². This was a major step forward for many users as the components of national CPIs do not conform to a common classification.

Each month Member States transmit the primary index series, i.e. the HICP and its sub-indices, to the Commission (Eurostat) correct to one decimal place, for example 99.5 or 102.4 taking 1996 = 100. In order to avoid excessive and conflicting rounding errors, all derived statistics are calculated from these primary series. All derived statistics are published correct to one decimal place. Annual average index numbers are the sum of the twelve monthly figures (with one decimal place) divided by twelve and rounded to one decimal place. The 12-month change in this annual average is, however, based on the unrounded averages i.e. obtained directly from the primary series. Member States also transmitted the initial sub-index weights used and will report any subsequent changes to the Commission (Eurostat). Weights for the sub-indices are sent to Eurostat to a degree of detail of at least 1 in 1000. The weights of the sub-indices of the EICP and the MUICP are disseminated to a degree of detail of at least 1 in a 1000. Since

²¹ Details about the target samples are given in paragraph 12.8.2.

²² See also paragraph 6.2.1.

March 1997 the Commission (Eurostat) has been disseminating every month all sub-indices and their weights²³.

6.2.8. Common reference periods

There are three types of base period used in the construction of CPIs: the period from which the expenditures for weights are obtained ("weight reference period"²⁴); the period in which base prices are valued ("price reference period"); and the period in which the index base is set to 100 ("index reference period"). There are differences between national CPIs in all these reference periods.

For the HICP, the Council Regulation sets the index reference period as 1996 = 100. Since the HICPs are derived from national CPIs it was necessary to "re-reference" or "price-update" the HICP and its sub-indices to 1996; that is to express the movements in the HICP and its sub-indices by reference to the average level of prices in 1996, and subsequently to December 1996, December 1997, December 1998, etc. Re-referencing is simply a scaling exercise which in itself has **no effect** on the measured rate of inflation. However, it allows HICPs to be treated and presented in the same way, provides for the construction of indices for groups of Member States or the EU as a whole, and allows for country weights changing each year. The problem of aggregating CPIs with different references and re-weighting frequencies brought out the computational advantages of the Laspeyres formula²⁵.

6.3. The EICP and the MUICP

The European Index of Consumer Prices (EICP) is calculated as a weighted average of the HICPs of the 15 EU Member States. The index is computed as an annual chain index allowing for country weights changing each year. The weight of a Member State is its proportion of final consumption expenditure of households in the EU total. The values of final consumption expenditure in national currencies are converted into purchasing power standards (PPS) using the purchasing power parities of final consumption. The country weights used in 1997 are national accounts data for 1995 at 1996 prices. The European Economic Area Index of Consumer Prices (EEAICP) is calculated in the same way, with the inclusion of Iceland and Norway²⁶.

The task of aggregating Member States' HICPs to a European HICP is an exercise of measuring and aggregating the evolution of the inner values of all EU currencies in order to obtain a corresponding measure of EU inflation. The final consumption expenditure in monetary transactions is the appropriate weight as it is commensurate with the coverage of the HICPs. It is right for Member States to be represented by their volume of consumption valued at standard prices relative to other Member States rather than by values which depend on financial and other factors. According to current Eurostat practice national weights for CPIs and HICPs are converted using purchasing power parities (PPPs). Their use reduces the disturbing volatility of exchange rates and enables an additive and meaningful expression of each Member State's relative importance in terms of final consumption expenditure, e.g. two countries with the same volume of consumption are given equal weights.

²³ Details are given in paragraph 6.4.

²⁴ Details are given in paragraph 12.3.2.

²⁵ See also paragraph 6.2.5.

²⁶ Liechtenstein is not included in the EEAICP since it neither calculates a national CPI nor a HICP

For the participating countries of the Monetary Union the national currencies will be replaced by the Euro. It remains to be decided how to calculate the Monetary Union index of consumer prices (MUICP), and in particular how to derive each Member States' relative weight in the MUICP, when the final household consumption expenditure of the participating countries will be expressed in Euros.

6.4. HICP data disseminated by the Commission (Eurostat)

The HICPs are the result of three years' co-operation between the Commission (Eurostat) and the National Statistical Institutes on harmonizing the different methods and practices used to compile price indices. The first set of HICPs was published on 7 March 1997. Since then the Commission (Eurostat) publishes each month:

- the all-items HICPs for all EU Member States plus Iceland and Norway²⁷,
- the European Index of Consumer Prices (EICP),
- the European Economic Area index (EEA),
- about 100 sub-indices, their corresponding weights and weighted averages (EICP and EEA), and
- the country weights.

For the HICPs and their sub-indices the following information is made available:

- the monthly index level,
- the monthly rate of change,
- the annual rate of change,
- the annual average index, and
- the annual average rate of change.

The information is updated monthly and available to all users from the Eurostat database "NEWCRONOS". The information can be obtained through Eurostat's Data Shop network.

The launch of the first set of HICPs on 7 March 1997 was well received in the media, and their monthly publication thereafter is working to the satisfaction of users. As a result of the complexity of the operation of compiling HICPs, Finland discovered a mistake in their HICP calculation just after the launch of the first set of indices. This mistake was corrected and the Finnish HICP series was revised with the publication of the February indices on 7 April 1997. The German and Austrian HICP series were also corrected for mistakes; revised figures for both Member States were disseminated with the publication of the August HICPs on 7 October 1997.

In line with Article 5 (1) (b) of the HICP Council Regulation, the HICP starts with the index for January 1997. The common index reference period is the year 1996. The rates of change for 1997 are established on the basis of the indices for 1996. The HICP concepts thus apply starting with the **index for January 1996**.

²⁷ Liechtenstein and Switzerland do not calculate HICPs

Although the indices for 1995 cannot be considered as a legal requirement, all Member States agreed to provide them²⁸. The 1995 indices for the United Kingdom are the interim indices for 1995 adjusted for the geometric mean effect²⁹. The indices for 1995 and the rates of change for 1996 based on 1995 do not fulfil the HICP standards, but they are considered to be superior to national CPIs and the interim indices³⁰ as regards comparability. They are, therefore, considered as the harmonized measure of inflation for the months in 1996 and are published by the Commission (Eurostat).

Ireland estimated monthly HICPs and monthly sub-indices for 1995 and 1996 based on their quarterly data. The monthly figures are adjusted linear interpolations of the quarterly indices making allowances for several sales effects. The estimation of these sales effects is based on seasonal patterns identified from United Kingdom data.

To calculate the rates of inflation for 1995 the Commission (Eurostat) would impute indices for the months of 1994 based on the rates of change for the interim indices in 1995. These estimates are available only for the all items index.

Table 1:
Overview of HICP data available since 7 October 1997

		1995	1996	1997
Monthly indices	HICP	all Member States	all Member States	all Member States
	Sub-indices	not F and UK	all Member States	all Member States
		[1995/1994] ³¹	1996/1995	1997/1996
Monthly rates of change	HICP	all Member States	all Member States	all Member States
	Sub-indices	None	not F and UK	all Member States

7. DEROGATIONS FROM THE PROVISIONS OF THE HICP COUNCIL REGULATION

Article 5 of the HICP Council Regulation allows the Commission (Eurostat), after consulting the EMI, to grant, where necessary, derogations up to one year from the timetable established through the Council Regulation. "Necessary" means that a Member State has to make significant adjustments to its statistical system in order to fulfil its obligations.

Only few Member States sought a derogation³². In most cases the issues concerned minor adjustments where satisfactory solutions could be found in accordance with the agreed implementation time table. Eventually, the Commission (Eurostat) has granted only one derogation to Denmark for firstly applying the elementary aggregates formulae in September 1997. Retrospective series are to be provided.

²⁸ France and the United Kingdom do not provide sub-indices for 1995

²⁹ Explanations are given in paragraphs 6.2.5. and 12.6.

³⁰ The interim indices are available from January 1994 to December 1996 for all EU Member States, Iceland, Norway, and Switzerland

³¹ Interim indices, see also paragraph 6.1.

³² Denmark, Germany, France, Italy

8. FURTHER STEPS TOWARDS HARMONIZATION

Although the HICPs provide the best current statistical basis for international comparisons of consumer price inflation, and very considerable progress has been made in harmonizing methodologies, more work remains to be done to achieve even better comparability. HICPs are not and will never be "fully" harmonized consumer price indices, inasmuch as the aim is comparability and not full harmonization. The Treaty on European Union expressly allows for national differences, which will continue to exist but at a level where the requirement of comparability of the HICP is not breached. Technical regulations and agreements will shortly be proposed in the following areas:

8.1. Extended coverage

Article 3 of Commission Regulation (EC) No 1749/96 defines the initial coverage³³ of the HICPs from January 1997. Some difficult categories such as health and educational services, where there are major institutional differences between Member States, are at present not fully covered by the HICP. Since many goods and services in the area of health, housing, and education are heavily subsidised by the state, it is not always clear which prices should be included in an index of consumer prices, and the ways of treating this problem differ between Member States.

A draft Commission Regulation amends Commission Regulation (EC) 1749/96 with regard to coverage and defines a staged procedure on how to extend the coverage of the HICP. The concept "household final monetary consumption expenditure" in the draft regulation defines both the goods and services to be covered and the prices to be used, which should be taken net of reimbursements, subsidies, and discounts. The draft regulation follows the definitions laid down in the new European System of Accounts (ESA 1995) where they are appropriate for international comparisons of inflation, and defines the details by reference to COICOP/HICP³⁴. The draft regulation provides that the coverage of goods and services shall be completed in two stages, in December 1998 and December 1999 as follows:

- (a) **Rents:** By December 1998 the treatment of subsidised rents will be harmonized.
- (b) **Services connected with the dwelling:** By December 1998 the coverage of refuse collection, sewerage services and water supply, unless they are financed out of general taxation, will be extended.
- (c) **Financial services:** By December 1999 the HICP will cover the remaining financial services, e.g. charges for tax consultancy or investment advice.
- (d) **Education:** By December 1998 the HICP will cover all educational goods and services in a harmonized way. Education will be covered on a net basis, i.e. the weights and the prices will refer to the amounts actually paid by consumers net of reimbursements by government. This applies to school books and other materials, school meals, and to educational services provided by all types of schools and universities. To solve some of the methodological details, including the treatment of income dependent prices, a special Task Force has been set up by Eurostat.
- (e) **Health:** By December 1998 the HICP will cover all health goods and services (apart from hospital services) in a harmonized way. Health will be covered on a net basis, i.e. the weights and the prices will refer to the amounts actually paid by consumers net of

³³ See also paragraph 6.2.1.

³⁴ See paragraphs 6.2.1 and 6.2.7.

reimbursements by social security. The Task Force will look at the methodological details of implementation. The methodology for the inclusion of hospital services will be settled no later than December 1998. The category will be included as soon as possible thereafter.

- (f) **Insurance:** By December 1998 the HICP will cover all insurances connected with the dwelling, not only contents insurance. By December 1999 at the latest the HICP will also cover private health, civil liability, and travel insurance. The methodology will be settled by another special Task Force set up by Eurostat. If the Task Force finds an early solution, the implementation could be scheduled for an earlier date.
- (g) **Social protection services:** By December 1998 the HICP will cover the services provided by crèches, nurseries, play-schools and kindergartens in a harmonized way. They will be covered on a net basis, i.e. the weight and the prices refer to the amount actually paid by the consumer net of reimbursements by government. Other social protection services, especially retirement homes, give rise to similar implementation problems as hospital services. However, since those services are of growing importance they should be covered by the HICP. The methodology for the inclusion of, for example, retirement homes will be settled no later than December 1998. The category will be included as soon as possible thereafter.
- (h) **Exclusions:** The following will be excluded from HICP coverage: narcotics, imputed rentals of owner occupiers, other imputed rentals, games of chance, certain personal care services, life insurance and financial intermediation services indirectly measured.

Where technically feasible, retrospective series will be compiled. It is estimated that the combined weight of the above goods and services is about 6% of "household final monetary consumption expenditure"³⁵.

There also remains the question of how to measure the impact of inflation on owner occupiers in respect of housing³⁶. The actual prices faced by owner-occupiers for minor repairs of the dwelling and regular maintenance services are already covered in the HICP. Imputed rents or mortgage interest payments, which are used in some CPIs, are not actual price transactions and considered inappropriate for international comparisons of consumer price inflation. The question has been discussed extensively by Member States. Eurostat submitted to the SPC on 13 March 1997 a position paper asking its view on whether to exclude such a non-comparable item from the HICPs or to include it on the basis of net acquisition prices for new owner-occupied dwellings. Many Member States were sympathetic to the idea that the prices faced by owner occupiers when acquiring housing should be covered by the HICP, but felt that it was premature to proceed with an index of net acquisition of new dwellings. It was agreed that discussions on this issue should continue and that further research work should be carried out before a final decision could be taken. A special Task Force will be set up in 1998 by Eurostat.

Extension of coverage beyond the obvious core of goods and services required agreement on the definition of inflation. The scope, or coverage in principle, was taken as "household final monetary consumption expenditure". Some commentators have suggested that the indices are seriously deficient on account of the incomplete coverage (in practice) assuming, by reference to some CPIs, this to be large and therefore important. The Commission (Eurostat) has pointed

³⁵ See also paragraph 12.2.3.

³⁶ See also paragraph 10.2.

out that CPIs are an inappropriate reference and the significance of omissions depends on their relative price movement rather than their size which, being net of reimbursements, will be small³⁷.

8.2. Minimum standards for the quality of HICP weights

Article 8 (3) of HICP Council Regulation No 2494/95 requires that HICP weights are sufficiently up-to-date to ensure comparability whilst avoiding the cost of having Household Budget Surveys more frequently than every five years. Article 5 (3) further requires that implementing measures for maintaining the "reliability and relevance" of the HICPs be adopted. CPIs are fairly insensitive to changes in weights. Imposing the cost of high precision for all weights by frequent and comprehensive up-dating would not be desirable. Nevertheless, it is necessary to give some assurance that large differences in the frequencies of up-dating do not lead to non-comparability.

A draft Commission Regulation sets minimum standards for the quality of HICP weights. The weights used can in general relate to a weight reference period up to seven years prior to the current year. However, adjustments need to be made for significant changes in expenditure patterns in the intervening periods. The draft regulation thus gives a minimum guarantee of the quality of weights used to construct the HICP and minimises any disparity between HICPs arising from different up-date frequencies³⁸.

The precise method of reviewing the weights is left to Member States to decide and to justify. The Commission (Eurostat) has suggested that it is possible to develop quality control procedures which focus on those relatively few weights which will be critical for the comparability, relevance and reliability of the HICP. A report of the review of the weights should be made available to the Commission (Eurostat). As a minimum this should show that, where changes in the prices of specific goods and services have diverged from the movement of the all items HICP, procedures have been instituted for monitoring the weights of such items in order to ensure that they are appropriate.

The Commission (Eurostat) has for a number of years been working with Member States to harmonize the design, content and frequency of Family Budget Surveys. This work has potential importance for the harmonization of CPIs since the quality and up-to-dateness of weights depend on such data sources as well as other sources such as National Accounts data.

8.3. Geographic and population coverage

National CPIs differ in their choice of population coverage, e.g. some exclude persons living in institutions, others include them. A particular problem concerns the expenditure of residents whilst in a foreign country, and the expenditure of foreign visitors in the home country, and at the same time distinguishing between business and private expenditure. Article 3 of Council Regulation (EC) No 2494/95 restricts the HICPs to "goods and services available for purchase in the economic territory of the Member State", but this does not say anything about the residency status of the consumer. This question is associated with what Member States use as a primary source of HICP weights, i.e. National Accounts or a Household Budget Survey. People living in institutional households and foreign visitors are not normally covered in

³⁷ Details are given in paragraph 12.2.3.

³⁸ See paragraphs 12.3. and 12.4. for more details

Household Budget Surveys. They are included in principle in the National Accounts, but the accurate derivation of corresponding HICP weights may be difficult.

The HICPs launched in March 1997 cover all households, regardless of income, resident in any part of the economic territory (rural and urban). Hence, some Member States needed to adjust their HICP weights to reflect households not covered by their national CPI, for example Greece, Portugal and the United Kingdom. However, the treatment of the expenditure of non-residents, visitors on business trips and institutional households for the HICP is the same as that for the national CPI³⁹.

A draft Commission Regulation provides a harmonized definition of the geographic and population coverage of the HICP. It specifies that the coverage, for the calculation of the HICP weights, should include all "household final monetary consumption expenditure"⁴⁰ which takes place on the economic territory of that Member State⁴¹. In particular, the coverage should include expenditure by foreign visitors and exclude the expenditure by residents whilst in a foreign country, i.e. the HICP should follow the "domestic concept". The coverage should refer to the expenditure of all private households irrespective of the area in which they live, and also to individuals living in institutions. Coverage should be households independent of the household income level. Expenditure incurred for business purposes should be excluded.

8.4. Comprehensive Definition of HICPs

In order to provide a complete and formal overview of HICP construction, the Commission (Eurostat) will revise and extend the implementation agreement approved by the SPC in January 1997. The document will tackle a number of issues concerning the construction of HICPs especially those areas for which legislation was considered premature or inappropriate. Examples are discounts, data editing, timing of data collection and seasonal adjustment. In order to speed up the completion of the methodological frame for the HICPs, "guidelines" will be formulated so as to cover the variety of existing concepts, methods or practices which are considered to give comparable results. The aim is to provide a complete description of the essentials of the HICP in 1998.

So far a legislative framework has been produced for those aspects of HICP construction which have the greatest potential for introducing non-comparability in results. Hence, essential parts of the indices have been defined, but several other aspects of HICP construction have been left open which can affect the resultant indices. Differences in these are not, on the evidence available at this time, expected to lead to significant non-comparability. This lack of full definition has the advantage of allowing Member States to follow the variety of practices adopted for their CPIs but the disadvantages that the practices followed are not documented and not known either to other Member States, to Eurostat or to users. Further they may be changed without reference to any authority outside the National Statistical Institute. In order to complete the framework within which the HICPs are defined and legitimised it is necessary to have a description of what is currently done by Member States. The aim is **not to evaluate** but to give a detailed description of current practices.

³⁹ Except for Austria, where the national CPI refers to the expenditure by residents on the domestic territory, whereas the HICP also includes the expenditure by foreign visitors ("domestic concept")

⁴⁰ See also paragraph 8.1.

⁴¹ The combined weight of these extensions is given in paragraph 12.2.3.

9. ENLARGEMENT OF THE EU

The decision has yet to be taken concerning the applications for membership⁴² of the European Union, having regard to the candidates' ability to take on the obligations of membership, including adherence to the aims of political, economic and monetary union. The statistical information, which is relevant for the purposes of membership, is supplied by Eurostat.

During the pre-accession stage the Candidate Countries are required to implement the "acquis communautaire"⁴³, which comprises the implementation of Harmonized Indices of Consumer Prices (HICPs). In 1996 the first meeting was held with the Candidate Countries in order to involve them as fully as possible in the harmonization project. At the end of 1996 Eurostat sent out a questionnaire to all Candidate Countries on the legislative framework establishing HICPs in the Member States. The aim was to identify gaps and shortcomings in complying with the HICP requirements, needs for technical assistance, available resources, potential costs, as well as the timetable for the implementation of HICPs. The information will serve as a basis for discussion for future meetings and for establishing a detailed programme of work.

First evaluations of the questionnaire focused on the Candidate Countries' ability to provide an index covering all goods and services as required under Article 3 of Commission Regulation (EC) No 1749/96 defining the initial coverage of the HICP⁴⁴. The following table summarises the result:

⁴² The candidate countries are: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia

⁴³ The legal framework that applies to the Member States of the European Union

⁴⁴ See also paragraph 6.2.1.

Table 2:
Assessment of compliance with HICP requirements in the Candidate Countries:
Initial coverage

	Candidate Countries' timetable for implementing the requirements of initial coverage of the HICP:	Eurostat's judgement of compliance with respect to initial coverage:
BUL		currently not possible
CYP	from Jan-1998: compilation of HICPs; (data available in spring 1998)	likely in 1998
CZE	1998: re-classification according to COICOP/HICP; 1999: revision of CPI basket; from beginning of 2000: compilation of HICPs	likely in 2000
EST	from 1998: allocation of representative items for those HICP sub-indices which are not yet covered by the national CPI	possible in 2000
HUN	1997: implementation of fixed basket concept; 1997 - 1998: implementation of COICOP/HICP	possible in 2000
LTU	2 years are needed to implement the HICP requirements	currently not possible
LVA		possible in 2000
POL	1997: implementation of COICOP in the Household Budget Survey; Jan-1998: implementation of COICOP/HICP and development of software for the computation of the HICP; Mar-1998: implementing COICOP-based weighting system; from 1999: compilation of HICPs	likely in 1999
ROM	not before 1998	no plans to revise national CPI before 2000
SVK		currently not possible
SVN	Dec-1998: coverage of all goods and services as defined by the initial coverage regulation and implementation of COICOP/HICP; from 1999: compilation of HICPs and all sub-indices	likely in 1999

10. THE HICP - A COMPARABLE MEASURE OF CONSUMER PRICE INFLATION

10.1. Improved comparability

The HICPs are based on harmonized concepts, methods and practices which make them better suited for comparing inflation between Member States than the national CPIs. As a result of the harmonization project also some national CPIs improved in various aspects in quality for measuring inflation.

Within the frame of the HICP Council Regulation, the Commission (Eurostat) has set in place a series of specific measures in the form of Commission Regulations introducing a common classification (COICOP/HICP), a common HICP coverage, and a series of minimum standards such as⁴⁵:

- Incorporating newly significant goods and services (e.g. mobile phones);
- Making appropriate allowance for quality change in the things consumers buy (quality adjustment);
- Ensuring that samples of prices are properly representative;

⁴⁵ More details are given in paragraphs 6.2. and 12.

- Using comparable formulae for measuring price changes.

The Boskin report and the BLS⁴⁶ response to it, gives support to the achievements of the harmonization process. The issues raised by Boskin were those on which the harmonization had already focused; most notably quality adjustment, the basic formula and keeping up with market developments (new goods and weights).

Removing the different approaches to owner occupiers, health and education for the first phase of HICPs was a major step towards more comparable indices. The approach of minimum standards had a considerable immediate effect on comparability through banning inappropriate practices and removing to a good extent the biases resulting from them, such as new goods, quality, missing prices and aggregation bias as well as formula, substitution and outlet bias. Reducing further remaining biases and errors is considered as a medium term task that started with the first sets of compiled HICP data. However, the HICPs will always be subject to a certain margin of statistical error and unknown biases.

If it were possible to quantify the bias in a CPI, there would be no bias because the CPI would be corrected accordingly. Until alternative unbiased measures can be defined and constructed the size of any bias is a matter of speculation. There is wide agreement that the main source of bias in CPIs arises from the treatment of quality changes, but the amount of bias is unknown. National CPIs can, however, be used to investigate alternative approaches to the problem of constructing price indices.

The rules and minimum standards laid down in the regulations and guidelines not only assure the comparability, precision and reliability of HICPs but they result in quality improvements in measuring inflation. National CPIs also benefit to the extent that they may adopt these minimum standards. For example Ireland has produced since January 1997 a monthly CPI instead of the quarterly CPI produced previously. Luxembourg is the first Member State that has replaced its national CPI with the HICP, and Greece has launched a new national CPI that is mainly based on the HICP standards.

With the proposed link to the new European System of Accounts (ESA 1995) through the introduction of the concept of "household final monetary consumption expenditure"⁴⁷, the HICPs provide a clear and unambiguous concept for defining coverage and constructing weights and also improve the compatibility with National Accounts.

10.2. Comparability and coverage

The comparability of the HICPs is the result of the implementation of a number of measures explained in detail in paragraph 6.2., however, the focus of this section is the coverage of the HICP. Following the launch of the HICP, the Commission (Eurostat) and statisticians in the Member States have been criticised for not having been able to extend the coverage of the HICPs with regard to owner-occupied housing, education and health⁴⁸.

The actual prices faced by **owner-occupiers** for minor repairs and the regular maintenance of the dwelling are already covered by the HICP. However, imputed rents or mortgage interest

⁴⁶ The Bureau of Labor Statistics is responsible for calculating the US CPI

⁴⁷ See also paragraph 8.1.

⁴⁸ See also paragraph 8.1.

payments, which are used in some CPIs to measure "inflation" faced by owner occupiers in respect of housing, are considered inappropriate for international comparisons of consumer price inflation since these are not actual monetary transactions. Imputed rents are the opportunity costs to owner occupiers of living in their houses rather than a reflection of actual prices faced by them as consumers. These and any other opportunity costs are not regarded as part of inflation. Mortgage interest is simply the cost of credit, and credit payments are not normally included in CPIs. The SPC discussed the treatment of owner occupied housing in the HICP on 13 March 1997. Many Member States were sympathetic to the idea that the prices faced by owner occupiers when acquiring housing should be covered by the HICP, but felt that it was premature to proceed with an index of net acquisition of new dwellings. It was agreed that discussions on this issue should continue and that further research work should be carried out before a final decision could be taken. A special Task Force will be set up in 1998 by Eurostat.

The effect of excluding most parts of **health and educational services** from the HICP depends on how these services are eventually measured; in particular, the way in which reimbursements are dealt with. Not all health and educational services are covered in all CPIs. Where they are included not always allowances are made for the fact that consumers are often reimbursed. Some solutions have been found to the extent that almost complete coverage of health and education will be achieved in two stages, in December 1998 and December 1999. The inclusion of some items in after 1998 reflects either the fact that no Member State has technical solutions for their treatment (e.g. hospital services: what are the prices faced by consumers?) or that the methods and practices must be refined before comparability can be assured.

Assuming that 6% of full coverage, as defined in terms of "household final monetary consumption expenditure", is missing, this matters only to the extent that inflation in the exclusions differs significantly from inflation in general. If, for example, the rate of inflation given by the HICP is 2.0%, inflation in the non covered items would have to be twice as high in order to change the measured rate to 2.1%. If the sub-index for the non-covered items evolves at a similar rate as the all-items index then it does not affect the rate of inflation measured by the HICP. Although non-coverage is a drawback of the HICP it needs to be evaluated in the context of the other major achievements of the harmonization process.

10.3. Differences between CPIs and HICPs

HICPs numerically diverge from national CPI as a result of differences in concepts, methods and practices. Since national CPIs and HICPs serve different purposes, it can be misleading to compare both indices directly⁴⁹. The numerical differences can be positive or negative, however, it is not the intention of this report to explain or comment on numerical differences, which was already done by the Commission in its Convergence Report of 1996⁵⁰. The focus of this paper is the comparability of the HICPs and the Member States' compliance with the regulatory framework. The HICPs constitute the **only** comparable basis for assessing inflation convergence among Member States and inflation convergence will be assessed during the critical period before the start of Stage III of Economic and Monetary Union, as required by the Treaty, on the basis of these comparable HICPs. Nevertheless, since Article 109 (j) TEU

⁴⁹ See also paragraph 4.

⁵⁰ "Report on convergence in the European Union in 1996" - COM(96)560 final, published in European Economy, supplement A, No 1 - January 1997

allows for taking into account "other price indices", national CPIs may, among others, be taken into consideration.

11. REACTIONS FROM USERS, MEDIA, AND MEMBER STATES

11.1. Opinion of the European Monetary Institute (EMI)

The EMI has stated the following:

"As a key user and as forerunner of the European Central Bank (ECB), the EMI has been closely involved in the preparatory work for the HICPs through the consultation procedures laid down in Article 5.3 of the Council Regulation on HICPs and through the participation of EMI technical experts in Eurostat's Working Party.

Against the background of the differing objectives, concepts and methods underlying the national CPIs, the EMI regards the harmonization efforts as essential for the assessment of convergence in accordance with the Treaty on European Union. HICPs will form the basis for the assessment of price stability convergence in the Convergence Report of the EMI in early 1998. In the short and medium term the focus is therefore on the comparison of HICPs of individual Member States. However, from the start of Stage Three of Monetary Union, while retaining this role for Member States not participating in the single currency area, the HICPs will be a central indicator for the single monetary policy and this implies the use of the index for the Monetary Union area as a whole (MUICP). The measures which have been introduced for the purpose of assessing convergence will form a good statistical basis for the MUICP. At the same time, the use of the MUICP for monetary policy purposes may increase the importance of considerations such as the timeliness of data, since the data are likely to be an important ingredient in policy analysis each month.

The harmonization so far achieved appears in general satisfactory. The common coverage and classification as well as the detailed publication of sub-indices is an important improvement for analytical purposes. A comparable basic formula has been established and first measures introduced to improve the comparability of methodological issues (approaches concerning quality adjustment and sampling). The EMI has supported the approach to establish minimum standards now and to introduce more comparable and reliable methods in the medium term. Many of the issues discussed concern the measurement of inflation and the reliability of consumer price statistics in general and work in this field is therefore particularly welcome from a monetary policy point of view. However, this positive assessment on the progress achieved does not imply that differences in methods have been completely eliminated. Moreover, the extension of coverage to those parts of consumers' expenditure which are not covered by the initial HICPs is a particular concern of the EMI.

In sum, the EMI sees the plans for further development of the HICP as a necessary prerequisite for their use in monetary policy, without prejudicing their usefulness for the assessment of convergence."

11.2. Opinion of the Directorate General for Economic and Financial Affairs of the European Commission (DGII)

DGII has stated the following:

"As a key user, DG II, the Directorate General for Economic and Financial Affairs, has persistently insisted on a timely availability of comparable and reliable data for the assessment of inflation convergence. DG II therefore welcomes that the timetable for the launch of the HICPs, as it is laid down in the Council Regulation (EC) No 2494/95 concerning harmonized indices of consumer prices, has been met. This has allowed the Commission to use the HICPs in its recent official documents, and more particularly in the Progress Report on the implementation of the 1996 Broad Economic Policy Guidelines and in the Commission's Recommendation for the 1997 Broad Guidelines of the Economic Policies of the Member States and the Community. The "operational" use of the HICPs one year before the preparation of the Convergence Report of 1998 is very important, as it leaves time to policy makers and economic agents to familiarise with this new index.

The launch of the HICPs must also be considered as a major achievement, since quality has not been sacrificed to timeliness. The HICPs, in their current shape, show a high degree of comparability across Member States, not only in terms of coverage, but also in quality terms. National Statistical Institutes (NSIs) have agreed on minimum standards and on good practices regarding some key methodological aspects, like lower level formula or weight updating. The fact that the improvement in comparability and in quality have gone hand in hand is much appreciated by the users.

However, DG II was thwarted in the execution of its tasks by the unavailability of historical series for some Member States' HICPs, in contradiction either with the legal requirements induced by the relevant Regulations or with the agreement with Eurostat. Although these problems have been solved since then, DG II wants to express its hopes that similar deficiencies will not occur again on the occasion of the release of amended HICP series (for instance when the coverage will be extended). Likewise, some HICP series have been subject to significant revisions in the months following the launch of the HICPs. Although DG II is well aware that some revisions are unavoidable, NSIs should ensure to do what is necessary to minimise the magnitude of potential revisions.

Regarding future progress, DG II encourages the work initiated by the Working Party in order to extend the coverage of the HICPs and to improve the statistical accuracy of both the CPIs and the HICPs. Finally, DG II reiterates its attachment to a continued respect of the timeliness of the HICPs, as the latter is crucial for users' efficient monitoring of the inflation in the forthcoming EMU, and in the European Union as a whole."

11.3. Summary opinion of Member States

The launch of the HICP was successful in all Member States. The main users, i.e. the Central Banks, ministries of finance, ministries of economics, financial institutions and research institutes, have shown great interest in the HICP. Since, in most Member States the main users have been kept fully informed about the progress of the harmonization project and its achievements, it was not difficult to explain to them the differences in methodology and concept between the national CPI and the HICP. In addition, some Member States held seminars on the HICP for their main users.

In contrast, the interest of the general public in this new measure of inflation was moderate. However, Member States consider that the situation might change in 1998 when the decision will be taken on the participating countries of the Economic and Monetary Union.

Some Member States have chosen to keep the HICP and the national CPI as similar as possible by implementing methodological improvements of the HICP also in the CPI, and by introducing goods and services which were added for the compilation of the HICP also in the CPI. Other Member States try to keep the HICP and the national CPI as distinct as possible to emphasise that they serve different purposes.

Luxembourg was the first country which replaced the national CPI by the HICP. The use of the HICP as a measure of inflation was never questioned. However, there were long discussions on whether the HICP should be used as the national CPI, and therefore for wage indexation.

In all other Member States there have so far been no particular difficulties in introducing an additional price index, since it was stressed that the HICP was primarily for international comparisons of inflation, and that the national CPI remained the best indicator for national purposes. In Greece, Ireland, Italy and Austria the launch of the HICP coincided with the launch of the updated national CPI. Ireland successfully moved from a quarterly to a monthly cycle for compiling the national CPI. Greece reported that the publication of the HICP strengthened confidence in the revised national CPI. However, there were discussions in Greece as to whether the HICPs instead of the CPIs should be used as deflators for many economic and monetary variables, which might lead to revised figures concerning various international comparisons.

12. COMPLIANCE AND QUALITY CONTROL

Article 12 of the HICP Council Regulation establishes indirectly an obligation to monitor compliance, by empowering the Commission (Eurostat) to request information from Member States that is necessary to evaluate:

- (a) the compliance with comparability requirements and
- (b) the quality of the HICPs.

Furthermore, all specific measures laid down in Commission Regulation require Member States to provide information sufficient to monitor and control quality. The general approach in the Commission Regulations is to specify the outputs, leaving it to Member States to decide how to achieve them⁵¹. This approach implies the need for an effective compliance monitoring system, in order to assure that Member States are in practice fulfilling the letter and the spirit of the various regulations and guidelines. The Commission may, however, require more information than Member States would require themselves in order to ensure that the indices are reliable.

The following paragraphs 12.1 to 12.8. of this report summarise the results of a first round of compliance monitoring, whilst discussions are proceeding on how best to provide a system of independent statistical checks so as to assure a high quality of the HICPs, and to set in place a monitoring system in line with the practice existing in many Member States. The Commission (Eurostat) is also considering whether further mechanisms are required to ensure the quality

⁵¹ See also paragraph 5.

and integrity of this important new economic indicator, one option being to establish an independent advisory body.

The compilation of HICPs is to a large extent based on the national CPIs. For those aspects of the index construction which have the greatest potential for introducing non-comparability the HICPs are based on harmonized concepts, methods and practices, which make the HICPs the best measures for comparing inflation between Member States. The aim of this section is to assess the improvements in comparability that have been delivered with the introduction of the HICPs. Paragraphs 12.2. to 12.8. describe the improvements as required by the existing legislative framework of the HICP, whereas paragraph 12.1. outlines improvements beyond the minimum required by the regulations.

12.1. Specific changes made by Member States

The harmonization project and the compilation of the HICP required considerable resources in terms of personnel and computing equipment⁵². Several Member States increased the number of professional and other staff, and/or enhanced their computer system to compile the HICP from January 1995, as for example Ireland, Luxembourg, Sweden and the United Kingdom. Austria introduced in the price collecting offices at the beginning of 1997 special software for the data collection and transmission.

In order to provide time series of HICPs which are as comparable as possible, Member States calculated retrospective data for the HICP. All Member States provided monthly HICPs starting with the index for January 1995, and all but France and the United Kingdom compiled the HICP sub-indices from January 1995⁵³ using the classification COICOP/HICP⁵⁴. However, Ireland and the United Kingdom provided the retrospective data only from the publication of the August figures on 7 October 1997. The provision of retrospective data required, in some Member States, the estimation of historic prices and weights for a number of items which were not covered by the national CPI. Furthermore, Greece, Luxembourg, Austria, Finland, and the United Kingdom introduced the geometric mean formula for the calculation of elementary aggregates for the indices prior to January 1997⁵⁵. Several Member States introduced or planned to introduce the COICOP classification for their national CPI which will be welcomed by many users as the components of national CPI do not conform to a common classification.

Greece, Austria, Portugal, and the United Kingdom adjusted their geographic and population coverage in time for the launch of the HICP, thereby partly anticipating a draft Commission Regulation providing a harmonized definition of the geographic and population coverage of the HICP⁵⁶. Since Greece includes rural areas, Portugal covers the Azores and Madeira, and the United Kingdom covers the top 4% of earners and also pensioners mainly dependent on state benefits, the HICPs launched in March 1997 refer to all households, regardless of income, resident in any part of the economic territory (rural and urban). Austria moved to the "domestic concept" for the HICP by including the expenditure by foreign visitors in Austria.

⁵² See also paragraph 2.

⁵³ See also Table to 6.4.

⁵⁴ See also paragraphs 6.2.1. and 6.2.7.

⁵⁵ See also paragraph 12.6.

⁵⁶ See also paragraph 8.3.

Several Member States took account of new goods and services such as mobile phones when constructing their HICP. Belgium, Denmark, Italy, Luxembourg, and Austria introduced new weights, earlier than previously planned, in time for the launch of the HICP. The Netherlands decided to move over to an annual updating of the weights used for compiling their HICP and the national CPI starting from December 1997. The inclusion of new goods and services and the use of more up-to-date weighting information should produce more reliable and relevant indices⁵⁷.

In Germany where the data collection and quality control is managed to a large extent by the regional offices (Statistische Landesämter), a system has been introduced which allows the Federal Statistical Office (Statistisches Bundesamt) to receive microdata from the regional offices in order to compile the statistical information required by Eurostat to demonstrate the quality of the HICP under compliance monitoring.

12.2. Coverage

12.2.1. Interim indices launched 29 February 1996

During 1996 the Commission (Eurostat) published each month the interim indices. They were used by the Commission (DGII) and the European Monetary Institute in their first convergence reports to the Council in 1996. Interim indices are available for the time period January 1994 to December 1996 for all EEA countries and Switzerland. As required by the Council Regulation they were replaced⁵⁸ by the HICPs starting with the index for January 1997.

The interim indices⁵⁹ provided a better basis of comparison of consumer price inflation than the national CPIs because they were adjusted to make the coverage of goods and services as similar as possible. Certain categories of expenditure were excluded, others which are not covered by some national CPIs were included for all Member States. The combined weight of these inclusions and exclusions was about 16% of total consumer spending. The exact amounts varied from country to country, details for the EU Member States are given in Tables 4 and 5 below. Apart from those differences in the coverage of goods and services, the interim indices were constructed by exactly the same methods as used by the national CPIs from which they were derived.

Table 3 highlights the difference in the coverage of goods and services between the interim indices and the national CPIs. The table is taken from Eurostat's press release No 15/96 of 29 February 1996 for the launch of the interim indices, corrected regarding the estimates for the United Kingdom. It indicates that the interim indices covered about 84% of the goods and services included in the national CPIs, with a maximum of 92% identity in coverage in Greece and a minimum of 75% in the Netherlands. The main differences in item coverage results from the treatment of owner occupiers in respect of housing⁶⁰. The variance in the weights for health and education, which accounts for 11% of the French CPI and less than 1% in the United Kingdom's, reflects not only major institutional differences between countries in the ways in

⁵⁷ Details are given in paragraphs 12.3. and 12.5.

⁵⁸ With the exception of Switzerland which produced an interim index but does not compile a HICP

⁵⁹ See paragraph 6.1.

⁶⁰ See also paragraphs 8.1. and 10.2.

which consumers pay for such services, but also differences in the ways these items are treated in the CPI.

Table 3:
Expenditure excluded from national CPIs when computing the interim indices
- approximate weights per 1000 (January 1996 ⁶¹) -

	B	DK	D	EL	E	F	IRL	I	L
Interim Index	822	821	826	916	913	875	846	900	883
+ Owner occupied housing	40	126	92	-	17	-	40	-	-
+ Health and Education	56	36	45	76	44	112	43	78	85
+/- Others	82	17	37	8	26	13	71	22	32
= national CPI	1000	1000	1000	1000	1000	1000	1000	1000	1000

	NL	A	P	FIN	S	UK	IS	N
Interim Index	749	871	876	774	793	796	750	803
+ Owner occupied housing	118	9	61	100	160	120	108	115
+ Health and Education	12	46	39	41	25	9	43	31
+/- Others	121	74	24	85	22	75	99	51
= national CPI	1000	1000	1000	1000	1000	1000	1000	1000

The following Tables 4 and 5, which are also taken from Eurostat's press release No 15/96 of 29 February 1996, give details of the categories which have been excluded from national CPIs and these where additions have been made. They include only information for the EU Member States.

Table 4:
Categories which have been added to national CPIs when computing the interim indices

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Alcoholic beverages									in						
Tobacco								in	in						
Services for the routine maintenance and repair of dwellings				in											

⁶¹ The reference expenditure is the total expenditure covered by the national CPI of each Member State which is set as a weight of 1000. The weights given for the interim index and the included or excluded categories are those used for the compilation of the index in January 1996

Table 5:

Categories which have been excluded from national CPIs when computing the interim indices

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Imputed rents of owner occupiers		out	out							out		out		out	
Mortgage interest payments	out						out						out	out	out
Refuse disposal and sanitation services (payment as tax regardless of consumption)				out						out					out
Insurance in respect of the dwelling	out		out		out		out				out	out	out	out	out
Water supply (payment as tax regardless of consumption)				out											out
Health	out	out	out	out	out	out	out	out	out	out	out	out	out	out	out
Package holidays and expenditure abroad	out		out		out	out	out		out	out	out	out	out	out	out
Travel insurance			out							out		out	out		out
Taxes related to the use of a car, road taxes and tolls	out		out	out	out	out	out		out	out	out	out	out		out
Car insurance	out		out	out	out		out	out	out	out	out	out	out	out	out
Drivers licence fee			out				out		out	out	out	out	out	out	
Education	out	out	out	out	out	out	out	out	out	out	out	out	out		out
Social services	out										out	out			
Financial services n.e.c.	out	out	out		out	out		out		out		out	out	out	out
Other services n.e.c.	out	out	out		out		out	out	out	out	out	out	out	out	out

12.2.2. HICPs launched 7 March 1997

As required by the Council Regulation, on 7 March 1997 the Commission (Eurostat) launched the first set of HICPs for all EU Member States, Iceland and Norway⁶². They replaced the interim indices as the best measure for comparing consumer price inflation between Member States, and are used in the convergence reports of the EMI and the Commission to the Council. The HICP is a new and different index for measuring inflation and not just an "extended interim index". In contrast to the interim indices, which were entirely based on the national CPIs and only adjusted to make the coverage of goods and services as comparable as possible, the HICPs are also (and in particular) harmonized with respect to certain methodological aspects of the index construction.

The additions to coverage as compared with the interim indices include in particular insurances for cars and dwellings, package holidays, banking services, several administrative fees and charges, educational goods and services such as evening classes, and health goods which are obtainable without prescription⁶³. The combined weight of these additions accounts for about 5% of total consumer spending on average across Member States, with a minimum of about 2% in Portugal and a maximum of about 7% in Iceland. Details are given in Table 6. It shows consumers' expenditure on the main categories of goods and services which were introduced ("added to the interim indices") for the construction of the HICPs, and thus reflects the weight of these sub-indices in each Member State's HICP.

⁶² See paragraph 6.2.; details about the available data are given in paragraph 6.4.

⁶³ See also paragraph 6.2.1.

Table 6:
Sub-indices introduced for the compilation of the HICPs
- approximate weights per 1000 (Annual 1996⁶⁴) -

	B	DK	D	EL	E	F	IRL	I	L
Health products - paid by the consumer and not reimbursed	8,7	7,4	8,5	11,9	8,4	4,8	6,0	16,0	2,8
Package holidays	31,4	12,6	16,7	2,6	7,8	1,4	30,6	0,0	50,0
Education - commonly paid by consumers in Member States	:	3,3	4,6	13,7	1,2	3,7	6,0	8,6	3,4
Insurance	8,7	3,5	5,7	11,6	4,0	11,7	2,5	1,8	5,5
Banking services n.e.c.	3,5	20,4	2,0	:	0,1	7,0	1,1	3,2	0,3
Other services n.e.c.	11,0	13,7	5,3	18,1	8,1	10,5	3,4	9,5	7,0
Sum of additions:	63,3	60,9	42,8	57,9	29,6	39,1	49,6	39,1	69,0

	NL	A	P	FIN	S	UK	IS	N
Health products - paid by the consumer and not reimbursed	7,6	4,1	5,6	11,2	12,1	7,0	9,2	7,1
Package holidays	16,4	16,8	3,2	22,0	9,5	30,0	24,5	20,2
Education - commonly paid by consumers in Member States	3,0	3,9	0,8	1,3	1,7	11,0	0,0	1,8
Insurance	9,8	7,0	5,3	3,7	7,3	6,0	6,6	5,3
Banking services n.e.c.	0,3	2,1	0,2	0,9	1,5	2,0	13,8	:
Other services n.e.c.	9,0	1,0	0,3	2,2	3,1	5,0	16,4	:
Sum of additions:	46,1	34,9	15,4	41,3	35,2	61,0	70,5	34,4

12.2.3. HICP versus CPI coverage

The aim of the HICP is to measure inflation faced by consumers. The concept "household final monetary consumption expenditure" defines both the goods and services to be covered by the HICP and the price concept to be used: prices net of reimbursements, subsidies, and discounts. The concept is laid down in a draft Commission Regulation amending Commission Regulation (EC) 1749/96 with regard to coverage⁶⁵.

"Household final monetary consumption expenditure" refers only to monetary transactions and, therefore, neither includes income in kind, as for example agricultural products grown for own consumption, nor services of owner occupied dwellings. In particular, the expenditure faced by owner occupiers when acquiring housing expressed as imputed rents or mortgage interest payments are not regarded as part of the inflationary process and hence excluded from the HICPs. Consideration is being given to the inclusion of the net acquisition prices of new dwellings. However, until a satisfactory solution for the services of owner occupied dwellings

⁶⁴ The reference expenditure is the total expenditure covered by the HICP which is set as a weight of 1000. The HICPs for the Member States are derived from the national CPIs using different weight, price and index reference periods and different frequencies of updating weights. In order to make the weights comparable between Member States and for the aggregation to the EICP they were re-referenced to 1996 (average level of prices for the year)

⁶⁵ See paragraph 8.1.

can be found, such expenditure is by definition excluded from "household final monetary consumption expenditure".

Table 7 gives rough estimates for what is already covered by the HICP as of January 1997, what remains to be added in 1998 and 1999, and what is out of the scope of the HICP and hence not considered as relevant for internationally comparable measures of inflation, though covered by some national CPIs. The HICPs of the Member States currently cover more than 90% of "household final monetary consumption expenditure". The remaining 10% will be added by December 1999, at the latest.

About 6% refer to goods and services which are not yet covered by the HICP because either no Member State has technical solutions for their treatment or the methods and practices must be refined before comparability can be assured. Complete item coverage (as far as it is possible) will be achieved in two stages, in December 1998 and December 1999. The main extensions of coverage concern health, education, social protection services such as retirement homes, and insurances⁶⁶.

Up to about 4% would be added to the coverage of some of the HICPs because of adjustments to the geographic and population coverage, which is defined in a draft Commission Regulation amending Commission Regulation (EC) 1749/96 with regard to the geographic and population coverage⁶⁷. The HICP refers to "household final monetary consumption expenditure" which takes place on the economic territory of a Member State. In particular, all Member States, except for Denmark and Italy who already include such expenditure, need to cover the expenditure of persons living in institutions. Belgium, Greece, Spain, Ireland, Luxembourg, the Netherlands, Portugal, Finland, the United Kingdom, Iceland, and Norway need to include the expenditure by foreign visitors and exclude expenditure of residents whilst in a foreign country. Other Member States are already using this "domestic concept". The additional weight of about 20% for Luxembourg reflects the importance of cross-border shopping. The negative weight for Norway indicates that residents spend more abroad than foreign visitors in Norway. Belgium and Spain cannot at present provide estimates for the additions to population coverage.

The two final rows in Table 7 illustrate the difference between "household final monetary consumption expenditure" and the national CPIs. The weights differ widely between Member States; some explanations are given in the footnotes. The figures are rough estimates which may change if Member States decide to take account of the additions to the HICP also in their national CPI. No single CPI or set of CPIs should be taken as a model for what HICPs should cover.

Note: HFMCE = Household final monetary consumption expenditure;
for Luxembourg the HICP and CPI are identical.

⁶⁶ Details are given in paragraph 8.1.

⁶⁷ See paragraph 8.3.

**Table 7: HFMCE covered by the HICP compared to national CPI coverage
- approximate weights per 1000 (Annual 1996 ^a)**

	B	DK	D	EL	E	F	IRL	I	L
HICP initial coverage as of Jan-97	952	903	953	875	954	847		973	725
Additions to items coverage in Dec-98 and Dec-99	48	31	45	56	46	153		27	80
Additions to population coverage by latest Dec-98	no estimate	66	2	69	no estimate	0		0	195
HICP final coverage as of Dec-99 = HFMCE	1000	1000	1000	1000	1000	1000	1000	1000	1000
Expenditure covered by:									
a) HFMCE but excluded from CPI	0	82 ^b	2	69	0	87 ^c		0	---
b) CPI but excluded from HFMCE	11 ^d	114 ^e	114 ^f	0	5	0		48 ^g	---

	NL	A	P	FIN	S	UK	IS	N
HICP initial coverage as of Jan-97	886	960	943	930	896	917	908	937
Additions to items coverage in Dec-98 and Dec-99	70	40	49	40	96		42	68
Additions to population coverage by latest Dec-98	44	0	8	30	8	83	50	-5
HICP final coverage as of Dec-99 = HFMCE	1000	1000	1000	1000	1000	1000	1000	1000
Expenditure covered by:								
a) HFMCE but excluded from CPI	84	132 ^h	0	0	0	124 ⁱ	0	25 ^j
b) CPI but excluded from HFMCE	173 ^k	83 ^l	77 ^m	0	165 ⁿ	96 ^o	92 ^p	100 ^q

^a The reference expenditure is household final monetary consumption expenditure which should be covered by the HICP from December 1999. This is set as a weight of 1000. The weights are rough estimates which refer to the average price level of the year 1996

^b Package holidays, fees for driving licence, arms permission, hunting licence and passport

^c Domestic services, legal services, insurance, used cars, administrative fees

^d Car tax and tax to put a vehicle into traffic for the first time ("BIV/TMC")

^e Imputed rents

^f Imputed rents, car tax

^g Health provided by social security, games of chance

^h Expenditure by foreign visitors in Austria

ⁱ The HICP covers the whole population while the CPI excludes the top 4% of earners and pensioners mainly dependent on state benefits

^j Financial services

^k Imputed rents, taxes for local services

^l Games of chance, car tax

^m Imputed rents

ⁿ Mortgage interest and other items in owner-occupied housing, games of chance

^o Mortgage interest, depreciation, taxes for local services, games of chance

^p Imputed rents and games of chance

^q Imputed rents, health, education and insurance on a gross basis

12.3. Weighting

12.3.1. Quality of weights

No specific measures relating to weights were required of Member States for the launch of the HICP. However, Belgium, Denmark, Italy, Luxembourg, and Austria have updated their weights earlier than planned in time for the launch of the HICP, thus anticipating requirements for minimum standards for reliability and relevance as laid down in a draft Commission Regulation concerning minimum standards for the quality of HICP weights⁶⁸.

Denmark introduced new weights in October 1996. They are used for the calculation of the HICP and the national CPI, and were used for the computation of the interim indices. The new weights are based on National Accounts figures and the Household Budget Survey of 1994.

In January 1997, new weighting schemes were introduced by Belgium based on the Household Budget Survey of 1995-1996, by Ireland based on the Household Budget Survey of 1994-1995, by Italy based on National Accounts data for 1995, and by Luxembourg based on the Household Budget Survey of 1993. Austria's consumption pattern is based on the Household Budget Survey and National Accounts data for 1993/94 and adjusted with the help of the preliminary accounts for 1995.

12.3.2. Weight reference period

Given that the HICPs are derived from national CPIs they have different weight reference periods and different frequencies of updating weights. The weight reference period is the time period of expenditure or consumption to which the weights used for compiling the HICPs refer for the months of 1997. It ranges from 1989/1990 to 1995/1996 depending on the Member State.

The majority of Member States update weights every five years. From 1998 they will be required to adjust weight every year, if there are any significant changes in expenditure pattern⁶⁹. The Netherlands decided to move to an annual base year revision for the HICP and the national CPI starting from December 1997. Hence, together with France, Sweden, and the United Kingdom, the Netherlands will compute a chain index with annual weight updating. Denmark and Luxembourg are also considering to annually update their weights, however not before December 1998.

Table 8 gives an overview of the weight reference periods and update frequencies used for the compilation of the HICP in 1997:

⁶⁸ See also paragraph 8.2.

⁶⁹ For more details see paragraph 12.4.

Table 8:
HICP weight reference periods and update frequencies in 1997

	Weight Reference Period of the HICPs in 1997:	Planned next weight reference period:	To be introduced in / starting with the index for:	Annual updating ("chain index"):
B	1995 - 1996			
DK	1994			
D	1991	1995	Dec-1998/Jan-1999	
EL	1994	1998 - 1999	Dec-2000/Jan-2001	
E	1990 - 1991			
F	1995	1996	Dec-1997/Jan-1998	*
IRL	1994	1999		
I	1995			
L	1993	1995	Dec-1998/Jan-1999	
NL	1990	1995	Dec-1997/Jan-1998	[* from Dec-1997]
A	1993/1994 - 1995			
P	1989 - 1990	1994 - 1995	Dec-1997/Jan-1998	
FIN	1990	1995	Dec-1997/Jan-1998	
S	1996	1997	Dec-1997/Jan-1998	*
UK	Jul-1995 - Jun-1996	Jul-1996 - Jun-1997	Jan-1998/Feb-1998	*
IS	1995	2000	Dec-2001/Jan-2002	
N	1993 - 1995	1994 - 1996	Dec-1997/Jan-1998	*

When presenting the HICP Eurostat "re-references" or "price-updates" the weights of all Member States to 1996 (average of the year), and subsequently to December 1996, December 1997, December 1998, etc.⁷⁰. Hence, the movements in the HICP and its sub-indices is expressed by reference to the average level of prices in 1996, and subsequently to December 1996, December 1997, December 1998, etc. This price updating is a re-scaling exercise which does not change the weight reference year and does not effect the measured rate of inflation.

12.4. Sub-index weights

Each month Member States transmit the HICP and its sub-indices to the Commission (Eurostat). The sub-indices are based on the classification COICOP/HICP⁷¹. They are needed to analyse the sources of inflationary pressure and are, hence, published monthly by Eurostat alongside the HICP.

Member States also transmit the sub-index weights used in the computation of the HICP to the Commission (Eurostat) to a degree of detail of at least 1 in 1000. The weights assigned to each category of COICOP/HICP vary from country to country depending on the relative importance of consumers' expenditure on each good or service in each Member State. There is no "uniform basket" applying to all Member States.

⁷⁰ See also paragraph 6.2.8.

⁷¹ See paragraphs 6.2.1. and 6.2.7.

Table 15 in the annex to this document is an extract of Eurostat's database "NEWCRONOS"⁷² giving the weights for all sub-indices from all Member States. The weights refer to the year 1996, i.e. the weights dating from the weight reference period of each Member State were "price-updated"⁷³ and expressed by reference to the average level of prices in 1996.

The weights shown for the sub-indices in the Table 15 differ widely between Member States, reflecting differences in the relative importance of consumers' expenditure on each group of goods and services. However, the weights also reflect differences between Member States in the weight reference period and the frequency of updating the weights. A weight for a certain item reflects the consumption of that item in the weight reference period which may differ by up to five years. For most items, such as food or housing, five year old weights might be good estimates reflecting current consumers' expenditure. However, for certain items which are significantly losing or gaining in importance, such as data processing equipment, five year old weights might not correctly capture their relative importance. The weights for example for data processing equipment (COICOP/HICP 09.1.3.) would probably not differ so widely between Member States (from 0.2‰ to 6.4‰) if the increased demand for PCs had been taken into account. Additionally, since the prices for data processing equipment are decreasing, the expenditure weights expressed by reference to the average price level of 1996 are lower than in the weight reference period.

From 1998 Member States will be required to review their weights every year and to adjust them for significant changes in the expenditure pattern, if the draft Commission Regulation concerning minimum standards for the quality of HICP weights is adopted⁷⁴. This will remove most of the non-comparability between HICPs which arises purely from methodological differences in weighting, i.e. the difference between annual and less frequent base year revision⁷⁵.

As part of the compliance monitoring the Commission (Eurostat) has asked several Member States to verify and if necessary correct their weights for some sub-indices which seemed to be either very low or very high as compared to other Member States' data. The analysis of the differences in the weighting pattern of Member States also indicated that the treatment of certain goods and services in the HICP, as for example package holidays (COICOP/HICP 09.4.), might be an issue for future harmonization.

12.5. Newly significant goods and services

From January 1997 Member States are required to make provision to identify goods and services which become a significant part of consumption and are not yet covered by the HICP. The threshold is defined as a sales volume of over one part per thousand of total consumers' expenditure in the Member State. The Commission (Eurostat) will facilitate the process by exchanging information about "newly significant goods and services" introduced in other Member States' HICPs. The aim is firstly to maintain the relevance of the HICP by taking account of market developments, and secondly to keep the HICPs broadly in step with respect to up-to-dateness in order to ensure comparability⁷⁶. However, it is not easy to define which

⁷² See also paragraph 6.4.

⁷³ For explanation see paragraphs 6.2.8. and 12.3.2.

⁷⁴ See paragraph 8.2.

⁷⁵ Details are given in paragraph 12.3.2.

⁷⁶ See also paragraph 6.2.2.

good or service is newly significant, which is a new variant of an already existing item, or which item was included in the HICP to improve representativity.

Table 9 lists newly significant items which were included in the HICP of at least one Member State for the first time in 1997 and reported to the Commission (Eurostat):

Table 9:
Newly significant goods and services since January 1997

Pay-TV	Throwaway camera
Subscription to the Internet	Rear window brake lights
Mobile phones and charges	Bicycle saddle
Fax-phone (answering machine or service in connection with a phone line)	Artificial sweetener
Modem	Ecological products (milk, butter, flour)
Printer	Ice cream cakes and bars
Home computer	Special milk, e.g. vitamin enriched
CD-ROM educational games/ games	Low fat "cream" (15%)
Computer games	Margarine with lower cholesterol
Unformatted PC-diskette	Light wine (4.6% alcohol)
Concentrated washing powder	Lemonade with alcohol (< 5% alcohol)
Satellite antenna	Kiwi fruit

12.6. Elementary aggregate formula

For the calculation of the elementary aggregates in the HICP Member States are allowed to use of the ratio of either arithmetic or geometric mean prices, but not the arithmetic mean of price relatives⁷⁷. Eight countries were required to change their formula: Denmark, Greece, France, Italy, Luxembourg, Austria, Finland, and the United Kingdom. All except Italy introduced the geometric mean; Italy changed to the ratio of arithmetic mean prices. Denmark has a derogation up to September 1997 on the grounds that it requires a "significant adjustment to its statistical system"⁷⁸, but will then introduce the geometric mean retrospectively starting with the index for January 1997. All countries except for Austria and the United Kingdom introduced the change in formula also for their national CPIs.

In order to improve comparability Greece, Luxembourg, and Austria applied the geometric mean formula retrospectively starting with the index for January 1995; Italy, Finland, and the United Kingdom used the new formula from January 1996.

France has chosen a stepwise procedure for moving to the geometric mean for heterogeneous products, which account for about one third of all elementary aggregates included in their HICP. Half the changes were carried out by January 1997, hence about 18% of the HICP is currently calculated using the geometric mean. The remaining changes to the geometric mean will be carried out in January 1998 and January 1999. Sweden is using the ratio of standardised mean prices which is a variant of the geometric mean. Both these Member States need to demonstrate by the end of 1997 that their formula leads to comparable results in the sense that

⁷⁷ See also paragraph 6.2.5.

⁷⁸ Article 5 (2) of Council Regulation (EC) No 2494/95

the effect on the HICP is less than one tenth of one percentage point on average in 1997 against 1996.

For the calculation of the elementary aggregates in the HICP eight Member States are now using the geometric mean or a close variant, eight are using the ratio of arithmetic mean prices, and France a combination. However, Portugal will move to the geometric mean starting with the index for January 1998.

Five Member States estimated the effect of the change in formula on the HICP as about 0.1 percentage points over a period of 12 months. In the United Kingdom the introduction of the geometric mean reduced inflation by 0.5 percentage points on average.

Table 10 gives an overview of the elementary aggregates formula used and the changes carried out in Member States:

Table 10:
Computation of elementary aggregates in the HICP

	For the computation of the HICP the formula for EA was changed:	Formula used in the HICP is the ratio of arithmetic mean prices (RAM) or geometric mean (GM):	New formula was introduced in the HICP starting with the index for:	Estimated effect on the HICP over a period of 12 months in percentage points:	New formula was/will be introduced in the CPI:
B	no	RAM	---	---	---
DK	yes, but derogation until Sep-1997	GM - derogation	Jan-1997 - derogation	estimate not yet available - derogation	yes, planned starting with index for early 1998
D	no	RAM	---	---	---
EL	yes	GM	Jan-1995	- 0.1	yes, starting with index for Jan-1994
E	no	RAM	---	---	---
F	yes, progressively for heterogeneous products	RAM for homogenous products (1/3), GM for heterogeneous products (1/3), other formula for fresh products, complex prices and tariffs (1/3)	Jan-1997: half of the changes to the GM were done; 18% of the index is calculated using GM; Jan-1998, Jan-1999: further changes to GM	- 0.1	yes
IRL	no	RAM	---	---	---
I	yes	RAM	Jan-1996	no estimate available	yes, starting with index for Jan-1996
L	yes	GM	Jan-1995	no estimate available	HICP and national CPI are identical
NL	no	RAM	---	---	---
A	yes	GM; RAM for certain items such as fruit, vegetables, and rents	Jan-1995	- 0.1	no (average of relatives)
P	no	RAM	GM will be used from Jan-1998	---	yes, starting with index for Jan-1998
FIN	yes	GM	Jan-1996	- 0.1	yes, starting with index for Jan-1996
S	no	variant of the GM (ratio of standardised mean prices)	---	---	---
UK	yes	GM	Jan-1996 ⁷⁹	- 0.5	no
IS	yes	GM	Mar-1997	no estimate available	yes, starting with index for Mar-1997
N	no	RAM	---	---	---

12.7. Quality adjustment

Quality adjustment is widely accepted among experts as one of the most, if not the most, intractable problems in CPI construction. As the Boskin report illustrates, the problem is not generally understood and many observers share the mistaken impression that no allowances are made for improvements that have occurred in product quality thus leading to an overstatement

⁷⁹ Estimates for 1995 are adjusted to take into account the effect of the formula change, see also paragraph 6.4.

of inflation. In practice many different adjustments have been made as index compilers have attempted to solve the problems in different ways and these may have resulted in an over-compensation for such improvements.

As a first step of compliance monitoring and to initiate further research in order to define appropriate standards for the treatment of changes in the quality of goods and services in the HICP, the Commission (Eurostat) requires information on actual quality adjustments. For five goods Member States were asked to provide the number of observations which were replaced during the four months period January 1997 to April 1997, and also the type of quality adjustments which were made to introduce these replacements into the HICP. Men's shirts, sofas, CD players, refrigerators and washing powder were selected because these five items are covered in all HICPs, are fairly easy to define, and give a range of rates of product change: slow, medium and fast. The quality adjustments were classified as one of three types:

- (a) **linking**, which is equivalent to the assumption that the difference in price between the old item and its replacement is wholly attributable to a difference in quality. Therefore, no price change between the old item and its replacement is reflected in the HICP. Member States need to be able to demonstrate that linking is not used automatically, i.e. without justification⁸⁰. One argument used is that the price difference represents the "market" evaluation of the quality difference as in "overlap pricing" (see (c) below). Another argument is that the items are indeed so different that they cannot be compared and that the replacement is introduced to maintain the representativity of the sample.
- (b) **same quality adjustment**, which treats the replacement as being of same quality as the old item which it replaces. Therefore, the whole of the price difference between the old item and its replacement is reflected in the HICP. In the absence of an explicit national or Eurostat estimate of the value of the quality change, a same quality adjustment is the default adjustment under Article 5 of Commission Regulation (EC) No 2494/95.
- (c) **other quality adjustment**, where the value of the quality difference between the old item and its replacement is estimated as somewhere in between zero and the whole price difference, or occasionally outside that range. Those estimates could be made by commodity experts, or using methods such as hedonic regression⁸¹, overlap pricing⁸², option pricing⁸³, the production cost approach⁸⁴, or the imputation approach⁸⁵.

The results showed large differences between Member States in the proportion of observations that were replaced during the first four months of 1997. Some had low replacement rates of

⁸⁰ See also paragraph 6.2.3.

⁸¹ Coefficients of a regression model, which relates the price to a number of characteristics of the item, are taken as estimates of the value of the quality difference between the old item and its replacement

⁸² The price difference between the old item and its replacement in the overlap period, which is considered as the "market" evaluation, is used as estimate of the value of the difference in quality between the two successive items

⁸³ The prices charged for features which are included in the replacement item but optional in the old item are used as estimates of the value of the quality difference between the old item and its replacement

⁸⁴ Additional manufactural costs of producing the replacement item as compared to the old item is used as the estimated value of the difference in quality between the two successive items

⁸⁵ The price change between the old item and its replacement is imputed using the price change of the other items belonging to the same group. Hence, the value of the quality adjustment between the old item and its replacement is estimated as the difference between the price of the old item and the imputed price

between 6% and 12% for each of the five items, whereas others showed replacement rates of up to 41% for sofas and 54% for CD players. Some Member States reported that for some items they did not replace any observation from January to April 1997.

As regards the **type of quality adjustments** it was only possible to look at their distribution for about ten Member States as the number of replacements in the remaining Member States was small, i.e. ten replaced observations or fewer per item during the four months period. For the ten Member States the results showed that the types of quality adjustments used differ between the five items and between Member States. The majority of Member States use the extreme adjustments "linking" and "same quality". Some use both procedures to about the same extent, whereas others almost exclusively use the "linking" procedure or assume the "same quality" for most replacements. Only a few Member States use "other quality adjustments" as the main procedure.

The differences in procedure between Member States do not necessarily lead to non-comparability but do confirm the widely expressed concern that "quality adjustment" is giving rise to considerable scope for bias and hence non-comparability. Not only are there large differences in the rates of product change identified but there is also little common in the procedural response that is evoked by a particular change. The procedures followed rest on different assumptions about what is to be measured and on varying amounts of information available from which to compute an adjustment. In a majority of cases the procedures followed involve no assessment of the differences in specification between a product and its replacement.

The next step is to further analyse the adjustment procedures and to estimate the effect on the HICP. This requires the development of a common terminology for quality adjustment, including the distinction between a replacement item and a new good. For example, the omission of an observation for one or two months and the introduction of a new good thereafter makes a quite different assumption about a quality change from alternative procedures, and may implicitly yield non-comparable results.

From the information collected it is not possible to estimate the effect that the different quality adjustment practices have on the HICP. Certain practices, for example linking, may raise or lower the index compared with a "same quality" adjustment depending on whether the price of the replacement is lower or higher than the price of the old item. The Commission (Eurostat) proposes to examine the effect on the index of a particular quality adjustment practice by comparing the HICP in each Member State with the index which would have resulted from a "standard reference practice". This standard reference practice would not necessarily be the correct or best practice as there is no consensus as to what the correct or best practice is. However, it serves as a point of reference against which to judge the practices of Member States. The Commission intends to follow a sequential inquiry approach making improvements. The burden on Member States is thus kept to a minimum.

Furthermore, the interaction between the sampling procedure and quality adjustment needs to be investigated. How are replacements identified? Why do some Member States have high replacement rates where others do not report any replacements at all? Differences in the sampling and the quality adjustment procedure might have counterbalancing effects on the HICP.

Finally, the Commission (Eurostat) will carry out further checks on compliance with respect to the use of linking. Member States need to be able to demonstrate that automatic linking is not

used. In the absence of national estimates for the value of the quality difference, the present position is that Member States should as a default reflect the full price difference between the old item and its replacement in the HICP. Eurostat's database on quality adjustments should be operational in 1998.

To sum up, so far the comparability of HICPs has been improved by banning one frequently used but inappropriate procedure for treating changing product quality and further improvement is expected as a result of a co-ordinated programme of work among Member States. Work comparing practices and their underlying assumptions and by targeting the most important areas of product development is throwing much light on specific operational issues that must be resolved before comparable practices can be established. Agreements are necessary on what product changes should be regarded as changes in quality and on appropriate procedures for allowing for particular changes in order to provide a basis for extending the initial requirements. As the BLS response to Boskin indicated it is unlikely that all the problems of quality change in CPIs will ever be resolved. However, the comparability of HICPs can be improved if common approaches are followed in like situations. This will require agreement on concepts and procedures, the sharing of information on product specification and the valuation of particular changes. The Commission (Eurostat) and Member States are working actively to this end.

12.8. Sample design and maintenance

12.8.1. Sampling and comparability

Good sample design and maintenance have been recognised from the outset of the harmonization exercise as critical to reliability, relevance, and comparability of HICPs⁸⁶. However, for reasons of costs and operational constraints the sample of prices used in national CPIs and, hence, for HICPs do not follow methods advanced in statistical theory. As a result few Member States have any assessment of the precision of their indices (sampling errors) and none has any measure of bias.

Most Member States follow some form of purposive sampling rather than random or probability sampling and the sizes of the samples depend more on costs and arbitrary historical decision processes than on the demands of a required level of accuracy. However, it does not follow that because a sample fails to meet the requirements of theory that it necessarily gives poor results. It is not therefore a matter of requiring all Member States to conform to a particular practice since the costs of change may not be warranted. Whether a HICP sample gives acceptable results is an empirical question which can only be answered by carrying out appropriate research. The harmonization process and the co-operation it has evoked among Member States provides an opportunity to examine the problem in ways not available to a single National Statistical Institute. The effect of a particular sampling practice on one HICP can be explored by reference to other HICPs either by simulation or by other experimental methods.

The Commission (Eurostat) has instituted a programme of research with Member States which aims to establish those sampling methods and practices which yield reliable results and to develop methods for assessing the reliability of HICPs whatever sampling arrangement are

⁸⁶ See also paragraph 6.2.6.

used. As part of that programme, Statistics Netherlands has analysed the procedures for sampling geographic localities, outlets, items, and varieties⁸⁷ used for compiling the HICP. Member States were asked to identify their sampling procedures as one of the following types:

(a) Probability sampling:

- SI = simple random sampling
- PPS = sampling with probability proportional to size
- stratified SI = stratified sampling with SI sampling in each stratum
- stratified PPS = stratified sampling with PPS sampling in each stratum

(b) Non-probability sampling:

- judgmental = sampling where the selection of elements is based on the judgement of experts
- cut-off = sampling where the elements with a value of the auxiliary variable, e.g. sales value, above the cut-off value are included in the sample
- quota = sampling where the number of elements is fixed a priori, and the selection of elements is delegated to price collectors

Sampling methods vary considerably between Member States. Only Sweden and the United Kingdom seek to use full probability sampling, all other Member States mainly apply non-probability procedures, such as judgmental or cut-off sampling. The main advantage of probability sampling is that it gives some guarantee against bias. It also allows the estimation of sampling errors and the optimisation of the sample sizes for localities, outlets, items, and varieties. Member States frequently use non-probability sampling due to the lack of sampling frames which are needed to apply probability sampling techniques.

Most Member States use a two-stage sample design to select geographic localities and outlets: first a sample of municipalities is drawn, and then in each selected municipality a sample of outlets is chosen. Municipalities are in general sampled using probabilities proportional to the number of inhabitants. Outlets are selected according to their turnover, in general on a judgmental basis. Six Member States use probability sampling for the selection of outlets: the Netherlands, Portugal, Finland, Sweden, the United Kingdom, and Norway. Sweden does not first select localities and then outlets, but uses random stratified one-stage sampling to select outlets from the Swedish business register. Most Member States exclude mail order firms and market stalls from the selection of outlets.

In all Member States, except for Sweden, the items are chosen by the National Statistical Institute using criteria such as representativity rather than probability sampling techniques. In general the item selection is a two-stage procedure: first a number of item sub-groups are selected using the cut-off method allowing only those sub-groups with the largest market shares to be chosen; then specific items are selected from each sub-group by means of judgmental selection. In those cases where the National Statistical Institute indicates the items only by loose specification, the price collectors usually choose the most frequently bought variety that fits the item description.

The results of Statistics Netherlands for sampling geographical localities and outlets are summarised in Table 11, those for sampling items and varieties in Table 12:

⁸⁷ A variety is a more detailed description of the particular item, i.e. good or service, selected in an outlet by the price collector within the item specification provided by the National Statistical Institute

Table 11:
Monthly sample of geographical localities and outlets in Member States

	Localities		Frame	Low or zero coverage	Outlets		
	Design	Number			Design	Updating*	Number
B	judgmental	65	yes	mail order firms	judgmental	every base year revision	9 509
DK	judgmental	30	yes	mail order firms, street markets	judgmental	every third year	1 900
D	cut-off, quota	190	no	shops for luxury items and for low quality items, weekly markets	judgmental	every base year revision	22 100
EL	judgmental	23	yes	shops for luxury items, non-food street markets	judgmental	every base year revision	3 200
E	cut-off	130	no	unknown	judgmental	in reaction to market signals	29 000
F	stratified PPS	96	no	unknown	judgmental	yearly	27300
IRL	stratified SI	82	no	mail order firms, street markets	judgmental, quota	every base year revision	3 898
I	unknown	82	yes	mail order firms, teleshopping firms	cut-off	every base year revision	25 000
L	judgmental	22	yes	mail order firms, street markets, small non-specialist food shops	judgmental	in reaction to market signals	634
NL	stratified PPS	100	yes	mail order firms	stratified SI, judgmental, cut-off	every base year revision	11 000
A	cut-off	20	no	temporarily open outlets, street markets	judgmental	every base year revision	4 200
P	PPS	41	yes	shops for luxury items, street markets, consumption co-operatives.	stratified PPS, judgmental	instantly in reaction to market signals	9 500 ⁸⁸
FIN	stratified PPS	107	yes	street markets, door-to-door selling, network marketing	stratified PPS, judgmental, cut-off	every base year revision	2 000
S	no sampling of localities	X	yes	specialist shops, mail order firms, repair workshops	stratified PPS	every year 20% by rotation	726
UK	stratified SI	146	yes	non-food market stalls shops requiring a membership fee	stratified PPS stratified SI	five yearly	18 000
IS	judgmental	4	yes	unknown	judgmental	every base year revision	420
N	stratified PPS	100	yes	shops requiring a membership fee	stratified PPS	every year 1/6 by rotation	2 100

* Except for (forced) replacement of outlets which cease trading or refuse to continue co-operation

Source: Statistics Netherlands

⁸⁸ 10 700 starting with the updating of the index in late 1997

Table 12:
Monthly sample of items and varieties in Member States

	Items			Varieties	
	Design	Updating*	Number	Design	No of price quotations**
B	judgmental	every base year revision	461	judgmental	91 980
DK	judgmental	in reaction to market signals	1 200	judgmental	25 000
D	judgmental	every base year revision	750	cut-off	400 000
EL	judgmental	every base year revision	600	judgmental	20 000
E	cut-off, judgmental	in reaction to market signals	471	judgmental	150 000
F	judgmental, cut-off	yearly	1 033	quota	171 000
IRL	judgmental	every base year revision	560	quota	45 000
I	judgmental	every base year revision	920	cut-off	300 000
L	judgmental	in reaction to market signals	263		5 700
NL	cut-off, judgmental	in reaction to market signals	1 200	cut-off	100 000
A	judgmental, cut-off	every base year revision	710	judgmental, cut-off, quota	80 000
P	stratified PPS	instantly in reaction to market signals	577 ⁸⁹	stratified PPS	40 000
FIN	judgmental	every base year revision	401	judgmental	43 600
S	stratified PPS, SI, judgmental	in reaction to market signals	318	cut-off	22 800
UK	judgmental	yearly	646	cut-off	120 000
IS	judgmental	every base year revision	2 131	judgmental	13 738
N	judgmental	yearly	900	judgmental	45 000

* Except for (forced) replacement of items which cease to be sold

** Excluding price quotations used in measuring housing items

Source: Statistics Netherlands

12.8.2. Statement of the target sample and maintenance

As a first step of compliance monitoring and to initiate further research in order to extend the minimum standards for prices and for sampling Member States were asked to describe their "target sample" for the HICP⁹⁰, which is essentially the present plan for the number of prices that should be obtained for the production of the HICPs from January 1997. The minimum standards for prices oblige Member States to maintain their target sample from month to month⁹¹, and the minimum standards for sampling require Member States to improve the representativity of their target samples, where necessary, in order to achieve reliability and comparability of HICPs⁹².

Member States were asked to give the total number of items and the total number of price observations for each HICP sub-index on 3-digit level of COICOP/HICP, and were asked to

⁸⁹ 650 starting with the updating of the index in late 1997

⁹⁰ In line with Article 9 (f) of Commission Regulation (EC) No 1749/96

⁹¹ See also paragraph 6.2.4.

⁹² See also paragraph 6.2.6.

indicate the number of monthly and less frequent price observations. According to Article 8 of the HICP Council Regulation the required frequency of price collection for the HICP is at least once a month. The Commission (Eurostat) may allow less frequent price observation where the requirements of comparability of the HICP are not breached.

For the HICP about 87% of the prices are collected at least monthly. In Greece, Italy, and Portugal certain items, such as fresh fruits and vegetables, are collected twice a month or even weekly. According to the target sample Belgium, Germany, Spain, and Iceland obtain close to 100% of the prices monthly, Sweden and the United Kingdom 97%, France and Norway 95%, and Greece 94%. France extended the monthly price collection: in 1996 about 15700 observations were changed for from quarterly to monthly price collection, and another 8700 observations in 1997. Hence, an additional 16300 prices are now observed monthly for the HICP. Sweden also changed several items which were previously collected only once, twice, or four times a year to monthly price collection from January 1997.

Less frequent than monthly price collection is the exception for the HICP, for example for seasonal items which are only available during certain months. However, the Netherlands and Portugal make frequent use of rolling or rotating samples where each month 1/x of the total prices for the item are obtained. Furthermore, the Netherlands collects prices for example for rents only once a year. Both Member States need to be able to demonstrate that this treatment does not give rise to non-comparability.

Table 13 gives the percentage of monthly and less frequent price observation as planned in the target samples of Member States:

Table 13:
Monthly and less frequent price observation for the HICP
as specified in the target samples of Member States

	Percentage of prices observed:					
	more than once a month	monthly	every second month	quarterly	twice a year	once a year
B	0	100	0	0	0	0
DK	0	77	0	1	20	3
D	0	100	0	0	0	0
EL	38	56	3	2	0	1
E	0	100	0	0	0	0
F	0	95	0	5	0	0
IRL	0	87	0	11	0	2
I	30	55	0	15	0	0
L	0	91	0	0	8	2
NL	0	59	23	6	0	11
A	0	72	0	28	0	0
P	10	43	0	46	0	1
FIN	0	84	11	3	0	1
S	0	97	0	3	0	0
UK	0	97	0	3	0	0
IS	0	100	0	0	0	0
N	0	95	0	3	1	1

Most Member States have taken the introduction of the HICP as an opportunity to enhance their samples. For example, they have added items and increased the number of price observations to improve their sample for certain sub-indices. This required new surveys and the estimation of historic prices and weights. Greece added more than 200 and Austria 130 items to their target samples which, therefore, increased by 13% and 24% respectively. Most Member States also increased the number of price observations: Denmark and Greece observe 6% more prices, Austria 14%, and Luxembourg 22% more than they did for their national CPI. Table 14 gives the number of items for which prices are collected and the number of prices observed in total per month, and the number of additions for the HICPs:

Table 14:
Total number of items and price observations per month for compiling the HICP as specified in the target samples of Member States

	Total number of		Additions for the HICP	
	items:	observations:	items:	observations:
B	461	91 980	0	0
DK		31 158		1 696
D	784	326 615	4	356
EL	1 766	33 687 ⁹³	208	1 803
E		119 143		
F	1 033	171 088		2 323
IRL		42 379	0	0
I	601	288 553	1	7
L	263	6 656	21	1 190
NL	16 239	115 522	0	0
A	678	53 475	130	6 605
P	593	103 691	11	1 093
FIN	399	45 870	4	170
S	309	29 899	3	27
UK	686	130 981	2	73
IS	2 131	13 738	0	0
N	781	47 857	0	0

As a next step the Commission (Eurostat) will require under compliance monitoring information on the extent to which the target sample is actually maintained in Member States: how many of the prices which according to the target sample should be collected monthly (or less frequently in exceptional cases) are actually observed; what procedures are used for estimating missing observations. Sample maintenance is essential because the aim is to measure price changes rather than price levels per se. The sample must be designed to track prices of the same good or service from month to month from the reference period to reflect the change in a "fixed basket". Where prices cannot be observed short-term it is important that appropriate estimates are made; long-term it is important that appropriate replacements are found. So far the comparability of HICPs has been improved by banning the frequently used but inappropriate procedure of automatically carrying forward the last observed price. Further improvement is expected as a result of studies carried out by the Commission (Eurostat) in co-

⁹³ Refers to a theoretical month during which all items are collected, i.e. all seasonal items and all items which are collected less frequently than monthly

operation with Member States on appropriate limits for the numbers of estimated prices and permissible estimation procedures.

13. OPERATION OF THE PROCEDURE UNDER ARTICLE 14 OF COUNCIL REGULATION (EC) No 2494/95 ("COMITOLOGY")

According to Article 145 of the EC Treaty, "the Council shall (...) confer on the Commission, in the acts which the Council adopts, powers for the implementation of the rules which the Council lays down. The Council may impose certain requirements in respect of the exercise of these powers (...)". Such "requirements" have been generally defined by the Council in its Decision 87/373/EEC laying down the procedures for the exercise of implementing powers conferred on the Commission, and consist in the obligation for the Commission to consult a "committee" composed of representatives of the Member States, following a range of different possible procedures described in the said Council Decision. Each Council legal act must specify in every particular context which of these procedures is to be applied. The participation of "committees" determines that this implementation process is broadly known as "comitology".

Concerning Harmonized Indices of Consumer Prices, Article 14 of Council Regulation (EC) No 2494/95 lays down the specific procedure according to which the Commission may exercise the powers for the implementation of the rules laid down therein. It states that the Commission shall be assisted to this end by the Statistical Programme Committee (SPC), established by Council Decision 89/382/EEC, Euratom, following the procedure IIIa (regulatory committee) among those established by Council Decision 87/373/EEC.

In practice the comitology procedure to draw up Commission legal acts (Commission Regulations, so far) implementing Council Regulation (EC) No 2494/95 works as follows:

- (a) If Eurostat has evidence of non-comparability or sees a need for harmonization an initial proposal for a Commission Regulation is presented to and discussed by a Task Force, which is a sub-group of the Working Party comprising statisticians from the National Statistical Institutes, main users, experts working in the field of price indices, and a representative of the CEIES⁹⁴. Taking into account the conclusions of the Task Force, Eurostat submits a draft regulation to the full Working Party.
- (b) The Working Party further discusses and proposes amendments to the draft regulation until a general agreement on the technical details can be reached.
- (c) Eurostat sends the draft regulation for interdepartmental consultation in the Commission. It needs to be approved by all relevant Commission Departments⁹⁵ and the Legal Service.
- (d) Eurostat submits the draft regulation for opinion to the SPC which is acting as a Regulatory Committee type IIIa under the Qualified Majority Vote procedure.
- (e) In accordance with Article 5 (3) of the HICP Council Regulation, the Secretary General of the Commission sends the draft regulation for consultation to the EMI.
- (f) After all parties have been consulted and a final text is ready for decision, Eurostat sends the draft regulation for agreement of the Commissioner concerned.

⁹⁴ Committee on Statistical Information in the Economic and Social Sphere

⁹⁵ Secretariat General, DG II, DG V, DG IX, DG X, DG XV, DG XIX, DG XX, DG XXIII, and DG XXIV

- (g) After the Commissioner agrees the proposal the Secretary General of the Commission submits the draft regulation for approval by the Commission (the "college"), which decides finally on its adoption.
- (h) Once adopted, the Commission Regulation is published in the Official Journal.

Thanks to the co-operation of the Member States, the support of the main users, especially DG II and the EMI, this procedure under Article 14 of the Council Regulation proved to be efficient and worked to the satisfaction of all parties involved.

As a next step the Commission (Eurostat) intends to merge all implementing measures for the HICP which are currently laid down in several Commission Regulations and draft Commission Regulations into one consolidated Commission Regulation. Since the first regulations defined initial implementing measures and minimum standards, the progress in the harmonization program did and will require that new regulations amend previous ones, which makes their application rather convoluted. The consolidation will be aimed at simplifying the legislative framework and should take place after the main regulations have been adopted by the Commission.

ANNEX

As mentioned in paragraph 12.4., the following Table 15 gives the weights for each sub-index of the HICP from each Member State. The weights dating from the weight reference period of each Member State were "price-updated" and expressed by reference to the average level of prices in 1996.

The table distinguishes between actual and rounded zero weights. An actual zero weight is shown as ":" indicating that the according sub-index is not covered by the HICP of the Member State. A rounded zero weight is given as "0.0" indicating that the according sub-index is covered by the HICP of the Member State, but with a weight below 1 in 1000 which rounds to zero.

For the following sub-indices Member States applied different definitions than those given in Commission Regulation (EC) No 2214/96, which is indicated in by a "d" in Table 15:

- Denmark:

04.5.5.: The weight for "hot water, steam and ice" includes "solid fuels" for which the weight is below 1/1000.

- Finland:

04.1.: The weight for "actual rentals for housing" includes charges for heating, water, hot water supply and waste collection. The rent and the charges can be split neither in the index nor in the weight.

- Sweden:

04.1.: The weight for "actual rentals for housing" includes charges for electricity, gas, water, hot water supply and waste collection. The rent and the charges can be split neither in the index nor in the weight.

04.5.5.: The weight for "hot water, steam and ice" includes district heating.

09.1.8.: The weight for "pets" refers only to pet food.

For the following sub-indices Member States used special estimation procedures for deriving the weight; in Table 15 these weights are indicated by an "e":

- Portugal:

09.3.1. and 09.1.4.: The weights for "data processing equipment" and for "other major durables for recreation and culture" are estimates based on the household budget survey.

12.4.2.A and 12.4.4.A: The gross weights for "insurance connected with the dwelling: contents" and "insurance connected with transport: cars" are derived from the household budget survey. Net weights are estimated using data from supervision authorities of insurances: premiums and claims for compensations related to maintenance and repairs.

- Finland:

02.1.1., 02.1.2. and 02.1.3.: The disaggregation of the weight for alcoholic beverage into "spirits", "wine", and "beer" is estimated using the consumption shares obtained from the Finnish alcohol monopoly ALKO. They also deliver the index for alcoholic beverage, which is one index covering all prices for alcohol.

04.1., 04.3.2., 04.4.A and 04.5.1.: The weights for "actual rentals for housing", "services for the regular maintenance of the dwelling", "other services relating to the dwelling", and "electricity" are estimated using the housing statistics of Statistics Finland. Since the household budget survey uses a different classification, the weights cannot be obtained from there.

12.4.2.A and 12.4.4.A: The net weights for "insurance connected with the dwelling: contents" and "insurance connected with transport: cars" are estimated by deducting from the gross weights used in the national CPI the value of reimbursements paid by insurance companies.

- Sweden:

04.5.5.: The weight for "hot water, steam and ice" is estimated on the basis on energy statistics produced by Statistics Sweden.

- United Kingdom:

07.1.1., 07.2.1. and 07.2.3.: The weights for "new and second hand motor cars", "spare parts and accessories", and "maintenance and repairs" equals the weight calculated from the household budget survey plus a proportion of the insurance weights representing claims paid directly by the insurance companies.

09.1.1., 09.1.2., 09.1.3. and 12.2.: The weights for "equipment for the reception, recording and reproduction of sounds and pictures", "photographic and cinematographic equipment and optical instruments", "data processing equipment", and "personal effects n.e.c." equal the weight calculated from the household budget survey plus a proportion of the insurance weights representing claims paid directly by the insurance companies.

Table 15: Sub-index weights of the HICP as part per 1000 (Annual 1996)

		B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	IS	N
01.	FOOD AND NON-ALCOHOLIC BEVERAGES	204.5	173.7	154.1	231.7	275.4	192.7	195.7	197.4	162.0	170.5	143.3	295.0	164.0	179.8	149.0	203.6	172.6
01.1.	Food	184.7	155.9	136.0	221.8	262.3	180.3	181.0	187.3	146.0	156.7	129.3	287.2	149.3	163.1	137.0	178.1	156.3
01.1.1.	Bread and cereals	35.7	20.4	28.0	30.1	36.3	26.7	35.9	25.6	25.4	30.4	22.9	44.0	30.1	28.5	25.0	33.5	18.3
01.1.2.	Meat	58.7	47.2	38.5	56.4	75.4	62.9	52.0	55.3	49.1	42.2	39.1	86.4	34.7	37.1	34.0	40.3	38.9
01.1.3.	Fish	13.2	4.9	4.3	16.3	35.2	12.8	4.5	12.3	7.7	4.0	2.8	39.1	6.4	9.5	6.0	8.8	10.7
01.1.4.	Milk, cheese and eggs	24.5	25.6	21.0	36.8	35.6	27.3	28.8	31.2	19.9	28.1	22.1	35.3	30.6	27.9	21.0	37.0	30.4
01.1.5.	Oils and fats	5.6	5.0	4.6	19.2	17.6	6.7	7.0	8.6	5.3	4.4	5.5	26.5	5.3	5.9	4.0	4.6	4.5
01.1.6.	Fruit	12.9	8.7	10.6	19.1	26.4	13.8	9.1	18.6	11.7	13.8	8.4	20.7	12.0	11.4	9.0	11.5	11.7
01.1.7.	Vegetables incl. potatoes and other tubers	17.0	16.9	12.2	22.7	24.8	14.9	21.1	25.6	13.9	18.2	12.5	24.9	12.6	18.4	19.0	13.8	14.2
01.1.8.	Sugar, jam, honey, chocolate, confectionery	13.2	18.5	11.5	14.6	8.1	12.5	13.3	9.2	9.6	11.1	11.6	8.6	14.5	20.9	12.0	20.1	16.2
01.1.9.	Food products n.e.c.	3.8	8.7	5.2	6.7	2.9	2.7	9.2	0.9	3.4	4.4	4.4	1.7	3.1	3.5	7.0	8.7	11.5
01.2.	Non-alcoholic beverages	19.9	17.8	18.1	9.9	13.1	12.4	14.7	10.1	16.0	13.9	13.9	7.8	14.7	16.6	12.0	25.4	16.1
01.2.1.	Coffee, tea and cocoa	5.1	6.0	6.8	3.8	6.5	5.1	4.8	5.0	6.7	6.2	5.8	4.1	6.3	6.2	4.0	5.5	4.0
01.2.2.	Mineral waters, soft drinks and juices	14.8	11.8	11.3	6.0	6.6	7.3	9.8	5.1	9.3	7.7	8.2	3.7	8.4	10.5	8.0	19.9	11.5
02.	ALCOHOLIC BEVERAGES AND TOBACCO	37.9	59.4	50.9	39.3	31.8	46.1	80.3	30.2	29.1	35.2	39.2	45.3	92.2	62.2	69.0	39.0	35.1
02.1.	Alcoholic beverages	23.8	29.5	24.7	6.6	11.5	24.8	28.9	11.3	18.2	19.4	20.2	26.3	55.6	36.4	35.0	20.9	17.5
02.1.1.	Spirits	3.4	3.2	3.4	2.6	2.1	5.4	11.5	2.6	1.8	5.0	3.8	1.8	22.1e	12.7	10.0	9.1	3.9
02.1.2.	Wine	13.8	10.1	6.4	1.7	6.2	17.3	8.5	7.3	11.7	7.0	8.3	22.1	10.0e	12.2	15.0	4.0	5.3
02.1.3.	Beer	6.6	16.2	15.0	2.3	3.2	2.1	9.0	1.5	4.7	7.4	8.1	2.4	23.5e	11.4	10.0	7.8	8.2
02.2.	Tobacco	14.1	29.9	26.2	32.6	20.3	21.3	51.4	18.8	10.9	15.7	19.0	19.0	36.6	25.9	34.0	18.1	17.8
03.	CLOTHING AND FOOTWEAR	87.3	60.0	83.8	121.7	114.4	74.7	68.5	117.5	117.3	75.4	82.4	103.6	77.4	69.0	66.0	71.0	69.4
03.1.	Clothing	71.8	51.0	70.9	95.3	92.3	60.3	53.2	94.9	94.7	60.9	70.3	78.5	65.4	57.9	54.0	57.6	58.0
03.1.1.	Clothing materials	1.1	0.7	0.7	1.3	3.3	0.6	0.5	1.1	0.3	2.6	1.4	2.0	3.2	1.3		1.2	1.2
03.1.2.	Garments	66.6	46.5	64.5	85.6	84.2	52.8	49.6	83.0	90.4	52.7	62.8	71.3	59.0	52.9	49.0	50.4	53.2
03.1.3.	Other articles of clothing, accessories	2.6	2.4	3.0	5.7	3.6	5.1	0.6	1.8	1.3	4.5	3.5	3.8	2.8	3.3	4.0	4.0	2.7
03.1.4.	Dry-cleaning, repair and hire of clothing	1.5	1.4	2.8	2.8	1.2	1.8	2.5	9.0	2.7	1.0	2.6	1.4	0.5	0.4	1.0	2.0	1.0
03.2.	Footwear, including repairs	15.6	9.0	12.9	26.5	22.1	14.4	15.2	22.6	22.6	14.6	12.1	25.1	12.0	11.1	12.0	13.4	11.4

		B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	IS	N
04.	HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS	156.1	194.6	202.7	140.4	112.0	138.7	125.6	99.5	132.7	187.4	137.6	73.1	135.2	208.9	131.0	114.9	184.5
04.1.	Actual rentals for housing	60.3	91.5	99.6	43.9	14.5	63.0	18.5	25.7	56.2	99.1	56.3	17.8	42.5de	129.5d	54.0	29.8	67.6
04.3.	Regular maintenance and repair of the dwelling	19.2	22.9	11.5	22.9	40.5	18.5	1.0	13.6	21.4	22.4	20.7	10.9	26.3	0.9	18.0	14.2	42.7
04.3.1.	Products for the regular maintenance and repair of the dwelling	13.8	12.1	6.4	9.1	27.3	2.9	0.5	1.8	12.4	12.5	10.4	2.5	1.0	0.9	8.0	11.8	17.6
04.3.2.	Services for the regular maintenance and repair of the dwelling	5.4	10.8	5.2	13.8	13.3	15.6	0.5d	11.7	9.0	10.0	10.2	8.4	25.3e	:	10.0	2.4	24.9
04.4.A	Other services relating to the dwelling	10.3	13.3	37.2	19.0	24.9	10.2	3.1	19.8	11.1	11.7	10.7	6.8	20.6e	9.4	14.0	25.4	14.3
04.5.	Electricity, gas and other fuels	66.2	66.9	54.3	54.7	32.0	47.0	102.9	40.4	44.0	54.2	49.9	37.6	45.7	69.1	45.0	45.7	60.0
04.5.1.	Electricity	43.6	25.9	26.5	24.8	20.1	26.7	21.5	15.6	20.2	54.2	23.1	23.8	38.5e	44.3	22.0	20.8	53.8
04.5.2.	Gas	10.7	7.6	7.1	2.3	7.7	10.8	4.7	18.0	10.1	:	6.9	10.5	0.2	0.5	20.0	:	:
04.5.3.	Liquid fuels	10.6	15.1	7.4	23.9	4.2	6.9	8.2	6.8	12.8	:	6.7	:	5.5	7.3	1.0	:	4.5
04.5.4.	Solid fuels	1.4	:	3.1	3.7	:	0.6	17.0	:	0.9	:	7.8	3.3	1.5	:	2.0	:	1.5
04.5.5.	Hot water, steam and ice	:	18.3d	10.3	:	:	2.0	51.4d	:	:	:	5.3	:	:	17.0de	:	24.9	0.1
05.	FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE OF THE HOUSE	91.7	65.8	78.9	89.3	64.7	74.1	60.0	99.8	120.3	96.0	98.5	78.8	64.7	64.0	89.0	74.1	85.4
05.1.	Furniture, furnishings and decorations, carpets, other floor coverings and repairs	30.2	23.5	33.4	16.6	16.9	24.9	18.8	35.0	55.9	37.0	42.7	29.0	20.2	28.9	37.0	28.8	30.3
05.1.1.	Furniture and furnishings	27.7	19.3	27.0	14.5	15.2	22.5	6.5	33.4	51.6	28.9	39.2	25.7	15.3	25.4	27.0	26.8	27.5
05.1.2.	Carpets and other floor coverings	2.5	3.4	6.2	2.1	0.4	1.7	2.9	1.6	4.3	8.1	3.5	2.4	4.9	3.5	10.0	0.3	2.8
05.1.3.	Repair of furniture, furnishings and floor coverings	:	0.8	0.2	:	1.4	0.7	9.4d	:	:	:	:	0.9	:	:	:	1.7	:
05.2.	Household textiles	8.5	6.7	6.5	15.4	5.6	7.6	4.4	12.7	10.4	11.6	10.3	7.7	7.8	6.5	6.0	10.7	7.4
05.3.	Heating and cooking appliances, refrigerators, washing machines, similar major household appliances, incl. repairs	17.1	12.3	12.8	10.8	10.8	13.0	8.8	10.6	13.5	10.6	20.0	15.9	12.6	8.4	13.0	12.0	17.2
05.3.1/2	Major household appliances (electric or not) and small electric household appliances	14.4	10.6	12.1	9.5	9.4	11.5	8.3	9.8	13.2	9.9	17.7	10.1	11.4	7.4	11.0	11.4	15.8
05.3.3.	Repair of household appliances	2.7	1.7	0.7	1.3	1.5	1.5	0.5	0.8	0.3	0.8	2.3	5.8	1.2	1.1	2.0	0.6	1.3
05.4.	Glassware, tableware, household utensils	5.4	6.7	5.8	9.2	3.9	8.8	4.3	5.8	4.5	6.8	7.0	5.0	7.5	5.1	7.0	6.2	5.2
05.5.	Tools and equipment for house and garden	6.0	4.0	8.4	2.1	2.0	3.4	5.2	1.4	7.2	5.1	4.1	1.3	5.0	5.0	9.0	3.9	8.7
05.6.	Goods and services for routine household maintenance	24.5	12.6	12.0	35.2	25.4	16.4	18.5	34.3	28.8	24.9	14.4	19.9	11.6	10.1	17.0	12.5	16.7

		B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	IS	N
05.6.1.	Non-durable household goods	13.6	8.6	8.5	25.5	16.0	11.5	12.8	18.0	13.1	11.7	10.4	11.6	9.2	10.1	9.0	11.1	14.3
05.6.2.	Domestic services and home care services	10.9	4.0	3.6	9.8	9.4	4.9	5.7	16.3	15.7	13.2	3.9	8.3	2.5	:	8.0	1.4	2.4
06.A	HEALTH - paid by the consumer and not reimbursed	8.7	7.4	8.5	11.9	8.4	4.8	6.0	16.0	2.8	7.6	4.1	5.6	11.2	12.1	7.0	9.2	7.1
07.	TRANSPORT	135.1	179.7	173.1	125.6	145.6	191.4	117.0	126.8	160.9	159.3	148.0	178.1	192.8	177.3	152.0	186.5	201.8
07.1	Purchase of vehicles	58.9	63.8	83.1	40.6	57.5	44.8	43.7	41.3	82.5	66.8	51.3	72.0	85.5	44.1	57.0	63.3	70.3
07.1.1.	New and second-hand motor cars	54.6	58.6	79.0	38.8	54.0	43.2	42.1	37.1	77.4	60.6	45.3	68.9	78.8	42.6	55.0e	60.3	65.7
07.1.2/3	Motor cycles and bicycles	4.3	5.2	4.0	1.8	3.5	1.6	1.7	4.2	5.1	6.2	6.0	3.1	6.8	1.5	2.0	3.0	4.6
07.2.	Operation of personal transport equipment	68.3	82.6	73.5	68.0	72.1	118.4	57.4	63.5	70.8	68.2	82.7	88.1	78.5	101.5	76.0	98.7	90.9
07.2.1.	Spares parts and accessories	5.4	11.6	6.0	12.3	4.5	31.9	5.4	2.8	5.7	6.8	4.8	7.0	10.9	17.0	8.0e	12.7	8.7
07.2.2.	Fuels and lubricants	40.6	32.4	36.3	39.6	44.5	49.1	43.5	27.5	32.2	37.1	39.0	31.0	52.6	53.5	40.0	60.5	52.8
07.2.3.	Maintenance and repairs	19.7	35.3	22.7	11.2	17.5	27.9	6.9	28.1	28.5	17.4	32.0	46.7	10.1	25.2	21.0e	15.5	15.9
07.2.4.A	Other services in respect of personal transport equipment	2.6	3.3	8.5	5.0	5.6	9.5	1.6	5.1	4.4	6.9	7.0	3.4	5.0	5.8	7.0	10.0	13.5
07.3.	Transport services	7.9	33.3	16.6	17.0	16.0	28.2	15.9	21.9	7.6	24.3	14.1	18.0	28.7	31.7	19.0	24.5	40.6
07.3.1.A	Passenger transport by railway	4.1	2.8	3.2	0.3	2.1	7.5	1.9	3.1	0.9	9.2	3.3	1.6	5.5	4.2	7.0	:	5.5
07.3.2.A	Passenger transport by road	2.5	10.4	0.8	7.3	12.3	6.8	10.0	6.7	1.3	8.8	6.2	5.1	10.9	3.0	9.0	9.6	12.5
07.3.3.A	Passenger transport by air	:	5.1	0.7	2.7	1.4	5.8	1.7	2.4	1.9	4.7	:	1.5	5.0	6.5	2.0	13.9	13.0
07.3.4.A	Passenger trans. by sea and inland waterway	:	3.7	0.8	2.0	0.2	0.4	0.3	1.3	:	1.3	:	0.0	4.3	4.1	1.0	1.0	4.5
07.3.5.A	Other purchased transport services	:	1.8	0.5	0.8	:	0.8	0.3	2.7	0.5	0.3	0.0	1.6	:	0.4	:	:	:
07.3.6.A	Combined tickets	1.3	9.5	10.6	3.9	:	6.9	1.7	5.8	3.0	:	4.5	8.2	3.1	13.4	:	:	5.2
08.	COMMUNICATIONS	23.7	23.1	19.5	22.3	15.8	20.2	21.2	17.8	17.0	24.6	22.4	12.0	16.9	29.1	21.0	15.7	21.1
08.1.	Communications	23.7	23.1	19.5	22.3	15.8	20.2	21.2	17.8	17.0	24.6	22.4	12.0	16.9	29.1	21.0	15.7	21.1
08.1.1.	Postal services	1.2	1.9	2.7	0.3	0.4	3.0	1.4	3.3	1.5	3.2	1.7	0.1	1.7	4.5	2.0	1.8	1.4
08.1.2/3	Telephone and telefax equip. and services	22.5	21.2	16.8	22.0	15.5	17.2	19.8	14.5	15.5	21.5	20.7	11.9	15.2	24.6	19.0	13.9	19.7
09.	RECREATION AND CULTURE	124.8	100.1	108.7	49.5	69.3	88.2	124.9	82.8	137.6	139.3	113.0	38.8	123.5	108.2	130.0	143.5	140.9
09.1.	Equipment and accessories, incl. repairs	43.5	46.0	46.2	16.0	24.1	40.2	40.6	43.5	45.9	54.9	48.7	15.4	51.6	52.6	46.0	45.1	52.8
09.1.1.	Equipment for the reception, recording and reproduction of sound and pictures	6.8	10.2	9.2	1.1	6.4	7.6	8.5	13.1	8.6	9.6	8.8	7.0	9.3	9.0	8.0e	7.4	11.6
09.1.2.	Photographic and cinematographic equipment and optical instruments	1.2	0.6	3.8	2.6	0.9	0.9	0.5	1.8	4.8	2.3	1.8	1.0	3.7	2.5	5.0e	2.2	1.8
09.1.3.	Data processing equipment	4.9	3.7	2.8	0.6	1.2	0.2	0.6	1.5	3.8	1.1	2.5	0.7e	1.8	2.3	5.0e	5.1	3.6
09.1.4.	Other major durables for recreat. and culture	2.7	2.4	2.2	0.1	:	1.5	1.6	4.5	3.5	6.5	2.3	0.4e	9.0	5.4	:	1.6	8.3

		B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	IS	N
09.1.5.	Games, toys and hobbies, equipment for sport, camping and open-air recreation	6.5	10.1	11.5	5.2	5.8	9.9	5.7	8.2	5.8	8.9	10.9	2.5	13.0	9.0	8.0	13.0	10.7
09.1.6.	Recording media for pictures and sound	6.0	5.2	3.6	2.0	5.3	8.8	2.9	3.6	3.8	6.6	4.4	2.3	2.9	5.6	4.0	5.2	5.9
09.1.7.	Gardening	8.1	7.0	8.8	2.6	1.2	6.8	5.8	6.9	9.4	10.4	10.0	:	6.9	10.9	6.0	6.6	6.9
09.1.8.	Pets	6.0	5.3	2.5	0.9	1.0	2.5	3.3	3.6	5.0	8.1	6.2	:	4.4	2.9d	9.0	2.1	1.9
09.1.9.	Repair of equipment and accessories for recreation and culture	1.3	1.5	1.7	0.9	2.5	2.0	11.7d	0.4	1.2	1.4	1.9	1.5	0.6	5.2	1.0	2.1	2.2
09.2.A	Recreational and cultural services	27.7	25.1	24.4	11.3	17.5	24.7	29.4	17.1	21.6	34.0	29.1	9.7	19.6	23.4	34.0	46.6	35.8
09.3.	Newspaper, books and stationery	22.1	16.4	21.4	19.7	19.9	21.9	24.3	22.1	20.1	34.0	18.4	10.5	30.4	22.7	20.0	27.3	32.0
09.4.	Package holidays	31.4	12.6	16.8	2.6	7.8	1.4	30.6	:	50.0	16.4	16.8	3.2	22.0	9.5	30.0	24.5	20.2
10.A	EDUCATION - commonly paid by consumers in Member States	:	3.3	4.6	13.7	1.2	3.7	6.0	8.6	3.4	3.0	3.9	0.8	1.3	1.7	11.0	:	1.8
11.	HOTELS, CAFES AND RESTAURANTS	70.6	66.9	68.4	90.4	117.8	91.2	156.9	119.5	63.6	48.6	157.4	121.7	80.4	47.7	127.0	64.8	45.4
11.1.	Catering	65.4	59.5	52.3	84.2	111.9	71.3	153.6	89.6	59.7	39.8	114.8	119.5	73.1	43.4	123.0	61.0	40.4
11.1.1.	Restaurants and cafés	61.1	59.5	46.8	80.3	109.1	54.7	144.8	84.9	56.3	37.0	107.9	111.4	72.7	37.0	116.0	51.8	37.0
11.1.2	Canteens	4.3	:	5.5	3.9	2.8	16.6	8.8	4.7	3.4	2.8	6.9	8.1	0.4	6.4	7.0	9.2	3.3
11.2.	Accommodation services	5.2	7.4	16.1	6.2	5.9	19.9	3.4	30.0	3.9	8.8	42.6	2.2	7.3	4.3	4.0	3.8	5.0
12.	MISCELLANEOUS GOODS AND SERVICES	59.5	66.0	46.9	64.3	43.5	74.2	37.9	84.1	53.3	53.1	50.2	47.2	40.5	40.0	48.0	77.7	35.0
12.1.	Personal care	29.4	19.9	24.5	24.1	25.7	31.1	25.6	39.3	29.6	25.2	27.4	30.6	23.9	18.8	26.0	33.8	24.3
12.1.1.	Hairdressing salons and personal grooming establishments	13.1	7.8	10.7	3.8	9.7	11.4	11.7	21.3	13.2	10.6	10.5	15.0	9.9	6.8	7.0	14.6	9.8
12.1.2.	Appliances, articles, and products for personal care	16.3	12.1	13.8	20.2	16.0	19.7	13.9	18.0	16.4	14.6	16.9	15.6	14.0	12.0	19.0	19.1	14.5
12.2.	Personal effects n.e.c.	6.9	8.5	9.4	10.5	5.7	13.9	5.3	30.3	10.9	8.8	12.7	10.8	9.9	9.2	9.0e	7.1	5.4
12.4.A	Insurance	8.7	3.5	5.7	11.6	4.0	11.7	2.5	1.8	5.5	9.8	7.0	5.3	3.7	7.3	6.0	6.6	5.3
12.4.2.A	Insurance connected with the dwelling - Contents	1.2	1.3	2.3	0.5	0.5	5.1	0.6	:	0.5	3.5	2.7	0.6e	1.4e	2.8	2.0	2.5	1.1
12.4.4.A	Insurance connected with transport - Car	7.6	2.2	3.4	11.1	3.4	6.6	1.9	1.8	5.0	6.3	4.4	4.7e	2.3e	4.5	4.0	4.1	4.1
12.5.A	Banking services n.e.c.	3.5	20.4	2.0	:	0.1	7.0	1.1	3.2	0.3	0.3	2.1	0.2	0.9	1.5	2.0	13.8	:
12.6.A	Other services n.e.c.	11.0	13.7	5.3	18.1	8.1	10.5	3.4	9.5	7.0	9.0	1.0	0.3	2.2	3.1	5.0	16.4	:

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