EUROPEAN COMMISSION
EUROSTAT

Directorate C: National Accounts, Prices and Key Indicators
Unit C-4: Price statistics. Purchasing Power Parities. Housing statistics

Treatment of telecommunication in the HICP (¹)

I.   The recommendations

Recommendation 1: Coverage

The price index for telecommunication services (ECOICOP 08.3.0) should cover wired and wireless telephone services, internet services and bundled telecom services that include television.

Recommendation 2: Weights

The weights for the ECOICOP 08.3.0 subclasses should be reviewed annually and, if necessary, updated. The market for telecommunication services may be stratified and weighted below the subclass level if needed, depending on national circumstances.

Obtaining information on weights is essential for the compilation of the indices. National regulatory bodies and telecom providers are recommended sources of information.

Recommendation 3: Sampling

The sample should include all significant ECOICOP subclasses. The sampling frame and sample (could be in terms of consumer profiles) should be reviewed annually at the minimum to keep the sample representative.

Because the telecommunication services market can be very dynamic it is recommended to review and update the sample more frequently than once a year.

Recommendation 4: Replacing tariffs

If binding contracts are used, new tariffs should be phased in, preferably using migration rates. If non-binding contracts are used, new tariffs may replace existing tariffs as they become available, but only if supported by evidence that consumers rapidly migrate.

If no empirically supported migration rates are available, some reasonable model for rational consumer behaviour should be used.

(¹) The content of this document corresponds to Annex 2 of the document HICP/HPI Recommendations, endorsed by the Directors of Macro-Economic Statistics, in June 2015 (DMES/2015/06-03).

New tariffs may only be linked to show no price change, if there is a justification to do so.

Recommendation 5: Index compilation methods

There are four methods to compile the sub-indices for telecommunication: the tariff, consumer profile, unit-value and actual usage approach. The methods can be rated as A, B, or C depending on their actual implementation. This is highly dependent on the source and frequency of updating weights. The first two methods are the most commonly used ones.

The tariff method takes prices from the tariff list in both periods as a matched pair. The method is rated as a B-method in a stable market, such as fixed telecommunication services. In dynamic markets (such as wireless telecommunication services) the method is rated as a C-method.

The pre-defined consumer profiles approach uses pre-defined consumer profiles and is an A-method if the profile is frequently checked against actual use. If the profiles are based on some other source like in-house judgements at the NSI, it will be a B-method. If there is no justification for the profile, then this method is rated as a C-method.

The unit-value approach assumes that the content of a tariff based service is well-defined and homogeneous and a unit value is used to track price development. If the service is indeed homogeneous then this is a B-method for both stable and dynamic markets; otherwise it should be rated as a C method.

The actual usage method uses all or nearly all transaction data to create one profile for which prices are collected. If it applies to all consumer transactions and is regularly updated it may be considered an A-method. If the profile is based on some other source like in-house judgements at the NSI, it will be a B-method. If there is no justification for the profile, then this method is rated as a C-method.

The methods may be used in combination.

Recommendation 6: Treatment of bundles

Pure bundles are bundles of services that are only available as a bundle and not sold separately. The expenditure should be allocated to the COICOP subclass according to the purpose of the main component.

There are two exceptions. Mobile call plans often include mobile internet and these bundles are to be included in wireless telephone services, regardless of the importance or weight of the two components. This is also the case with call plans that include the cost of a mobile telephone; these are also to be included in wireless telephone services.

Mixed bundles are products which are sold both in bundles and, separately, as stand-alone products. The expenditure on stand-alone products belongs in their respective COICOP subclasses.

The expenditure of mixed bundles should be dealt with according to the Recommendation on the treatment of Bundles (2010): unless the constituent components

can be weighed and itemised easily, the bundle should be allocated to the COICOP subclass according to the purpose of the main component.

Mixed bundles that include combinations of telephony, internet and television are allocated to COICOP 08.3.0.4 'Bundled telecommunication services'.

Recommendation 7: Discounts

Discounts should be taken into account according to the HICP rules and recommendations.

However, without information on actual usage it may be difficult to estimate the necessary adjustments. It is therefore recommended to focus on discounts that have either a direct effect on the price and/or have a direct effect on the main components of the service. Other discounts should only be included if they have an empirically justified significant impact.

Recommendation 8: Quality changes

Horizontal quality changes are changes that apply to all customers or affect the entire network. Often these changes cannot be taken into account on practical grounds, in which case the tariffs may be linked to show no change.

Vertical quality changes are changes in the characteristics between a replaced and a replacement tariff package. The following is recommended:

- For the tariff approach**,** such changes should be adjusted for.

- For the other approaches vertical quality changes are implicitly included in the method.

Suggested implementation

From January 2016 onwards.

II. Explanatory text

1. Introduction

The aim of the recommendations is to provide guidance on the treatment of telecommunication services in the HICP in order to support the requirements of comparability, reliability and relevance of the legal obligations.

The explanatory text will give some more background on the recommendations and explain the meaning of several terms used.

Measuring price development for telecommunication has been the subject of much discussion and the current practice is well understood. The recommendations 'codify' current best practices.

The telecommunication services industry is very dynamic, developing new products and integrating previously distinct services into new bundled products. Therefore it is not possible to give more detailed recommendations.

Telecommunication services are to be treated in the HICP following the definitions and procedures laid down in Commission Regulation (EC) No 2646/98 of 9 December 1998 for the treatment of tariffs.

At the time this regulation was adopted, the majority of households used fixed line telephones. Mobile telephones and connections to the internet were not very significant and the bundling of telephone, internet and television was practically non-existent.

The challenge for index compilers today is to produce indices which on the one hand maintain the fixed basket concept and on the other hand remain representative, reflecting the constantly changing dynamics of the telecommunication market.

These recommendations recognise that any one approach may not be suitable for all market sectors or all telecommunication services offered in any particular Member State, and that a mixture of methods may be required.

Some definitions of terms used:

Binding contracts are contracts that are in general valid for a longer period. In the telecom market, one and two year contracts are typical examples of binding contracts.

Migration rates describe the transition of consumers from one tariff to another in terms of what proportion of consumers change and at what pace.

Call plans are packages of telecommunication services which a consumer buys e.g. a certain number of call minutes, SMS and internet usage per month for a certain price.

2. Data sources

Telecommunication providers and regulatory bodies are the obvious sources for detailed information on consumption patterns, weights and market developments in general.

Developing and maintaining contacts with service providers or regulatory bodies is therefore essential for a correct measurement of price development for telecommunication.

The telecommunication market, COICOP 08.3.0, is divided into the following five subclasses:

08.3.0.1 Wired telephone services i.e. fixed telephone line services from a fixed place of origin. Includes, line rental, talk plans, public and hotel phone charges, and hire and installation of equipment. In addition to full service providers it includes call-by-call and pre-selection providers.

08.3.0.2 Wireless telephone services: mobile communications i.e. from a flexible point (mobile) of origin. Includes the cost of mobile phones ([2]) if included in the subscription costs, covers all calls and text and media messages.

08.3.0.3 internet access provision services: wired and wireless (mobile) internet access.

08.3.0.4 Bundled telecommunication services: includes telephony/internet/television packages.

08.3.0.5 Other information transmission services: Telegraphy, telex, telefax services and Voice Over the Internet Protocol (VOIP).

The last subclass is likely to be insignificant in terms of household expenditure in most Member States. Note that VOIP is a commonly used technology for fixed line communication and should be classified in 08.3.0.5 if used for stand-alone products. The technology is often used to offer fixed telephone services as part of a bundle with internet and/or television, in which case it should be classified in 08.3.0.4.

Any further subdivision may not be needed or feasible due to a lack of information. Whether or not consumption segments are used depends on the information available to the Member State and the compilation method used. As the methods either use consumer profiles or tariff structures, the actual information available to make those profiles and structures will determine the level of segmentation possible.

3. Sampling

Because the telecommunication market can be very dynamic a frequent update of the consumption patterns and weights and sample is needed to maintain representativity.

New tariffs should preferably be phased in using migration rates. It is important here to seek advice from service providers to estimate the rate of switching between existing and new tariffs.

If no actual information is available on migration rates a rational consumer approach may be taken. If binding contracts are used, e.g. for a 24 month contract, one may assume that each month one-twenty fourth of the consumers switch to the new tariff.

([2]) Includes smartphones.

4. Index compilation methods

The results of a Eurostat questionnaire of 2013 showed that the tariff and consumer-profile methods are the most commonly used methods.

Concerning the evaluation of each pricing method, there is no clear assignment of the methods to the A, B and C classification; the assignment depends on the flexibility with which the method is applied and especially the frequency and source of weights. If samples are kept constant for a long time or are only updated within an annual re-sampling procedure each method can easily be a C-method. To be rated as an A method the usage of additional information about market shares and substitution behaviour is necessary. Therefore only a general assessment can be made.

The A-methods are the preferred methods, the B-methods are acceptable and C-methods should, preferably, not be used.

The tariff method. A full tariff list or an element of the tariff structure is treated as an item (i.e. a product specification) in the weight reference period and priced in subsequent periods.

> *This method should be rated as a **B-method in a stable market** (such as fixed telecommunication services) and as a **C-method in a dynamic market** (such as wireless telecommunication services) because the method does not follow consumer behaviour.*

The pre-defined consumer profiles approach. Consumer profiles are defined independently of provider's tariff structures and resemble typical or average consumer *usage* pattern. These profiles are then priced each month using the tariffs of each provider.

> *Consumer profiles that use first-hand data (from providers or regulators) for making and updating the profiles could be rated as an A-method. If **other sources are used** or in-house judgements then the method should be rated as a **B-method**. If there is no justification for the method, then the method should be considered a C-method.*

The unit-value approach. The contents of the tariff-based service are considered to be in essence homogeneous and some form of unit value – the cost for one unit, the mean cost incurred by all consumers using the provider etc. – is used for monitoring the prices.

> *This method should be rated as a **B method for both stable and dynamic markets**, on condition that the service categories priced are precisely defined so as to include all tariff elements, and that the categories are relatively homogenous, otherwise it should be rated as a C-method.*

The actual usage method ([3]). This method uses all or almost all transactions in a certain market segment to make one single profile. In any period the consumption pattern is kept constant; however the weights which are used for aggregating the tariff plans within a

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([3]) Also known as comprehensive basket method.

provider, and the relative shares between the providers, are flexible. Changes between tariff packages as well as migration from one provider to another are therefore reflected in the index.

> *The actual usage methods that use **first-hand data** (from providers or regulators) for making and updating the profiles could be rated as an **A-method**. If other sources are used or **in-house judgements** then the method should be rated as a **B-method**. If there is no justification for the method, then the method should be considered a C-method.*

The following table summarises the approaches.

Approach	Weights information	Stable	Dynamic
Tariff		B	C
Predefined Consumer Profiles	First hand	A	A
	Other sources	B	B
	None	C	C
Unit Value			
- homogenous categories		B	B
- non-homogenous categories		C	C
Actual usage	First hand	A	A
	Other sources	B	B
	None	C	C

5. Bundled telecommunication packages

The definition of bundles

Bundling involves offering two or more goods or services that serve two or more different purposes as a package deal. In the case of pure bundling, a group of products are only available ([4]) as a bundle and are not sold separately. In the case of mixed bundling, the products are sold both in packages (mixed bundles) and as individual units.

An example of a pure bundle is a mobile call plan where calls and SMS are not available separately. An example of a mixed bundle is the purchase of a tablet (personal computers, ECOICOP 09.1.3.1) and internet data plan (telecommunication services) as a package for a single monthly fee, because both tablets and internet data plans can be bought separately. Two other commonly available mixed bundles are the purchases of mobile phones with a mobile call plan and the triple play package consisting of fixed phone, internet and TV.

([4]) The term 'available' is rather vague. We understand available as meaning ***commonly or readily*** available, from a specific retailer, as a stand-alone item (not an add-on) that is used independently from the other elements of the package. To give an example: internet providers may also offer VOIP telephony, but only as an add-on, even though it is itemised on the website. The latter case would be a pure bundle.

How should these types of bundles be treated? The HICP recommendation on bundles recommends classifying bundles according to the consumption purpose of the main component. If the bundle is itemized and expenditure can easily be split then the components can be allocated to the relevant COICOP class.

The first example – the pure bundle – should be classified in 08.3.0.2. The second example will be dependent on whether the expenditure can be split and, if not, the expenditure of the bundle should be allocated to ECOICOP 09.1.3.1. The third and fourth examples are special cases. ECOICOP 08.3.0.2 (wireless telecommunication services) explicitly includes the cost of mobile phones if they are included in the call plan contract and triple play packages should not be split up but allocated to 08.3.0.4 (Bundled telecommunication services) regardless of whether the constituent services can be itemised.

The treatment of bundles in the index compilation is not always straightforward especially if information on actual usage is lacking which makes it difficult to determine the main purpose.

6. Discounts

The treatment of discounts is a separate issue from the treatment of replacement tariffs. As with all other goods and services in the HICP, price discounts for telecommunication services should be reflected in the HICP. A typical example may be a discounted monthly charge for internet or bundled TV packages etc. for the first 'X' months of a contract.

Often providers will offer various inducements to attract customers that do not bear directly on the main service provided, e.g. a temporary free use of music streaming. It is recommended to focus on discounts directly related to the principle service; i.e. that have either a direct effect on the price (e.g. 10€ discount on the monthly fee for the first 6 months) or have a direct effect on the main components of the service (additional free download usage, free minutes etc.).

7. Quality changes

There are two kinds of quality changes: horizontal and vertical quality changes.

- **Horizontal** quality changes are changes that affect all consumers or the entire network, for example changes in terms of sale or an increase of internet speed across the network. In principle quality adjustments should be made if such changes are perceived as improvements by consumers. However, the large number of potential variables that have to be considered in making such adjustments may render such adjustments not feasible.

- **Vertical** quality changes are changes in the characteristics between a replaced and a replacement tariff package and in general quality adjustments should be made for such changes.

For both types of quality change a variety of explicit and implicit quality adjustment methods are allowed dependent on the information available to make the adjustment. A special case is the introduction of flat-rates and fair-use policy. Without detailed information on the actual usage one may not assume a large change in consumer behaviour. In the absence of information on actual usage one assumes that usage remains stable during the transition.