

# Pricing some complex products for the CPI needs (based on the Polish practice)

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**Abstract:** Market competition induces retailers to be creative for the sake of increasing turnover. Price collectors have to cope with identifying products connected with another good or service. Retailers offer various inducements and in particular during recent years there has been seen in Poland a growing number of market changes which were very complex for pricing. The paper considers a practical approach to the treatment of products which are offered to consumers as packages or with any supplements or additions. Values of such additions vary. Sometimes it is only a small cosmetics sample added to another cosmetic of normal size, but there are also goods and services offered as supplements with substantial value, such as annual car insurance or a set of winter tyres included with a car. While the price of the “main” product remains unchanged, prices of inducements may have different price developments and changes in quality if sold as separate products. The paper classifies and describes different cases faced in statistical practice and presents methods to treat them in CPI calculations.

## 1. Introduction

The development of the Polish economy which took place in the nineties and at the beginning of the current decade has changed the domestic market in many dimensions. Both volume and structure of sales and its forms and marketing as well are undergoing changes. The growing importance of the services sector became established, making the economy more resemble those in western European countries. However, the share of consumer expenditure on services in total consumption of households is still lower than in some EU member states (currently about 30%) though remaining on a rising trend. There was a noticeable opposite trend in food expenditure at the same time (36,3% in 1998, against 28,2% in 2002, as estimated for the CPI weights). Apart from the economic development to a more market-based economy, these changes were also partially due to differential price developments, e.g. much faster for services but slower for food. Moreover, different classifications in use before and after 1999 confuse the comparisons. The national classification used in the past assigned goods and services rather differently from COICOP, e.g. catering before 1999 was classified as food but now as services; electricity, gas and other fuels were services according to the national classification but in COICOP “non-durables/energy”.

Although in COICOP some classes contain both goods and services because it is difficult to break them down into goods and services, some statistical institutions publish CPIs for an artificially constructed aggregate of “services”, which contains several 4-digit headings of COICOP for goods and services. This is not to show any weakness of COICOP but rather to

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<sup>3</sup> The views presented in the paper are those of the author, not necessarily reflecting the views of the Polish CSO.

grant that it reflects reality. There were always on the market tangible products (e.g. cars) and intangible products (e.g. postal services), but also some “hybrids” such as dental services, which are classified as services, but what patients are most interested in are goods: fillings in their teeth.

Recent times have brought however newer forms of products offered, like a service plus a good, a service plus another service, a good with a service and a good plus another good. A vast number of them are inducements which according to Eurostat’s guidelines “should be disregarded if they are not significant”. The guidelines go on to say: “The market value of the inducement may be deducted if known but it should then be added back if the offer is withdrawn”. In practice not all of them are “not significant” and many have a known value. It is a source of some interpretation doubts which cause problems in price collection and put the comparability of price indices in question, especially if changes in quality of product are involved.

## **2. Sampling (item specification, a good, a service, a product, a product observed, inducements)**

The sample of items in the Polish CPI (and HICP) contains about 1,800 products. The sample is purposively selected. Prices of goods and services are gathered by price collectors employed by regional statistical offices, in about 28,000 outlets selected within 309 price survey regions. Changes in the general consumption pattern were taken into account in selecting the survey regions, sales outlets, representative items of goods and services. The price survey regions were settled by the CSO in cooperation with the regional statistical offices. The survey region can be a town, part of a large city, a county (gmina) or a district. The choice of outlets was made by price collectors and regional statistical offices. Price collectors are recommended to monitor prices in the same outlets for at least one year.

A centrally fixed list of representative items of goods and services remains obligatory and unchanged for all regions covered by the price surveys throughout the year. From the description’s point of view the list covers two types of representative items:

- products precisely described including their specific parameters (tight specification),
- products representing narrow assortment groups like clothes, underwear, footwear, etc., which are supplied on the market for short periods requiring general specifications. Selection of particular products as representative items within those groups depends on the price collector’s decision.

Having loose rather than tight specifications allows more freedom for the price collectors, but it results in less comparability of price levels across the country. This has the effect of reducing the usefulness of the average prices which are published with the index. It may also result in collectors monitoring the prices of significantly different products when they should be very similar. On the other hand, tight specifications guarantee the comparability of prices of products observed in all regions, but at the same time may reduce the number of available price quotations. It also increases the probability that products so defined will not remain long on the market.

Sources of information on consumer prices of goods and services are the following:

- price recordings conducted by price collectors in selected sales outlets,
- price lists, regulations and decisions applicable to the uniform prices binding throughout part or all of the country, introduced by organs of central or local government, or other entities responsible for economic activity.

Prices of food, non-alcoholic and alcoholic beverages and tobacco are collected twice a month (in the first and the second half of the month), fruit and vegetables three times a month, and other goods and services once a month.

There are about 0.5m individual price quotations observed each month. Among them about 1% of products are those whose descriptions differ from those recorded in the previous month, of which some are new to the market (old ones were withdrawn) and some with temporary inducements e.g. an extra good or service included.

### **3. Changes in specification, price and/or quality; comparability; methods applied**

The sample is updated annually but some adjustments take place each month on a small scale depending on local market supply changes. Each month there are a number of prices submitted by price collectors as being problematic, for which some price estimations must be made, taking account of possible quality changes.

From last year's experience examples have been taken of some of these problematic goods and services (see the annex) for which inducements were regarded as "significant" and the method of treating them in the CPI had to be considered. The following four cases were observed:

- Services offered with extra goods.
- Services offered with extra services.
- Goods offered with extra goods.
- Goods offered with extra services.

Prices of some products with "extras" remained unchanged. However, in some cases the combined prices was higher than the price of the two items when bought separately, and in other cases the combined price was lower than the separate prices. There were observed products without any quality changes but the quality of the inducements added to them varied.

Problems to consider refer to the treatment of "extras". Whether they should be treated as:

- Case A: A quality change of the product previously sold without extra good or service.
- Case B: Defining a new product as the combination of the original product plus the added good or service.
- Case C: A temporary and "insignificant" inducement which may be ignored.

Case A and B needed some estimations for which a group of methods marked as 1. in the annex was applied. This occurred when the extra good or service was treated as a substantial value added to the main product and its price was deducted. Different individually determined methods of valuation were used, such as:

- the price of the extra good or service was taken from another outlet (or even the same outlet) where it was sold as a separate product (e.g. for garments and personal care products),
- the price of the extra good or service was estimated using information on the time used to produce the “extras” and the estimated hourly pay of the maker (e.g. repair of therapeutic appliances),
- the price of the main product was estimated using information on the price development of other products in the group (e.g. new motor cars),
- additional information was gathered from the outlet or the producer to estimate the price of the main product (e.g. newspapers, books and stationery).

Method 2 was applied in case C where the extra good or service was ignored and not treated as a higher quality of a product, which in practice meant that the price of the main product was directly compared with its price from the reference month. For some cases there was no price change but for some there was a price decrease or increase.

Another method, numbered in the annex as method 3, refers only to products with uniform prices within the country such as a weekly magazine. The extra good (CD) was treated as a temporary addition to the main product but the CSO considered that it increased the quality of the main product. Although the only choice available to consumers was either to buy the product including the extra item – at a higher price than before – or not to buy it, in practice it was taken into the index calculation as no price change. In this particular example the CD was added to only a single issue of the weekly magazine, and the monthly average price was taken for the further calculations.

#### **4. Summary and issues remaining for further discussions**

The methods described above of dealing with those forms of products which are new to the Polish market are often decided ad hoc and applied to the calculations. The estimation method is proposed by the regional statistical office staff but a final decision is made at the central level. Each decision however may be biased by a subjective approach of persons responsible for the index calculations.

Problems still remain for consideration, particularly:

- whether and when inducements or “extras” may be ignored (what value should be treated as “significant”?)
- if values of “extras” are assessed as deductible, should the full estimated value be deducted, or only part of it?

- can inducements be treated as a better quality of the product offered even if not all consumers are interested in acquiring them? And note that it is not generally known what consumers' views are;
- should the price of “extras” be deducted from the price of the main product if in order to obtain the extra good or service it is necessary to spend a minimum amount of money in the particular shop?

If statisticians declare to produce their indices as computed based on the data on prices actually paid by consumers, then above questions need to be answered and more detailed recommendations should be offered to NSIs.

Observing the market development it seems that some more research needs to be done in this area of CPI calculations aimed at increasing the comparability of results.

## Annex

<b>COICOP code</b> (or below COICOP)	<b>Name of the group</b>	<b>Description of the representative item</b>	<b>Extra service or good</b>	<b>Weight of the group in 2002 (%)</b>	<b>Method used</b>
031211	Garments for men	Men's trousers, cotton with synthetic fibres	shortening	0,9485	1
031221	Garments for women	Women's skirt, wool with synthetic fibres	alteration	1,3219	1
031231	Garments for children (3 to 13 years)	Trousers (6-11 age), jeans type	alteration	0,4053	1
045221	Gas from cylinder	Propane-butane gas (cylinder of 11 kg liquid capacity)	delivery	0,5221	2
051111	Furniture and furnishings	Kitchen furnishings (about 6-8 pieces)	delivery, design services	0,8884	1
053111	Refrigerators, freezers and fridge-freezers	Fridge-freezer, capacity about 280 l	delivery	0,1575	1
053121	Washing machines and similar major household appliance	Dish washing machine, capacity 6-8 dish sets	delivery	0,1557	1
071111	New motor cars	Passenger car "Uno 1,0 S Fire", engine capacity 999 cm <sup>3</sup> , 5-doors (standard version)	yearly insurance	0,4849	1
08211	Telephone equipment	Mobile phone	subscription and additional services	0,0549	2
111121	Restaurants and cafes	Pizza with meat, sausage, etc.	delivery	1,5290	2
031411	Cleaning, laundering and dyeing of clothing	Men's suit dry-cleaning	collecting from the house and delivery	0,0319	2
044412	Other services relating to the dwelling	Cleaning of the chimney	travel costs of the workman included	0,0248	1
053132	Installation of stoves and ovens	Replacement of the gas oven	connection	0,0035	2
056221	Other domestic services and home care services	Bed-linen laundering	ironing	0,1062	1
		Cleaning of carpet	travel costs of the workman included	0,1062	1
06131	Repair of therapeutic appliances	Grinding of the spherical glass	fitting	0,0053	2
072311	Maintenance and repair of the personal transport equipment	Repairing of car wheel (inner tube)	wheel balancing	0,5132	1

072411	Other services in respect of personal transport equipment	Driving course for amateurs, "B" category	insurance of the driver	0,2283	1
091125	Installation of the TV equipment	Installation of the satellite dish	decoder, subscription	0,0053	2
121111	Hairdressing salons and personal grooming establishments	Hair dyeing	hairdressing	0,2743	1
032211	Repair of footwear	Repairing men's shoes	cost of material included	0,0026*	2
054141	Repair of the glassware, tableware and households utensils	Installing window shutters	cost of material included	0,0017*	1
056221	Services for routine household maintenance	Glazing a window (150-60 cm), 3-4 mm glass thickness	cost of material included	0,1062	2
		Door glazing (129-54 cm), transparent glass	cost of material included		2
		Making a duplicate key "Yale" or "Lucznik"	cost of material included		2
061311	Other medical products, therapeutic appliances and equipment	Making dentures	cost of material included	0,2142*	1
062211	Dental services	Filling the teeth	cost of material included	0,6282	1
072311	Maintenance and repair of personal transport equipment	Car tyres - retreading	cost of material included	0,5132	2
		Bicycle tyres – retreading	cost of material included		2
121111	Personal care	Women's cold wave	cost of material included	0,2743	2
		Women's hair – dyeing and brushing	cost of material included		2
		Women's hair "Balayage", 3 colours	cost of material included		2
		Manicure	cost of material included		2
121212	Repair of electric appliances for personal care	Replacing feeding cable in electric shaver	cost of material included	0,0018	2
123112	Repair of jewellery, clocks and watches	Replacing battery in men's digital watch	cost of the battery included	0,0106	2
127114	Other services	Visit cards printing, per 100 pcs	cost of paper included	0,0738	2
056111	Goods and services for routine household maintenance	Dishwashing liquid "Ludwik S", per 500 g	with dishcloth	0,4406	2

071111	New motor cars	Passenger car "Matiz FRIEND S", engine capacity 798 cm3 (standard version)	with set of winter tyres (Nov, Dec.)	0,4849	1
		Passenger car "Renault Megane Pack Authentique" engine capacity 1400 cm3 (standard version)	with set of winter tyres (Dec.)		1
		Passenger car "Lanos Daewoo ", engine capacity 1500 cm3 (standard version)	with set of winter tyres (Nov. Dec.)		1
095212	Newspapers, books and stationery	Daily newspaper - "Gazeta Wyborcza"	with compact disc	0,6265	3
		Weekly magazine - "Przyjaciolka"	with compact disc		3
		Weekly magazine - "Kobieta i Zycie"	with compact disc		3
		Weekly magazine - "Pani Domu"	with compact disc		3
		Weekly magazine - "Gala"	with compact disc		3
		Monthly magazine - "Claudia"	with compact disc		3
121311	Articles and products for personal care	Toilet soap for children	with extra bar of soap	0,6990	1
		Toilet soap "Fa", per 100 g	with extra bar of soap		1
		Hair shampoo "Palmolive Naturals", per 200 ml	with antiperspirant (50 ml)		1
		Shower gel	with antiperspirant (50 ml)		1
		Liquid toilet soap, per 300 ml	with balsam for firmness		1
121312	Articles and products for personal care	Lipstick	with lip balsam	0,9326	1
		Cleansing milk	with moisturising toner		1
		Moisturising cream	with hand cream		1
		Active balance toner	with cleansing milk		1
		Shaving foam	with after shave milk		1

\* in 2003