Fast-Evolving Technology Items: Approach and Data Requirements

Technology products such as audiovisual, photographic, and information processing equipment pose unique challenges for the price collection process of the International Comparison Program (ICP) and for the computation of purchasing power parities (PPPs). Challenges are primarily related to the short life cycles and the overall fast-changing nature of these products. Further complicating the task, the introduction of new models may not occur simultaneously across different markets, and consumer electronics companies may tend to create market fragmentation by introducing models with minor variations for certain groups of economies or even for individual economies. In view of this situation, standard ICP practices cannot in general produce satisfactory PPPs.

An approach to resolving this problem is based on four steps:

1. Focus on products with wide availability, a low number of alternative models for the same product type, and a relatively long lifespan, or with replacement models that can be clearly identified.
2. Improve the item specifications so they list the key price-determining factors and indicate a product series instead of a single model.
3. Use the whole scope of the basic heading(s).
4. Collect brand and model information for validation purposes.

The first step identifies clearly universal products such as media players or tablet computers that can be priced by all economies. The second step guides the pricing of products that are not available in identical fashion in all economies. The key parameters for a variety of products differ relatively little across economies and are also fairly stable over a certain period of time, even if the models and especially the model codes vary and change constantly. The third step is intended to ensure that the item list also includes items that are relatively easy to price. The final step is used in the validation work so that outlier prices can be checked for potentially differing models and cross-checks for priced models can be made across economies.

BASIC HEADINGS COVERED

The issue of fast-evolving technology relates mainly to basic heading 110911.1, audiovisual, photographic, and information processing equipment. The annex to this chapter presents a full description of this basic heading. Although similar obstacles can be observed for other household products such as refrigerators and vacuum cleaners, the magnitude of the problem with those types of products is considerably smaller.
OPERATIONAL ACTIVITIES

Based on the four steps just described, the global core list (GCL) was revised for ICP 2011 to include 16 new items in basic heading 110911.1, audiovisual, photographic, and information processing equipment. The prices of these items were collected in quarters 3 and 4 of the ICP 2011 round. These items were treated just like any other GCL item. Before the addition of these new items, the GCL already included items under the basic heading of concern here. Regions were allowed to decide on the treatment of these “old items” and their respective prices based on the results of the Q1 and Q2 price collections. They did not have to collect prices for the old items within Q3 and Q4. The new items had new item codes, but overlap was expected for three items. However, because the item specifications had been modified, it was not guaranteed that the price data collected for these items would be comparable. The regional coordinating agencies were allowed to add items to their regional lists following the approach described here. The old items were either kept or deleted, depending on the results for previous quarters. For each new item, price collectors were asked to enter (write down) the priced brand and model in the comments cell of the price survey form. This information was used during the inter-economy validation process, when outlier prices and the comparability of the price data across economies were checked.

ITEM SPECIFICATIONS

What follows is an example of an item specification that defines the series for the given brand and the key price-determining parameters for the product. Reference to an actual model code is not made directly. It is included only as an example because the model code can differ across economies for exactly the same product and can change quickly even within an economy because of very minor changes in the actual product. Series, by contrast, are more universal and stable. In addition to the series, the key product features are clearly listed to facilitate the price collection and to assist the price collectors and shop assistants in finding comparable models in the national market. It is important that the model code be recorded exactly because a one-to-one match between the model code and the characteristics often exists; characteristics can always be checked on the manufacturer’s website. The model code will be an important check for the collected item when matched with the characteristics.

An item specification might look like this:

**Basic heading:** 110911.1, audiovisual, photographic, and information processing equipment

**Product:** 110911160, BRAND X Series Y netbook computer

**Brand:** BRAND X

**Series:** Series Y

**Model:** D255E-13639

**Type:** Netbook computer

**Screen size:** 10.1"

**Processor:** Letni Atom N455

**Installed memory:** 1 GB

**Hard disc:** 250 GB

**Wireless connectivity:** Wi-fi (WLAN), Bluetooth

**Exclude:** 3G/4G models

**Number of units:** 1

**Unit of measurement:** Piece

**Specify:** Brand and model

PRICING GUIDELINES

Three simple pricing rules should be followed during price collection:

1. *Price only the brand(s) and series listed in the item specification.* Brand(s) and series define features such as physical characteristics, type of product, and the technology used in general terms. To collect comparable price data, the collectors should price only the listed brands and series. In addition, only original brands should be priced, not imitations or illegal copies.

2. *Price the cheapest product that fulfills the given item parameters.* Even within a series, there may be models that are more expensive. In this case, the cheapest product that fulfills the item parameters should be priced.
3. If a product with the suggested key parameters is not found, the closest one should be priced and the differences written down. The availability of identical products across economies may be limited. Nevertheless, products with very similar specifications can still be found. The closest match should be priced, and the parameters that differ along with the model number should be noted in the comments cell of the price survey form. The key parameters in item specifications will help collectors identify equivalent products.

ANNEX

CLASSIFICATION OF THE AUDIOVISUAL, PHOTOGRAPHIC, AND INFORMATION PROCESSING EQUIPMENT BASIC HEADING

110911.0 Audiovisual, photographic, and information processing equipment [COICOP\(^2\) 09.1.1, 09.1.2, and 09.1.3]
110911.1 Audiovisual, photographic, and information processing equipment (D)\(^2\)
OECD 11.09.11.1 Equipment for the reception, recording, and reproduction of sound and pictures (D)
Television sets, videocassette players and recorders, television aerials of all types; radio sets, car radios, radio clocks, two-way radios, amateur radio receivers and transmitters; gramophones, tape players and recorders, cassette players and recorders, CD players, personal stereos, stereo systems and their constituent units (turntables, tuners, amplifiers, speakers, etc.), microphones, and earphones; excludes video cameras, camcorders, and sound recording cameras (11.09.12.1).

OECD 11.09.12.1 Photographic and cinematographic equipment and optical instruments (D)
Still cameras, movie cameras and sound-recording cameras, video cameras and camcorders, film and slide projectors, enlargers and film processing equipment, accessories (screens, viewers, lenses, flash attachments, filters, exposure meters, etc.); binoculars, microscopes, telescopes, and compasses.

OECD 11.09.13.1 Information processing equipment (D)
Personal computers, visual display units, printers, and miscellaneous accessories accompanying them; computer software packages such as operating systems, applications, and languages; calculators, including pocket calculators; typewriters and word processors; includes telefax and telephone answering facilities provided by personal computers; excludes prerecorded diskettes and CD-ROMs containing books, dictionaries, encyclopedias, foreign language trainers, multimedia presentations, etc. in the form of software (11.09.14.1); video game software (11.09.31.1); video game computers that plug into a television set (11.09.31.1); typewriter ribbons (11.09.53.1); toner and ink cartridges (11.09.53.1); slide rules (11.09.53.1).

NOTES

1. In the Eurostat-OECD (Organisation for Economic Co-operation and Development) comparison, there are three different basic headings:
   - 11.09.11.1, equipment for the reception, recording, and reproduction of sound and pictures
   - 11.09.12.1, photographic and cinematographic equipment and optical instruments
   - 11.09.13.1, information processing equipment.
2. COICOP = Classification of Individual Consumption According to Purpose.
3. (D) = durable goods.