Note on the implementation of regulation (CE) 330/2009 regarding minimum standards for the treatment of seasonal products in the Harmonised Indices of Consumer Prices (HICP)

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1. Subdivisions affected by the methodological changes

In January 2011, the HICP for Luxembourg has been affected by the implementation of regulation N° 330/2009 concerning minimum standards for the treatment of seasonal products. According to article 3 of this regulation, these standards should apply for fish (COICOP 01.1.3), fruits (COICOP 01.1.6), vegetables (COICOP 01.1.7), clothing (COICOP 03.1) and footwear (COICOP 03.2).

More particularly, seasonal products can be found in the following finer subdivisions of the Luxembourg HICP.

COICOP class or group	**COICOP subdivision affected in the Luxembourg HICP**
01.1.3 Fish	No seasonal products contained in this class
01.1.6 Fruit	01.1.6.0.0 Fresh fruits
01.1.7 Vegetables	01.1.7.0.0 Fresh vegetables
03.1 Clothing	03.1.2 Garments
03.2 Footwear including repair	03.2.1 Footwear

2. Old methodology

For clothing and footwear, a “carry forward” method is applied. This means that the price recorded for an out-of-season product is the last in-season price. In other words, the last in-season price is repeated until the start of the next season.

For fresh fruits and vegetables, a method is applied which combines a monthly weighting scheme with a 12-month moving average.

In this method, weights are defined which model the share of a particular type of fruit (e.g. oranges, apples, cherries ...) or vegetable (e.g. chicory, cabbage, tomato ...) in a given month. This weighting scheme differs every month. If the fruit or vegetable is out of season, then its share is set to zero for that particular month.

The compilation of a price index for fresh fruits (or for fresh vegetables) for month m during year y can be described as follows:

- **Step1, Compilation of product indices:** Indices are computed at product level by comparing the price of the current month to the base price. The base price for a particular product in year y is defined as the weighted average of the prices observed during year y-1 using the monthly weighting scheme. Indices have to be computed both for the current year y and the preceding year y-1 using the same base price.

- **Step2, Compilation of indices by type of fruit (or type of vegetable):** These indices are aggregated by type of fruit (or by type of vegetable) using a geometric mean (Jevons price index).

- **Step3, Compilation of a global index:** Indices by type of fruit (or by type of vegetable) are aggregated using the monthly weighting scheme. That way an index is obtained for fresh fruits (and for fresh vegetables).

- **Step4, Compilation of a 12-month moving average:** A 12-month moving average is computed for fresh fruits (or fresh vegetables) using the indices obtained in the preceding step. The final index for fresh fruits (or for fresh vegetables) is obtained by multiplying the index obtained in the preceding step by a correction factor.

3. New methodology

Following the implementation of the regulation N° 330/2009, an all-seasonal estimation approach (ASE) is applied for the seasonal products listed in section 1. Furthermore, the 12-month moving average which had been applied for fruits and vegetables is abandoned in order to measure actual month-to-month price movements.

According to Article 2 (paragraph 4) of the regulation, ASE is defined as follows:

'All-seasonal estimation' means the estimation of a price for a product-offer of a product that is out-of-season so that:
- in the first month of the out-of-season period, the estimated price is equal to a typical price observed in the previous in-season period, and,
- from the second month, the estimated price is equal to the estimated price for the preceding month, adjusted by the change in observed prices on average over all available products in the same subdivision of COICOP/HICP

In order to estimate a typical price for the first month of the out-of-season period, the following methods are used:

Seasonal Product	**Typical price**
Fruits, Vegetables	Average of the prices for the months which are in-season and which belong to the current year.
Clothing, Footwear	Last in-season price

In order to estimate an out-of-season price other than the first-out-of-season price, the following formula is used:

$$P_t = P_{t-1} \cdot \frac{\sum_{i \in S_t \cap S_{t-1}} I_t^i}{\sum_{i \in S_t \cap S_{t-1}} I_{t-1}^i}$$

where:

- P_t and P_{t-1} are out-of-season prices
- S_t and S_{t-1} are the set of prices of the same group or class (or any finer subdivision) which are in-season in period t and in period t-1
- I_t^i and I_{t-1}^i are price indices for in-season products in period t and in period t-1

The base price corresponds to the price collected in December the preceding year for those products which are in-season in December. For those products which are not in-season in December, the base price corresponds to the price estimated in December the preceding year. Consequently, for the 2011 indices, a base price had to be estimated for those products which were out-of-season in December 2010 by applying the ASE principle to these products already in 2010.