

Elementary aggregation: A not so elementary story!

Claude Lamboray

European Commission

EUROSTAT - Statistical Office of the European Union

Unit C-4: Price statistics. Purchasing Power Parities. Housing statistics

BECH A2/042

L-2920 Luxembourg

+352 4301 38 552

claude.lamboray@ec.europa.eu

The compilation of a CPI is often presented in two stages. First, prices are aggregated without weights at the elementary level. These elementary price indices are then aggregated to the higher levels using expenditure weights. Nowadays, a CPI may be compiled in more than two stages and weights may be available even within the elementary aggregates. In order to clarify the concepts and methods underlying elementary aggregation, we first present a generic framework that can be applied and understood independently of the data source at hand.

With scanner data, the index compiler must make two main structural decisions which can have a significant impact on inflation measurement. First, the product which is being aggregated must be defined. Second, the level must be fixed up to which these products are first aggregated. In order to formalize this second issue, we distinguish two strategies for a product category that can be divided into sub-categories. Either the products are directly aggregated to the category level, using for instance a multilateral method. Alternatively, the multilateral method aggregates only up to the sub-category level, and these intermediate sub-category level indices are then aggregated to the category level using for instance a Laspeyres-type index formula. We examine the impact of introducing this additional level of fixity in the CPI structure. The resulting price indices are compared to those obtained from a more traditional setup where prices of the most sold products are simply aggregated with an unweighted index formula. The indices are compiled with transaction data taken from the publicly available Dominick's data set.