

Expenditure weights in the HICP: Selected aspects from a user's perspective

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HICP weights and index formula

- **Harmonised Indices of Consumer Prices (HICPs) are Laspeyres-type price indices, i.e. Lowe price indices**
- **Expenditure weights in national HICPs may be based on baskets (quantities) which refer to different years**
- **Price reference period: previous year's December**
- **Expenditure weights are “price-updated”, i.e. the annual expenditure shares are expressed in quantities from the weight reference period and prices of previous year's December**
- **Price-updating may encompass several years depending on age of the respective national basket and the frequency of updating it**

Minimum standards for HICP weights

Minimum standards for the quality of HICP weightings:

- **Weights refer to a 12-month period ending not more than seven years prior to December of the previous year**
- **Whenever a change in weighting impacts on annual HICP rate of change by 0.1 pp or more
→ Update of relevant product weights**
- **Current country practices: Several national statistical institutes update expenditure weights only every three to five years (BE, DK, DE, IE, GR, CY, MT, AT and FI)**

Planned tighter standards for weights

Planned tighter standards and current ESS discussion:

- **Explicit target: Estimating weights of the year $t-1$ which are then price-updated to December $t-1$**
- **Potential source: National Accounts data from year $t-2$ for class weights**
- **Several national statistical institutes have already implemented an annual weight updating, based on National Accounts data**
- **Should expenditure shares based on $t-2$ data be price-updated in order to obtain a better estimate of $t-1$ expenditure shares?**
 - **If not, price-updating accounts for the change of $t-1$ average prices and $t-1$ December prices**

Weights and annual chaining (I)

- **Chained consumer price indices: linking to a certain month, usually December (HICP) or January (Retail Price Index for the United Kingdom)**
→ month-on-month rates of change not affected by structural changes in weighting
- **Other techniques for annual chaining:**
 - **Annual overlap approach (AO)**
 - **Over-the-year approach (OtY)**
- **AO: Used in National Accounts in most EU countries, but only rarely in consumer price indices**
- **OtY: Short-term developments might be severely affected**

Weights and annual chaining (2)

Chain-linking and seasonal adjustment:

- **Linking over a specific month preferable, since it keeps month-on-month rates of change unaffected by structural shifts or breaks**
- **Seasonally adjusted indices are fit for chain-linking due to absence of seasonal peaks or troughs in the linking month**
- **In case of indirect seasonal adjustment, i.e. the aggregation of seasonally adjusted component indices: Price-updating with seasonally adjusted price indices
→ Consistency of prices used for a component index and prices used for expressing the respective components' expenditure weights**

Sources of HICP weights

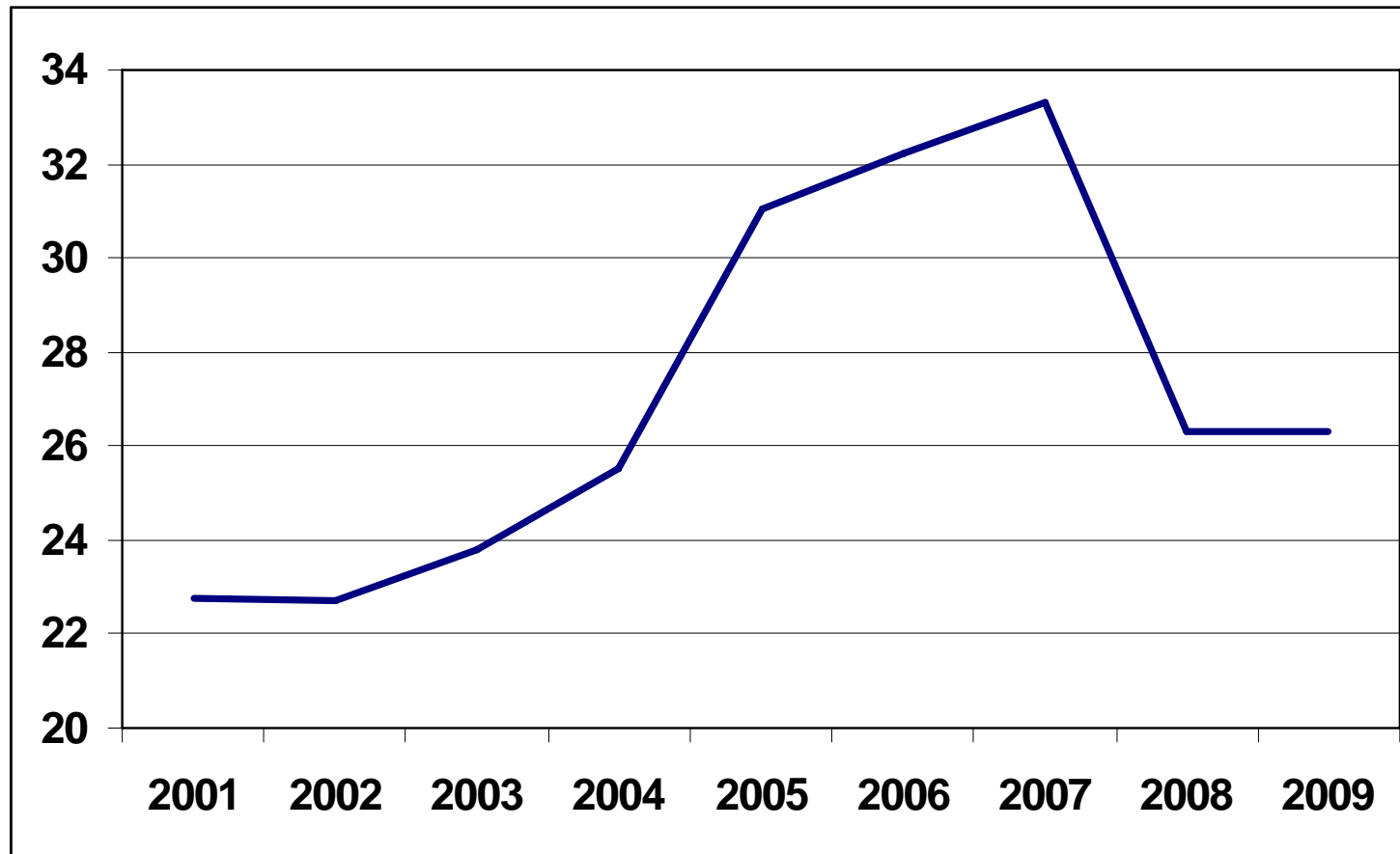
- **Main principal sources: Household Expenditure Surveys (HBS) and National Accounts**
- **HBS broadly used for deriving weights at a detailed level of breakdown**
- **National Accounts data are used for adapting expenditure shares to the domestic concept and by several countries for annually updating HICP weights on a higher level of breakdown**
- **Additional sources, e.g. to correct for underreporting of consumption of tobacco and alcohol in HBSs**
- **Allow for a broader set of sources in order to get weights more timely?**

Updating weights in national HICPs (I)

- **Different weight reference periods and different frequencies in basket updates in national HICPs**
- **Affects comparability across countries – and therefore also aggregability – not only in terms of up-to-dateness of expenditure shares, but also as regards product characteristics referred to when quality adjustment is conducted**
- **If weights are not annually updated, structural shifts may be implemented in the index with a delay and might create a more pronounced shift in the weights between the year before and after the basket update**

Updating weights in national HICPs (2)

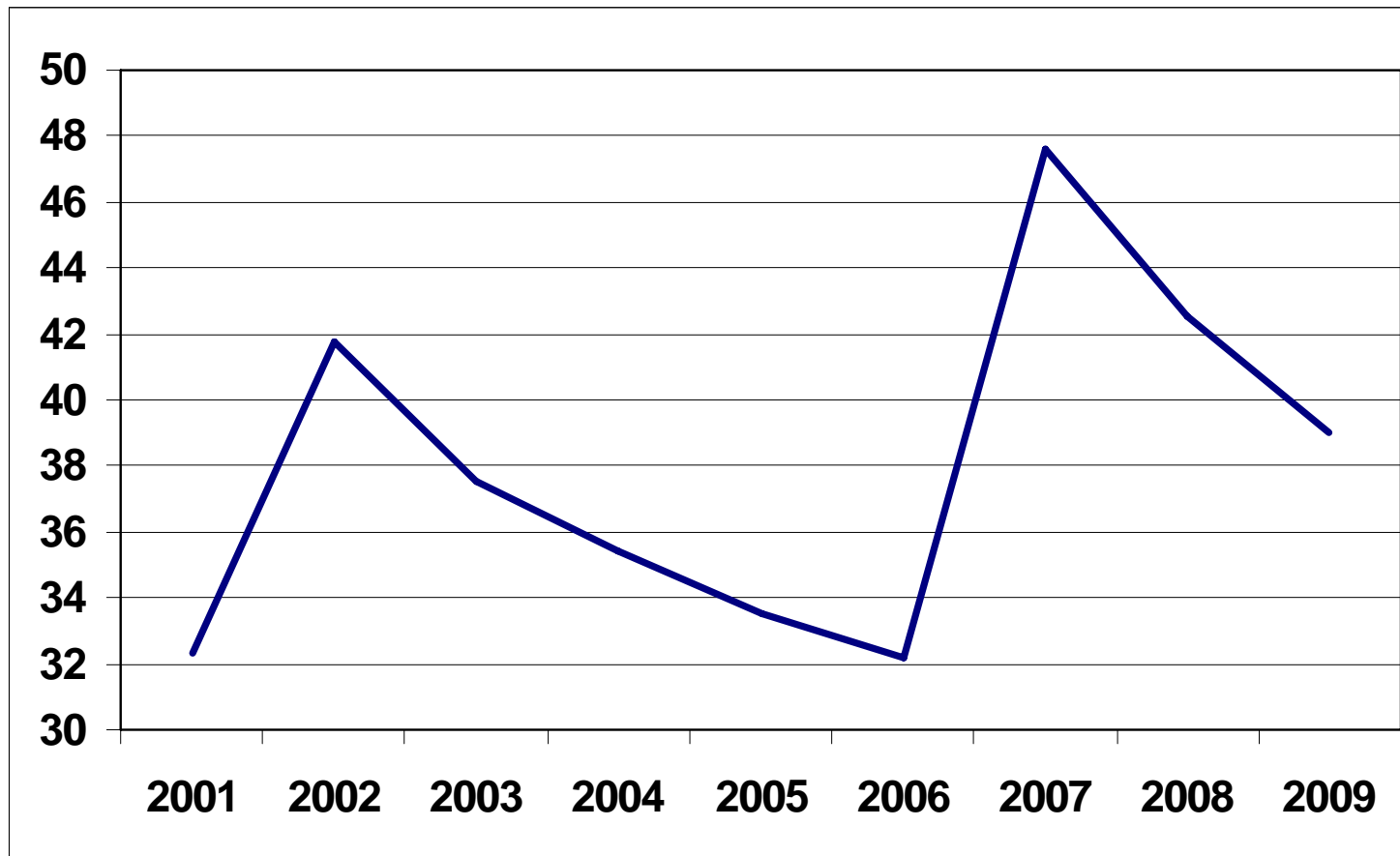
HICP for Germany: Weight for tobacco in parts per 1000



Source: Eurostat

Updating weights in national HICPs (2)

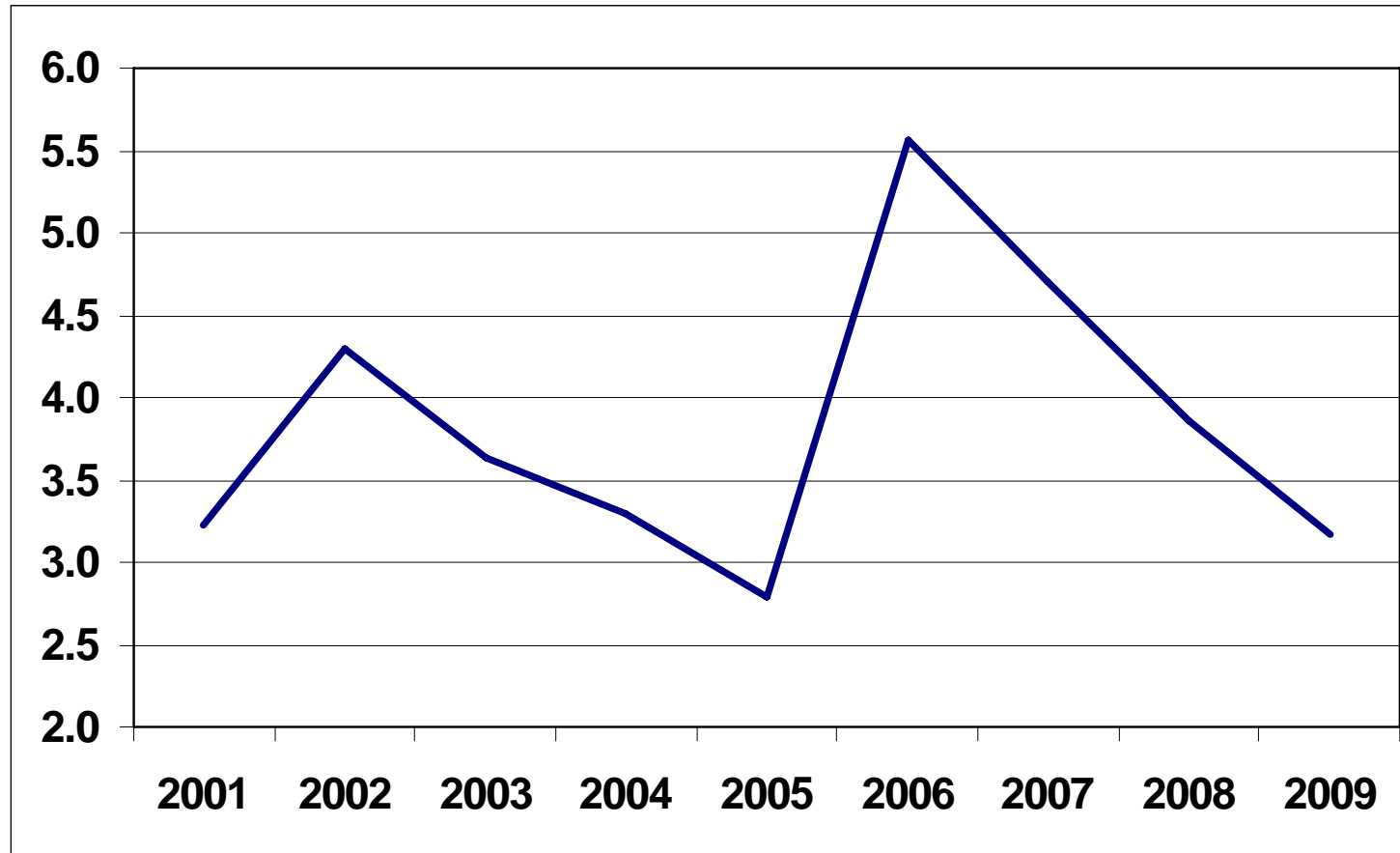
HICP for Ireland: Weight for garments in parts per 1000



Source: Eurostat

Updating weights in national HICPs (2)

HICP for Finland: Weight for PCs in parts per 1000



Source: Eurostat

Overall impact of weight updates (I)

- **Statistics Canada:**
Difference of 2005 index-based consumer price indices, using the 2000 and the 2005 basket, accumulated in April 2007 to 0.5 pp
- **Germany, Statistisches Bundesamt:**
 - **From 2000 to 2005 basket: annual rates of CPI changes differed not more than 0.1 pp in 2006 and 2007**
 - **From 1995 to 2000 basket: annual rates of CPI changes differed by about 0.2 pp in 2001**
- **Japan, Statistics Bureau:**
2000 index-based Laspeyres and Paasche indices differed by 2.5 pp in 2005

Overall impact of weight updates (2)

- **US, Bureau of Labor Statistics:**
Test calculations with alternative one-year weight reference periods revealed only small variations in Laspeyres indices (December 1986 to December 1995)
 - **General robustness:**
Australian Bureau of Statistics found changes of weights impacting on the overall CPI more than 0.1 pp if weights shift are more substantial, e.g. 20% to 30% in the case of motor vehicles or tobacco product
- Test calculations and revisions revealed that annual rates of change of Lowe indices have not been affected substantially in several cases where weights have been updated after three to five years

Impact of weight updating

- **However, impact can be more significant for component indices**
- **Particular effects can be expected in the following areas:**
 - **Categories where items have become newly significant**
 - **Health and social care services**
 - **Volume shifts due to changes in excise duties, price administration etc.**
 - **Products whose prices are significantly adjusted for changes in quality over time**

Annual weight updating

- ... increases representativity of HICP weights
- ..., applied in a strict sense, might increase volatility of weights over time, particularly affecting weights
 - which reflect “net” expenditures (insurances → service component, used cars → purchases from non-households)
 - of expenditures showing a strong and timely reaction to short-term fluctuations in the economy (e.g. major durable goods like cars, furniture or luxury products)
- **Multi-period averages / smoothing of expenditures?**
 - Implemented for insurances, planned for OOH
 - Could be considered in areas where “bouncing” of prices and quantities might create index drift

General strategy to weight updating

- **Annual updating of weights particularly important in areas which tend to be prone to expenditure shifts**
- **Where weights tend to develop more smoothly
→ decide on a case-by-case basis whether or not past period's weights should be price-updated to year $t-1$;
the resulting figures are then price-updated to Dec. $t-1$**
- **Monitoring changes in overall consumption patterns and their potential impact on HICP weighting**
- **Irregular movements should influence updating of weights to the least possible extent**
- **Harmonised approach in EU Member States supported by the implementation of a centralised expert group**