Weighing things up: Sources of data for CPI weights
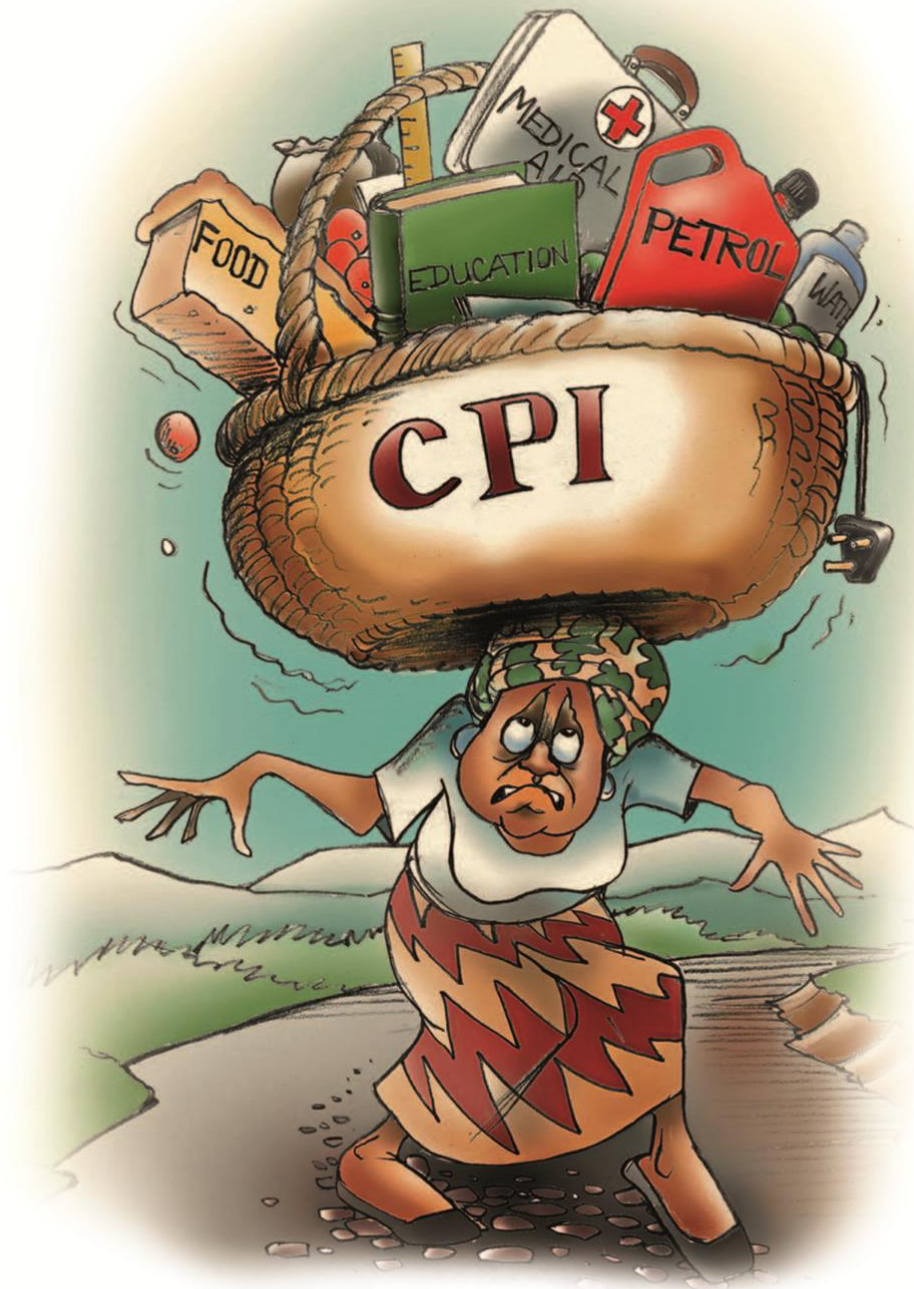
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UNECE/ILO meeting of CPI experts
1 June 2012

The weight of the CPI

Why adjustments?

- Data from a Household Expenditure Survey (HES)
.   normally forms basis for CPI weights

Discussed in CPI manual and Practical guide

- Two main reasons for needing to adjust:
  - Under reporting
  - Scope or methodological reasons

Under reporting

- Common experience is that HES under-captures certain
. groups

> *"Under reporting is probably the most
serious and common problem affecting the HBS"*
(CPI manual)

- Main areas of under reporting:
  > <u>Frequently purchased items</u>: Food, NAB, personal care items – largely because of respondent fatigue

  > <u>Alcoholic beverages and tobacco</u>: embarrassment at extent of 'sin purchases

  > Big ticket items (vehicles or luxury items): telescoping effect

Methodological reasons

- Scope – Domestic concept - adjust for tourist expenditure
  .

- Imputation for owner occupied housing

- Used vehicles to record net expenditure of households - dealer margin and ex-fleet vehicles

Sources of alternative data

1. **National accounts**
   - ✓ Comprehensive
   - ✓ Credible

   but
   - ✗ Also relies on HES
   - ✗ Usually only national estimates
   - ✗ Scope and methods not identical to CPI

2. **Scanner or selected sales data from retail firms**
   - ✓ Accurate
   - ✓ Comprehensive
   - ✓ Good for lower level weights

   but
   - ✗ From supermarkets only - not all outlets
   - ✗ Not COICOP classified
   - ✗ How many sales are to out of scope populations

Sources of alternative data

3. Retail surveys
- ✓ Scientific
- ✓ Input into other macro indicators (e.g. National Accs)

but
- ✗ Limited product detail
- ✗ Limited geographic detail
- ✗ No distinction between households and others

4. Administrative records (tax etc)
- ? Completeness
- ? Compiled with a different purpose
- ? Geographic detail
- ? Scope

South African HES

South Africa runs an Income and Expenditure survey (IES) and a Living Conditions Survey (LCS) – 3 yearly rotation

- Diary and recall
- Run for 12 months

Weaknesses:

- Under reporting of food, NAB, personal care and restaurants
- Alcohol and tobacco
- Granular product detail

  (e.g. Men's clothing →   men's shirts)

Adjustments need to be made

Summary of adjustments

Warning: This is experimental…not final

Group	Reason	External data sources used
Food and non-alcoholic beverages	Under-reporting in the LCS	Retail trade surveys, retailer data
Alcoholic beverages and tobacco	Under-reporting in the LCS	Liquor Boards, Retail trade surveys
Used vehicles	Use of the net weight	National Accounts PCE
Car hire	Adjusting for tourism expenditure	Industry association
Package holidays	Adjusting for tourism expenditure	Tourism satellite account (TSA)
Restaurants and hotels	Adjusting for tourism expenditure, and under-reporting	Accommodation; Food and beverages; and Domestic tourism surveys

Example of adjustments

Àlcoholic beverages

Item	Source	Value (R)
Total sales	Industry association	R57,300,000,000
Less: Sales to Restaurants and hotels	Food and beverage Survey 2009	R 3,051,602,145
Total sales ex sales to restaurants and hotels		R54,248,397,855
Less: Business expenditure on alcoholic beverages	Food and beverage survey (Split between private and business consumption of all food and beverages; respectively 78% and 22%)	R54,248,397,855 x 0.78
Alcoholic beverages		R42,313,750,327

Example of adjustments

Restaurants

Item	Source	Value
Restaurants	LCS 2008/09	R14,130,581,427
Restaurants	Food and beverages survey 2008 and 2009	R 37,985,100,000
Proportion of personal and business expenditure	Food and beverages industry report 2009; Personal 78% and Business 22%	
Restaurants (Food and Beverages Survey) less business expenditure		R 37,985,100,000 x 0.78
Restaurants		R29,682,380,000

Example of adjustments

Üsed vehicles

Item	Source	Value
Used vehicles	LCS 2008/09	R23,216,384,868
Proportions of purchases of vehicles	National accounts average proportion 2008 and 2009; New vehicles 80.6% and Used vehicles 19.4%	
New vehicles	LCS 2008/09	R35,415,467,550
Calculate total purchase of vehicles		R35,415,467,550 x 100 / 80.6
Total purchase of vehicles		R43,939,786,042
Less: New vehicles		R35,415,467,550
Used vehicles		R 8,524,318,492

Result of adjustments

	COICOP	Proportions	
		LCS	**CPI**
1	Food and non-alcoholic beverages	14.7%	18.1%
2	Alcoholic beverages and tobacco	1.0%	7.0%
3	Clothing and footwear	5.1%	4.5%
4	Housing, water, electricity, gas and other fuels	26.4%	23.3%
5	Furnishings, household equipment and routine maintenance of the dwelling	5.7%	5.0%
6	Health	1.4%	1.2%
7	Transport	16.2%	12.8%
8	Communication	3.6%	3.2%
9	Recreation and culture	4.5%	4.1%
10	Education	3.0%	2.6%
11	Restaurants and hotels	2.5%	4.3%
12	Miscellaneous goods and services	15.8%	13.9%
		100%	100%

Cautionary conclusions

- Uncertain quality of alternative data sources

- Work with HES and National accounts teams

- What level of transparency is best - users?

- Efforts should be devoted to improving HES