

INTRODUCTION OF NEW WEIGHTS AND BASKET FOR THE CONSUMER PRICE INDEX

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'A consumer price index (CPI) is usually calculated as a weighted average of the price changes of the goods and services covered by the index. The weights are meant to reflect the relative importance of the goods and services as measured by their shares in the total consumption of households. The weight attached to each good or service determines the impact that its price change will have on the overall index.' (Consumer Price Index Manual: Theory and Practice, ILO, paragraph 4.1.)

A. Introduction

Stats SA will update the basket of the CPI (list of products that are surveyed) and the weights attached to each of these with effect from the January 2017 CPI release (to be published on 15 February). These changes ensure the ongoing relevance of the CPI to the inflation experience of South African consumers. The complete set of weights is formally published on Stats SA's website as P0141.5 – Consumer Price Index 2016 weights.

The weights and basket of the CPI were last updated in January 2013. These weights were based on the household Income and expenditure survey (IES) of 2010/11. Stats SA made several adjustments to the expenditure levels of selected groups to account for under-reporting and methodological factors in the IES. The main features of the adjustments were detailed in an information note published in November 2012

(http://www.statssa.gov.za/cpi/documents/Updating_weights.pdf).

Four years on, Stats SA will update the basket and weights of the CPI based on data from Stats SA's Living conditions survey (LCS) conducted in 2014/15. The LCS surveys household expenditure in precisely the same way as the IES, but also measures a range of additional poverty indicators. In line with previous practice, additional data sources were used to adjust the LCS expenditure values to arrive at the CPI weights.

Together with the introduction of new weights, Stats SA will make some changes to the level of geographic reporting in the monthly publication. City-level indices will no longer be published, and CPIs for ten expenditure groups (deciles) rather the five (quintiles) will be published.

B. Changes to the basket

The total number of products in the CPI basket will be 412, slightly up from the 396 in the 2012 basket.

Tables 1 and 2 show the additions to the CPI basket from January 2017; Table 3 lists products that will be dropped from the basket.

Table 1. Goods entering the basket

| | |
|--------------------|--|
| Food | Savoury biscuits |
| | Rusks |
| | Instant noodles |
| | Frozen pastry products (pizza or pies) |
| | Hot cereals (porridge) |
| | Ready-mix flour |
| | Chicken gIBLETS |
| | Corned beef |
| | Beef offal |
| | Mutton offal |
| | Pears - fresh |
| | Peanuts |
| | Chewing gum |
| Household contents | Coffee mug |
| | Sheet & pillow case |
| | Sandwich maker/ toaster |
| | Cooking pot |
| Transport | Diesel |
| Recreation | Video game |
| | Soccer ball |
| | Toy car |
| | Crayons |

Table 2. Services entering the basket

| | |
|-----------|-------------------------------------|
| Housing | Levies for sectional title property |
| Transport | Car wash/valet |
| | Driving lessons |
| | Driving licences |
| | Car rental |

Table 3. Products to be dropped from the basket.

| | |
|--------------------|------------------------------|
| Food | Sweet corn (cream style) |
| | Tinned peas |
| | Spreads (Marmite and Bovril) |
| Household contents | Freezer |
| | Fan |
| | Teapot |
| Health | Public theatre and ward fees |
| Communication | Stamps |
| Recreation | Pre-recorded DVD |
| | Blank CD & DVD |
| | Board game |
| | Tennis ball |
| | Automated pool cleaner |

In addition to products moving in and out of the basket, amendments to the grouping of certain products have been made. In most cases, products that were grouped together are now split and have a specific weight attached to them. The advantage of defining products more precisely is to enable tracking of prices that may be relevant for particular economic or policy purposes.

These cases are:

Beef was previously allocated one weight with a number of different products being surveyed. There will now be four specific beef products, each with their own weight. These are mince, stewing beef, steak and offal.

Frozen chicken portions will be distinguished as IQF (individually quick frozen) and non-IQF, each with their own weight.

Baby food will be split into baby cereal and baby formula.

Hamburgers have formed part of meat-based dishes in meals away from home. They will now be monitored as a separate product.

Hotels and bed and breakfast establishments, which were previously one product, will now be split.

C. Weights

The weights of the CPI represent the proportions of total household expenditure over a 12-month period. The LCS records values for each of the 12 months of the survey. These are inflated and deflated to the mid-point of May 2015. The weights are therefore calculated with reference to May 2015. Once all the values have been computed, they are price updated by inflating the values with the relevant CPI index to December 2016. At this point they are converted to percentages.

1. Changes to the weights

The new and old headline CPI weights for the main expenditure categories are compared in Table 4.

Notable (more than 10%) weight changes occurred in food and NAB (non-alcoholic beverages); household furnishings and contents; transport; recreation and culture; education; and restaurants and hotels.

The weight for food has increased from 15,41% to 17,24%, mainly because of rises in expenditure on hot and cold beverages; meat; fish; milk, eggs and cheese; fruit; and the 'other' food category. The proportion of staples such as bread and cereals and oils and fats dropped.

The transport category dropped from being the second biggest weight to the fourth. Its share of expenditure dropped from 16,43% to 14,28% mainly as a result of decreases in the proportions for fuel, running expenses and public transport.

A substantial increase in expenditure on television subscriptions (recreational and cultural services) pushed the weight for recreation and culture up from 4,09% to 5,16%.

Education's share of household spending decreased by over 14% due to a 14,5% decrease in the proportion for primary and secondary education. The weight for tertiary education dropped by 19,5%.

A 22% decrease in the weight for restaurants resulted in the overall proportion of the restaurants and hotels category dropping to 3,09% from 3,5%.

Table 4. Headline CPI weights: 2016 and 2012

| Expenditure category | 2016 | 2012 |
|----------------------------------|-------|-------|
| Food and non-alcoholic beverages | 17,24 | 15,41 |
| Alcoholic beverages and tobacco | 5,82 | 5,43 |
| Clothing and footwear | 3,83 | 4,07 |
| Housing and utilities | 24,62 | 24,52 |
| Household contents and services | 4,35 | 4,79 |
| Health | 1,40 | 1,46 |
| Transport | 14,28 | 16,43 |
| Communication | 2,63 | 2,63 |
| Recreation and culture | 5,16 | 4,09 |
| Education | 2,53 | 2,95 |

| | | |
|----------------------------------|-------|-------|
| Restaurants and hotels | 3,09 | 3,50 |
| Miscellaneous goods and services | 15.05 | 14,72 |

2. Reasons for adjusting LCS results

While the LCS forms the basis of the weights, there are five main reasons that adjustments to these values are made.

Frequent purchases: Although multiple techniques (including a daily diary for recording items purchased) are used in the survey to capture all expenditure, it is common in many countries for survey respondents to fail to record all expenditure on items such as groceries and food and drink away from home which are purchased often, and usually by multiple household members.

'Sin' purchases: Under-reporting is common for purchases to which some embarrassment may be attached. Specifically alcoholic beverages, tobacco and gambling are affected by this.

Methodological differences: In certain cases the concepts underlying the economic scope of expenditure for the CPI are not easily applied in a survey. For example, a net payments approach is applied to insurance and gambling. Here the money received back (in refunds or winnings) is deducted from the total expenditure to avoid double counting. Different estimates for owner occupied housing in the LCS and CPI are a result of different methods used to estimate this category.

Survey response: The LCS shows poor response rates in affluent areas in general, and in Gauteng in particular. Certain expenses incurred mainly by higher-income households (such as vehicles and tertiary education) reported lower levels of expenditure than the previous survey, a finding that was not borne out in other data sources.

Price updating: The values of all products are adjusted with applicable inflation rates from May 2015 to December 2016. Price updating assumes price-inelasticity in the quantities purchased and accounts for any increased expenditure resulting from price changes over the period.

3. Data sources used for adjustments

One goal of the reweighting exercise was to improve the alignment between the CPI weights and the household final consumption expenditure account of the national accounts. Where possible, appropriate data sources used in the national accounts have been used by the CPI. Supplementary data sources typically measure consumption from the supply side. Sources include Stats SA surveys, regulatory reports, excise tax receipts, industry associations and summarised transaction data from retailers.

Table 5. Impact of adjustments and price updating: Total country CPI

| Expenditure category | 2016 - price updated | 2016 - adjusted | LCS |
|----------------------------------|-----------------------------|------------------------|------------|
| Food and NAB | 19,15 | 18,14 | 12,9 |
| Alcoholic beverages and tobacco | 5,88 | 5,98 | 0,9 |
| Clothing and footwear | 4,04 | 4,07 | 4,8 |
| Housing and utilities | 22,55 | 22,13 | 32,6 |
| Household contents and services | 4,33 | 4,44 | 5,2 |
| Health | 1,26 | 1,33 | 0,9 |
| Transport | 14,72 | 15,2 | 16,3 |
| Communication | 2,62 | 2,89 | 3,4 |
| Recreation and culture | 4,86 | 4,91 | 3,8 |
| Education | 2,34 | 2,43 | 2,5 |
| Restaurants and hotels | 3,41 | 3,38 | 2,1 |
| Miscellaneous goods and services | 14,84 | 15,08 | 14,7 |

Adjustments were made in the following expenditure groups:

Food and non-alcoholic beverages

This category is subject to under-reporting because many food items are purchased throughout the month and by different household members. The total value for food and NAB is based on Stats SA's 2013 Retail trade large sample survey (LSS). These values were escalated using the monthly retail trade survey results. In addition, a national accounts estimate for food sales through informal and small businesses was added. More detailed groups utilised a combination of the LCS and LSS values. Detailed product proportions were derived from the LCS and retailer sales data.

Alcoholic beverages and tobacco

Values for this category were derived from excise tax data, using national accounts calculations to subtract any sales of alcoholic beverages to businesses. The spending on alcoholic beverages and tobacco is in line with industry estimates and the values reflected in the national accounts

Housing and utilities

The value for owner occupied housing was obtained by matching the characteristics of rented and owner occupied dwellings in the LCS. Rental values from Stats SA's rental survey (for dwellings in suburban areas) and the LCS (for rural and informal areas) were used to impute the rental equivalent of owner occupier costs. More information on this method can be found in a paper presented at an international CPI expert meeting in 2013 (www.ottawagroup.org).

Health

The LCS showed a drop in health purchases. The overall level of health expenditure for the CPI weights was raised based on regulatory data on out-of-pocket expenses by members of medical schemes.

Transport

Three adjustments were made to values in the transport category. First, new vehicle sales were revised upwards from the LCS based on national accounts estimates and industry sales data. Second, the value of fuel purchases and the split between petrol and diesel was adjusted using national accounts and industry. The third adjustment was to calculate net expenditure

on used vehicles (purchases less income from sale of used vehicles), again using national accounts estimates.

Recreation and entertainment

'Games of chance' is adjusted both because it is a 'sin' purchase and because winnings should be subtracted from the total expenditure to obtain a net value. Data from regulatory authorities provide these values.

Spending on subscriptions for pay TV services was adjusted upwards using supplier data.

Education

Expenditure values on tuition for tertiary educational institutions were raised using information from Stats SA's financial survey of higher educational institutions.

Restaurants and hotels

Expenditure in restaurants was adjusted using Stats SA large sample and monthly survey results. Alcoholic beverages purchased away from home were further adjusted using national accounts estimates.

Miscellaneous

Net expenditure was calculated for all insurance categories, using regulatory and national accounts data. This subtracts the amount of claims paid back to households from the total spending on premiums.

Expenditure on personal care items was increased by the same percentage as food and non-alcoholic beverages.

D. Rebasing the CPI

Rebasing indices when reweighting and introducing new products is good practice as it reduces the impact that these changes can have on the level of the indices. Rebasing also eliminates the influence of historical trends on the current measurement of inflation. All indices will be rebased so that they equal 100 in December 2016. This is in line with the practice adopted in 2013.

E. Changes to the format of the CPI publication

For many years Stats SA has published a CPI with certain sub-aggregates for selected urban areas in each province. A distinction was also made between larger and smaller urban areas. The naming convention for these changed over the years from metropolitan and other urban areas, to historical metropolitan and other urban areas, and then to primary and secondary urban areas.

The sample of the LCS was designed to provide reliable estimates at a provincial level, and did not oversample in the main urban areas as had occurred in previous surveys. Furthermore there is little evidence of user demand for these indices.

The additional tables will include the following areas with indices for 41 product groups:

- CPI for total country
- CPI for rural areas
- CPI for each province.

Given the increased interest in inequality and the impact of inflation on different segments of consumers, Stats SA will be expanding the number of expenditure groups for which it publishes CPI data from five (quintiles) to ten (deciles).

Some changes will be made to the order of indices displayed in Table A of the CPI release. The core inflation measure most commonly cited by the SARB, “CPI excluding food and NAB, petrol and energy” and the trimmed mean CPI will be grouped at the top of the table immediately following the headline CPI figure. The analytical index “CPI excluding food and NAB, fuel, VAT, assessment rates and finance” is to be removed due to insufficient user demand.

F. Next reweighting

Stats SA plans to run the next income and expenditure survey in 2018/19. This will allow an update of the CPI weights and basket with effect from January 2021.

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