Statistics South Africa

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Planned improvements to the Consumer Price Index

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1. Reweighting of the CPI

The weights of the CPI represent the shares of total household expenditure in a specific period. The weights remain fixed until a new set of weights is introduced. The current weights of the CPI are based on the Income and Expenditure Survey (IES) of 2005/6 and were implemented with effect from January 2009.

a) Weights and basket

i. The new weights for the CPI will be introduced in the January 2013 release. Key improvements from the last reweighting are:
   - that the weights will be introduced four years from the previous reweighting (the international norm is five years); and
   - the lag between completion of the survey and the introduction of these weights into the index will be 1 1/2 years compared with the 2 1/2 years last time around.

ii. The weights will mainly be based on the 2010/11 Income and Expenditure Survey. Where necessary, alternative data sources (e.g. from industry surveys, administrative data, national accounts) will be used to correct for under or over reporting in the IES.

iii. A basket will be determined for each collection area – each primary and secondary area within a province. Currently the baskets are determined only at a provincial level. This will help to make the specific baskets more relevant to each local area.

iv. We will price update the weights to account for any price changes in the period between the survey and the implementation of the results. Price updating involves applying an inflation rate to the weights to account for the impact of abnormal price changes in significant products.

b) Rebasing and reweighting

The CPI indices will be rebased to 2012. The time series will be maintained, meaning that the published rates of change will not be altered through the rebasing.

Because the old and new indices have different weights, it is necessary to link the indices through splicing and chain linking. This method is aimed at facilitating a smooth transition from the old to the new weights set.

While there will be no substantial changes to the structure of the CPI, it is anticipated that there will be some additions to the product basket. There will not be any parallel series as in 2009, in order to preserve the integrity of the historic series.

c) Rural food prices for rural CPI

The rural CPI is currently calculated with the weights of expenditure by rural households and by proxy of prices from secondary areas. This feeds into the total country (but not headline) CPI. The IES will provide breakdowns of where households bought which products. For the first time it will be possible to construct a properly designed rural CPI. The intention is to collect food items in rural areas as a start. The monthly CPI publication will feature a national rural CPI with product breakdowns.

d) Informal market collection

Currently the CPI expenditure weights include purchases in the informal sector but the price survey excludes them. The new IES will show which products have significant expenditure in the informal sector. A collection of food items is to be initiated during 2012. These prices are to be included in the calculation of the index from 2013.

e) Core inflation

Stats SA plans to introduce a new analytic measure of core inflation - a trimmed mean. The trimmed mean is calculated by ordering the CPI product groups by their price change in the month and taking the expenditure weighted average of the middle 90 per cent of these price changes. This is useful for analysing underlying inflationary trends for monetary policy purposes. We have proposed to exclude the prices with a cumulative weight of 10% (5% of biggest and 5% of smallest price changes).

f) New analytical index on tradables and non-tradables

Tradables are those goods that may potentially be traded in international markets. The aim of this index is to assist tariff policy development and understand the local impact of global inflation trends. All items in the CPI basket will be classified as either tradable or not tradable. This list will be finalised for the duration of the basket.

g) Quality and quantity adjustments

Currently, the South African CPI makes a break in the price-level time series when changes are made to the characteristics or size of a product. This ensures that only price changes in identical products are incorporated into the CPI. This has the disadvantage of ignoring implicit price changes caused by changing characteristics.

The aim of quality adjustments is to estimate the market price for a substitute product if the characteristics are held constant between the old and substitute varieties. This is done by identifying the (price determining) characteristics of a product and using these in a regression analysis. This technique is known as hedonic regression. Stats SA will use the parameter estimates obtained from the hedonic model to adjust the price change used in index calculations in instances where the new item and old item differ in quality. The new price is then adjusted using these results. This allows the price series to be extended using the substitute product.

There are currently no quality adjustments in the South African CPI; however, their use is part of standard international practice. The proposal is to introduce quality adjustments for different products in staggered phases. Targeted for introduction in 2013 are quality adjustments for motor vehicles, communication equipment (cell phones) and other selected technological items (e.g. computers). Research on quality adjustments for clothing, housing rentals and household appliances will be carried out in 2014 and beyond.

We will also introduce quantity adjustments on permanent changes in size (especially for food, non-alcoholic and alcoholic beverages). This will allow us to track the implicit price change when the size of, for example, a bottle of tomato sauce changes but the price remains the same.

h) Tariff prices

Tariff prices refer to charges for services provided by municipalities, and others such as phone operators. Tariff prices are currently computed without any sub-weighting attached to the different price bands. This can cause a distortion to the rates of change in the CPI if one price band has significantly higher sales than others. Sales data per tariff band will be sourced from the relevant municipalities and used to subweight each price band. This will take place annually when these items are published.

i) Seasonal fruit

Currently all seasonal fruit are excluded from the CPI product list to avoid missing prices in non-seasonal months. International advice suggests that it is a more robust practice to include them. Different methods are available. We have decided to use the practice of 'the seasonal basket'. In this method, seasonal fruit as a collective has one weight. The contents of the basket changes according to the seasons. The list was determined on the basis of data sourced from fresh produce markets. Non-seasonal fruit in the basket (currently bananas, apples, oranges and lemons) will have their own weight.

Table 1: The seasonal basket

Indicator product	Basket months
Grape	Jan, Feb, Mar, Apr, May, Jun, Nov, Dec
Watermelon	Jan, Feb, Oct, Nov, Dec
Papayas	Apr, May, Jun, Jul, Sep, Oct, Nov
Strawberries	May, Jun, Jul, Aug, Sep, Oct
Naartjies	Jun, Jul, Aug, Sep, Oct
Avocados	Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Nectarines	Jan, Feb, Dec
Mangoes	Jan, Feb, Mar, Apr, Dec
Peaches	Jan, Feb, Oct, Nov, Dec
Plums	Jan, Feb, Mar, Apr
Pineapples	Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

j) Used vehicles

There are two changes to be made.

- Use the national accounts method for determining the weight. Because transactions of used vehicles are typically a transfer from one household to another, the only value recorded in the national accounts is the profit margin of the used car dealer. We will multiply this profit percentage by the total expenditure on used cars as recorded in the IES. This will result in a smaller weight when compared with the current CPI weights set.
- Quality adjust the price change from one year's model to the next as discussed above.

2. More frequent weights updates

Traditionally, Stats SA has updated the weights of the CPI on a five yearly basis. This is in line with the standards published by the International Labour Organisation.

The Income and Expenditure survey is the primary data source for updating the weights. Stats SA has recently concluded the first Living Conditions Survey (LCS). The LCS is primarily aimed at measuring poverty levels, but it contains the same expenditure module as used in the Income and Expenditure Survey. Following this round of reweighting, Stats SA will utilise the expenditure data from the LCS to update the CPI weights. This will result in the CPI weights being updated every three years. The next reweighting will be based on the data of the 2013/14 LCS and implemented in 2016.

3. Conclusion

During 2012 Stats SA will be in a position to share more detailed information with the user community. In particular, the new weights and changes to the basket for the CPI will be published during the third quarter of 2012.