

### Box 1: The reweighted and rebased consumer price index

In line with international best practice, Statistics South Africa (Stats SA) periodically revises the weights and constituents of the consumer price index (CPI) basket, as well as the base period of the CPI. These interventions are necessitated by changes in the spending patterns of consumers over time, and to keep the reference period of the index appropriate and recent. The most recent revision of the CPI basket and weights by Stats SA was implemented in February 2013 and is applicable to the CPI time series from January 2013 onwards.

The primary data source used to determine the constituents of the CPI basket and their respective weights in the index is the Income and Expenditure Survey (IES). The IES is a comprehensive survey of household incomes and expenditures of which the latest was conducted from September 2010 to August 2011, and covered approximately 31 500 households. Stratified sampling was utilised to ensure a high level of representativity of the universe of South African households. The IES 2010/11 was conducted by applying a diary method combined with a recall questionnaire, and by utilising other household information. Households were required to record all their daily purchases in diaries provided by Stats SA for a period of two weeks. In addition, households were required to answer a variety of questions from a household questionnaire administered by a Stats SA official over a four-week period. These recall questionnaires captured purchases of durable and semi-durable items. Where under-counting was suspected, Stats SA augmented the IES results with available counterpart supply-side data, such as large sample surveys conducted in the retail and wholesale trade sectors, and data from industry associations and regulatory bodies.

The items in the new CPI basket will continue to be classified according to the Classification of Individual Consumption by Purpose (COICOP). The new basket of goods and services comprises 393 items, compared with 402 items in the previous basket. New items in the basket include mageu, filter coffee, mineral water, bricks, cement, doors, electrician and plumbing services, satellite dishes, and tablet computers. *Package holidays* is also included as a new item, being the only new item to be explicitly shown in the monthly Stats SA CPI statistical release due to its higher-order position in the COICOP classification system. Items now excluded from the CPI basket include samp, vienna sausages, varnish, toasters, music hi-fi centres, parking fees and swimming pool entrance fees due to the fact that they did not meet the selection criteria.

#### Comparison of weights for the new and previous CPI basket

COICOP categories	All urban areas		
	New CPI	Previous CPI	Difference
Food and non-alcoholic beverages.....	15,41	15,68	-0,27
Alcoholic beverages and tobacco.....	5,43	5,58	-0,15
Clothing and footwear .....	4,07	4,11	-0,04
Housing and utilities .....	24,52	22,56	+1,96
Household contents and services.....	4,79	5,86	-1,07
Health.....	1,46	1,47	-0,01
Transport .....	16,43	18,80	-2,37
Communication .....	2,63	3,22	-0,59
Recreation and culture .....	4,09	4,19	-0,10
Education .....	2,95	2,19	+0,76
Restaurants and hotels.....	3,50	2,78	+0,72
Miscellaneous goods and services .....	14,72	13,56	+1,16
Goods.....	49,86	54,20	-4,34
Services.....	50,14	45,80	+4,34
Total.....	100,00	100,00	0,00

Among the twelve main COICOP categories the housing and utilities, miscellaneous goods and services, education and restaurants and hotels categories registered the largest increases in

weight. Conversely, the transport and the household content and services categories recorded the largest decreases in weight. At the more detailed level notable changes in weights included those for electricity (from 1,68 per cent in the previous basket to 4,13 per cent in the new basket), the purchase of motor vehicles (from 11,25 per cent to 5,98 per cent), petrol (from 3,93 per cent to 5,68 per cent) and insurance (from 7,71 per cent to 9,92 per cent).

To increase the relevance of the CPI weights, in line with international practice, Stats SA price-updated the new set of weights to the level of the CPI in December 2012 – known as the ‘weights reference period’. The price-updating exercise was done to adjust the weights to account for differences in relative price movements of goods and services since the IES 2010/11 was conducted. This approach, however, does not account for behavioural changes of consumers due to those price changes.

Since changes in the CPI represent a weighted average of price changes, revisions to the weights of individual goods and services can have a significant effect on the level of and changes in the index. The introduction of a new set of CPI weights is therefore regarded as the introduction of a new CPI time series, in a technical sense. In order to obtain a continuous CPI time series it is necessary to link the previous set of indices to the new set of indices. Instead of rebasing the CPI to an average index level of 100 in a particular calendar year (previously 2008), Stats SA has now rebased the CPI to an index level of 100 in December 2012 – known as the ‘price reference period’. Stats SA then linked the previous and new indices in December 2012, since the indices using the previous weights and those using the new weights all equal 100 in that month, as do all aggregations of the indices. The index levels for January 2013 were then calculated in the normal manner, that is, the sum of the lower-level indices multiplied by their weights. This method of rebasing and linking the CPI achieves the following important objectives:

- The historic rates of change in the CPI are retained
- There is a base period in which all indices equal 100 (namely December 2012)
- All monthly changes in the CPI from January 2013 reflect underlying price movements
- Additivity is maintained through all levels of aggregation.

In addition to the new set of weights, Stats SA also introduced a number of methodological changes to the compilation of the CPI, including:

- the replacement of one CPI basket per province by three CPI baskets per province, covering the province’s primary urban areas (large towns or cities), its secondary urban areas (small towns) and rural areas in order to enhance the relevance of the CPI to purchasing patterns at the local level;
- the collection of food item prices in the rural areas, previously proxied by food prices in secondary areas;
- the inclusion of a ‘seasonal fruit basket’ in the CPI, the composition of which will change according to the changing of the seasons; and
- the introduction of quality adjustments to the prices of certain durable goods, such as vehicles, communication equipment and computers, by means of hedonic regressions, to account for quality changes impacting the effective value derived from the purchase of such goods.

Following the reweighting and rebasing of the CPI, the headline CPI for all urban areas will remain the inflation target measure for monetary policy purposes.

## References

Statistics South Africa. 2011. “Planned Improvements to the Consumer Price Index”. November. Pretoria: Statistics South Africa.

Statistics South Africa. 2012. “Updating the Weights of the CPI”. November. Pretoria: Statistics South Africa.

Statistics South Africa. 2013. “Information Note on Reweighting, Rebasing and Linking the Consumer Price Index (CPI)”. January. Pretoria: Statistics South Africa.