

# Consumer Price Index (CPI)

## Transition to the 2009 CPI

### 1. Introduction

In February 2009, Statistics South Africa (Stats SA) will introduce a revamped Consumer Price Index (CPI) with the publication of the CPI for January 2009. Various changes, methodological and other, will be implemented in the construction of this CPI, and these changes are of three main types. First, the CPI will undergo reweighting with the introduction of new expenditure weights, based largely on the Income and Expenditure Survey of 2005/6. Associated with this change is the update of the CPI basket. Second, the release of the CPI for January 2009 will mark the introduction of the Classification of Individual Consumption by Purpose (COICOP), replacing the International Trade Classification (ITC) currently in use. Third, the CPI will be rebased so that 2008=100.

### 2. Reweighting

In order to reflect changes in the cost of living of households, the composition of the CPI should reflect the average spending patterns of the population. Over time, however, spending patterns naturally change as incomes and preferences evolve and as new products become available and others are phased out. This means that over time spending patterns diverge from the CPI basket, which therefore needs to be reweighted from time to time. The international norm is that the reweighting of the CPI basket occurs at least once every five years based on data from household expenditure surveys. In South Africa, the Income and Expenditure Surveys (IES) have, as their main objective, the collection of information on spending patterns for use in the calculation of CPI weights.

On the basis of the recently released IES 2005/6 and other supplementary data sources, Stats SA has constructed a new CPI basket. As part of the reweighting process, new items have been included and some items currently included in the CPI excluded from the new basket, with importance within total spending and widespread purchasing the main criteria for inclusion in the basket. For those items that continue to form part of the CPI basket, their relative importance as indicated by their respective weights may have increased or decreased. There have been some substantial shifts in the spending patterns of households between 2000 and 2005/6, meaning that it is likely that the introduction of the new 2006 weights will impact on the level of calculated inflation.

There are two effects that will impact on calculated inflation. Firstly, incomes have risen between 2000 and 2005/6 and, as a result, spending patterns have changed. This income effect saw a shift in expenditure away from food, for example, and towards transport and services. The second effect, a substitution effect, results in households shifting their expenditure away from higher inflation items towards lower inflation items. Overall, given these behavioural changes, it is anticipated that the reweighting of the CPI will result in a decrease in the level of measured inflation. The greater importance of services, which typically have lower rates of inflation relative to goods, in the CPI basket serves to reinforce this expectation. Thus, of the three main changes, the new CPI weights and basket are responsible for the greatest disruption to the CPI time-series.

### 3. A new classification system: COICOP

The move to COICOP, bringing South Africa in line with standard international practice, entails a recategorisation of the elementary aggregates, with some items being allocated to different CPI aggregates. As its name suggests, COICOP classifies expenditures according to their purpose and, so, expenditures for similar purposes are classified together. Thus, for example, vehicle insurance is moved from Transport under the ITC system, and medical aid contributions are moved from Medical Care and Health, to Insurance (part of Miscellaneous Goods and Services) under COICOP. Many items, though, are unaffected with some aggregates remaining virtually unchanged (e.g. Clothing and Footwear).

What are the implications of this change in classification for the CPI and measured inflation? On its own, a change in the method of classification has no impact on the level of measured inflation. In other words, if this were the only change being implemented, there would be no difference in the overall CPI or measured inflation between the ITC or COICOP classifications. However, the classification change impacts on the composition of certain CPI aggregates and, depending on the extent of the change, results in a break in the series of those aggregates.

### 4. Introduction of the 2009 CPI

Of the three main changes to the CPI, it is the move to the new CPI basket that will impact on the level of measured inflation. The current reweighting process is qualitatively different from that which occurred in 2002 involving a more substantial change in the composition of the total basket and a streamlining of the number of items included in the basket. The latter has allowed Stats SA to increase the number of prices per product it collects, thereby improving the robustness of the calculated price changes. In preparation for the release of the new CPI, therefore, Stats SA began collecting price data for the expenditure items contained in the new index in January 2008, while continuing to collect price data for the current CPI. This parallel collection of price data ensures that it is possible to compare like with like in calculating inflation rates in the January 2009 release.

The following table (Table 1) provides an illustration of the way in which the CPI will be moved from the current methodology to the new methodology. In this example, as will happen in South Africa, the existing CPI is replaced by the revamped CPI in January 2009, with parallel price collection occurring during 2008.

The first three columns of the table detail the path of the old CPI, which has some year in the past equal to 100. From this index, year-on-year (YoY) and month-on-month (MoM) inflation rates are calculated, which are published as per usual. In January 2008, the parallel collection of prices begins, with the new CPI for January 2009 equalling 100 (column D). Over the course of 2008, the new CPI is calculated parallel to the old CPI, but the former is not published as it is not the official CPI. By December 2008, twelve months of data exist for the new CPI. Month-on-month inflation rates based on the new CPI exist (column F), but there is still insufficient data to calculate year-on-year inflation rates. The possible differing behaviour of the new and old CPIs are visible in the different rates of month-on-month inflation in columns C and F.

Table 1. Illustration of the Old and New CPI Series (Hypothetical Example)

	Old Consumer Price Index			New Consumer Price Index			Old CPI 2008=100	New CPI 2008=100
	Index	Inflation Rate		Index	Inflation Rate			
		YoY	MoM		YoY	MoM		
	A	B	C	D	E	F	G	H
Jul-07	137,1	6,4	0,5				94,8	
Aug-07	137,8	6,4	0,5				95,2	
Sep-07	138,4	6,3	0,5				95,7	
Oct-07	139,1	6,3	0,5				96,1	
Nov-07	139,8	6,2	0,5				96,6	
Dec-07	140,4	6,2	0,5				97,0	
Jan-08	141,1	6,1	0,5	100,0			97,5	97,6
Feb-08	141,7	6,1	0,5	100,4		0,4	98,0	98,0
Mar-08	142,4	6,0	0,5	100,9		0,5	98,4	98,5
Apr-08	143,1	6,0	0,5	101,4		0,5	98,9	98,9
May-08	143,7	5,9	0,5	101,8		0,5	99,3	99,4
Jun-08	144,4	5,8	0,4	102,3		0,4	99,8	99,8
Jul-08	145,0	5,8	0,4	102,7		0,4	100,2	100,2
Aug-08	145,6	5,7	0,4	103,1		0,4	100,6	100,6
Sep-08	146,3	5,7	0,4	103,5		0,4	101,1	101,1
Oct-08	146,9	5,7	0,5	104,0		0,4	101,6	101,5
Nov-08	147,7	5,7	0,5	104,5		0,5	102,1	102,0
Dec-08	148,4	5,7	0,5	105,0		0,5	102,6	102,4
Jan-09				105,4	5,4	0,4		102,9
Feb-09				105,9	5,5	0,4		103,4
Mar-09				106,4	5,4	0,5		103,8

For the January 2009 release, the published CPI will be the new CPI. Both the old and the new CPI series will be rebased so that the average index for 2008 equals 100 (columns G and H). However, the 2008 indices using the old weights and old prices differ from the 2008 indices calculated using the new weights and the new prices. From the launch of the January 2009 CPI, year-on-year inflation rates will be calculated based on the new weights and prices, i.e. the index presented in column D forms the basis for year-on-year comparisons starting in January 2009.

In other words, the year-on-year inflation rate for January 2009 is calculated as

$$\frac{\text{CPI}^{2006 \text{ Weights}}_{\text{Jan 2009}}}{\text{CPI}^{2006 \text{ Weights}}_{\text{Jan 2008}}} = \frac{102.90}{97.60} \quad \text{and not} \quad \frac{\text{CPI}^{2006 \text{ Weights}}_{\text{Jan 2009}}}{\text{CPI}^{2008 \text{ Weights}}_{\text{Jan 2008}}} = \frac{102.90}{97.50}$$

where the superscript denotes the weights and the subscript the price data.

The month-on-month inflation rates will be based on the old weights and prices (column A) until December 2008, whereafter they will be based on the new weights and

prices (column D). In other words, in the January 2009 release the month-on-month inflation rate will be published as 0.5 percent, while the year-on-year inflation rate will be 5.4 percent.

The transition to the new CPI will mean that for 2008, the year in which the parallel price collection took place, there will technically be two price index series, one using the old weights and the old price series (the CPI as it currently exists) and one using the new weights and the new price index series.

However, there is only one official Consumer Price Index series. The publication of the new CPI indices does not and will not constitute a revision of the officially published CPI, nor will it entail a withdrawal of the price indices published during the course of 2008. Consumer price indices published for 2008 are and will remain the official consumer price indices for 2008. Price indices and their resultant inflation rates for 2008 are based on the 2000 weights and the current set of price data, classified according to the ITC system. Price indices and the resulting inflation rates for 2009 onwards will be based on the 2006 weights and the new set of price data, classified according to COICOP.

## 5. Time series data

Various users may require historical CPI data compatible and comparable with the new CPI data. Stats SA recognises this need and will publish COICOP-consistent historical price series where the data allows. This decision is in line with International Labour Organisation recommendations that when changing classifications results in significant changes in the composition of the CPI aggregates, the CPI under the new classification should be calculated backwards for at least one year to allow the calculation of consistent annual rates of change (ILO, *Consumer Price Index Manual*, paragraph 9.143). Essentially, these series would represent an alternative calculation of the published historical series based on COICOP as opposed to ITC classifications. In some instances sufficient historical price data is available to extend the COICOP-based series backwards over a considerable period of time, as may be the case for food and non-alcoholic beverages for example. In other instances, historical price data is not available and it will therefore not be possible to calculate these historical series further back than 2008. These historical COICOP-based price indices will, however, remain consistent with previously published indices. At a minimum, therefore, historical price series according to the COICOP classification covering no less than the twelve months of 2008 will be made available by Stats SA in the month leading up to the CPI release in February 2009. The publication of historical price series for CPI aggregates under the ITC system will then be suspended.



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## Annual Inflation on a Monthly Basis – Base year: 2000 = 100

The figures in this table are prior to the rebased figures.

Year	Index	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2000	Index %	96.9 +2.6	96.6 +2.3	97.6 +3.4	98.9 +4.5	99.3 +5.1	99.9 +5.2	100.8 +6.0	101.2 +6.9	101.7 +6.9	102.2 +7.0	102.2 +7.0	102.5 +7.0
2001	Index %	103.8 +7.1	104.1 +7.8	104.8 +7.4	105.3 +6.5	105.7 +6.4	106.2 +6.3	106.1 +5.3	105.9 +4.6	106.2 +4.4	106.1 +4.0	106.6 +4.3	107.2 +4.6
2002	Index %	109.0 +5.0	110.2 +5.9	111.3 +6.2	113.1 +7.4	113.9 +7.8	114.7 +8.0	116.3 +9.6	116.9 +10.4	118.1 +11.2	119.9 +13.0	120.3 +12.9	120.5 +12.4
2003	Index %	121.6 +11.6	121.5 +10.3	122.7 +10.2	123.1 +8.8	122.8 +7.8	122.4 +6.7	122.4 +5.2	122.9 +5.1	122.5 +3.7	121.7 +1.5	120.8 +0.4	120.9 +0.3
2004	Index %	121.8 +0.2	122.4 +0.7	123.2 +0.4	123.4 +0.2	123.5 +0.6	123.9 +1.2	124.3 +1.6	124.1 +1.0	124.1 +1.3	124.6 +2.4	125.3 +3.7	125.0 +3.4
2005	Index %	125.4 +3.0	125.6 +2.6	126.9 +3.0	127.6 +3.4	127.6 +3.3	127.4 +2.8	128.5 +3.4	129.0 +3.9	129.5 +4.4	129.6 +4.0	129.5 +3.4	129.5 +3.6
2006	Index %	130.4 +4.0	130.5 +3.9	131.2 +3.4	131.8 +3.3	132.6 +3.9	133.6 +4.9	134.9 +5.0	136.0 +5.4	136.3 +5.3	136.6 +5.4	136.5 +5.4	137.0 +5.8
2007	Index %	138.2 +6.0	138.0 +5.7	139.2 +6.1	141.0 +7.0	141.8 +6.9	143.0 +7.0	144.4 +7.0	146.1 +6.7	146.1 +7.2	147.4 +7.9	148.0 +8.4	149.3 +9.0
2008	Index %	150.0 +9.3	151.5 +9.8	153.9 +10.6	156.6 +11.1	158.4 +11.7	160.4 +12.2	163.8 +13.4	165.0 +13.7	165.3 +13.1	165.3 +12.1	165.4 +11.8	163.5 +9.5

Source: Statistics South Africa ([www.statssa.gov.za](http://www.statssa.gov.za))

## Updated rebased historical table

Year	Index	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave
2000	Index %	60.6 +2.7	60.4 +2.4	61.0 +3.4	61.8 +4.6	62.1 +5.1	62.4 +5.1	63.0 +6.1	63.3 +6.9	63.6 +7.1	63.8 +7.0	63.9 +7.0	64.1 +5.4	<b>62.5</b> <b>+5.4</b>
2001	Index %	64.9 +7.1	65.1 +7.8	65.5 +7.4	65.8 +6.5	66.1 +6.4	66.4 +6.4	66.3 +5.2	66.2 +4.6	66.4 +4.4	66.3 +3.9	66.6 +4.2	67.0 +4.5	<b>66.1</b> <b>+5.8</b>
2002	Index %	68.1 +4.9	68.9 +5.8	69.6 +6.3	70.7 +7.4	71.2 +7.7	71.7 +8.0	72.7 +9.7	73.1 +10.4	73.8 +11.1	74.9 +13.0	75.2 +12.9	75.3 +12.4	<b>72.1</b> <b>+9.1</b>
2003	Index %	76.0 +11.6	75.9 +10.2	76.7 +10.2	76.9 +8.8	76.8 +7.9	76.5 +6.7	76.5 +5.2	76.8 +5.1	76.6 +3.8	76.1 +1.6	75.5 +0.4	75.6 +0.4	<b>76.3</b> <b>+5.8</b>
2004	Index %	76.1 +0.1	76.5 +0.8	77.0 +0.4	77.1 +0.3	77.2 +0.5	77.4 +1.2	77.7 +1.6	77.6 +1.0	77.6 +1.3	77.9 +2.4	78.3 +3.7	78.1 +3.3	<b>77.4</b> <b>+1.4</b>
2005	Index %	78.4 +3.0	78.5 +2.6	79.3 +3.0	79.8 +3.5	79.8 +3.4	79.6 +2.8	80.3 +3.3	80.6 +3.9	80.9 +4.0	81.0 +4.0	80.9 +3.3	80.9 +3.6	<b>80.0</b> <b>+3.4</b>
2006	Index %	81.5 +4.0	81.6 +3.9	82.0 +3.4	82.4 +3.3	82.9 +3.9	83.5 +4.9	84.3 +5.0	85.0 +5.5	85.2 +5.3	85.4 +5.4	85.3 +5.4	85.6 +5.8	<b>83.7</b> <b>+4.6</b>
2007	Index %	86.4 +6.0	86.3 +5.8	87.0 +6.1	88.1 +6.9	88.6 +6.9	89.4 +7.1	90.3 +7.1	90.7 +6.7	91.3 +7.2	92.1 +7.8	92.5 +8.4	93.3 +9.0	<b>89.7</b> <b>+7.2</b>
2008	Index %	94.4 +9.3	95.9 +9.8	97.4 +10.6	98.0 +11.1	98.7 +11.7	100.1 +12.2	101.4 +13.4	102.0 +13.7	102.6 +13.1	102.8 +12.1	102.9 +11.8	102.7 +9.5	<b>100.0</b> <b>+11.5</b>
2009	Index YoY%	103.1 +8.1	104.3 +8.6	105.7 +8.5	106.2 +8.4	106.6 +8.0	107.0 +6.9	108.2 +6.7	108.5 +6.4	108.9 +6.1	108.9 +5.9	108.9 +5.8	102.9 +6.3	<b>107.1</b> <b>+7.1</b>
2010	Index YoY%	109.5 +6.2	110.2 +5.7											

Source: Statistics South Africa ([www.statssa.gov.za](http://www.statssa.gov.za))  
YoY = Year-on-Year