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## **Consumer Price Index**

### **The South African CPI Sources and Methods Manual**

**Release v .2**

**20 February 2013**

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# Chapter 1: Introduction to the South African Consumer Price Index (CPI)

## 1. Defining the Consumer Price Index

The CPI is a current social and economic indicator that is constructed to measure changes over time in the general level of prices of consumer goods and services that households acquire, use, or pay for. The index aims to measure the change in consumer prices over time. This is done by measuring the cost of purchasing a fixed basket of consumer goods and services of constant quality and similar characteristics, with the products in the basket being selected to be representative of households' expenditure during a year or other specified period. Such an index is called a fixed-basket price index. The index also aims to measure the effects of price changes on the cost of achieving a constant standard of living (i.e. level of utility or welfare). This concept is called a cost-of-living index (COLI).

## 2. The South African CPI

### 2.1 Uses of the South African CPI

The South African CPI has two equally important objectives:

1. To measure inflation in the economy so that macroeconomic policy is based on comprehensive and up-to-date price information and to provide a deflator of consumer expenditure in the expenditure national accounts.
2. To measure changes in the cost of living of South African households to ensure equity in the measures taken to adjust wages, grants, service agreements and contracts.

### 2.2 History of the South African CPI

The South African CPI originated in 1917, covering large urban areas only. Since 1997, smaller urban areas were included. The CPIX (CPI excluding interest rates on mortgage bonds) was introduced for the first time in January 1997, together with the current list of nine provinces. The CPIX was discontinued in 2009 and the CPI for all urban areas was announced as a headline inflation measure and also used as an inflation target measure. The Rural and Total Country indices were introduced in January 2002.

Prior to January 2006, all prices of goods and services were collected from the head office of Statistics South Africa (Stats SA) mainly using the post. A direct collection methodology that entailed collecting prices on goods directly by visiting retail outlets, was piloted in July 2004. This direct collection methodology was rolled out region by region. Since January and June 2006, the CPI has been compiled using the prices of goods from the direct collection methodology in the metropolitan (primary) areas and in the other urban (secondary) areas, respectively.

## 3. Alignment with international best practice in CPI formulation

### 3.1 International expert groups

The International Labour Organisation (ILO) is the authoritative body on the methodology for price statistics and the compilation of CPIs. The ILO is supported by other organisations including the United Nations Statistics Division (UNSD), International Monetary Fund (IMF) and the World Bank. The ILO manual for CPIs is the main reference for statistical offices for CPI concepts and definitions. The manual provides the theory and conceptual framework of

the CPI and aims to give methodological and practical guidelines for the compilation of CPIs. Stats SA follows the methodology guidelines in the ILO manual when compiling the South African CPI.

*<http://www.ilo.org/public/english/bureau/stat/guides/cpi/index.htm#manual>*.

Price statisticians face several issues in the compilation of CPIs. The bulk of the compilation issues are covered by the ILO manual. The introduction of new and improved methodology comes as a result of technical and academic discussions of current methodology through a number of expert groups. The new methodology may be captured through resolutions taken at official meetings of these groups in consultation with the ILO. There are a number of professional expert groups that have members from statistical agencies from around the world. The groups provide a forum for specialists to share their experiences and discuss research and methodology on crucial problems of measuring price change and to identify good practice. These groups include:

- The Ottawa Group which was formed in 1994. This group is also known as the United Nations International Working Group on Price Indices. The group focuses on applied research in the area of consumer price indices. The group has played a key role in the theoretical and methodological development of price indices.
- ILO/UNECE joint meeting. The joint meeting includes the United Nations Economic Commission for Europe (UNECE) and the ILO. Compilation issues are discussed including collection, processing and dissemination of data, and resource and organisational issues. Price statisticians from statistical agencies in continents outside Europe are also invited. Experts from other international organisations, especially users of the CPI (e.g. central banks) are also invited to the joint meetings.

### **3.2 Adoption and use of methodology in line with international best practice**

Stats SA has committed itself to the adoption and use of methodology that is in line with international best practice and which is relevant and practicable to South African conditions. The sources and methods documents of other statistical agencies are also used as reference material.

## Chapter 2: Classification of goods and services

### 1. Background

The Classification of Individual Consumption by Purpose (COICOP) is the international standard for classifying household expenditure. Goods and services are classified according to their intended use. It is an integral part of the 1993 System of National Accounts (SNA). COICOP is used for household budget surveys, consumer price indices and international comparisons of gross domestic product (GDP) and its component expenditures.

The CPI is part of economic statistics and the use of COICOP is consistent with the SNA. It is also advisable that both the CPI and the household survey use the same classification. Stats SA runs a five-yearly Income and Expenditure Survey (IES) which is used to derive the weights of the South African CPI. All the IESs up until IES 2000 used the International Trade Classification (ITC) to classify household expenditure. Similarly, the CPI and the expenditure weights derived from the IES 2000 were classified according to the ITC. The ITC is a classification primarily used in Customs. The ITC classification of products is according to origin.

The current South African CPI uses the Classification of Individual Consumption by Purpose (COICOP) for goods and services. COICOP was used for the IES 2005/6 from which the 2008 CPI weights were derived. It is the international standard for the classification of household expenditure in the CPI. The International Comparison Programme (ICP) also uses COICOP in order to allow for comparable CPIs between countries. The foundation of the ICP is the list of well-defined products for which prices are collected in each country to calculate Purchasing Power Parities based on a comparison of prices between countries.

### 2. Classification of Individual Consumption by Purpose (COICOP)

The United Nations Statistical Division (UNSD) is the custodian of COICOP. The high-level COICOP categories are given below:

- 01 – Food and non-alcoholic beverages
- 02 – Alcoholic beverages and tobacco
- 03 – Clothing and footwear
- 04 – Housing, water, electricity, gas and other fuels
- 05 – Furnishings, household equipment and routine household maintenance
- 06 – Health
- 07 – Transport
- 08 – Communication
- 09 – Recreation and culture
- 10 – Education
- 11 – Restaurants and hotels
- 12 – Miscellaneous goods and services
- 13 – Individual consumption expenditure of non-profit institutions serving households (NPISHs)
- 14 – Individual consumption expenditure of general government

## 2.1 Individual consumption

Individual consumption expenditures are those that are made for the benefit of individual persons or households. More specifically:

- All consumption expenditures by households are defined as individual. These are contained in COICOP categories 01 to 12.
- Only some of the consumption expenditures of general government are defined as individual. Expenditures on general public services, defence, public order and safety, economic affairs, environmental protection and housing and community amenities are considered to be for the benefit of the community as a whole rather than for individual households. They are termed “collective consumption expenditures” (or “actual final consumption of general government” or “actual collective consumption”) and are excluded from COICOP.
- Prostitution and narcotics are excluded from the South African CPI because they are not legal in South Africa.

The Consumer Price Index focuses on households and thus uses COICOP categories 01 to 12. The South African CPI has fully adopted COICOP and does not diverge.

## 2.2 Structure of COICOP classification in the South African CPI

The structure of COICOP is made up of 2-digit, 3-digit, 4-digit, 5-digit, 8-digit and 12-digit classification levels. The 12-digit is the lowest level whilst the 2-digit is the highest level. The table below shows an example of a decomposition of a 2-digit level down to 8-digit level.

**Table 1: Example of COICOP hierarchy**

COICOP code	Product code	COICOP description	Indicator product
<b>01.</b>	<b>Food and non-alcoholic beverages</b>		
<b>01.1.</b>	<b>Food</b>		
<b>01.1.1</b>	<b>Bread and Cereals</b>		
01.1.1.1	01111001	Rice	Rice
01.1.1.2	01112001	Loaf of white bread	White bread
01.1.1.2	01112002	Loaf of brown bread	Brown bread
01.1.1.2	01112003	Sweet biscuits	Sweet biscuits
01.1.1.2	01112005	Bread rolls	Bread rolls
01.1.1.3	01113001	Spaghetti	Spaghetti
01.1.1.3	01113002	Macaroni	Macaroni
01.1.1.3	01113003	Pasta (excluding Spaghetti and Macaroni)	Other pasta
01.1.1.4	01114001	Cakes and tarts	Cakes and tarts
01.1.1.6	01116001	Cake flour	Cake flour
01.1.1.6	01116002	Bread flour	Bread flour
01.1.1.6	01116005	Cereal	Cereal
01.1.1.6	01116008	Super maize	Super maize
01.1.1.6	01116009	Special maize	Special maize



The number system for the different classification levels has been simplified by naming the different levels using names such as categories, classes, and groups. The table below shows the naming convention for the different classification levels.

**Table 2: COICOP naming convention**

COICOP level	Name	Example
2-digit	Category	Food and non-alcoholic beverages
3-digit	Class	Food
4-digit	Group	Bread and cereals
5-digit	Product	Bread
8-digit	Indicator product	Loaf of white bread
12-digit	Sampled product	Albany 700g loaf of white bread

### 2.3 Product types

The COICOP four-digit levels (Groups) are divided into different types of products:

- Services (S);
- Non-durables (ND);
- Semi-durables (SD);
- Durables (D).

The following extract from the ILO Manual gives the standard definitions of the types of products as used in price statistics:

The distinction between non-durable goods and durable goods is based on whether the goods can be used only once or whether they can be used repeatedly or continuously over a period of considerably more than one year. Moreover, durables, such as motor cars, refrigerators, washing machines and televisions, have a relatively high purchasers' value. Semi-durable goods differ from durable goods in that their expected lifetime of use, though more than one year, is often significantly shorter and their purchasers' value is substantially less.

The categories of goods defined as durables in COICOP are listed below:

- furniture and furnishings;
- information processing equipment;
- major household appliances whether or not electrical;
- vehicles;
- musical instruments;
- telephone and fax equipment;
- equipment for the reception, recording and reproduction of sound and pictures;
- jewellery, clocks and watches.

The following goods are listed as semi-durables:

- clothing and footwear;
- household textiles;
- small electrical household appliances;

- glassware, table ware and household utensils;
- small tools and miscellaneous accessories;
- spare parts for vehicles;
- recording media;
- games, toys, hobbies;
- equipment for sport, camping, etc.;
- books;
- other personal effects.

The following goods are listed as non-durables:

- food and non-alcoholic beverages;
- alcoholic beverages and tobacco;
- materials for the maintenance and repair of the dwelling;
- electricity;
- solid fuels;
- non-durable household goods;
- pharmaceutical products;
- fuels and lubricants;
- gardens, plants and flowers;
- pets and related products;
- newspaper and periodicals;
- miscellaneous printed matter;
- stationery and drawing materials;
- personal care products.

The following are listed as services:

- actual rentals paid by tenants;
- imputed rentals for owner-occupiers;
- services for the repair and maintenance of a dwelling (plumbers and electricians);
- water supply; other services relating to the dwelling n.e.c.;
- domestic services and household services;
- medical services;
- dental services;
- hospital services;
- maintenance and repair of personal transport equipment;
- other services in respect of personal transport equipment;
- transport services;
- postal services;
- telephone and telefax services;
- recreational and sporting services;
- cultural services;
- games of chance;
- education;
- restaurants and hotels;
- accommodation services;

- social protection services;
- package holiday;
- insurance;
- financial services n.e.c.;
- other services n.e.c.

Some COICOP classes contain both goods and services because it is difficult for practical reasons to break them down into goods and services. Such classes are usually assigned an (S) when the service component is considered predominant; for example services for the maintenance and repair of the dwelling, which include the cost of labour and materials.

## **2.4 Mixed purpose goods and services**

There are some products whose intended use changes according to geographical location; hence COICOP may be tweaked to suit local conditions, where necessary. Goods and services with multi-purpose use are allocated to a category that represents the dominant use, e.g. food consumed outside the home is shown under *Restaurants and hotels* and not in *Food and non-alcoholic beverages*. Some services may consist of a bundle of goods and services that serve mixed purposes. A purpose breakdown of each bundle is done in order to produce the most precise fit is consistent with practical considerations of data availability. Considerations of data availability normally dictate that no attempt is made to isolate the separate purposes from the bundled product. An example of mixed-use products is the purchase of in-patient hospital fees which include payments for medical treatment, accommodation and catering.

## Chapter 3: Weights in the CPI

### 1. Introduction

The weights of the CPI represent the proportions of consumption expenditure by households in a specific period. Each indicator product in the CPI has a weight attached to it which reflects its relative importance in the overall index. The impact that a price change for a good or service has on the overall index is therefore determined by the weight attached to it. The weighted sum of changes in the price of specific products and services in the CPI provides the rate of inflation. Whereas the prices are updated on a monthly, quarterly or annual basis, the weights are normally updated only every five years.

There are two types of weighting for the construction of an aggregated price index for a population on the basis of Household Expenditure Survey (HES) results. These are called plutocratic and democratic. Plutocratic weights reflect total expenditures of all reference households and the composition of the estimated aggregate values of the reference population. In this type of weighting, each household contributes to the weights an amount proportional to its expenditure. The South African CPI uses a plutocratic weighting scheme.

Democratic weighting gives equal importance to all households by averaging consumption value proportions over the whole population instead of summing consumption values. Democratic weights reflect the expenditure of an average household.

### 2. Need to update weights

The reference period is the time period to which the estimated weights relate. The chosen period should cover a seasonal cycle, typically a calendar year, and should reflect economic conditions that are reasonably normal or stable. Any irregularities may need to be adjusted.

The accuracy of weights to represent current expenditure patterns decreases as the length of time increases from the weight reference period. However, the frequency of updating weights depends on the availability of the expenditure survey results.

The choice of a weights reference year should ideally avoid periods of high inflation or periods when the influence of special factors is significant.

The ILO manual lists the following sources for weights:

- Household expenditure surveys (HES). The main requirements of HESs are that the survey should be representative of all private households in the country, should not exclude any particular group, and should include all types of consumption expenditures by households. HES include expenditures that are outside the scope of the CPI but these should be excluded from the total expenditure used to estimate CPI weights. Examples are interest payments on credit cards or mortgage bonds.
- National accounts. The household sector in national accounts consists of all individual households and institutional households. Institutional households are usually excluded from HES. National accounts expenditure estimates may be used to adjust the weights of products that are known to suffer from significant cases of under- or over-reporting.
- Retail sales data. Retail sales statistics can provide detailed data at geographical level. The main difficulty in using the data is that it usually contains data for groups that are outside the CPI reference population, e.g. expenditure by businesses.
- Point of purchase surveys. Weights for groups of products may be obtained by outlet type using a purposive sample of each outlet type.
- Scanner data. Cash register data may be used to derive CPI weights.
- Population censuses. Population statistics may be used in the absence of any expenditure statistics as a basis for regional weights.

For most countries, the HES is the main source for deriving CPI weights. The HES usually requires the use of additional data sources to supplement the HES results in order to deal with known cases of under- or over-reporting. The use of a combination of HES data and national accounts is a common way of deriving CPI weights.

### 3. Deriving CPI weights

#### 3.1 Income and Expenditure Survey (IES)

The Income and Expenditure Survey is a household-based survey which uses a countrywide sample of dwelling units to measure a snapshot of the levels of income and expenditure for households during a specified reference period. Successive IESs gauge changes in household consumption patterns, levels of income and income distribution.

##### 3.1.1 *Income and Expenditure Survey (IES) 2010/11<sup>1</sup>*

In 2010/11, Stats SA conducted its latest Income and Expenditure Survey (IES) using a sample of 31 500 dwelling units covering the whole country. This was up from 24 000 dwelling units used in the IES 2005/6. The IES 2010/11 used a combination of the recall and diary methods.

Both the IES 2010/11 and IES 2005/6 samples were based on 3 000 primary sampling units from Stats SA's master sample. The master sample is a frame of primary sampling units (PSUs) used for household surveys. It is based on multi-stage stratified area probability design of PSUs which are essentially enumeration areas (EAs) of the population census.

<sup>1</sup> Refer to [www.statssa.gov.za](http://www.statssa.gov.za) for further information on the IES

The IES 2010/11 ran from September 2010 to August 2011. This allowed for a 12-month period in which seasonal expenditure patterns were identified. The sample was evenly spread over 12 survey periods of one month. The sample was kept nationally representative in each quarter.

Fieldworkers administered a main questionnaire that was divided into five separate interview modules each covering different topics. This was done over four separate visits with one interview module covered per visit. The main questionnaire covered all household acquisitions of durable and semi-durable goods and services over the 11 months prior to the survey. The information collected also includes the income of each household member in the survey month and during the 11 months prior to the survey.

One significant change in the survey methodology introduced in 2010/11 was the shortening of the period assigned for diary completion from four to two weeks. The survey year was divided into 26 periods to ensure continuous recording of expenditure by representative households. This was an attempt to minimise under-reporting of certain expenditures due to respondent 'fatigue'.

The general approach used to collect information on household consumption expenditure during this survey was that of acquisition. The acquisition approach takes into account the total value of all goods and services acquired, whether consumed or not, during a given period, whether or not paid for (wholly or partly) during the period of collection. Expenditure on certain household expenditure categories were covered only in the diaries. Expenditure items that were collected by the diary are:

- Food and non-alcoholic beverages;
- Personal care;
- Alcoholic beverages and tobacco;
- Restaurants.

The table below shows a summary of the main differences between the IES 2005/6 and IES 2010/11.

**Table 3: IES 2005/6 compared with IES 2010/11**

Distinguishing features		IES 2005/2006	ISE 2010/2011
Sample size		24 000	31 419
Methodology		Diary and recall	Diary and recall
Household questionnaire		Five modules	Four modules
Diaries		Four weekly diaries	Two weekly diaries
Expenditure data collection approach	Goods	Acquisition approach	Acquisition approach
	Services	Payment approach	Payment approach
	Own production	Consumption approach	Consumption approach
Survey period		One year – September 2005 to August 2006	One year – September 2010 to August 2011
Reference period: Food expenditure		September 2005 to August 2006	September 2010 to August 2011
Visits per household		Six	Four
Classification of expenditure items		COICOP	COICOP

\*Source: Income and Expenditure of Households 2005/6 and 2010/11.

### 3.2 IES 2010/11 weights and adjustments for CPI weights

According to general international practice, a survey of household expenditure (Income and Expenditure Survey) provides the basis of the CPI weights. The CPI weights are based on the total consumption expenditure as recorded over the survey period. However, well established practice is that additional sources are used in cases where the IES may under- or over-report certain expenditures. All calculations are done for the total country expenditure. Specific CPI index weights (e.g. Headline CPI) are calculated following the macro adjustments. Following the adjustments to the macro level weights, in order to account for significant price movements between the survey period and the implementation of the weights, Stats SA has employed a technique known as price-updating which applies a relevant inflation rate to each index. This method accounts for divergent or significant price movements between the survey period and the implementation of the weights.

The difference in expenditure proportions between the IES and the new CPI weights is shown in Table 5. Although the weights are reported as a percentage, they are calculated on the rand value of total expenditure. All adjustments to the IES were made based on actual expenditure, not the final proportions.

**Table 4: Difference in expenditure proportions between IES and CPI weights (Total country) – prior to price-updating**

COICOP category	IES shares*	CPI 2012 weights
Food and non-alcoholic beverages	12,8	17,5
Alcoholic beverages and tobacco	1,1	5,4
Clothing and footwear	4,5	4,5
Housing and utilities	32,0	22,8
Household contents, equipment, and maintenance	5,1	5,2
Health	1,4	1,4
Transport	17,1	15,4
Communication	2,8	2,9
Recreation and entertainment	3,0	4,5
Education	2,7	2,7
Restaurants and hotels	2,4	3,4
Miscellaneous	14,7	14,4

\*Does not total 100% because unclassified items are excluded.

Adjustments were made to the IES results in respect of frequently purchased items: Food and non-alcoholic beverages, and Personal care (under Miscellaneous), Restaurants and hotels, and Alcoholic beverages and tobacco. Significant methodological changes in weights calculation were applied to the following categories: Owner-occupied housing, Motor vehicles, Gambling, and Insurance.

International good practice proposes to use additional data where an expenditure survey under- (or over-) reports. IES diary data were adjusted for CPI purposes by the use of additional data sources. Specifically, they were compared with the Private household consumption expenditure accounts of the GDP, sectoral surveys conducted by Stats SA of the retail, motor trade and food and beverages industries, and data from various industry sources.

**3.2.1 Food**

The total weight for food was adjusted upwards. The proportions of different food sub-components as reported in the IES 2010/11 were retained to estimate weights at a lower level. The weight for food was calculated by taking the value of food sales in the Retail trade large sample survey (2010), and then increasing it by 10,7% to account for informal sector sales (sourced from the National Accounts). In addition, a value sourced from the Large sample survey of the wholesale sector representing direct wholesale sales to households was added. Finally, the sum was adjusted using nominal increases in monthly retail sales to bring it into the same time period as the IES. This resulted in a total value of food expenditure of R216 747m compared with R159 973m as recorded in the IES. The overall weight for food (total country) dropped slightly from 18,3% to 17,5%.



**Table 5: Calculating total Food and non-alcoholic beverages expenditure**

	2010/11 Rm		2005/06 Rm
IES		159 973	100 971
LSS		170 477	
Adjusted with monthly retail sales	11,6%	190 320	
Add informal sector sales	10,7%	210 685	
Plus wholesale sales to households	6 063	216 747	
<b>Final value</b>		<b>216 747</b>	<b>143 401</b>
<b>Weight</b>		<b>17,5%</b>	<b>18,3%</b>

### 3.2.2 Personal care

Similarly to food, consumers tend to under-report their expenditure on personal care items. Data from Stats SA's large sample and monthly retail sales were used to obtain a more accurate estimate for personal care.

**Table 6: Calculating Personal care**

Personal care	2010/11		2005/06
	Value	Weight	Weight
	Rm		
IES value	14 659		
CPI value	21 419	2,4%	2,2%

### 3.2.3 Alcohol and tobacco

Viewed as 'sin' purchases, IES respondents appear to be reluctant to record the full value of their expenditure on alcohol and tobacco. Stats SA sourced data from industry bodies for total sales of alcoholic beverages in the country. Using Stats SA's supply and use tables, a value of sales to other businesses (including restaurants and bars) was subtracted. This resulted in a weight for alcoholic beverages of 3,9% – slightly higher than the 2005/06 proportion of 3,3%.

**Table 7: Calculating expenditure on alcoholic beverages**

Alcohol	Rm
Industry sales	66 521
Less sales through bars, restaurants and business	17 845
<b>Final value</b>	<b>48 676</b>
<b>Weight 2010/11</b>	<b>3,9%</b>
<b>Weight 2005/06</b>	<b>3,3%</b>

Using information on excise tax collection, the current value underlying the weight was adjusted by the percentage increase in excise tax revenue from cigarettes. This reduces the weight of tobacco in the CPI to 1,5%.

**Table 8: Calculating expenditure on tobacco**

<b>Tobacco</b>	<b>2010/11 Rm</b>	<b>2005/06 Rm</b>	<b>Change</b>
Excise tax collection	9 367	6 024	55,5%
CPI value	18 013	11 585	55,5%
CPI weight	1,5%	2,3%	

### **3.2.4 Restaurants and hotels**

The values for restaurants and hotels have been adjusted both for under-reporting and for methodological reasons. Expenditure in restaurants is often incurred by different household members individually and they may not report all of this in the household diary. Expenditure on alcohol away from home may also be under-reported for the reasons discussed under alcohol and tobacco above.

Stats SA has adopted the domestic concept for the scope of the CPI. This includes all expenditure by private households/consumers within the boundaries of South Africa irrespective of the place of normal residence of the consumer. This clarification largely affects this category. Previously tourism-related expenditure of non-residents was excluded.

Using large sample and monthly surveys of the accommodation and catering industry, a value for total sales was established. An estimate for sales to businesses was then subtracted to arrive at a final value.

**Table 9: Calculating Restaurants and hotels**

<b>Restaurants and hotels</b>	<b>2010/11 Rm</b>	<b>2005/06 Rm</b>	<b>Change %</b>
IES	30 331	15 354	97,5%
CPI	41 773	16 894	147,3%
Weight	3,4%	2,8%	

### **3.2.5 Owner-occupied housing**

The rental equivalence approach to owner-occupied housing was introduced to the CPI in 2009. At that time, the weight was based on a rental yield (6,9%) which was applied to the market value of the property as estimated by the owner-occupier. In applying the same method (albeit with a slightly higher rental yield), the latest IES computes a value for owner-occupied housing of R256 billion – almost 200% more than the value reported in the 2005/06 IES.

The CPI weights were calculated using an alternative method. Housing data in the IES were split between (actual) rented and owner-occupied. The dwellings were matched according to location and physical characteristics. The rental value for similar dwellings was then used to derive a rental equivalence for owner-occupied dwellings. This approach leaves the weight for owner-occupied housing relatively unchanged at 11,2%.

**Table 10: Calculating Owner-occupied housing: IES and CPI**

Owner-occupied housing	2010/11 Rm	2005/06 Rm	Change
IES value	256 708	88 213	191,0%
Imputed rentals – matching	139 051	88 213	57,6%
Weight	11,2%	11,3%	

### 3.2.6 Gambling

Gambling is the third group of ‘sin’ expenditures for which respondents tend to under-report their spending. Data were sourced from the Gambling Board and the Lotto to obtain the value of bets made by punters, less payouts received.

**Table 11: Calculating Gambling**

Gambling	2010/11		2005/06
	Value Rm	Weight	Weight
IES value	1 496		
CPI value	16 356	1,3%	0,4%

### 3.2.7 Motor vehicles

Where possible, Stats SA adopts concepts and methods in line with those used in the national accounts. Consequently, Stats SA has applied the ‘net purchases’ approach to expenditure on used vehicles. Sales between households are regarded as having a net expenditure of zero. Accordingly, only the margin imposed by the car dealer and purchases of vehicles from the corporate sector should be considered as expenditure for this product. The weight was calculated based on data from the national accounts and applied to the IES expenditure for used vehicles.

The IES showed a significant drop in the purchase of vehicles as a proportion of total expenditure across both new and used vehicles as a result of changes in consumer spending. The weight for used vehicles dropped from 3,8% to 2,7% using the old method and dropped further to 0,8% using the net purchases method.

**Table 12: Calculating New and used vehicles**

Motor vehicles	2010/11 – net weight		2010/11 – gross weight		2005/06	
	Value Rm	Weight %	Value Rm	Weight %	Value Rm	Weight %
Used motor vehicles	10 381	0,8	33 905	2,7	25 065	3,8
New motor vehicles			63 711	5,1	48 269	7,4

### 3.2.8 Insurance

The CPI insurance class includes short-term (dwelling, household contents, motor vehicle, funeral) insurance and medical aid/health insurance. The values from the IES have been adjusted to account for reporting errors, as well as to account for the premium net of claims approach.

Comparing IES results with the statutory reports of oversight structures, it is evident that medical aid premiums have been under-reported in the expenditure survey. This is most likely because the premium may be paid directly

by an employer on behalf of the policyholder in part or in full. Data from the Council for Medical Schemes (CMS) have been used to arrive at a more realistic level for medical aid premium payments.

Data from the CMS and the Financial Services Board (which regulates the short-term insurance industry) was used to determine the amount of money that was paid out in claims directly to members. It is assumed that this money would be captured as expenditure elsewhere by the IES and it is therefore subtracted from the total premiums in order to avoid double counting. Claims paid directly to third-party service providers were not considered in this calculation. This approach has led to a decrease in the weight of short-term insurance.

**Table 13: Calculating Insurance**

Insurance	2010/11		2005/06	
	Value Rm	Weight %	Value Rm	Weight %
Total Insurance	114 665	9,3	56 554	7,2
Medical aid		7,2		3,4
Short term insurance		2,1		3,8

All other values used in the CPI weights were taken directly from the Income and Expenditure Survey results. Comparative tests were conducted to ensure that they were in line with other surveys<sup>2</sup>.

**3.2.9 Price updating weights**

Price updating assumes zero elasticity of products and updated with the price relative (changes in price) on an elementary index level. For new products the higher level aggregates were used. The result of price-updating the expenditure shares gives the final CPI proportions as below.

**Table 14: Difference in expenditure proportions between IES and CPI weights (Total country)**

COICOP category	IES shares*	CPI 2012 weights
Food and non-alcoholic beverages	12,8	18,2%
Alcoholic beverages and tobacco	1,1	5,4%
Clothing and footwear	4,5	4,4%
Housing and utilities	32,0	23,1%
Household contents, equipment, and maintenance	5,1	4,9%
Health	1,4	1,4%
Transport	17,1	16,1%
Communication	2,8	2,5%
Recreation and entertainment	3,0	4,1%
Education	2,7	2,7%
Restaurants and hotels	2,4	3,3%
Miscellaneous	14,7	13,9%

\*Does not total 100% because unclassified items are excluded.

<sup>2</sup> For further information, refer to document "Weights presentation" on the Stats SA website at <http://www.statssa.gov.za/cpi/index.asp>

## Chapter 4: CPI Basket of goods and services

### 1. Introduction

The basket is a list of specific goods and services, which forms the sample for price collection in the CPI.

### 2. Basket of goods and services for South African CPI

The Income and Expenditure Survey informs the decisions on which Stats SA will collect products and services prices. In November 2012, a public discussion document was published by Stats SA on the process and outcome of selecting a new basket. Each collection area has its own basket. Every product that appears in at least one local basket is included in the national basket.

### 3. Selection criteria for basket of goods and services

The 2008 CPI had a CPI basket for each province. The 2013 CPI has a basket for each primary urban area (large town or city), secondary urban area (smaller town) and rural area in each province. Determining basket composition at a disaggregated level improves the relevance of the CPI to the purchasing patterns at a local level. The baskets, however, reflect the pattern of residence rather than the point at which purchases are made. Stats SA compiles indices for 31 different 'index' areas – nine of these being the rural areas in each province.

The basket selection is conducted per 'index' area. The objective of the process is to ensure inclusion in the basket of those goods and services that represent the greatest share of expenditure within a group. Typically, products and services accounting for 90% of expenditure in each group are included. Because of the large number of food items available, the criteria for the selection of food products is that they should represent at least 0,5% of expenditure within their 3-digit class and 5% of expenditure within a 5-digit product. Products with a national weight of less than 0.01% were excluded from the basket.

The 2013 CPI contains 393 products, which is slightly lower than the 2008 basket, which had 403 products.

The number of products in each province and the national total are shown in the table below. The provincial baskets and list of goods and services are provided in Appendix 1 and can also be found on the Stats SA website.

**Table 15: Number of Indicator products**

Province	WC	EC	NC	FS	KZN	NW	GP	MP	LP	Total
Number	344	343	333	331	340	328	358	335	338	<b>393</b>

## Chapter 5: CPI geography

### 1. Introduction

The CPI is published for different types of areas. The geographical CPI collection areas are located in both urban and rural areas. Urban areas are classified as primary or secondary urban areas. The CPI generally collects and publishes for all areas in which prices are collected. Price collection for certain food items is done in rural areas. This section explains how the CPI geographical areas are selected, including the relevant terminology.

### 2. Primary and secondary urban areas

The larger cities and towns in each province are defined as primary urban areas and the smaller towns are defined as secondary urban areas. The demarcation boundaries of each primary area are defined as the municipality boundaries as applicable in the 2001 Census, e.g. City of Johannesburg, eThekweni and the City of Cape Town. The secondary areas are defined by the continuous built-up areas within the municipal boundaries, and exclude any substantial rural areas.

The rural areas adjacent to each urban collection area are used as data collection points for the rural CPI.

### 3. Selection of primary and secondary urban areas

The CPI geographical coverage aims to identify areas with the highest levels of consumer economic activity. This exercise is not easy due to the unavailability of suitable data. A combination of data sources was used to rank the different areas. The socioeconomic variables of each city or town were used to rank the areas at provincial level and at national level. The main variable is the estimated contribution of the area to national expenditure. The Census 2001 was used as the main data source since it contains detailed geographic data. Its results were adjusted to 2005 using the mid-year population estimates published by Stats SA. The variables obtained from the Census 2001 results are the number of employed people; the employment rate; and the population

The number of employed people is included as a variable since employment is correlated with economic activity and expenditure. The employment rate is considered here in addition to the number of people employed, as an area with more of its population employed is likely to see higher levels of expenditure. The population is used as an indicator of economic activity and to establish the size of an area.

The availability of chain stores in an area is also a general indicator for potential consumer expenditure, i.e. the more chain stores in an area the greater the potential consumer expenditure in the area. The Census results were complemented using other data sources. These include the Urban Function Index (UFI) which is based on the number of formal businesses (including industries and private and public services) that are currently located in an area, i.e. the greater the UFI, the greater the level of economic activity of the area.

### 4. CPI Publication areas

The monthly CPI tables contain results for specified publication areas. These areas correspond to data collection areas. Primary areas are published individually. In certain provinces, more than one primary area may be selected. Where these primary areas are of significant importance in the country's economic landscape, they will be reported individually. All other areas will be combined to form publication areas in each province. This means, for example,

that the Gauteng province will have Ekurhuleni, City of Johannesburg and City of Tshwane reported individually, whereas Klerksdorp and Rustenburg will form one publication area. The secondary urban areas are published as an aggregate per province.

**Table 16: CPI collection/publication areas**

Province	Current CPI Areas
<b>Western Cape</b>	
Primary urban areas	City of Cape Town
Secondary urban areas	Paarl
<b>Eastern Cape</b>	
Primary urban areas	Nelson Mandela (Port Elizabeth), Buffalo City (East London)
Secondary urban areas	Queenstown
<b>Northern Cape</b>	
Primary urban areas	Sol Plaatje (Kimberley)
Secondary urban areas	Kuruman
<b>Free State</b>	
Primary urban areas	Mangaung (Bloemfontein), Matjhabeng (Welkom) [Combined]
Secondary urban areas	Kroonstad
<b>KwaZulu-Natal</b>	
Primary urban areas	Ethekwini (Durban/Pinetown), Msunduzi (Pietermaritzburg)
Secondary urban areas	Newcastle
<b>North West</b>	
Primary urban areas	Rustenburg, City Council of Klerksdorp [combined]
Secondary urban areas	Mafikeng
<b>Gauteng</b>	
Primary urban areas	City of Johannesburg Metro, City of Tshwane Metro & Ekurhuleni Metro
Secondary urban areas	Vereeniging
<b>Mpumalanga</b>	
Primary urban areas	Emalahleni (Witbank) & Mbombela (Nelspruit) [combined]
Secondary urban areas	Secunda & Ermelo
<b>Limpopo</b>	
Primary urban areas	Polokwane
Secondary urban areas	Tzaneen

## Chapter 6: Collection methodology

### 1. Introduction

This chapter explains the collection methodology for all indicator products. There are two principal data collection groupings. These are the field and head office collections. Collection methodology also includes the sample of indicator products per product group, sample of respondents, and collection method and frequency.

### 2. Field and head office collection

Field-based collection entails the use of fieldworkers (Price Collectors) who visit sampled outlets and markets in order to record actual prices on the shop floor. The field collection is mostly used for commodities even though some services are included. The collection is carried out on a monthly basis.

The collection and processing of data in the CPI utilises the following forms:

1. Structured product description form (SPD), used to initiate a new product selected for pricing.
2. Pricing form, used to price products that were previously initiated (selected for pricing).
3. Not-carried form, used to verify that the product is unavailable.
4. Tracking form, used to ensure that the forms reach the destination it is intended for.
5. Outlet Cover Page, used to capture data on the outlet status, address, the responsible person for collection and quality control.

The head office collection entails the use of staff based at Stats SA's head office mostly for the collection of prices for services. These collections are carried out by post, fax, e-mail and telephonic survey. The CPI head office collection is divided into four collection groups. These are the monthly, quarterly and annual collections, and collections at other times of the year. The history and nature of the frequency of changes in prices for specific types of products inform the decision on whether prices should be collected monthly, quarterly or annually. Additional information from respondents is also used to supplement the information used to determine the frequency of collection.



Table 16 shows a summary of how the two collections compare.

**Table 16: Comparison of head office collection and field collection**

<b>Comparison</b>	<b>Head office collection</b>	<b>Field collection</b>
Types of items	Commodities and services	Commodities, taxi fares, rentals, and restaurants
Collection method	Postal, e-mail, fax, telephonic, internet	Enumerator
Collection frequency	Monthly, quarterly, biannually, annually, or other times of the year	Monthly (except taxis and rentals which are collected quarterly)
Sampling	Sampling based on quantitative data to include major service providers	Purposive sample
Survey forms	Unique survey form for each respondent, showing the unique quote(s) linked to each indicator product. All quotes linked to the indicator product are printed on a single survey form.	Standardised SPD and Pricing forms. Unique item characteristics for each item. Only one quote printed per survey form.

### 3. Listing of indicator products and methods

Appendix 2 provides a summary of all indicator products and relevant collection methodology information.

## Chapter 7: Special cases

### A. Housing

#### 1. Introduction

There are essentially two types of arrangements that characterise the housing market: housing is either lived in by the owner of the property or rented out by a property owner to a tenant. Estimating the cost of housing should consider these two arrangements.

Defining actual rentals is straightforward. These are the amounts actually paid by tenants to property owners for the provision of accommodation. Typically, tenant and property owners enter into a rental agreement valid for a particular period of time, for example 12 months. The measurement of actual rentals is expected to track the average changes of all rental agreements.

Owners' Equivalent Rent (OER) measures the value of the services yielded by the use of an owner-occupied dwelling over a period of time by the corresponding market rental value for the same type of dwelling for the same period of time. This appraisal is based on the opportunity cost incurred by the owners by deciding to live in their own home, rather than renting them out. Otherwise put, owners who decide to live in their homes are paying a virtual rent to themselves.

#### 2. Actual rentals for housing

The sample of indicator products includes houses, townhouses and flats. Stats SA uses its own rental survey of letting agents. Prior to 2009, Stats SA used an outsourced survey of letting management agencies, providing data on a quarterly basis.

From 2009, fieldworkers (price collectors) visit letting agents in order to record rental prices of actual rented properties. The collection is carried out on a quarterly basis.

#### 3. Owners' equivalent rent

Owner-occupier housing costs represent the largest single component of the Consumer Price Index. Previously these costs were measured by interest rates on mortgage bonds. Interest rates are an inappropriate measure of housing costs as they reflect the cost of debt rather than the cost of housing.

There are three approaches to measuring owners' equivalent rent: Acquisitions, User cost, and Rental equivalence. The first two require data that are not available in South Africa. The third approach requires data on rentals of equivalent dwellings. Not only are these data available but they can be used with no significant risk of error.

Therefore, Stats SA uses the concept of owners' equivalent rent (rental equivalence) measure of housing. This concept reflects the cost associated with the benefit of the accommodation services benefit derived by owner-occupiers from their own homes. It excludes, as it should, the investment component of home ownership. Owners'

equivalent rent measures the opportunity cost to the owners of forgoing a rental income by living in rather than renting out the house they own.

Rental equivalence is used because the measure is conceptually clear, required data are available, and the rental sector in South Africa represents adequately the owner-occupied component. A survey of rentals (same survey is used for actual rentals will be discussed in a later section) by Stats SA running since 2005 will form the data source for owners' equivalent rent.

Similar to actual rentals the indicator products are houses, townhouses and flats.

### **3.1 Explaining the rental equivalence approach**

The rental equivalence approach uses actual rents observed for rented dwellings to impute the equivalent rents that would be payable for owner-occupied housing (Eurostat).

It uses information from the rental sector to estimate owner-occupied housing. It can be argued that the cost of living in one's own house cannot be less than the rent that one can receive from a tenant. An owner-occupier always forgoes this amount when he lives in his own house. It can also be argued that over a long period, the cost cannot be greater than the rent of similar rental dwellings, assuming the existence of a sufficiently active rental market, since the owner-occupier always has the possibility of acquiring equivalent housing services at this price (Johannessen; 2004).

The requirements for implementation of the rental equivalence approach:

- The rental market is large enough for there to be types and sizes of properties in the rental market, which are comparable to those in owner-occupied housing, and that the market rent rate be used as an equivalent of rent changes for owner-occupied housing.
- That the rental market is not controlled and that rent not be subsidised by the authorities or market prices governed in some other way.

The only data requirement is a rental survey. Data on rent paid and the specific housing services that are associated with the unit should be obtained from the survey. The same data are used for the rental index.

## **4. Statistics South Africa's rental survey**

Stats SA's quarterly Rental Survey tracks actual rental values for specific dwellings in each relevant geographic area, by houses, flats, and townhouses. Actual rentals for a given dwelling are compared from one quarter to the next, enabling the calculation of quarterly price relatives for that dwelling for actual, and owners' equivalent rent.

The Rental Survey is designed to cover areas within the scope of CPI. The sample is drawn from actual real estate agents, renting privately owned dwellings to the public in all CPI areas. The sample covers a wide geographic spread to ensure that all of the CPI regions are represented, as well as different housing types. The sample is composed of real properties (dwelling units), using actual locations (i.e. street address), of rented properties.

Housing types should be selected to represent the formal property rental market. The housing types are thus flats, townhouses, and houses.

Since the sample is composed of real properties, using actual locations of rented properties, enumerators go to individual estate agent respondents and collect the actual rental price paid by the tenants of those dwellings included in the sample.

Other information obtained from the respondent:

- Property address to ensure accurate tracking
- Property status (rented, vacant or no longer listed)
- Property features (number of bedrooms, bathrooms, etc.)
- Title status (full-title or sectional title)
- Market segment (upmarket, standard, other)
- Other features (such as whether it includes a swimming pool, etc.)
- Other charges included in the rent price (such as electricity, water, etc.)
- Comments to justify change in price (when it occurs)

## B. Domestic worker wages

### 1. Overview

According to the Classification of Individual Consumption by Purpose (COICOP), domestic services<sup>3</sup> form part of the household operations index. Domestic worker wages (DWW) is included in the CPI basket and has a weight of 2,35% (for all urban areas) in the South African CPI as determined by the Income and Expenditure Survey (IES) and price updated.

Since 2003, it has been compulsory for domestic workers to be registered for Unemployment Insurance. Employers of domestic workers are required to pay over an amount equivalent to 2% of salary paid to domestic workers to the Unemployment Insurance Fund (UIF). These payments may be made annually or monthly, in advance or in arrears. Stats SA receives updates of the UIF data on a monthly basis. In April 2008, Stats SA started to use the UIF database as the source of pricing data for DWW.

## C. Seasonal fruit

### 1. Overview

Prior to 2013, all seasonal fruit were 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. A practice of 'the seasonal basket' was introduced in the South African CPI in 2013. 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.

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<sup>3</sup> Domestic services is the employment of paid staff in private service such as butlers, cooks, maids, cleaners, drivers, gardeners, governesses, secretaries, tutors and au pairs; also domestic services, including baby-sitting and housework, supplied by agencies or self-employed persons (COICOP-HBS, 2003).

**Table 17: Seasonal basket composition**

Indicator product	Indicator product code	Basket months
Oranges – fresh	01161001	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Naartjies – fresh	01161003	Jun, Jul, Aug, Sep, Oct
Peaches – fresh	01165002	Jan, Feb, Oct, Nov, Dec
Plums – fresh	01165003	Jan, Feb, Mar, Apr
Avocados – fresh	01165004	Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Nectarines – fresh	01165005	Jan, Feb, Dec
Grapes – fresh	01166001	Jan, Feb, Mar, Apr, May, Jun, Nov, Dec
Strawberries – fresh	01166002	May, Jun, Jul, Aug, Sep, Oct
Pawpaws/Papayas – fresh	01167001	Apr, May, Jun, Jul, Sep, Oct, Nov
Pineapples – fresh	01167002	Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Mangoes – fresh	01167003	Jan, Feb, Mar, Apr, Dec
Watermelon – fresh	01167099 01167004	Jan, Feb, Oct, Nov, Dec

Non-seasonal fruit in the basket (bananas, apples) will have their own weight.

## Chapter 8: CPI compilation

### 1. Elementary indices

Compilers of the CPI have to select representative products within an elementary aggregate and then collect a sample of each of the representative products, usually from a sample of different outlets. The individual products for which prices are actually collected are described as the sampled products. Their prices are collected over a succession of time periods. An elementary price index is therefore typically calculated from two sets of matched price observations.

The price index for an aggregate is calculated as a weighted average of the price indices for the sub-aggregates, the (expenditure or sales) weights and type of average being determined by the index formula. The lowest-level aggregates are called elementary aggregates.

Since the elementary aggregates form the building blocks of a CPI, the choice of an inappropriate formula at this level can have a tremendous impact on the overall index. The definition of an elementary aggregate involves aggregation over four possible dimensions.

- A time dimension; i.e. the item unit value could be calculated for all item transactions for a year, a month, a week, or a day.
- A spatial dimension; i.e. the item unit value could be calculated for all item transactions in the country, province or state, city, neighbourhood, or individual location (South African selection).
- A product dimension; i.e. the item unit value could be calculated for all item transactions in a broad general category (e.g. food), in a more specific category (e.g. margarine), for a particular brand (ignoring any particular size) or for a particular narrowly defined item (e.g. a particular universal product code).
- A sectoral (or entity or economic agent) dimension; i.e. the item unit value could be calculated for a particular class of households or a particular class of outlets.

### 2. Calculating the South African CPI

The CPI measures price change by comparing the cost of a fixed basket of commodities. This basket is based on expenditures in a particular reference period. The basket contains only commodities of unchanging or equivalent quantity and quality, the index reflects pure price movements.

The calculation of the South African CPI entails calculating price relatives using prices in the current and previous survey periods. The survey periods are equal to a month. In the first stage of calculation, for each of the products (goods or services) for which prices are collected, an elementary index is calculated using the Jevons index number formula. The Jevons index is defined as the unweighted geometric mean of the price ratios (relatives), which is identical to the ratio of the unweighted geometric mean prices:

$$I_J^{0:t} = \prod \left( \frac{p_i^t}{p_i^0} \right)^{1/n} = \frac{\prod (p_i^t)^{1/n}}{\prod (p_i^0)^{1/n}}$$

The chained monthly indices link together the month-to-month changes through successive multiplication. The Jevons formula is transitive as the chained monthly indices are identical to the corresponding direct indices which compare prices in each successive month directly with those of the reference month.

The second stage of calculating the CPI does not involve individual prices or quantities. Instead, a higher-level index is calculated as a Young index in which the elementary price indices are averaged using a set of predetermined weights. The formula can be written as follows:

$$I^{0t} = \sum w_i^b I_i^{0t}, \sum w_i^b = 1$$

where  $I^{0t}$  denotes the overall CPI, or any high-level index, from period 0 to  $t$ ;  $w_i^b$  is the weight attached to each of the elementary price indices; and  $I_i^{0t}$  is the corresponding elementary price index. The elementary indices are identified by the subscript  $i$ , whereas the higher-level index carries no subscript. The weights are derived in period  $b$ , which in practice has to precede period 0, the price reference period. There are three kinds of reference periods:

- Weight reference period. The period covered by the expenditure statistics used to calculate the weight. Usually, the weight reference period is a year.
- Price reference period. The period whose prices are used as denominators in index calculation.
- Index reference period. The period for which the index is set to 100 also referred to as the base period.

The three reference periods are generally different, but in the case of the South African CPI, the price and index reference periods are similar. The weights are usually estimated on the basis of an expenditure survey that was conducted some time before the price reference period, hence the weight reference period and the price reference period are invariably separate periods in practice.



## 2.1 Numerical example

The following example shows the calculations applicable to “Instant coffee”.

**Table 18: Calculating the relative**

Product code							
01211001	<b>INSTANT COFFEE</b>						
Unique number	Respondent	Quantity	Unit	Previous price	Current price	Relative	Geometric mean
xxxxxxx	Pick 'n Pay	1 tin	750g	61,99	61,99	1,00000	
yyyyyyy	Checkers	1 tin	250g	16,99	15,99	0,94114	
zzzzzzz	Woolworths	1 pouch	120g	19,99	21,99	1,10005	
wwwww	Corner Café	1 tin	250g	18,79	18,79	1,00000	
							<b>1,00871</b>

**Table 19: Creating the index**

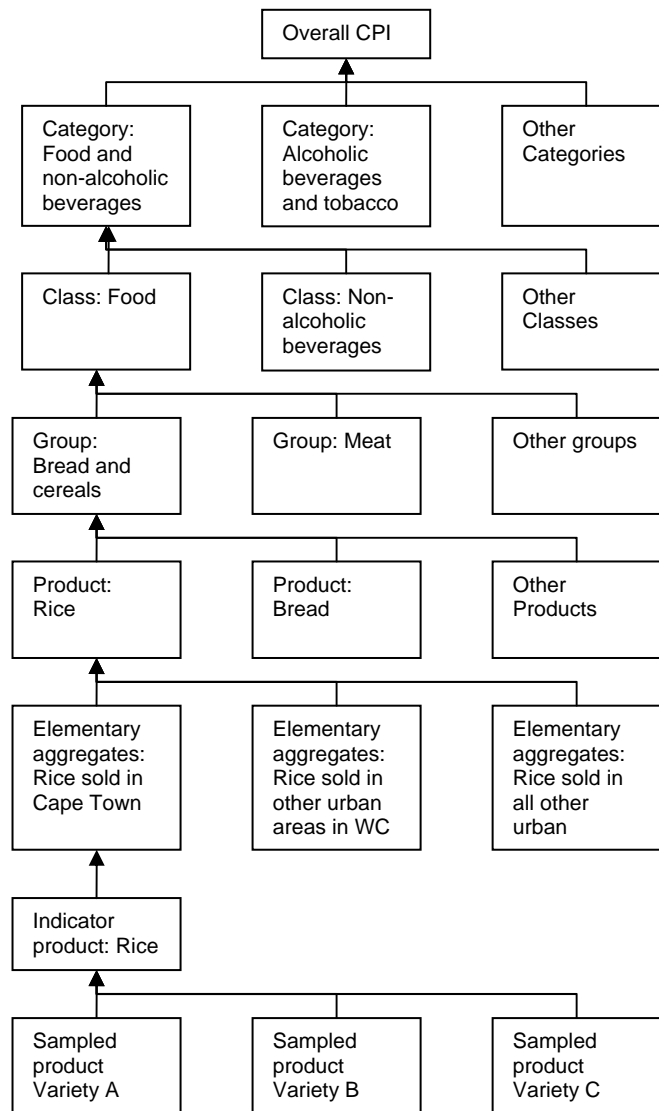
INSTANT COFFEE				
Product code	Previous index	Relative	New index	
01211001	139,2	1,00871	140,4	
Product code	Description	new index	weight in CPI	weighted index
01211001	Instant coffee	140,4	0,15	21,06
01211002	Ground coffee and coffee beans	141,4	0,02	2,828
01212001	Ceylon/black tea	141,3	0,12	16,956
01212002	Rooibos tea	139,8	0,03	4,194
01212003	Drinking chocolate	139,2	0,02	2,784
0121	Hot beverages		0,34	140,653
Product code	Description	new index	weight in CPI	
0121	Hot beverages	140,7	0,34	47,838
0122	Cold beverages	140,2	1	140,2
012	Non-alcoholic beverages		1,34	140,327
Product code	Description	new index	weight in CPI	
011	Food	150,3	16,17	2430,351
012	Non-alcoholic beverages	141,3	1,34	189,342
01	Food and non-alcoholic beverages		17,51	149,611

Product code	Description	new index	weight in CPI	
01	Food and non-alcoholic beverages	149,5	18,28	2732,86
02	Alcoholic beverages and tobacco	152,2	5,56	846,232
03	Clothing and footwear	165,4	4,42	731,068
04	Housing, water, electricity, gas and other fuels	174,9	21,04	3679,896
05	Furnishings. and household equipment	86	6,14	528,04
06	Health	122,8	1,48	181,744
07	Transport	146,1	17,79	2599,119
08	Communication	115,1	3,13	360,263
09	Recreation and culture	138,2	3,93	543,126
10	Education	164	2,15	352,6
11	Restaurants and hotels	145,8	2,78	405,324
12	Miscellaneous goods and services	123,4	13,3	1641,22
	CPI All Items (All urban areas)		<b>100,00</b>	146,015

**Table 20: Inflation rate**

	Index (previous year, same month)	Index (previous month)	Index (current month)	Monthly percentage change	Annual percentage change (inflation rate)
CPI All Items (All urban areas)	137,5	144,8	146,0	0,84	6,19

## 2.2 Graphical example of the aggregation structure of CPI



### 3. Linking new index series to old index series

From time to time, the weights for the elementary aggregates have to be revised to ensure that they reflect current expenditure patterns and consumer behaviour. When new weights are introduced the price reference period for the new index can be the last period of the old index, the old, and the new indices being linked together at this point. The old and the new indices constitute a linked index.

The introduction of new weights is often a complex operation because it provides an opportunity to introduce new items, new samples, new data sources, new compilation practices, new elementary aggregates, new higher-level indices or new classifications. These tasks are often undertaken simultaneously at the time of reweighting to minimise overall disruption to the time series and any resulting inconvenience to users of the indices.

In many countries, reweighting and chaining are carried out about every five years, but some countries introduce new weights each year.

#### 3.1 Features of a linked index

There are several important features of a linked index:

- The linked index formula allows weights to be updated, and facilitates the introduction of new items and sub-indices and the removal of obsolete ones.
- In order to be able to link the old and the new series, an overlapping period ( $k$ ) is needed in which the index has to be calculated using both the old and the new set of weights.
- A linked index may have two or more links. Between each link period, the index may be calculated as a fixed weight index using any index number formula. The link period may be a month or a year, provided the weights and indices refer to the same period.
- Linking is intended to ensure that the individual indices on all levels show the correct development through time.
- Linking leads to non-additivity. When the new series is chained onto the old the higher-level indices after the link cannot be obtained as weighted arithmetic averages of individual indices using the new weights. If, on the other hand, the index reference period is changed and the index series prior to the link period is rescaled to the new index reference period, this series cannot be aggregated to higher-level indices by use of the new weights.

### 3.2 Method of linking and rebasing

There are many different methods of linking indices. The method followed by Stats SA is as follows.

All indices are rebased so that December 2012 equals 100. All new product indices are at 100 in December 2012. This is a departure from previous practice where the average of the index for a year was set equal to 100.

Since all elementary (lowest-level) indices equal 100 in December 2012, all aggregations using the new weights also equal 100 in December 2012. The index levels for January 2013 are calculated in the normal manner (the sum of lower-level indices multiplied by their weights). This ensures that all month-on-month percentage changes from December 2012 to January 2013 are driven by price changes and the relative importance of each price change as determined by the new weights.

Similarly, the CPI for February and all subsequent months is calculated in the normal way. This method satisfies the following criteria:

- The historical, published rates of change in the CPI are retained (although historical additivity is lost);
- The base period of the CPI is December 2012 = 100;
- All monthly changes in the CPI from January 2013 are a true reflection of the underlying price movements; and
- All indices are calculated in the normal fashion and additivity through all aggregation levels is ensured.

Table 19 shows the respective indices used to calculate the month-on-month and year-on-year percentage changes for the first two months of 2013.

**Table 19: Calculating monthly and annual percentage changes for the CPI**

	January 2013	February 2013
<b>Month-on-month</b>	$\frac{\text{Jan-13 (new weights)}}{\text{Dec-12 (rebased to 100)}^*}$	$\frac{\text{Feb-13 (new weights)}}{\text{Jan-13 (new weights)}}$
<b>Year-on-year</b>	$\frac{\text{Jan-13 (new weights)}}{\text{Jan-12 (old weights, rebased)}}$	$\frac{\text{Feb-13 (new weights)}}{\text{Feb-12 (old weights, rebased)}}$

\* Dec-12 = 100 at all levels of aggregation

## Chapter 9: Imputations in the CPI

### 1. Introduction

Although the CPI is published monthly, certain price data are sometimes not available. This may be due to the seasonal nature of the product, the fact that prices change only periodically (such as administrative prices, tariffs and fees), or the absence of the product from outlets for various reasons (e.g. items temporarily unavailable). In all of these cases, an imputation method should be used, whether at an aggregated level or a more disaggregated level. The failure to impute for missing prices may lead to a bias in the index (see Armknecht and Maitland-Smith, 1999).

Prior to 2009, Stats SA did not have an explicit approach to dealing with this problem. Implicitly the carry forward method was used, i.e. the last observed price was carried forward. Although this is an accepted method of imputation in certain cases, its indiscriminate use had the effect of distorting movement in the index.

With the introduction of the reweighted and rebased CPI at the beginning of 2009, a new approach to imputation was adopted.

### 2. Methods of imputations

The ILO Manual on CPIs (Ch 9) outlines three possible methods to impute missing price observations.

- Omit the item for which the price is missing so that a *matched sample* is maintained (like is compared with like) even though the sample is depleted.
- *Carry forward* the last observed price.
- Impute the missing price from the *average price change* for the prices that are available in the elementary aggregate or from a particular comparable item from another similar outlet.

These three options are discussed in more detail.

#### 2.1 Matched sample

Omitting an observation from the calculation of an elementary index is equivalent to assuming that the price would have moved in the same way as the average of the prices of the items that remain included in the index. Omitting an observation changes the implicit weights attached to the other prices in the elementary aggregate.

#### 2.2 Carry forward

Carrying forward the last observed price should be avoided whenever possible and is acceptable only for a very limited number of periods. Special care needs to be taken in periods of high inflation or when markets are changing rapidly as a result of a high rate of innovation and product turnover. While simple to apply, carrying forward the last observed price biases the resulting index towards zero change. In addition, when the price of the missing item is recorded again, there is likely to be a compensating step-change in the index to return it to its proper value. The adverse effect on the index will be increasingly severe if the item remains unpriced for some length of time. In general, carrying forward is not an acceptable procedure or solution to the problem.

## 2.3 Average price change

Imputation of the missing price by the average change of the other available prices within an elementary aggregate may be applied where the prices can be expected to move in the same direction. The imputation can be made using all of the remaining prices in the elementary aggregate. As already noted, this is numerically equivalent to omitting the item for the immediate period, but it is useful to make the imputation so that if the price becomes available again in a later period the sample size is not reduced in the current period. In some cases, depending on the homogeneity of the elementary aggregate, it may be preferable to use only a subset of items from the elementary aggregate to estimate the missing price. In some instances, this may even be a single comparable item from a similar type of outlet whose price change can be expected to be similar to that of the missing one.

## 3. Methods applied by Statistics South Africa

Stats SA uses all three methods of imputation in the calculation of the CPI. The choice of method is determined by the level of aggregation of a particular index and the frequency of price collection for a particular product.

The *matched sample approach* is used when one observation in a sample for an elementary aggregate is temporarily unavailable. For example, if the CPI collects data for 10 types of tyres in Tshwane and one of those is temporarily unavailable, the average price change is calculated on the remaining nine for that area. In this way, the assumption is that the price would have moved in the same way as the average of the prices of the items that remain included in the elementary index. This type of imputation is applied at the lowest level of calculation/aggregation, at the elementary index<sup>4</sup> level.

The *carry-forward approach* is applied to annual, biannual, quarterly and other infrequent surveys in months when the item is not surveyed. It is not applied to prices in their survey month and is not applied to prices collected monthly. In the case of these periodic changes, it is legitimate to infer that the prices should remain constant until the next change. This type of imputation is applied at the lowest level of calculation/aggregation, at the elementary index level.

Imputation by *average price change* is only considered once there are no data available to calculate an average percentage change for an elementary index. The lack of data could be attributed to various causes, for example seasonal behaviour, shortages in the market, etc. If data are missing for an elementary aggregate, the missing elementary index is imputed from the national average percentage change (average of all price changes for the same products in other publication areas). It should be noted that this type of imputation should be kept to a minimum.

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<sup>4</sup> An elementary index in the South African CPI refers to an index per product per publication region.

## Chapter 10: Quality and quantity adjustments in the CPI

### 1. Quality adjustments in the CPI

Currently, the South African CPI breaks the price-level time series when changes are made to the characteristics or size of a product. This ensures that only price changes for identical products (matching sample approach) are incorporated into the CPI. This method is internationally accredited but has the disadvantage of ignoring implicit price changes caused by changing characteristics. The ignored implicit price changes can be accommodated in the CPI through the use of quality adjustments.

Quality adjustments are the process of estimating what the market price of a replacement product would be if it had the characteristics of the product it replaces and with whose price its price is to be compared. The process requires estimating the market value of any differences in the price-determining characteristics of the two products and adjusting by addition, subtraction or multiplication by a coefficient – the observed price of the replacement product (OECD). The methods that are commonly used for quality adjustments are:

- **Overall mean imputation** – the use of price movements of a similar item or items to estimate an overlap price for the old item.
- **Class mean imputation** – impute price changes based on price changes of comparable items.
- **Production cost method** – adjusts prices on the foundation that the difference between the qualities of old and new products corresponds to the difference in costs to make products. Quality changes can therefore be removed from replacement products if the cost of these quality changes can be determined or is available.
- **Hedonic regression** – various variables affecting a product's price are regressed against the price of the product in order to determine the value of the product should the variables change.

Prior to 2013, there were no quality adjustments in the South African CPI. The use of quality adjustments is part of standard international practice. The South African CPI has introduced quality adjustments for different products in staggered phases. The products where quality adjustments are made are motor vehicles, cellphones, decoders, DVD players and TVs. The list will be updated as more research is conducted on other products.

The aim of quality adjustments is mainly to estimate the market price for a substitute product if the characteristics are held constant between the old and substitute varieties. In line with international best practice, Stats SA uses hedonic regressions to quality adjust for the products listed above. This is done by identifying the (price determining) characteristics of a product and using these in a regression analysis.

Parameter estimates are 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.



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## 2. Quantity adjustments in the CPI

A quantity adjustment is a form of quality adjustment where the pure change in the quantity of a product results in the adjustment of a price. In other words, the quantity change may take the form of a change in the physical characteristics of the product that can easily be quantified, such as change in weight, dimensions, purity, or chemical composition of a product (ILO Manual; 2004). Quantity adjustments are applied distinctly to products with permanent quantity structure changes.

Quantity adjustment is one of the most straightforward explicit adjustments to undertake. It is applicable when the size of the replacement item differs from that of the previously priced item. This is accomplished by scaling the price of the old or new product by the ratio of quantities. To be in line with international best practice, the South African CPI also makes use of quantity adjustments.

## Definitions and glossary

<b>Acquisitions approach</b>	The <i>acquisitions approach</i> measures changes in the price paid by householders for net acquisitions of homes, purchased from the corporate or the public sector. In practice, this means homes built by developers or the state and sold to households for the first time. It includes major additions and alterations to existing homes.
<b>Aggregate</b>	A set of transactions relating to a specified flow of goods and services, such as the total purchases made by resident households of consumer goods and services in some period. The term “aggregate” is also used to mean the value of the designated set of transactions.
<b>Aggregation</b>	The process of combining or adding different sets of price changes to obtain larger sets of price changes. The larger set is described as having a higher level of aggregation than the sets of which it is composed.
<b>Base period</b>	The base period is usually understood to mean the period with which all the other periods are compared.
<b>Basket</b>	A specified set of goods and services. In a CPI context, the set may comprise the actual quantities of consumption goods or services acquired or used by households in some period, or may be made up of hypothetical quantities.
<b>Bias</b>	A systematic tendency for the calculated CPI to diverge from some ideal or preferred index, resulting from the method of data collection or processing, or the index formula used.
<b>Category</b>	In COICOP: classification of goods and service at 2-digit level.
<b>Chain index</b>	An index number in which the value at any given period is related to a base in the previous period, as distinct from one which is related to a fixed base (OECD).
<b>Chaining</b>	Joining together two indices that overlap in one period by rescaling one of them to make its value equal to that of the other in the same period, thus combining them into single time series. More complex methods may be used to link together indices that overlap by more than one period (OECD).
<b>Class</b>	In COICOP: classification of goods and services at 3-digit level.
<b>COICOP</b>	Classification of individual consumption by purpose
<b>Collection frequency</b>	Frequency of data collection, e.g. monthly, quarterly or annually.
<b>Collection method</b>	The methods of collection include the use of direct (field) collection, internet, e-mail, post or fax.
<b>Consumer price index</b>	A monthly or quarterly price index compiled and published by an official statistical agency that measures changes in the prices of consumption goods and services acquired or used by households. Its exact definition may vary from country to country.
<b>Consumption expenditure (CPI)</b>	Expenditure on goods and services acquired and privately used by household members, including imputed values for items produced and consumed by the household itself.

<b>Cost of living index (COLI)</b>	An index that measures the change between two periods in the minimum expenditures that would be incurred by a utility-maximising consumer, whose preferences or tastes remain unchanged, in order to maintain a given level of utility (or standard of living or welfare).
<b>CPI</b>	Consumer Price Index
<b>CPI collection areas</b>	The cities, towns or municipalities from which sample prices for indicator products are collected.
<b>CPI compilation</b>	The process of calculating the CPI.
<b>CPI Core index</b>	CPI excluding items that are policy, seasonal or volatile.
<b>Data editing</b>	A process of cleaning raw data to remove coverage or content errors by applying a set of pre-determined rules.
<b>Deflator</b>	A price index that is used to divide the value of some aggregate in order to revalue its quantities at the prices of the price reference period.
<b>Democratic weights</b>	Each household is given equal weight in the calculation of the index, irrespective of the size of its expenditures.
<b>Diary method</b>	A data collection method whereby respondents are given open-ended forms (diaries) to record all purchases (acquisitions) on a daily basis.
<b>Domestic worker</b>	A person employed to work in a household as a cleaner, cook, nanny, driver, gardener, etc.
<b>Durables</b>	A consumption good that can be used repeatedly or continuously for purposes of consumption over a long period of time, typically several years.
<b>Dwelling unit</b>	Structure or part of a structure or group of structures occupied or meant to be occupied by one or more than one household. Includes structure or part of a structure that is vacant and/or under construction, but can be lived in at the time of the survey. Includes units in collective living quarters.
<b>Elementary aggregates</b>	The smallest aggregate for which expenditure data are available and used for CPI purposes. The values of the elementary aggregates are used to weight the price indices for elementary aggregates to obtain higher-level indices.
<b>Expenditure weights</b>	See <i>weights</i> .
<b>Field collection</b>	The direct collection of prices from outlets by fieldworkers (price collectors).
<b>Fisher price index</b>	The geometric average of the Laspeyres price index and the Paasche price index.
<b>GDP</b>	Growth Domestic Product. The total value of goods and services produced within the geographic boundaries of a country for a specified period of time.
<b>Geographical CPI areas</b>	See <i>CPI collection areas</i> .
<b>Geometric mean</b>	A method of calculating a type of average by taking the <i>n</i> th root of the product of <i>n</i> items.
<b>Geometric Laspeyres index</b>	A weighted geometric average of the price relatives using the expenditure shares of the price reference period as weights. Also called Logarithmic Laspeyres index.

<b>Head office collection</b>	The collection of prices by staff based at Stats SA head office via internet, e-mail and fax.
<b>Headline CPI (South Africa)</b>	This monthly price index is compiled and published measuring changes in the prices of consumption goods and services for all urban areas.
<b>Household</b>	Either households may be individual persons living alone or groups of persons living together who make common provision for food or other essentials for living.
<b>Household expenditure survey</b>	Sample survey of households in which the households are asked to provide data on, or estimates of, the amounts they spend on goods and services over a given period of time.
<b>Imputation</b>	Data imputation is the substitution of estimated values for missing or inconsistent data items (fields) (OECD).
<b>Index number</b>	An index number is an economic data figure reflecting price or quantity compared with a standard or base value.
<b>Index reference period</b>	The period for which the value of the index is set, equal to 100.
<b>Indexation</b>	The periodic adjustment of the money values of regular scheduled payments based on the movement of the CPI or some other price index. The payments may be wages or salaries, social security or other pensions, other social security benefits, rents, interest payments, etc.
<b>Indicator products</b>	Representative products within an elementary aggregate for which a sample of prices is collected, usually from a sample of different outlets.
<b>Inflation</b>	The persistent change in the general level of prices. In finance, inflation is a continuous decline in the value of money, which is reflected in the ever-increasing prices of goods and services. Two measures of inflation are most often used, namely monthly inflation and annual inflation.
<b>Inflation rate</b>	The percentage change in the CPI.
<b>Inflation target</b>	In setting monetary policy, the Treasury determines a range or target in the chosen inflation measure (e.g. CPI) as part of an approach to reduce inflation. This is done by adjusting chosen financial instruments (e.g. interest rates) in order to contain inflation within the target.
<b>Initiation</b>	Initiation occurs when a SPD form is completed for an item for the first time.
<b>Interest rates on mortgage bonds</b>	The cost of capital borrowed for the purposes of purchasing an asset which is in turn used by the lender (e.g. banks) as surety for the loan.
<b>International Trade Classification (ITC)</b>	It is a statistical classification of the commodities entering external trade. It is designed to provide the commodity aggregates required for purposes of economic analysis and to facilitate the international comparison of trade-by-commodity data (OECD).
<b>Jevons price index</b>	An elementary price index defined as the unweighted geometric average of the sample price relatives.

<b>Laspeyres price index</b>	A price index defined as a fixed weight, or fixed basket, index which uses the basket of goods and services of the base period. The base period serves as both the weight reference period and the price reference period. It is identical with a weighted arithmetic average of the current to base period price relatives using the value shares of the base period as weights. Also called a “base weighted index” (OECD).
<b>Link factor</b>	A ratio used to join a new index series to an old index series to form a continuous series.
<b>Linking</b>	Splicing together two consecutive sequences of price observations, or price indices, that overlap in one or more periods. When the two sequences overlap by a single period, the usual procedure is simply to rescale one or other sequence so that the value in the overlap period is the same in both sequences and the spliced sequences form one continuous series.
<b>Low index</b>	A price index that measures the proportionate change between periods 0 and t in the total value of a specified basket of goods and services. The basket does not necessarily have to consist of the actual quantities in some period (OECD).
<b>Historical metropolitan area</b>	The ‘historical metropolitan areas’ are generally the largest towns or cities in each province. These are published in the CPI release either as the city or as a combination of two cities.
<b>Minibus taxi</b>	A motor vehicle that usually sits about 15 passengers and is used for public transport in South Africa, e.g. Toyota Hiace (Siyaya).
<b>Municipality</b>	A generic term describing the unit of government in the third sphere responsible for local government in a geographically demarcated area. It includes district, local and metropolitan municipalities.
<b>NHTS</b>	National Household Travel Survey (2003)
<b>Non-durables</b>	Household items that do not last long, for example food and personal care items. Households acquire these items on a daily, weekly or monthly basis.
<b>Other urban area</b>	“Other urban areas” are mid-sized towns in each province.
<b>Ottawa group</b>	This international expert group is also known as the United Nations International Working Group on Price Indices. The group focuses on applied research in the area of consumer price indices.
<b>Outlier</b>	An outlier is a data value that lies in the tail of the statistical distribution of a set of data values (OECD). A term that is generally used to describe any extreme value in a set of survey data. In a CPI context, it is used for an extreme value of price or price relative that requires further investigation or that has been verified as being correct.

<b>Owner-occupied housing</b>	Dwellings owned by the households that live in them. The dwellings are fixed assets that their owners use to produce housing services for their own consumption, these services usually being included within the scope of the CPI. The rents may be imputed by the rents payable on the market for equivalent accommodation or by user costs.
<b>Owners' equivalent rent</b>	The cost of consuming a housing service. It is the opportunity cost incurred by owners who live in their own home rather than renting it out.
<b>Paasche price index</b>	A price index defined as a fixed weight, or fixed basket, index which uses the basket of goods and services of the current period. The current period serves as the weight reference period and the base period as the price reference period. It is identical with a weighted harmonic average of the current to base period price relatives using the value shares of the current period as weights. Also called a "current weighted index" (OECD).
<b>Payments approach</b>	Payments for a particular good should be allocated to the period in which they were made, irrespective of whether the product was delivered (consumed) or not. This approach is not generally used in CPIs.
<b>Plutocratic weights</b>	Households are given different weights in the calculation of the index according to their relative importance which is based on total expenditure.
<b>PPI</b>	Producer Price Index
<b>Price index</b>	A price index is a normalised average (typically a weighted average) of prices for a given class of goods or services in a given region, during a given interval of time. It is a statistic designed to help to compare how these prices, taken as a whole, differ between time periods or geographical locations.
<b>Price reference period</b>	The period that provides the prices with which the prices in other periods are compared. The prices of the price reference period appear in the denominators of the price relatives, or price ratios, used to calculate the index. The price reference period is typically designated as period 0.
<b>Price relative</b>	The ratio of the price of an individual product in one period to the price of that same product in some other period.
<b>Primary sampling unit (PSU)</b>	Geographical area comprising one or more <i>enumeration areas</i> of the same type (and therefore not necessarily contiguous) that together have at least one hundred <i>dwelling units</i> .
<b>Primary urban area</b>	The larger cities/towns in each province are defined as primary urban areas, e.g. City of Johannesburg. These areas are demarcated by the municipal boundaries.
<b>Provincial basket</b>	A specified set of goods and services in a specific province. In a CPI context, the set may comprise the actual quantities of consumption goods or services acquired or used by households in some period, or may be made up of hypothetical quantities.

<b>Purposive sampling</b>	A purposive sample is one which is selected subjectively. The sampler attempts to obtain a sample that appears to him/her to be representative of the population and will usually try to ensure that a range from one extreme to the other is included.
<b>Quality adjustments</b>	Quality adjustments are the result of the process of estimating what the market price of a replacement product would be if it had the characteristics of the product it replaces and with whose price its price is to be compared.  The process requires estimating the market value of any differences in the price-determining characteristics of the two products and adjusting – by addition, subtraction or multiplication by a coefficient – the observed price of the replacement product.  The adjustment is made in order that the price comparison between the two products reflects “pure” price change only (OECD)
<b>Rebasing</b>	Rebasing may have different meanings in different contexts. It may mean:  – changing the weights used for a series of indices; or – changing the price reference period used for a series of indices; or – changing the index reference period for a series of indices.  The weights, price reference period and index reference period may be changed separately or at the same time.
<b>Recall method</b>	A data collection method whereby respondents are asked to recall information for a reference period several months prior to the current survey month.
<b>Reference period</b>	The period of time relevant for a particular survey.
<b>Reference population</b>	The set of households included within the scope of the index.
<b>Refusal</b>	Situation when a household or individual refuses to answer the questions or complete the questionnaire.
<b>Relative importance</b>	See <i>Weights</i> .
<b>Rental equivalence</b>	The estimation of the imputed rents payable by owner-occupiers based on the rents payable on the market for accommodation of the same type.
<b>Respondent</b>	The person or organisation that answers the questions or completes the questionnaire.
<b>Reweighting</b>	Replacing the weights used in an index by a new set of weights.
<b>Sampling</b>	Selecting elements from a population in such a way that they are representative of the population.
<b>Sampling frame</b>	A comprehensive list of distinct and distinguishable units within a population from which a sample is drawn.
<b>Scope</b>	The set of products for which the index is intended to measure the price changes. The scope of a CPI will generally be defined in terms of a designated set of consumption goods and services purchased by a designated set of households.
<b>Secondary urban area</b>	The smaller towns in each province are defined as secondary urban areas, e.g. Paarl. See chapter 5.

<b>Semi-durables</b>	Semi-durable goods differ from durable goods in that their expected lifetime of use, though more than one year, is often significantly shorter and their purchasers' value is substantially less.
<b>Services</b>	A service is the non-material counterpart of a physical <b>good</b> . A service provision comprises a sequence of activities that does not result in ownership of the outcome, and this is what fundamentally differentiates it from furnishing someone with physical goods.
<b>SPD (form)</b>	Structured Product Description form
<b>Stats SA</b>	Statistics South Africa
<b>Substitution</b>	<ul style="list-style-type: none"> <li>– of outlets: Substitution of similar outlets occurs to replace outlets that have closed down.</li> <li>– of products: Substitution of similar products occurs to replace items that have become permanently unavailable (i.e. items reported as “permanently unavailable” on the Pricing form).</li> </ul>
<b>Substitution bias</b>	This is generally understood to be the bias that results when a basket index is used to estimate a cost of living index, because a basket index cannot take account of the effects on the cost of living of the substitutions made by consumers in response to changes in relative prices. In general, the earlier the period to which the basket relates, the greater the upward bias in the index.
<b>Survey</b>	A process, which collects, examines, and reports on data concerning variables of interest for a reference period.
<b>System of National Accounts (SNA)</b>	A coherent, consistent, and integrated set of macroeconomic accounts, balance sheets, and tables based on a set of internationally agreed concepts, definitions, classifications, and accounting rules. Household income and consumption expenditure accounts form part of the SNA. The expenditure data are one of the sources that are used to estimate expenditure weights for CPI purposes.
<b>Trimmed mean</b>	An analytical series 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.
<b>Unit status code</b>	Items selected for pricing in outlets are subject to changes in their collection status. The item status is tracked using a set of codes called Unit Status Codes (USC).
<b>UNSD</b>	United Nations Statistics Division
<b>Urban</b>	A continuously built-up area with characteristics such as type of economic activity and land use, proclaimed as such under the pre-1998 municipal demarcation or classified as such by the Geography department of Stats SA based on their observation. Cities, towns, townships, suburbs, etc. are typical urban areas.
<b>Urban function index (UFI)</b>	A measure based on the number of formal businesses, including industries and private and public services that are currently located in an area, i.e. the greater the UFI, the greater the level of economic activity of the area.
<b>User cost</b>	The cost incurred over a period of time by the owner of a fixed asset or consumer durable as a consequence of using it to provide a flow of



	capital or consumption services. User cost consists mainly of the depreciation of the asset or durable (measured at current prices and not at historic cost) plus the capital, or interest, cost.
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<b>Utility</b>	The satisfaction derived from consumption of a good or service.
<b>Value</b>	Price multiplied by quantity. The value of the expenditures on a set of homogeneous products can be factored uniquely into its price and quantity components.
<b>Volume seller</b>	The volume seller is based on the quantity sold. In practise, the volume seller is assumed to be the brand and unit with the most shelf space allocated to it.
<b>Weights</b>	A set of numbers summing to unity that are used to calculate averages. Weights represent the relevant importance of the indicator product in a subgroup. The weight of a product is calculated by dividing the total expenditure by households on that product by the total expenditure on all goods and services by households.
<b>Weights reference period</b>	The period, usually one or more years, of which the expenditures serve as weights for the index. The period of which the expenditure shares serve as the weights for a Young index, or of which the quantities make up the basket for a Lowe index.
<b>Young index</b>	An index calculated as a weighted arithmetic average of the individual price relatives, holding constant the revenue shares of the weight reference period.

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## Appendix 1: CPI basket of goods and services, provincial baskets indicator product survey months

Table 21

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
<b>01</b>	<b>Food and non-alcoholic beverages</b>			
<b>01.1.</b>	<b>Food</b>			
<b>01.1.1</b>	<b>Bread</b>			
01.1.1.1	01111001	Rice	All provinces	Monthly
01.1.1.2	01112001	White bread	All provinces	Monthly
01.1.1.2	01112002	Brown bread	All provinces	Monthly
01.1.1.2	01112003	Sweet biscuits	WC, EC, NC, FS, KZN, NW, GP, MP	Monthly
01.1.1.2	01112005	Bread rolls	WC, EC, NC	Monthly
01.1.1.3	01113001	Spaghetti	WC, EC, NC, NW, GP, MP, LP	Monthly
01.1.1.3	01113002	Macaroni	WC, EC, NC, NW, GP, MP, LP	Monthly
01.1.1.3	01113003	Other pasta (excluding Spaghetti and Macaroni)	WC, EC, NC, NW, GP, MP, LP	Monthly
01.1.1.4	01114001	Cakes and tarts	All provinces	Monthly
01.1.1.6	01116001	Cake flour	All provinces	Monthly
01.1.1.6	01116002	Bread flour	WC, EC, NC	Monthly
01.1.1.6	01116005	Cereal	All provinces	Monthly
01.1.1.6	01116008	Super maize	All provinces	Monthly
01.1.1.6	01116009	Special maize	All provinces	Monthly
<b>01.1.2</b>	<b>Meat</b>			
01.1.2.1	01121001	Beef	All provinces	Monthly
01.1.2.2	01122001	Pork	All provinces	Monthly
01.1.2.3	01123002	Lamb and mutton	All provinces	Monthly
01.1.2.4	01124001	Whole Chicken – Fresh	All provinces	Monthly
01.1.2.4	01124002	Chicken Portions – Fresh	All provinces	Monthly
01.1.2.4	01124004	Chicken Portions – Frozen	All provinces	Monthly
01.1.2.5	01125004	Polony	All provinces	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
01.1.2.5	01125005	Ham	All provinces	Monthly
01.1.2.5	01125006	Biltong	EC, FS, GP, LP	Monthly
01.1.2.5	01125007	Bacon	WC, EC, NC, FS, KZN, NW, GP, LP	Monthly
01.1.2.5	01125009	Sausage	All provinces	Monthly
01.1.2.6	01126002	Beef extract	WC, EC, NC, FS, KZN, GP	Monthly
<b>01.1.3</b>	<b>Fish</b>			
01.1.3.1	01131001	Hake	WC, EC, NC, FS, KZN, GP, MP, LP	Monthly
01.1.3.4	01134001	Fish fingers	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
01.1.3.4	01134002	Canned tuna	All provinces	Monthly
01.1.3.4	01134003	Canned pilchards	All provinces	Monthly
<b>01.1.4</b>	<b>Milk, cheese and eggs</b>			
01.1.4.1	01141001	Fresh full cream milk	All provinces	Monthly
01.1.4.1	01141002	Long-life Full cream milk	All provinces	Monthly
01.1.4.2	01142001	Fresh low fat milk	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
01.1.4.2	01142002	Long-life low fat milk	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
01.1.4.3	01143001	Powdered milk	All provinces	Monthly
01.1.4.3	01143002	Whiteners (Cremora, Ellis Brown)	All provinces	Monthly
01.1.4.3	01143003	Condensed milk	WC, NC, FS, NW, GP, MP, LP	Monthly
01.1.4.4	01144001	Plain yogurt	All provinces	Monthly
01.1.4.4	01144002	Flavoured yogurt	All provinces	Monthly
01.1.4.5	01145001	Cheddar cheese	All provinces	Monthly
01.1.4.5	01145002	Gouda cheese	All provinces	Monthly
01.1.4.5	01145003	Cheese spread	EC, NC, FS, KZN, NW, GP, MP, LP	Monthly

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
01.1.4.5	01145004	Feta cheese	WC, EC, NC, FS, KZN, NW, GP, MP	Monthly
01.1.4.6	01146001	Fresh cream	WC, NC, FS, KZN, NW, GP	Monthly
01.1.4.6	01146002	Sour milk/maas	All provinces	Monthly
01.1.4.6	01146003	Prepared custard (e.g. Ultramel)	All provinces	Monthly
01.1.4.6	01146004	Amageu	NC, FS, NW, GP, MP, LP	Monthly
01.1.4.7	01147001	Eggs	All provinces	Monthly
<b>01.1.5</b>	<b>Oils and fats</b>			
01.1.5.2	01152001	Margarine	All provinces	Monthly
01.1.5.2	01152002	Yellow brick margarine	All provinces	Monthly
01.1.5.2	01152003	Peanut butter	All provinces	Monthly
01.1.5.4	01154001	Edible oils (e.g. cooking oils)	All provinces	Monthly
<b>01.1.6</b>	<b>Fruit</b>			
01.1.6.1	01167099	Seasonal fruit	WC, GP, LP	Monthly
01.1.6.2	01162001	Bananas	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
01.1.6.3	01163001	Apples	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
<b>01.1.7</b>	<b>Vegetables</b>			
01.1.7.1	01171001	Lettuce	GP, LP	Monthly
01.1.7.1	01171002	Spinach/morogo fresh	GP, LP	Monthly
01.1.7.2	01172001	Cabbage fresh	All provinces	Monthly
01.1.7.2	01172002	Cauliflower fresh	WC, EC, NC, KZN, NW, GP	Monthly
01.1.7.2	01172003	Broccoli fresh	WC, EC, NC, KZN, GP	Monthly
01.1.7.3	01173001	Tomatoes fresh	All provinces	Monthly
01.1.7.3	01173002	Pumpkin (Butternut) fresh	All provinces	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
01.1.7.3	01173003	Green/red/yellow pepper fresh	WC, EC, KZN, GP, MP, LP	Monthly
01.1.7.3	01173004	Mixed vegetables frozen	All provinces	Monthly
01.1.7.3	01173006	Cucumber fresh	WC, EC, KZN, GP, LP	Monthly
01.1.7.4	01174001	Onions	All provinces	Monthly
01.1.7.4	01174002	Carrots fresh	All provinces	Monthly
01.1.7.4	01174003	Beetroot	All provinces	Monthly
01.1.7.4	01174005	Mushrooms	All provinces	Monthly
01.1.7.5	01175002	Beans dried	EC, KZN	Monthly
01.1.7.6	01176001	Sweet corn, cream style	WC, EC, NC, FS, GP, MP	Monthly
01.1.7.6	01176002	Baked beans in tomato sauce	All provinces	Monthly
01.1.7.6	01176003	Peas tinned	WC, EC, NC, GP	Monthly
01.1.7.6	01176005	Prepared salads	WC, EC, FS, KZN, GP	Monthly
01.1.7.6	01176006	Atchaar	NC, FS, KZN, NW, GP, MP, LP	Monthly
01.1.7.6	01176007	Other canned vegetables	All provinces	Monthly
01.1.7.7	01177001	Potatoes	All provinces	Monthly
01.1.7.8	01178001	Sweet potatoes	WC, EC, NC, FS, GP, MP, LP	Monthly
01.1.7.8	01178002	Potato chips frozen	WC, EC, NC, NW, GP	Monthly
01.1.7.8	01178003	Potato crisps	All provinces	Monthly
01.1.7.8	01178004	Corn chips	All provinces	Monthly
<b>01.1.8</b>	<b>Sugar, jam, honey, chocolate and confectionary</b>			
01.1.8.1	01181001	White sugar	All provinces	Monthly
01.1.8.1	01181002	Brown sugar	NC, FS, KZN, NW, GP, MP, LP	Monthly
01.1.8.3	01183001	Chocolate slab	All provinces	Monthly
01.1.8.3	01183002	Bar with filling	All provinces	Monthly
01.1.8.4	01184001	Sweets	WC, NC, FS, NW, GP, MP, LP	Monthly
01.1.8.5	01185001	Ice cream	WC, GP, MP, LP	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
<b>01.1.9</b>	<b>Food products not elsewhere classified</b>			
01.1.9.1	01191001	Vinegar	All provinces	Monthly
01.1.9.1	01191002	Chutney	WC, EC, NC, FS, NW, GP, MP, LP	Monthly
01.1.9.1	01191004	Tomato sauce	All provinces	Monthly
01.1.9.1	01191005	Mayonnaise	All provinces	Monthly
01.1.9.1	01191006	Salad dressing	All provinces	Monthly
01.1.9.2	01192001	Salt	All provinces	Monthly
01.1.9.2	01192002	Spice	All provinces	Monthly
01.1.9.2	01192003	Curry powder	All provinces	Monthly
01.1.9.3	01193004	Instant yeast	WC, EC, NC, FS, GP	Monthly
01.1.9.3	01193005	Baking powder	FS, GP, MP, LP	Monthly
01.1.9.3	01193006	Powder soup	All provinces	Monthly
01.1.9.3	01193007	Baby food	All provinces	Monthly
01.1.9.4	01194001	Spreads (Marmite and Bovril)	WC, EC, NC, FS, GP	Monthly
<b>01.2.</b>	<b>Non-alcoholic beverages</b>			
<b>01.2.1</b>	<b>Coffee, tea and cocoa</b>			
01.2.1.1	01211001	Instant coffee	All provinces	Monthly
01.2.1.1	01211002	Ground coffee and coffee beans	All provinces	Monthly
01.2.1.2	01212001	Ceylon tea	All provinces	Monthly
01.2.1.2	01212002	Rooibos tea	All provinces	Monthly
01.2.1.3	01213001	Drinking chocolate	All provinces	Monthly
<b>01.2.2</b>	<b>Mineral waters, soft drinks, fruit and vegetable juices</b>			
01.2.2.1	01221001	Mineral water/spring water (aerated and still)	All provinces	Monthly
01.2.2.2	01222001	Fizzy drinks – can	All provinces	Monthly
01.2.2.2	01222002	Fizzy drinks – bottle	All provinces	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
01.2.2.2	01222003	Other drinks excluding fizzy and fruit drinks	WC, NC, KZN, NW, GP, MP	Monthly
01.2.2.3	01223001	Fruit juices not from food service places	All provinces	Monthly
01.2.2.3	01223002	Fruit juice concentrate	All provinces	Monthly
<b>02</b>	<b>Alcoholic beverages and tobacco</b>			
<b>02.1.</b>	<b>Alcoholic beverages</b>			
<b>02.1.1</b>	<b>Spirits</b>			
02.1.1.1	02111001	Spirits – Brandy	All provinces	Monthly
02.1.1.1	02111002	Spirits – Whiskey	All provinces	Monthly
02.1.1.1	02111003	Spirits – Liqueur	All provinces	Monthly
02.1.1.1	02111004	Spirits – Vodka	All provinces	Monthly
<b>02.1.2</b>	<b>Wine</b>			
02.1.2.1	02121001	Wine from grapes or other fruit – Red Wine	WC, EC, NC, KZN, NW, GP, LP	Monthly
02.1.2.1	02121002	Wine from grapes or other fruit – White Wine	WC, EC, NC, KZN, NW, GP, LP	Monthly
02.1.2.2	02122001	Spirit coolers (cider, hooch, etc.) not from a food service place	NC, KZN, GP, MP	Monthly
<b>02.1.3</b>	<b>Beer</b>			
02.1.3.1	02131001	Beer (excl. sorghum beer) – local	All provinces	Monthly
02.1.3.1	02131002	Beer (excl. sorghum beer) – imported	All provinces	Monthly
<b>02.2.</b>	<b>Tobacco</b>			
<b>02.2.1</b>	<b>Tobacco</b>			
02.2.1.1	02211001	Cigarettes	All provinces	Monthly
02.2.1.3	02213001	Tobacco	WC, EC, NC, FS, KZN, NW, MP, LP	Monthly



<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
<b>03</b>	<b>Clothing and footwear</b>			
<b>03.1.</b>	<b>Clothing</b>			
<b>03.1.2</b>	<b>Garments</b>			
03.1.2.1	03121002	Trousers – business	All provinces	Monthly
03.1.2.1	03121003	Jeans	All provinces	Monthly
03.1.2.1	03121004	Shirts – formal	All provinces	Monthly
03.1.2.1	03121005	Jackets	All provinces	Monthly
03.1.2.1	03121007	Underwear	All provinces	Monthly
03.1.2.1	03121008	Trousers – casual	All provinces	Monthly
03.1.2.1	03121009	Shirts – casual	All provinces	Monthly
03.1.2.1	03121010	Shorts	All provinces	Monthly
03.1.2.1	03121011	Tops (including T-shirts)	All provinces	Monthly
03.1.2.2	03122001	Jacket	All provinces	Monthly
03.1.2.2	03122005	Jeans	All provinces	Monthly
03.1.2.2	03122006	Knitwear	All provinces	Monthly
03.1.2.2	03122008	Bra	All provinces	Monthly
03.1.2.2	03122009	Panty	All provinces	Monthly
03.1.2.2	03122013	Dress	All provinces	Monthly
03.1.2.2	03122014	Pants (+trousers)	All provinces	Monthly
03.1.2.2	03122015	Tops (T-shirt)	All provinces	Monthly
03.1.2.3	03123001	Dress	All provinces	Monthly
03.1.2.3	03123002	T-shirt	All provinces	Monthly
03.1.2.3	03123003	Panties	All provinces	Monthly
03.1.2.3	03123005	Shorts	All provinces	Monthly
03.1.2.3	03123006	Shirt	All provinces	Monthly
03.1.2.3	03123010	Babygrows	All provinces	Monthly
03.1.2.3	03123013	Jacket – boys	All provinces	Monthly
03.1.2.3	03123014	Jacket – infants	All provinces	Monthly
03.1.2.3	03123015	Jeans – boys	All provinces	Monthly
03.1.2.3	03123016	Jeans – girls	All provinces	Monthly
03.1.2.3	03123017	Knitwear	All provinces	Monthly
03.1.2.3	03123018	Pants	All provinces	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
03.1.2.3	03123019	Pants (called Bottoms) (+bottoms + jeans + shorts)	All provinces	Monthly
03.1.2.3	03123020	Sets	All provinces	Monthly
03.1.2.3	03123021	Skirts	All provinces	Monthly
03.1.2.3	03123022	Sleepwear – infants	All provinces	Monthly
03.1.2.3	03123023	Sleepwear – girls	All provinces	Monthly
03.1.2.3	03123024	Tops (+ shirts + T-shirts) as tops	All provinces	Monthly
03.1.2.3	03123025	Tops (excluding T-shirts) (+ shirts) as tops	All provinces	Monthly
03.1.2.3	03123026	Trousers (+ tracksuit trousers)	All provinces	Monthly
03.1.2.3	03123027	T-shirt (+ tops) as tops	All provinces	Monthly
03.1.2.3	03123028	Underwear and socks (+ underwear) as underwear	All provinces	Monthly
03.1.2.3	03123029	Vests	All provinces	Monthly
<b>03.2.</b>	<b>Footwear</b>			
<b>03.2.1</b>	<b>Footwear</b>			
03.2.1.1	03211002	Sports shoes	All provinces	Monthly
03.2.1.1	03211004	Sandals	All provinces	Monthly
03.2.1.1	03211005	Shoes (+ other + slippers)	All provinces	Monthly
03.2.1.2	03212001	Shoes	All provinces	Monthly
03.2.1.2	03212002	Sandals	All provinces	Monthly
03.2.1.2	03212003	Sports shoes	All provinces	Monthly
03.2.1.2	03212004	Slippers	All provinces	Monthly
03.2.1.3	03213001	Shoes	All provinces	Monthly
03.2.1.3	03213002	Sandals – girls	All provinces	Monthly
03.2.1.3	03213003	Sports footwear – girls	All provinces	Monthly
03.2.1.3	03213006	Sandals – boys	All provinces	Monthly

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
03.2.1.3	03213007	Sports footwear – boys	All provinces	Monthly
03.2.1.3	03213009	Infants' footwear	WC, NC, KZN, NW, GP, MP, LP	Monthly
03.2.1.3	03213010	Shoes + other+ slippers	All provinces	Monthly
<b>04</b>	<b>Housing, water, Electricity, gas and other fuels</b>			
<b>04.1.</b>	<b>Actual rentals for housing</b>			
<b>04.1.1</b>	<b>Actual rentals paid by tenants</b>			
04.1.1.1	04111001	Rent dwelling	All provinces	Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec
04.1.1.1	04111002	Rent dwelling	All provinces	Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec
04.1.1.1	04111003	Rent dwelling	All provinces	Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec
<b>04.2.</b>	<b>Imputed rentals for housing</b>			
<b>04.2.1</b>	<b>Imputed rentals of owner-occupiers</b>			
04.2.1.1	04211001	Imputed rent on owned dwelling	All provinces	Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec
04.2.1.1	04211002	Imputed rent on owned dwelling	All provinces	Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec
04.2.1.1	04211003	Imputed rent on owned dwelling	All provinces	Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec
<b>04.3.</b>	<b>Maintenance and repair of the dwelling</b>			
<b>04.3.1</b>	<b>Materials for the maintenance and repair of the dwelling</b>			
04.3.1.1	04311002	Chipboard	All provinces	Monthly
04.3.1.1	04311003	Paint	All provinces	Monthly
04.3.1.1	04311006	Plaster	All provinces	Monthly
04.3.1.1	04311009	Bricks	All provinces	Monthly
04.3.1.1	04311010	Cement	All provinces	Monthly
04.3.1.1	04311011	Door and doorframe	All provinces	Monthly
<b>04.3.2</b>	<b>Services for the maintenance and repair of the dwelling</b>			
04.3.2.1	04321001	Electricians	EC, NC, FS, KZN, GP, MP, LP	May, Nov

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
04.3.2.1	04321002	Plumbers	EC, NC, FS, KZN, GP, MP, LP	May, Nov
<b>04.4.</b>	<b>Water supply and miscellaneous services relating to the dwelling</b>			
<b>04.4.1</b>	<b>Water supply</b>			
04.4.1.1	04411001	Water	All provinces	Jul, Aug
<b>04.4.4</b>	<b>Other services relating to the dwelling not elsewhere classified.</b>			
04.4.4.1	04441001	Rate and taxes	All provinces	Jul, Aug
<b>04.5.</b>	<b>Electricity, gas and other fuels</b>			
<b>04.5.1</b>	<b>Electricity</b>			
04.5.1.1	04511001	Electricity	All provinces	Jul, Aug
<b>04.5.3</b>	<b>Gas</b>			
04.5.3.1	04531001	Paraffin	EC, GP	Monthly
<b>05</b>	<b>Furnishings, household equipment and routine maintenance of a house</b>			
<b>05.1.</b>	<b>Furniture and furnishings, carpets and other floor coverings</b>			
<b>05.1.1</b>	<b>Furniture and furnishings</b>			
05.1.1.1	05111001	Bedroom suite	All provinces	Monthly
05.1.1.1	05111003	Lounge furniture	All provinces	Monthly
05.1.1.1	05111005	Dining room and kitchen furniture	All provinces	Monthly
<b>05.2.</b>	<b>Household textiles</b>			
<b>05.2.1</b>	<b>Household textiles</b>			
05.2.1.1	05211001	Duvets, duvet covers and duvet packs	All provinces	Monthly
05.2.1.1	05211002	Blankets and travelling rugs	All provinces	Monthly
05.2.1.1	05211003	Curtains (including making and hanging charges) and material for curtains	All provinces	Monthly
05.2.1.1	05211006	Bed bases and mattresses	All provinces	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
<b>05.3.</b>	<b>Household appliances</b>			
<b>05.3.1</b>	<b>Major household appliances whether or not electrical</b>			
05.3.1.1	05311002	Refrigerator/Freezer and refrigerator combination	All provinces	Monthly
05.3.1.1	05311003	Freezer	All provinces	Monthly
05.3.1.2	05312001	Washing Machines	WC, EC, NC, FS, NW, GP, MP, LP	Monthly
05.3.1.3	05313001	Electrical stove and oven	All provinces	Monthly
05.3.1.3	05313002	Microwave oven	All provinces	Monthly
05.3.1.3	05313003	Gas stoves and heaters (Non-electrical)	WC, EC, NC, KZN, NW, MP, LP	Monthly
<b>05.3.2</b>	<b>Small electrical household appliances</b>			
05.3.2.1	05321001	Irons	All provinces	Monthly
05.3.2.1	05321002	Kettle	All provinces	Monthly
05.3.2.1	05321005	Fan	All provinces	Monthly
05.3.2.1	05321006	Hotplates	All provinces	Monthly
<b>05.4.</b>	<b>Glassware, tableware and household utensils</b>			
<b>05.4.1</b>	<b>Glassware, tableware and household utensils</b>			
05.4.1.1	05411005	Crockery	All provinces	Monthly
05.4.1.1	05411006	Glassware	All provinces	Monthly
05.4.1.2	05412001	Cutlery set	All provinces	Monthly
05.4.1.2	05412002	Teaspoon	All provinces	Monthly
05.4.1.3	05413002	Teapot	All provinces	Monthly
05.4.1.3	05413003	Non-electrical frying pan	All provinces	Monthly
05.4.1.3	05413005	Grater	All provinces	Monthly
<b>05.5.</b>	<b>Tools and equipment for house and garden</b>			
<b>05.5.1</b>	<b>Major tool and equipment</b>			
05.5.1.1	05511001	Power drills	All provinces	Monthly
05.5.1.1	05511002	Power driven garden tools	All provinces	Monthly
<b>05.5.2</b>	<b>Small tools and miscellaneous accessories</b>			

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
05.5.2.1	05521001	Batteries	All provinces	Monthly
05.5.2.1	05521003	Light bulbs	All provinces	Monthly
05.5.2.1	05521005	Garden hand tools (such as spades)	EC, NC, FS, KZN, NW, GP, MP, LP	Monthly
05.5.2.1	05521006	Garden water sprinkler	WC, NC, FS, NW, GP, MP, LP	Monthly
05.5.2.1	05521007	Light bulbs – energy savers	All provinces	Monthly
<b>05.6.</b>	<b>Goods and services for routine household maintenance</b>			
<b>05.6.1</b>	<b>Non-durable household goods</b>			
05.6.1.1	05611002	Laundry soap	All provinces	Monthly
05.6.1.1	05611003	Washing powder	All provinces	Monthly
05.6.1.1	05611004	Dishwashing liquid	All provinces	Monthly
05.6.1.1	05611005	Shoe polish	EC, FS, KZN, NW, LP	Monthly
05.6.1.1	05611007	Indoor insecticide	WC, NC, KZN, NW, GP	Monthly
05.6.1.1	05611008	Toilet care	WC, NC, KZN, NW, GP	Monthly
<b>05.6.2</b>	<b>Domestic services and household services</b>			
05.6.2.1	05621001	Domestic workers	All provinces	Mar, Jun, Sep, Dec
<b>06</b>	<b>Health</b>			
<b>06.1.</b>	<b>Medical products, appliances and equipment</b>			
<b>06.1.1</b>	<b>Pharmaceutical products</b>			
06.1.1.1	06111001	Painkillers	All provinces	Monthly
06.1.1.1	06111002	Cough syrup	All provinces	Monthly
06.1.1.1	06111003	Vitamins	All provinces	Monthly
06.1.1.1	06111006	Cold and flu	All provinces	Monthly
06.1.1.1	06111007	Heartburn (+Anti-acids)	All provinces	Monthly
06.1.1.1	06111009	Lozenges	All provinces	Monthly
06.1.1.1	06111010	Laxatives	All provinces	Monthly
06.1.1.1	06111011	Prescription medicine	All provinces	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
06.1.1.1	06111012	Dispensing fees	All provinces	Monthly
06.1.1.1	06111013	Eye drops	All provinces	Monthly
<b>06.2.</b>	<b>Out-patient services</b>			
<b>06.2.1</b>	<b>Medical services</b>			
06.2.1.1	06211001	Private – General practitioners	All provinces	Feb
06.2.1.1	06211002	Private – Gynaecologists	All provinces	Feb
06.2.1.1	06211003	Private – Physicians	All provinces	Feb
06.2.1.1	06211004	Private – Paediatricians	All provinces	Feb
06.2.1.1	06211005	Public – General practitioners	All provinces	Apr
06.2.1.1	06211006	Public – Medical specialists	All provinces	Apr
<b>06.2.2</b>	<b>Dental services</b>			
06.2.2.1	06221001	Dentists	WC, EC, NC, FS, KZN, GP, MP, LP	Feb
<b>06.3.</b>	<b>Hospital services</b>			
<b>06.3.1</b>	<b>Hospital services</b>			
06.3.1.1	06311001	Private – Ward fees	All provinces	Feb, May, Aug, Nov
06.3.1.1	06311002	Private – Theatre fees	All provinces	Feb, May, Aug, Nov
06.3.1.1	06311004	Public –Ward fees	All provinces	Apr
06.3.1.1	06311005	Public –Theatre fees	All provinces	Apr
<b>07</b>	<b>Transport</b>			
<b>07.1.</b>	<b>Purchase of vehicles</b>			
<b>07.1.1</b>	<b>Motor-cars</b>			
07.1.1.1	07111001	New Hatchback	All provinces	Monthly
07.1.1.1	07111002	New Sedan	All provinces	Monthly
07.1.1.1	07111003	New SUVs/MPVs including four wheel drive vehicles	EC, FS, KZN, NW, GP, MP	Monthly
07.1.1.1	07111004	New bakkies	WC, EC, NC, FS, KZN, NW, LP	Monthly
07.1.1.2	07112001	Used Hatchback	All provinces	Monthly

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
07.1.1.2	07112002	Used Sedan	All provinces	Monthly
07.1.1.2	07112003	Used SUVs/MPVs including four wheel drive vehicles	WC, EC, GP, MP, LP	Monthly
07.1.1.2	07112004	Used bakkies	All provinces	Monthly
<b>07.2.</b>	<b>Operation of personal transport equipment</b>			
<b>07.2.1</b>	<b>Spare parts and accessories</b>			
07.2.1.1	07211001	New tyres and tubes	All provinces	Monthly
07.2.1.1	07211002	Shocks	All provinces	Monthly
07.2.1.1	07211003	Disc pads	All provinces	Monthly
07.2.1.1	07211006	Spark plugs	All provinces	Monthly
07.2.1.1	07211008	Clutch kits	All provinces	Monthly
07.2.1.1	07211009	Battery	All provinces	Monthly
<b>07.2.2</b>	<b>Fuels and lubricants</b>			
07.2.2.1	07221001	Motor car fuel	All provinces	Monthly
<b>07.2.3</b>	<b>Maintenance and repair</b>			
07.2.3.1	07231004	Car service	WC, FS, KZN, GP	Monthly
<b>07.2.4</b>	<b>Other services in respect of personal transport equipment</b>			
07.2.4.1	07241002	Licences and registration fees (including that of motor cycles)	All provinces	Monthly
07.2.4.1	07241004	Toll fees	WC, FS, KZN, NW, GP, MP, LP	Mar
<b>07.3.</b>	<b>Transport services</b>			
<b>07.3.1</b>	<b>Passenger transport by railway</b>			
07.3.1.1	07311001	Train fees	WC, GP	Mar, Jun, Sep, Dec
<b>07.3.2</b>	<b>Passenger transport by road</b>			
07.3.2.1	07321001	Bus fees (Local)	WC, EC, NW, MP	Jan, Mar, Apr, Jun, Jul, Sep, Oct, Dec
07.3.2.1	07321002	Taxi fares	All provinces	Mar, Jun, Sep, Dec



<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
07.3.2.1	07321003	Bus fees (Long Distance)	WC, EC, NW, MP	Mar, Jun, Sep, Dec
<b>07.3.3</b>	<b>Passenger transport by air</b>			
07.3.3.1	07331001	Airfares	WC, KZN, GP	Monthly
<b>08</b>	<b>Communication</b>			
<b>08.1.</b>	<b>Postal services</b>			
<b>08.1.1</b>	<b>Postal services</b>			
08.1.1.1	08111001	Stamps	WC, EC, NC, FS, KZN, GP, MP, LP	Apr
08.1.1.1	08111002	Renting of post boxes	All provinces	Jan
08.1.1.1	08111003	Courier services	All provinces	Monthly
<b>08.2.</b>	<b>Telephone and telefax equipment</b>			
<b>08.2.1</b>	<b>Telephone and telefax equipment</b>			
08.2.1.1	08211001	Cellular phones	All provinces	Monthly
<b>08.3.</b>	<b>Telephone and telefax services</b>			
<b>08.3.1</b>	<b>Telephone and telefax services</b>			
08.3.1.1	08311001	Telephone fees	All provinces	Monthly
08.3.1.1	08311002	Cellphone fees	All provinces	Monthly
08.3.1.1	08311003	Internet usage costs	All provinces	Monthly
<b>09</b>	<b>Recreation and culture</b>			
<b>09.1.</b>	<b>Audio-visual, photographic and information processing equipment</b>			
<b>09.1.1</b>	<b>Equipment for the reception, recording and reproduction of sound and pictures</b>			
09.1.1.2	09112001	Television	All provinces	Monthly
09.1.1.2	09112002	Subscription television decoder	All provinces	Monthly
09.1.1.2	09112003	DVD player	All provinces	Monthly
09.1.1.2	09112004	Aerials and satellite dishes	EC, NC, FS, KZN, GP, MP, LP	Monthly

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
<b>09.1.2</b>	<b>Photographic equipment</b>			
09.1.2.1	09121001	Camera	WC, EC, KZN, GP, LP	Monthly
<b>09.1.3</b>	<b>Information processing equipment</b>			
09.1.3.1	09131002	Laptops	All provinces	Monthly
09.1.3.1	09131004	Tablets	All provinces	Monthly
<b>09.1.4</b>	<b>Recording media</b>			
09.1.4.1	09141001	Pre-recorded CD	WC, EC, NC, FS, KZN, GP, MP, LP	Monthly
09.1.4.1	09141002	Pre-recorded DVD	WC, EC, NC, FS, KZN, GP, MP, LP	Monthly
09.1.4.1	09141003	Blank CD	WC, EC, NC, FS, KZN, GP, MP, LP	Monthly
09.1.4.1	09141004	Blank DVD	WC, EC, NC, FS, KZN, GP, MP, LP	Monthly
<b>09.2.</b>	<b>Other major durables for recreation and culture</b>			
<b>09.2.2</b>	<b>Musical instrument</b>			
09.2.2.1	09221001	Musical instruments: Pianos, organs and other musical instruments	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
<b>09.3.</b>	<b>Other recreational items and equipment, gardens and pets</b>			
<b>09.3.1</b>	<b>Games, toys and hobbies</b>			
09.3.1.1	09311001	Board-game	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
09.3.1.1	09311003	Doll	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
09.3.1.1	09311004	Teddy-bear	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
<b>09.3.2</b>	<b>Equipment for sport, camping and open-air recreation</b>			
09.3.2.1	09321001	Swimming pool chlorine	WC, EC, NC, KZN, GP, LP	Monthly
09.3.2.1	09321002	Tennis balls	WC, EC, NC, FS, KZN, NW, GP, MP	Monthly
09.3.2.1	09321003	Sleeping bag	All provinces	Monthly
09.3.2.1	09321004	Sports boots	All provinces	Monthly
09.3.2.1	09321005	Swimming pool cleaning equipment	WC, EC, NC, KZN, NW, GP, MP, LP	Monthly
<b>09.3.3</b>	<b>Gardens, plants and flowers</b>			
09.3.3.1	09331002	Seeds	All provinces	Monthly
09.3.3.1	09331004	Plant pots	All provinces	Monthly
<b>09.3.4</b>	<b>Pets and related products</b>			
09.3.4.1	09341001	Dog food – pellets	All provinces	Monthly
09.3.4.1	09341002	Dog food – tinned	All provinces	Monthly
09.3.4.1	09341003	Cat food – tinned	All provinces	Monthly
09.3.4.1	09341004	Cat food – pellets	All provinces	Monthly
<b>09.4.</b>	<b>Recreational and cultural services</b>			
<b>09.4.1</b>	<b>Recreational and sporting services</b>			
09.4.1.1	09411002	Membership fees for gymnasiums, health, sport and social clubs	All provinces	Jan, Apr, Jul, Oct
09.4.1.1	09411003	Rugby tickets	All provinces	Feb
09.4.1.1	09411004	Soccer tickets	All provinces	Aug, Sep, Oct, Nov, Dec, Jan, Feb, Mar, Apr, May
09.4.1.1	09411005	Cricket tickets	All provinces	Sep
<b>09.4.2</b>	<b>Cultural services</b>			
09.4.2.1	09421001	Cinema, theatres, concerts, festivals	All provinces	Monthly
09.4.2.3	09423001	Television licenses	All provinces	Apr, Oct
09.4.2.3	09423002	Subscription to pay TV channels	All provinces	Monthly

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
<b>09.4.3</b>	<b>Games of chance</b>			
09.4.3.1	09431001	Other gambling	EC, NC, FS, KZN, NW, GP, MP, LP	Jan
<b>09.5.</b>	<b>Newspapers, books and stationery</b>			
<b>09.5.1</b>	<b>Books</b>			
09.5.1.1	09511001	Books (excluding those in 1614)	All provinces	Monthly
09.5.1.1	09511002	Textbooks	All provinces	Monthly
<b>09.5.2</b>	<b>Newspapers and periodicals</b>			
09.5.2.1	09521001	Newspapers	All provinces	Monthly
09.5.2.1	09521002	Magazines	All provinces	Monthly
<b>09.5.4</b>	<b>Stationery and drawing materials</b>			
09.5.4.1	09541001	Books (including exam pads)	EC, NC, FS, KZN, NW, GP, MP, LP	Monthly
09.5.4.1	09541003	Pens	EC, NC, FS, KZN, NW, GP, MP, LP	Monthly
09.5.4.1	09541004	Files	EC, NC, FS, KZN, NW, GP, MP, LP	Monthly
<b>09.6.</b>	<b>Package holidays</b>			
<b>09.6.1</b>	<b>Package holidays</b>			
09.6.1.1	09611001	Holiday tour package	All provinces	Monthly
<b>10</b>	<b>Education</b>			
<b>10.1.</b>	<b>Pre-primary and primary education</b>			
<b>10.1.1</b>	<b>Pre-primary and primary education</b>			
10.1.1.1	10111001	Pre-primary and primary education	All provinces	Mar
<b>10.2.</b>	<b>Secondary education</b>			
<b>10.2.1</b>	<b>Secondary education</b>			
10.2.1.1	10211001	Secondary education	All provinces	Mar

COICOP code	Product code	Indicator product	Provincial baskets	Collection frequency
<b>10.4.</b>	<b>Tertiary education</b>			
<b>10.4.1</b>	<b>Tertiary education</b>			
10.4.1.1	10411001	Tertiary education and Education not definable by level	All provinces	Mar
<b>11</b>	<b>Restaurants and hotel</b>			
<b>11.1.</b>	<b>Catering services</b>			
<b>11.1.1</b>	<b>Restaurants, cafés and the like</b>			
11.1.1.1	11111001	Red meat-based products	All provinces	Monthly
11.1.1.1	11111002	Poultry-based products	All provinces	Monthly
11.1.1.1	11111003	Fish and other seafood-based products	All provinces	Monthly
11.1.1.1	11111004	Pizzas	All provinces	Monthly
11.1.1.1	11111005	Pies	All provinces	Monthly
11.1.1.1	11111006	Cold beverages	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
11.1.1.1	11111007	Hot beverages	WC, FS, KZN, GP	Monthly
11.1.1.1	11111008	Alcoholic beverages	WC, EC, FS, KZN, NW, GP, MP, LP	Monthly
<b>11.2.</b>	<b>Accommodation services</b>			
<b>11.2.1</b>	<b>Accommodation services</b>			
11.2.1.1	11211001	School boarding fees	WC, EC, NC, KZN, GP, MP, LP	Mar
11.2.1.1	11211002	Hotels	All provinces	Monthly
<b>12</b>	<b>Miscellaneous goods and services</b>			
<b>12.1.</b>	<b>Personal care</b>			
<b>12.1.3</b>	<b>Other appliances, articles and products for personal care</b>			
12.1.3.1	12131001	Shampoo	All provinces	Monthly
12.1.3.1	12131002	Conditioner	All provinces	Monthly
12.1.3.1	12131003	Tissues	KZN	Monthly
12.1.3.1	12131004	Sanitary towels	All provinces	Monthly
12.1.3.1	12131005	Tampons	All provinces	Monthly

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
12.1.3.1	12131006	Bar of bath soap	All provinces	Monthly
12.1.3.1	12131007	Toothbrush	All provinces	Monthly
12.1.3.1	12131008	Skin lotion	All provinces	Monthly
12.1.3.1	12131010	Toilet paper	All provinces	Monthly
12.1.3.1	12131011	Disposable nappies	All provinces	Monthly
12.1.3.1	12131012	Toothpaste	All provinces	Monthly
12.1.3.1	12131013	Deodorant	WC, EC, NC, FS, KZN, NW, GP, LP	Monthly
12.1.3.1	12131014	Hair relaxer	All provinces	Monthly
12.1.3.1	12131015	Hair colour	All provinces	Monthly
12.1.3.1	12131016	Hair pieces	FS, KZN, NW, GP, MP, LP	Monthly
12.1.3.1	12131017	Bubble bath	NW	Monthly
12.1.3.1	12131018	Powder (including baby powder) and deodorants	All provinces	Monthly
<b>12.3.</b>	<b>Personal effects not elsewhere classified.</b>			
<b>12.3.1</b>	<b>Jewellery, clocks and watches</b>			
12.3.1.1	12311001	Watches	All provinces	Monthly
<b>12.3.2</b>	<b>Other personal effects</b>			
12.3.2.1	12321001	Bags, travelling bags	All provinces	Monthly
12.3.2.1	12321002	Schoolbags	All provinces	Monthly
12.3.2.2	12322001	Prams	All provinces	Monthly
12.3.2.2	12322002	Car seats for babies	All provinces	Monthly
12.3.2.2	12322003	Sunglasses	All provinces	Monthly
<b>12.4.</b>	<b>Social protection</b>			
<b>12.4.1</b>	<b>Social protection services</b>			
12.4.1.2	12412001	Crèche fees	All provinces	Mar
<b>12.5.</b>	<b>Insurance</b>			
<b>12.5.2</b>	<b>Insurance connected with the dwelling</b>			

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
12.5.2.1	12521001	Insurance on buildings	All provinces	Jan, Jul

<b>COICOP code</b>	<b>Product code</b>	<b>Indicator product</b>	<b>Provincial baskets</b>	<b>Collection frequency</b>
12.5.2.1	12521002	Insurance on contents of dwellings	WC, EC, NC, FS, KZN, GP, MP, LP	Jan, Jul
<b>12.5.3</b>	<b>Insurance connected with health</b>			
12.5.3.1	12531001	Medical-aid contributions	All provinces	Feb
<b>12.5.4</b>	<b>Insurance connected with transport</b>			
12.5.4.1	12541001	Insurance for private transport	WC, NC, KZN, NW, GP, MP	Mar, Jun, Sep, Dec
<b>12.5.5</b>	<b>Other insurance</b>			
12.5.5.1	12551001	Funeral policies	All provinces	Jan, Apr, Jul, Oct
<b>12.6.</b>	<b>Financial service not elsewhere classified</b>			
<b>12.6.2</b>	<b>Financial service not elsewhere classified</b>			
12.6.2.1	12621001	Bank charges	All provinces	Monthly
<b>12.7.</b>	<b>Other services not elsewhere classified</b>			
<b>12.7.1</b>	<b>Other services not elsewhere classified</b>			
12.7.1.1	12711001	Funeral expenses	All provinces	Jan, Apr, Jul, Oct
12.7.1.1	12711002	Gravestones and maintenance of graves (excluding unveiling)	EC, NC, KZN, NW, GP, MP, LP	Jan, Apr, Jul, Oct

## Appendix 2: Collection Methodology and summary of methodological changes

Table 23

3-digit COICOP code and description	5-digit COICOP code and description	Indicator product(s)	Sample of respondents	Prices/rates/tariffs obtained	Collection method and frequency	Summary of methodology changes
01.1 Food, 01.2 Non-alcoholic beverages	See Appendix 1	See Appendix 1	These include supermarkets, convenience stores, specialty shops, e.g. butcheries and green grocers and markets		Field collection. Monthly	The following changes were implemented: – New indicator products added – All seasonal fruit included and combined; weighted as one indicator product
02.1 Alcoholic beverages, 02.2 Tobacco	02.1.1.1 Spirits, 02.1.2.1 Wine 02.1.3.1 Beer	Brandy, Whiskey, Liqueur, Vodka, Red wine, White wine, Beer (excl sorghum beer) – local, Beer (excl sorghum beer) – imported	Respondents include liquor stores and supermarkets		Field collection. Monthly	New indicator product added
03.1 Clothing 03.2 Footwear	See Appendix 1	See Appendix 1	The sample includes clothing and footwear retailers, i.e. chain stores and smaller independent stores		Field collection. Monthly	New indicator product added
04.1 Actual rentals for housing	04.1.1.1 Actual rentals paid by tenants	Rent paid for: Flats, Townhouses and Houses	Letting agents in Stats SA's Rental Survey		Field collection. Quarterly: Jan-Mar; April-Jun; Jul-Sep; Oct-Dec	Stats SA's rental survey is used
04.2 Owners' equivalent rent	04.2.1.1 Owners' equivalent rent	OER for: Flats, Townhouses and Houses	Letting agents in Stats SA's Rental Survey		Field collection. Quarterly: Jan-Mar; April-Jun; Jul-Sep; Oct-Dec	Stats SA's rental survey is used
04.3 Maintenance and repair of the dwelling	04.3.1.1 Materials for the maintenance and repair of the dwelling	Chipboard, Paint, Plaster, Bricks, Cement, Door and doorframe	Hardware and DIY stores	Indicator products were selected based on sales units	Field collection. Monthly	New indicator product added



<b>3-digit COICOP code and description</b>	<b>5-digit COICOP code and description</b>	<b>Indicator product(s)</b>	<b>Sample of respondents</b>	<b>Prices/rates/tariffs obtained</b>	<b>Collection method and frequency</b>	<b>Summary of methodology changes</b>
04.3 Maintenance and repair of the dwelling	04.3.2 Services related to the maintenance of a dwelling	Electricians, Plumbers	Electricians and plumbers in the CPI collection areas	Call out fee and prices for the service offered	Telephone. May and November	New indicator product added
04.4 Water supply and miscellaneous services connected to the dwelling	04.4.1.1 Water supply, 04.4.4.1 Other services relating to the dwelling not elsewhere classified	Water supply Assessment rates	All municipalities within CPI collection areas	Tariffs collected based on tariff structure of municipality	Postal, e-mail, internet collection: Water supply: Jul/Aug depending on when tariff changes implemented. Assessment rates. Jul, Aug	Old products, revised sample
04.5 Electricity, gas and other fuels	04.5.1.1 Electricity 04.5.3.1 Paraffin	Electricity Paraffin	All municipalities within CPI collection areas	Tariffs collected based on tariff structure of municipality	Postal, e-mail, internet collection. Jul, Aug	Old products, revised sample
05.1 Furniture and furnishings, carpets and other flooring	05.1.1.1 Furniture and furnishings	Bedroom suite, , Lounge suite, Dining room and Kitchen furniture	Furniture outlets and other major retailers who sell furniture in addition to other products, e.g. hypermarkets. Outlets are selected for all the geographical CPI areas		Field collection. Monthly	New indicator product added
05.2 Household textiles	05.2.1.1 Household textiles	Duvet cover and pillow case set, Blanket, Curtains, Bed bases and mattresses	Furniture outlets, hypermarkets and other independent suppliers of household textiles		Field collection. Monthly	New indicator products added
05.3 Household appliances	05.3.1.1 Refrigerators, freezers and fridge-freezers, 05.3.1.2 Washing machine, 05.3.1.3 Electrical stove and oven, microwave oven, 05.3.2.1 Small electrical household appliances	Freezer and refrigerator combination, Freezer, Washing machine, Stove and oven, Microwave oven, Gas stoves and heaters, Iron, Kettle, Fan	Furniture shops, hypermarkets and other major retailers of appliances, and other independent retailers		Field collection. Monthly	New indicator products added

3-digit COICOP code and description	5-digit COICOP code and description	Indicator product(s)	Sample of respondents	Prices/rates/tariffs obtained	Collection method and frequency	Summary of methodology changes
05.4 Glassware, tableware and household utensils	05.4.1.1 Crockery and glassware, 05.4.1.2 Cutlery set and teaspoons, 05.4.1.3 Kitchen and domestic utensils	Crockery, Glassware, Cutlery set, Teaspoon, Teapot, Non electrical frying pan	Retailers of glass, tableware and household utensils		Field collection. Monthly	The following changes were implemented: – New indicator product added
05.5 Tools and equipment for house and garden	05.5.2.1 Small tools and miscellaneous accessories	Household batteries, Light bulb, Light bulb – energy savers, Garden hand tools, Garden water sprinkler	Major retailers of tools and equipment for house and garden, e.g. hardware stores, hypermarkets and other independent retailers		Field collection. Monthly	The following changes were implemented: – New indicator product added
05.6 Goods and services for routine household maintenance	05.6.1.1 Non durable household goods, 05.6.2.1 Domestic services	Laundry soap, Washing powder, Dish-washing liquid, Wax shoe polish, Indoor insecticides, Toilet care, Domestic worker wages	Supermarkets, hypermarkets and other independent retailers. The UIF is a data source for domestic worker wages		Field collection. Monthly. Domestic worker wages updated quarterly	New indicator product added
06.1 Medical products, appliances and equipment	06.1.1.1 Pharmaceutical products	Pain killers, Cough mixture, Vitamin and mineral, Cold and flu medication, Heartburn medication, Sore throat lozenges, Laxative, Eye drops, Prescription medicine, Dispensing fees	A technological company that contracts with pharmacies and medical schemes for membership and benefit verification as well as electronic submission and processing of accounts. Respondents for medicine purchased without prescription in private institutions or over the counter medication include retail outlets, i.e. pharmacies, supermarkets and other retailers for pharmaceutical products	The selection of pharmaceutical products for pricing was done using data obtained from a technological company that processes about 90 percent of all transactions between pharmacies and medical aid schemes.	E-mail collection. Monthly.	New indicator product added

3-digit COICOP code and description	5-digit COICOP code and description	Indicator product(s)	Sample of respondents	Prices/rates/tariffs obtained	Collection method and frequency	Summary of methodology changes
06.2 Out-patient services	06.2.1.1 Medical services, 06.2.2.1 Dental services	Private General practitioners, Private Physicians, Private Gynaecologists, Private Paediatricians, Public – General Practitioners, Public – Medical specialists. Dentists	Respondents for medical services include general practitioners, gynaecology, paediatricians and physicians. These were selected based on the significance of benefits paid by medical aid schemes in 2010/11 to each of the specialists and general practitioner types  National Department of Health for Public General practitioners and medical specialists	Consultation fee. Ultrasound obstetrics. Amalgam restoration. See Appendix 3  National Department of Health – Uniform Patient Fee Schedule for Public General practitioners and Public Medical specialists	Telephonic collection - Feb  E-mail and telephone collection for public hospitals – Apr	Public sector included
06.3 Hospital services	06.3.1.1 Hospital services	Private Ward fees, Private Theatre fees, Public Ward fees, Public Theatre fees,	The HASA database of members was used as a sampling frame and it allows for the identification of significant private hospital groups. Holding groups were selected based on the percentage of registered hospitals; each had to have a share of 15% or more. Independent hospitals could not be included in the sample, as none of these hospitals is located in the selected CPI areas  National Department of Health for Public Ward fees and Public Theatre fees	Indicator products selected for hospital fees (06.3) were based on the significance of benefits paid by medical aid schemes in 2010/11 to each of the components under private hospitals and medical specialists that do not fall into the category of medical services (COICOP code 062) as the services they render are not major procedures but minor  National Department of Health – Uniform Patient Fee Schedule for Public Ward fees and Public Theatre fees	E-mail. Feb, May, Aug, Nov for private ward and private theatre fee  E-mail. Apr, for Public Ward and Public Theatre fee	Public sector included
07.1 Purchase of vehicles	07.1.1.1 Purchase of new motor-cars	Hatchback, Sedan, bakkie, SUV/MPV	Price list from major newspapers		Newspapers. Monthly	Old product
07.1 Purchase of vehicles	07.1.1.2 Purchase of second-hand motor-cars	Hatchback, Sedan, bakkie, SUV/MPV	Motor dealers based on advertised vehicles on the Autotrader website. Retail selling value for stock in specified condition obtained from Auto Dealer's guide	Volume sellers priced as identified by model, make, engine capacity and year of manufacturing. Prices obtained are the "Retail selling value for stock in specified condition" as specified in the Auto Dealer's guide	Auto Dealer's guide. Monthly	Old product, revised sample

3-digit COICOP code and description	5-digit COICOP code and description	Indicator product(s)	Sample of respondents	Prices/rates/tariffs obtained	Collection method and frequency	Summary of methodology changes
07.2 Operation of personal transport equipment	07.2.1.1 Spare parts and accessories	Tyre, shock absorbers, disk pads, clutch kits, battery spark plug			Field collection. Monthly	New indicator products added
07.2 Operation of personal transport equipment	07.2.2.1 Fuels and lubricants	Unleaded petrol	Department of Minerals Energy	Prices obtained for all types of unleaded petrol, inland and coastal	Internet collection. Monthly	
07.2 Operation of personal transport equipment	07.2.3.1 Maintenance and repair	Car service	New motor vehicles	Service intervals are pre-specified by manufacturer	Telephonic collection. Monthly	
07.2 Operation of personal transport equipment	07.2.4.1 Other services in respect of personal transport equipment	Motor vehicle licence and registration fee	Department of Transport	Motor vehicle licence fee for different vehicle weights, Motor vehicle registration fee	E-mail: Monthly.	
07.2 Operation of personal transport equipment	07.2.4.1 Other services in respect of personal transport equipment	Toll fees	Sample of toll gates based on annual traffic volumes	Toll fees for Class 1, i.e. light motor vehicles are collected	Internet collection. Mar	
07.3 Transport services	07.3.1.1 Passenger transport by railway	Train fees	Rail company providing daily commuter services and Gautrain	Sample of routes based on number of trains covering the route per day	E-mail/Telephonic collection. Mar, Jun, Sep, Dec	Old product, revised sample
07.3 Transport services	07.3.2.1 Passenger transport by road	Taxi fare	Taxi ranks and other departure points	Taxi routes were identified using the 2001 Census. The number of workers per residential area was used to select destination areas for taxis departing from the main central business district. A standard adult fare is to be collected for each route	Field collection. Mar, Jun, Sep, Dec	
07.3 Transport services	07.3.2.1 Passenger transport by road	Local bus fares	Bus operators	Bus routes were identified using the 2001 Census. The number of workers per residential area was used to select destination areas for buses departing from the main central business districts. Standard adult fare obtained	Telephonic collection Jan, Mar, Apr, Jun, Jul, Sep, Oct, Dec	

3-digit COICOP code and description	5-digit COICOP code and description	Indicator product(s)	Sample of respondents	Prices/rates/tariffs obtained	Collection method and frequency	Summary of methodology changes
07.3 Transport services	07.3.2.1 Passenger transport by road	Long-distance bus fares	Bus operators	Quotes to be priced are limited to standard single adult fares. No special offer tickets will be priced. The quotes are for predetermined routes. The routes were created as links between two CPI areas, e.g. Johannesburg CBD to Cape Town CBD. The routes were selected purposively to cover both primary and secondary CPI areas	Internet collection. Mar, Jun, Sep, Dec	
07.3 Transport services	07.3.3.1 Passenger transport by air	Air fares	All the major passenger airlines which provide daily scheduled flights to and from destinations across South Africa. These are termed as domestic flights. The airlines can be divided into mainstream and low cost/budget airlines	Air fares for passengers boarding daily scheduled flights have been selected as the indicator product. Chartered flights are synonymous with business travel and are therefore not eligible. The quotes to be collected are for predetermined routes with departure primary and secondary CPI areas located within the Western Cape, KZN and Gauteng provinces. Quotes to be priced are limited to economy class standard single adult fares. Prices collected are for current month, one month in advance and two months in advance. This is done since most flights are booked in advance	Internet collection. Monthly	
08.1 Postal services	08.1.1.1 Postal services	Rental of post box	SA Post Office	Rental of post box	Telephone. Jan	
08.1 Postal services	08.1.1.1 Postal services	Stamps	SA Post Office	Charge for different sized envelopes for ordinary mail and fast mail	Internet. Apr	
08.1 Postal services	08.1.1.1 Postal services	Courier services	Courier service providers	Charge per Kilometre or per area	E-mail. Monthly	New indicator product added
08.2 Telephone and telefax equipment	08.2.1.1 Telephone and telefax equipment	Cellular phones	Cell phone retailers in all geographical CPI areas		Field collection. Monthly	

<b>3-digit COICOP code and description</b>	<b>5-digit COICOP code and description</b>	<b>Indicator product(s)</b>	<b>Sample of respondents</b>	<b>Prices/rates/tariffs obtained</b>	<b>Collection method and frequency</b>	<b>Summary of methodology changes</b>
08.3 Telephone and telefax services	08.3.1.1 Telephone and telefax services	Telephone fees, Cell phone fees, Internet subscription costs	Telkom. Cell phone operators sampled based on market share	Telephone calls and landline rental are priced. Cell phone contracts and prepaid options included in the sample. Internet subscription packages sampled purposively. Only private services are included	Internet. Monthly	
09.1 Audio-visual, photographic and information processing equipment	09.1.1.2 Television sets, video-cassette players and recorders	TV, Aerial and satellite dishes, DVD Player	Retailers of electronic and computer appliances		Field collection. Monthly	New indicator products added
09.1 Audio-visual, photographic and information processing equipment	09.1.3.1 Information processing equipment	Laptops, Tablets	Retailers of electronic and computer appliances		Field collection. Monthly	New indicator products added
09.1 Audio-visual, photographic and information processing equipment	09.1.4.1 Recording media	Pre-recorded DVDs	Music stores maintaining a top 10 or top 20 list of branches nationwide	Top 10 or top 20 DVDs	Internet collection. Monthly	
09.1 Audio-visual, photographic and information processing equipment	09.1.4.1 Recording media	Pre-recorded CDs	Music stores maintaining a top 10 or top 20 list of branches nationwide	Top 10 or top 20 CDs	Internet collection. Monthly	
09.1 Audio-visual, photographic and information processing equipment	09.1.4.1 Recording media	Blank CDs, Blank DVDs,	General retailers, and retailers of recording and music products		Field collection. Monthly	New indicator products added
09.2 Other major durables for recreation and culture	09.2.2.1 Musical instruments	Pianos, Organs, other musical instrument	Musical instrument stores and other major retailers such as hypermarkets		Field collection. Monthly	New indicator products added
09.3 Other recreational items and equipment, gardens and pets	09.3.1.1 Games, toys and hobbies	Board games, Doll, Teddy bears	Retailers of games and toys in the geographical CPI areas		Field collection. Monthly	

3-digit COICOP code and description	5-digit COICOP code and description	Indicator product(s)	Sample of respondents	Prices/rates/tariffs obtained	Collection method and frequency	Summary of methodology changes
09.3 Other recreational items and equipment, gardens and pets	09.3.2.1 Equipment for sport, camping and open-air recreation	Swimming pool chlorine, Tennis balls, Sleeping bag, Sports boots, Swimming pool cleaning equipment	Retailers of swimming pool equipment, camping equipment and sports equipment in the geographical CPI areas		Field collection. Monthly	New indicator products added
09.3 Other recreational items and equipment, gardens and pets	09.3.3.1 Gardens, plants and flowers	Seeds, Plant pots	Nurseries and retail outlets with a gardening section are included in the sample. The sample includes three nurseries for each of the CPI publication areas	Plants, trees, shrubs etc are not included, since the quality adjustments required if the items are not exactly the same size over time, are complicated	Field collection. Monthly	
09.3 Other recreational items and equipment, gardens and pets	09.3.4.1 Pets and related products	Dog food - pellets, Dog food - tinned, Cat food - pellets, Cat food - tinned	Retailers of pet food and requirements		Field collection. Monthly	
09.4 Recreational and cultural services	09.4.1.1 Recreational and sporting services	Gym fees, Rugby tickets, Soccer tickets, Cricket tickets	Chain and independent gyms, sport stadiums	Adult rates for gym fees and sporting events. Price of a season ticket collected for rugby and cricket	Gym fees: Internet/Telephonic. Jan, Apr, July, Oct Rugby: Internet. Feb Soccer: Telephonic. Aug, Sep, Oct, Nov, Dec, Jan, Feb, Mar, Apr, May Cricket: Internet. Sep	
09.4 Recreational and cultural services	09.4.2.1 Cinemas, theatres, concerts	Movie tickets	Nu Metro and Ster Kinekor	Standard priced ticket for an adult	Internet collection. Monthly	
09.4 Recreational and cultural services	09.4.2.3 Television and radio taxes and hire of equipment	Television licence	South African Broadcasting Corporation (SABC)	Annual television licence fee	Internet collection. Apr, Oct	
09.4 Recreational and cultural services	09.4.2.3 Television and radio taxes and the hire of equipment	Subscription to pay TV channels	Multi Choice and Top-TV	Different packages are priced	Internet collection. Monthly	
09.4 Recreational and cultural services	09.4.3.1 Games of chance	Lotto ticket	Gambling Board of South Africa	Lotto and lotto plus ticket	Internet collection. Jan	
09.5 Newspapers, books and stationary	09.5.1.1 Books	Top 10 books	Book sellers maintaining a top 10 list with branches nationwide	Top 10 books	Internet collection. Monthly	
09.5 Newspapers, books and stationary	09.5.1.1 Books	Textbooks	University textbooks from different book sellers	Top selling books from a academic bookstores	Internet collection. Monthly	

3-digit COICOP code and description	5-digit COICOP code and description	Indicator product(s)	Sample of respondents	Prices/rates/tariffs obtained	Collection method and frequency	Summary of methodology changes
09.5 Newspapers, books and stationery	09.5.2.1 Newspapers and periodicals	Newspapers, magazines	Marketing departments of sampled newspapers and magazines	Newspapers and magazines were sampled based on circulation. Daily and weekly newspapers in the Business/Financial and Leisure categories are included. Magazine categories include Business/Financial, Leisure (general interest, men's, women's, sport and health), Creative living, and Other niche	Telephonic collection. Monthly	
09.5 Newspapers, books and stationery	09.5.4 Stationery and drawing material	Books (Including exam pads, Pen, Files	Stationery retailers		Field collection. Monthly	New indicator products added
09.6 Package holidays	09.6.1 Package holidays	Holiday tour packages	Travel agencies		Telephonic collection. Monthly	New indicator product
10.1 Pre-primary and primary education	10.1.1.1 Pre-primary and primary education	Primary school fees	Pre-primary and Primary schools	School fees; includes private and public schools	Telephonic collection. Mar	
10.2 Secondary education	10.2.1.1 Secondary education	Secondary school fees	Secondary schools	School fees; includes private and public schools	Telephonic collection. Mar	
10.4 Tertiary education	10.4.1.1 Tertiary education	Tertiary education fees (including education not definable by level)	Tertiary institutions within CPI collection areas	Top 10 subjects or degrees, based on frequency of registered students	Postal and E-mail collection. Mar	Product descriptions have been changed to make them less restrictive
11.1 Catering services	11.1.1.1 Restaurants	Red meat based products, poultry based products, fish and other seafood based products, pizza, pies, cold beverages (non-alcoholic), hot beverages, alcoholic beverages	Chain and independent restaurants and take away outlets	Red meat based products, poultry based products, fish and other seafood based products, pizza, pies, cold beverages (non-alcoholic), hot beverages, alcoholic beverages	Field and internet collection. Monthly	Rest and take-away combined(explain this a bit better)
11.2 Accommodation services	11.2.1.1 Accommodation services	Accommodation services – double room	3-star hotels and bed and breakfast accommodation	Weekend and midweek rates for a double room.	Internet and telephonic collection. Monthly	



<b>3-digit COICOP code and description</b>	<b>5-digit COICOP code and description</b>	<b>Indicator product(s)</b>	<b>Sample of respondents</b>	<b>Prices/rates/tariffs obtained</b>	<b>Collection method and frequency</b>	<b>Summary of methodology changes</b>
11.2 Accommodation services	11.2.1.1 Accommodation services	University boarding fees	All universities within CPI collection areas	Top 5 residences, based on frequency of students	Postal and E-mail collection. Mar	
12.1 Personal care, 12.3 Personal effects not elsewhere classified	See Appendix 1	See Appendix 1	These include supermarkets, convenience stores, specialty shops, e.g. Jewellery stores and others		Field collection. Monthly	New indicator products added
12.4 Social protection	12.4.1.2 Crèches, nurseries	Crèche fees	Crèches	Crèche fees	Telephonic collection. Mar	
12.5 Insurance	12.5.2.1 Insurance connected with the dwelling	Building insurance, Household content insurance	Sample of short-term insurance companies based on market share and customers' brand loyalty levels	Building insurance: Premiums based on value of house and suburb. Household content insurance: Premium based on risk profile and suburb	E-mail and Telephonic collection. Jan, Jul	
12.5 Insurance	12.5.3.1 Insurance connected with health	Medical aid contributions	The three most significant "open" (not restricted) registered medical schemes were sampled as respondents based on the average number of members. The relevant information about the membership of the different medical aid schemes in South Africa is available in the annual reports by the Council of Medical Schemes	For each of the medical aid providers at most five medical aid options were selected based on the number of members linked to the specific plan	Internet, e-mail, telephone collection. Feb	
12.5 Insurance	12.5.4.1 Insurance connected with transport	Motor vehicle insurance	Sample of short-term insurance companies based on market share and customers' brand loyalty levels. Mainstream insurance companies and specialist motor vehicle insurance companies are included in the sample	Premiums based on the most common profile of an individual purchasing insurance for private use; the most commonly insured vehicles for private use; and the suburbs which are common in terms of vehicle insurance for private use	E-mail and Telephonic collection. Mar, Jun, Sep, Dec	
12.5 Insurance	12.5.5.1 Other insurance	Funeral policies	Financial institutions, funeral service providers	Premiums of funeral policies	Internet collection. Jan, Apr, Jul, Oct	

<b>3-digit COICOP code and description</b>	<b>5-digit COICOP code and description</b>	<b>Indicator product(s)</b>	<b>Sample of respondents</b>	<b>Prices/rates/tariffs obtained</b>	<b>Collection method and frequency</b>	<b>Summary of methodology changes</b>
12.6 Financial services not elsewhere classified	12.6.2.1 Financial services not elsewhere classified	Bank charges	Sample of banks	Admin, cash deposit and cash withdrawal fees on savings, credit and cheque accounts	Internet collection. Monthly	
12.7 Other services not elsewhere classified	12.7.1.1 Other services	Funeral expenses (excluding tombstones), gravestone and maintenance of gravestone (excluding unveiling)	Funeral service providers	Coffin/casket, tombstone, printing of pamphlets, cremation, urn	Telephonic collection. Jan, Apr, Jul, Oct	New indicator product added

### Appendix 3: Medical services priced for the CPI

Table 20

Product code	Indicator product	Quote no	Code	Quote description
06211001	Private – General practitioners	001	0190	Consultation fee – Patients with medical aid
		002	0190	Consultation fee – Private patients
06211002	Private – Gynaecologists	001	0190	Consultation fee – Patients with medical aid
		002	0190	Consultation fee – Private patients
		005	3617	Ultrasound obstetrics – Patients with medical aid
		006	3617	Ultrasound obstetrics – Private patients
06211003	Private – Physicians	001	0190	Consultation fee – Patients with medical aid
		002	0190	Consultation fee – Private patients
06211004	Private – Paediatricians	001	0190	Consultation fee – Patients with medical aid
		002	0190	Consultation fee – Private patients
06211005	Public – General practitioners	001	001	Consultation fee – Uniform patient fee
06211006	Public – Medical practitioners	001	001	Consultation fee – Uniform patient fee
06221001	Private – Dentists	001	8101	Oral examination – Patients with medical aid
		002	8101	Oral examination – Private patients
		003	8341	Amalgam restorations – Patients with medical aid
		004	8341	Amalgam restorations – Private patients