

Consumer Price Index

The South African CPI Sources and Methods Manual

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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 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. The products in the basket are selected as being 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 three equally important objectives:

1. To measure inflation in the economy so that macroeconomic policy is based on comprehensive and up-to-date price information.
2. To provide a deflator of consumer expenditure in the expenditure national accounts and other economic data.
3. To measure changes in the cost of living of South African households to promote 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. 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 and fax. A direct collection methodology, that entailed collecting prices of goods directly by visiting retail outlets, was piloted in July 2004. This direct collection methodology was rolled out region by region. Since 2006, the CPI has been compiled using the prices of goods from the direct collection methodology in all areas.

3. Alignment with international best practice in CPI formulation

3.1 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.

3.2 International expert groups

The International Labour Organization (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 largely 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>

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. New methodology may be captured through resolutions taken at official meetings of these groups in consultation with the ILO. The groups provide a forum for specialists to share their experiences and discuss research and methodology on crucial problems of measuring price change, and thereby identify best 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 is organised by 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.

3.3 International participation

3.3.1 International comparisons programme

The International Comparisons Programme (ICP) is a global statistical initiative established in 1970 to produce internationally comparable price and expenditure data as well as purchasing power parity (PPP) estimates to facilitate cross-country comparisons of price levels, Gross Domestic Product (GDP) and related economic aggregates in real terms and free of price and exchange rate distortions. The ICP uses Purchasing Power Parities (PPPs) to effect conversion. PPPs are spatial price indices. They make it possible to compare the GDPs and component expenditures of countries in real terms by removing the price level differences between them. The programme is globally managed by the World Bank and implemented by regions, namely, Africa, Asia and Pacific Islands, South America, the Commonwealth of Independent States (CIS) and Russia, Western Asia and Europe. Stats SA participates in the ICP through collection of prices of goods and services as prescribed by the ICP basket, of which some are already being collected. <http://www.worldbank.org/en/programs/icp>

3.3.2. Harmonised Consumer Price Index (HCPI)

The Harmonised Consumer Price Index (HCPI) is defined as the Consumer Price Index (CPI) developed from comparable methodologies. That means CPIs which have been developed from concepts, definitions and methods that are comparable. The Member States HCPIs are produced by respective Member States using agreed harmonised methodologies. The SADC HCPI is compiled by the SADC Secretariat by aggregating the National HCPIs of the Member States. HCPI is meant to provide an official measure of inflation in the SADC region, and it makes international comparisons easier since the national HCPIs are produced using harmonised methodologies and as much is practicable using the same statistical classifications, standards and frameworks. The SADC Secretariat has been implementing the Harmonised Consumer Price Index (HCPI) since August 2011. <http://www.sadc.int/news-events/newsletters/harmonised-consumer-price-index-newsletter/>

Chapter 2: Classification of goods and services

1. Background

The South African CPI uses the Classification of Individual Consumption by Purpose (COICOP) for goods and services. 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.

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.

The Consumer Price Index focuses on households and thus uses COICOP categories 01 to 12. Illegal products such as prostitution and narcotics are excluded from the South African CPI.

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 most detailed whilst the 2-digit is the least. 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	Product code	COICOP description	Indicator product
01.	Food and non-alcoholic beverages		
01.1.	Food		
01.1.1	Bread and Cereals		
01.1.1.1	01111001	Rice	Rice
01.1.1.2	01112001	Bread	Loaf of white bread
01.1.1.2	01112002	Bread	Loaf of brown bread
01.1.1.2	01112003	Bread	Sweet biscuits
01.1.1.2	01112004	Bread	Savoury biscuits
01.1.1.3	01113001	Pasta products	Spaghetti
01.1.1.3	01113002	Pasta products	Macaroni
01.1.1.3	01113003	Pasta products (excluding spaghetti and macaroni)	Pasta (excl. spaghetti, macaroni)
01.1.1.4	01114001	Pastry-cook products	Cake 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	Cold cereal	Cold cereal

The numbering 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 700 g loaf of white bread in XXX store in YYY area.

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); and
- 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;
- major household appliances whether or not electrical;
- major tools and equipment;
- vehicles;
- telephone and fax equipment;
- information processing equipment;
- musical instruments;
- equipment for the reception, recording and reproduction of sound and pictures; and

- jewellery, clocks and watches.

The following goods are listed as semi-durables:

- clothing and footwear;
- household textiles;
- small electrical household appliances;
- glassware, tableware and household utensils;
- small tools and miscellaneous accessories;
- spare parts for vehicles;
- recording media;
- games, toys, hobbies;
- equipment for sport, camping, etc.;
- books; and
- 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;
- non-durable household goods;
- pharmaceutical products;
- fuels and lubricants;
- gardens, plants and flowers;
- pets and related products;
- newspaper and periodicals;
- stationery and drawing materials; and
- 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 and 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;
- package holiday;
- education;
- restaurants and hotels;
- accommodation services;
- social protection services;
- insurance;
- financial services n.e.c.; and
- 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 designated as a service when the service component is considered predominant; for example services for the maintenance and repair of the dwelling, which includes 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. 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 that is consistent with practical considerations of data availability. 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 four or 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. This is the method used to calculate the CPI weights.

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.

In terms of geographical coverage, all expenditure made by residents outside the boundaries of the country is excluded. However, all expenditure by non-residents within the country are included; this is referred to as the domestic concept. If all expenditure made by residents outside the boundaries of the country is included, then the national concept would be applied. 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.

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 HES 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 area and product 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.
- 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 supplementary data sources to supplement 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 Household Expenditure Survey (HES)

In the previous years, Stats SA has run two versions of a Household Expenditure Survey, the Income and Expenditure Survey (IES) and Living Conditions Survey (LCS). The primary objective of both the IES and LCS is to provide information on households' consumption expenditure patterns. However, the LCS also provides estimates for monitoring poverty levels. Successive HES gauge changes in household consumption patterns, levels of income and income distribution.

3.1.1 Living Conditions Survey (LCS) 2014/15¹

¹ Refer to www.statssa.gov.za for further information on the LCS.

In 2014/15 Stats SA conducted its latest HES, namely the Living Conditions Survey. The Living Conditions 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. The sample consisted of 30 818 dwelling units covering the whole country. The LCS 2014/15 used a combination of the recall and diary methods.

The LCS 2014/15 ran from 13 October 2014 to 25 October 2015. This allowed for a 12-month period in which seasonal expenditure patterns were captured. 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 four 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.

As in the IES 2010/11, the LCS 2014/15 used a 2-week period for diary completion. The year was thus 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; and
- Restaurants.

3.2 LCS 2014/15 weights and adjustments for CPI weights

In accordance with general international practice, Stats SA uses the survey of household expenditure to provide the basis of the CPI weights. However, well-established practice is that additional sources are used in cases where the HES may under- or overreport 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. 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.

The difference in expenditure proportions between the LCS and the new CPI weights is shown in Table 4. Although the weights are reported as a percentage, they are calculated on the rand value of total expenditure. All adjustments to the LCS were made based on actual expenditure, not the final proportions.

Table 4: Difference in expenditure proportions between LCS and CPI weights (Total country)

COICOP category	LCS shares	CPI 2016 weights
Food and non-alcoholic beverages	12,9	19,15
Alcoholic beverages and tobacco	0,9	5,88
Clothing and footwear	4,8	4,04
Housing and utilities	32,6	22,55
Household contents, equipment, and maintenance	5,2	4,33
Health	0,9	1,26
Transport	16,3	14,72
Communication	3,4	2,62
Recreation and entertainment	3,8	4,86
Education	2,5	2,34
Restaurants and hotels	2,1	3,41
Miscellaneous	14,7	14,84

Additional data sources for compiling weights include 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, excise tax receipts, industry associations' data summaries, and summarised transaction data from retailers.

Adjustments were made to the LCS results in respect of frequently purchased items and under-reporting for food and non-alcoholic beverages, and personal care (under Miscellaneous), restaurants and hotels, and alcoholic beverages and tobacco, health, transport, education. Significant methodological changes in weights calculation were applied to the following categories: Owner-occupied housing, Motor vehicles, Games of chance, and Insurance. The "net expenditure approach" was applied to Second-hand motor vehicles, Games of chance, and Insurance. The net expenditure approach adjusts for any returns to household either as income or claims made. This is done to avoid any double counting. Below are details on adjustments made on the expenditure groups.

3.2.1 Food and non-alcoholic beverages

This category is subject to under-reporting because many food items are purchased throughout the month and by different household members. The total value for food and NAB is based on Stats SA's

2013 Retail Trade Large Sample Survey (LSS). These values were escalated using the monthly retail trade survey results. In addition, a national accounts estimate for food sales through informal and small businesses was added. More detailed groups utilised a combination of the LCS and LSS values and retailer sales data.

3.2.2 Alcoholic beverages and tobacco

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

3.2.3 Housing and utilities

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 which was applied to the market value of the property as estimated by the owner occupier. This method is still used in the calculation for LCS results.

The CPI weights were calculated using an alternative method. Housing data in the LCS 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.

3.2.4 Health

Regulatory data was used to adjust the LCS out-of-pocket medical expenses for over-the-counter, prescription medication and consultations.

3.2.5 Transport

Three adjustments were made to value in the transport category. First, new vehicles sales were adjusted upwards from the LCS based on national accounts estimates and industry sales data. Secondly, the value of fuel purchases and the split between petrol and diesel was adjusted using national accounts and industry estimates.

The third adjustment was to calculate net expenditure on used vehicles (purchases less income from sale of used vehicles) using national accounts estimates. 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.

3.2.6 Recreation and entertainment

Games of chance were adjusted as respondents tend to under-report their spending on gambling. Data were sourced from the Gambling Board and the National Lotteries Commission to obtain the value of bets made by punters, less payout received.

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

3.2.7 Education

Stats SA's financial survey of higher educational institutions was used to derive an estimate on university tuition fees. A split between FET and university enrolment numbers obtained from the Council for Higher Education and the Department of Higher Education was used in order to derive estimated spending at FET colleagues.

3.2.8 Restaurants and hotels

The values for restaurants and hotels have been adjusted, both for underreporting. Different household members often incur expenditure in restaurants 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.

This category was adjusted using national accounts supply and use tables by calculating a ratio for alcoholic beverages consumed at home versus alcoholic beverages consumed at restaurants, bars, taverns, etc. The overall estimate for alcoholic beverages was multiplied with the calculated ratio in order to derive an estimate of alcoholic beverages consumed away from home.

3.2.9 Personal care

Similar 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.

3.2.10 Insurance

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

When comparing LCS results with the statutory reports of oversight structures, it was 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 policy holder, in part or in full. Data from the Council for Medical Schemes (CMS) was 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 LCS 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.

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.

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

In January 2017, Stats SA published an information note on the process and outcome of selecting a new basket. Each province has its own basket. Every product that appears in at least one provincial basket is included in the national basket.

3. Selection criteria for the basket of goods and services

Determining the basket composition at a disaggregated provincial level improves the relevance of the CPI to the purchasing patterns at a local level. The baskets reflect the pattern of residence rather than the point at which purchases are made. For publication purposes, Stats SA compiles indices at provincial level.

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. Products are included in the basket if they contribute at least 0,1% of the total household expenditure. Within product classification, products are ranked from highest to lowest and cumulative 80% of expenditure is selected.

The 2016 CPI contains 412 products, which is slightly more than the 2012 basket, which had 393 products. The provincial baskets and list of goods and services are provided in Appendix 1 and can also be found on Stats SA's website.

Chapter 5: Sampling and CPI operations

1. Introduction

This chapter explains the sampling and collection methodology for all indicator products. There are two principal data collection groupings. These are the field and head office collections.

2. Sampling methodology

The most common procedure used for price collection is a sample survey. There are various methods of sampling, whether determined by probability or not. It is important that Statistics South Africa (Stats SA) follows an internationally accepted practice when sampling occurs within the CPI. This section discusses the sampling method used by Stats SA.

South Africa has the following restrictions in terms of sampling:

- No sampling frame is available.
- Price collection must take place where there are price collectors.
- A probability sample with respect to the base period is not a proper probability sample with respect to the current period.
- Sales values or units at sub-urban area level are virtually impossible to obtain.

Any sampling method applied needs to maximize precision and minimise the cost of carrying out the survey. Given the restrictions mentioned above, outlet selection is purposive and sampled products are selected as follows:

- The item selected should be the most popular item in terms of brand and unit. The volume seller is assumed the most popular item. In general, the volume seller is assumed to be the brand and unit with the most shelf space allocated to it.
- The outlet should expect to continue selling the product.
- The item should be regular merchandise. An item is considered to be regular merchandise if the outlet normally sells the item. Special order items that are one-time, one-of-a-kind purchases are not eligible for the index.
- The item must be in good condition.

3. 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. The collection is carried out on a monthly basis.

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 e-mail, internet and telephonic surveys. The history and nature of the frequency of changes in prices for specific types of products informs the decision on whether prices should be collected monthly, quarterly or annually.

4. Auditing

Stats SA quality assurance audits are conducted on all data collection. The purpose of quality assurance audits is to ensure that the CPI methodology is correctly applied by the fieldworkers at the outlets and by head office collectors. The audit process allows the auditors to confirm if prices and products collected by the price collectors are correct. Audits are performed parallel to price collection. For the purpose of general coverage and to ascertain the general level of quality, all nine provinces are audited during a year.

5. Data editing

Edits are performed to detect if there are any errors in the data and, if so, to verify and correct those errors. The main objective of editing is to ensure clean data is prepared for analysis. There are four stages in CPI editing:

- Validation stage: check if the correct codes were allocated during capturing and allocate missing unit codes.
- Phase 1: Logical edits, ensure that the current and previous months' data do not have contradictory values.
- Phase 2: Range edits, identify whether the data item value falls inside a determined acceptable range.
- Phase 3: check the correctness of all the allocated unit status codes.

6. Product maintenance

The aim of product maintenance is to ensure there are enough prices for each product in each provincial basket. This process involves substitution of items that are temporarily unavailable, out of season items, and permanently unavailable items. Products and outlets that are permanently closed or temporarily closed for two consecutive months are substituted.

7. Listing of indicator products and methods

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

Chapter 6: Special cases

A. Housing

1. Introduction

Essentially there are two types of arrangements that characterise the housing market: a house is occupied 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 the property owner for the provision of accommodation. Typically, a tenant and property owner 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 it out. In other words, 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 conducts its own rental survey of letting agents. From 2009, fieldworkers 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 it 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 derived by owner-occupiers from their own homes. It excludes 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.

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. Actual rentals for a given dwelling are compared from one quarter to the next, enabling the calculation of quarterly price relatives for that dwelling.

The sample is made up of actual real estate agents, renting privately owned dwellings to the public in all CPI areas. The sample covers a wide geographic spread. Housing types are selected to represent the formal property rental market. The housing types are thus flats, townhouses, and houses.

B. Seasonal fruit

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 as seasons change. The list was determined on the basis of data sourced from fresh produce markets.

Table 3: Seasonal basket composition

Indicator product	Indicator product code	Basket months
Naartjies - fresh	01161003	Jun, Jul, Aug, Sep, Oct
Pears - fresh	01164001	Jun, Jul, Aug, Sep, Oct, Nov
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
Paw-Paw/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	01167004	Jan, Feb, Oct, Nov, Dec

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

C. Used vehicles

Previous methodology

The pricing methodology used up to December 2016 for used motor vehicles compared prices for two consecutive months. Because used vehicle prices are driven by depreciation, this resulted in declining price indices for used motor vehicles.

New methodology

In order to eliminate the depreciation effect in the price indices for used motor vehicles, a revised pricing methodology was implemented in 2017. The new methodology also uses the TransUnion Auto Dealer Guide book for used motor vehicles prices as data source, and also compares prices for a selected sample of one- and two-year-old motor vehicles. The sample is updated every year in January. A selected vehicle in the new sample is then compared with a similar (model and age) vehicle in the previous sample over a 12-month period, and the year-on-year price ratio for this vehicle is established. The month-on-month price ratio is then derived from the calculated annual rate.

This new methodology has several advantages compared to the previous methodology:

- The depreciation effect is eliminated and the year-on-year price changes are a better reflection of consumer expectations.
- The year-on-year price changes do not show depreciation.
- The exaggerated price changes in January months (as provided by the data source) are avoided.

D. Games of chance

Introduction

Games of chance are considered recreational consumption expenditure in the South African consumer price index and the national accounts. This is in line with the international product classification system for the CPI (COICOP). Internationally, many countries include games of chance in their CPI, and those that exclude it usually do so on the basis of the difficulty in tracking comparable prices. Expenditure on gambling in South Africa amounts to more than one per cent of the current CPI weights. The expenditure value in the CPI weights and the national accounts is calculated on a net basis (total gambling revenue minus winnings).

Previous pricing methodology

The previous pricing method for games of chance uses the ticket price of games run by the national lottery. Internationally, the prices of lottery tickets are commonly used as a proxy where gambling is state regulated – as it is in South Africa. Lottery ticket prices are surveyed annually by Stats SA. Since their inclusion in the CPI in 2008, there have only been two price increases in lottery tickets (2009 and 2015). Price changes were captured into the CPI without consideration of any changes in potential winnings.

Revised pricing methodology from 2017

An increase in the price of a lottery ticket should be seen in the context of any change in the possible winnings that players may receive. The change in the ticket price to be included in the CPI should be adjusted to account for any change in the winnings. For example, if the ticket price increased by 20%, and the potential winnings by 10%, then the effective price increases (in the CPI) would be calculated as 9%. This method is similar to that used for CPI calculation purposes when the quantity of a product changes and an adjustment to the price change is affected. The proportion of ticket revenues due to the winners is determined by the payout ratio attached to each game. This ratio is agreed between the lottery operator and the National Lotteries Commission. Any change in price will therefore be quality adjusted by the payout ratio. Any change in the payout ratio without a change in the ticket price will also be considered a price change.

Chapter 7: 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 index number could be calculated for all item transactions for a year, a month, a week, or a day;
- A spatial dimension; i.e. the index number 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 index number 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); and
- A sectoral (or entity or economic agent) dimension; the i.e. index number 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).

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

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:

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

where $I^{0:t}$ 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 $I_i^{0:t}$ 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. All future prices to be collected are then compared to these prices in calculating the index.
- Index reference period. The period for which the index is set to 100, also referred to as the base period.

2.1 Numerical example

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

Table 4: Calculating the price relative

Product code							
01211001	INSTANT COFFEE						
Unique number	Respondent	Quantity	Unit	Previous price	Current price	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	
							1,00871

Table 5: Creating the index

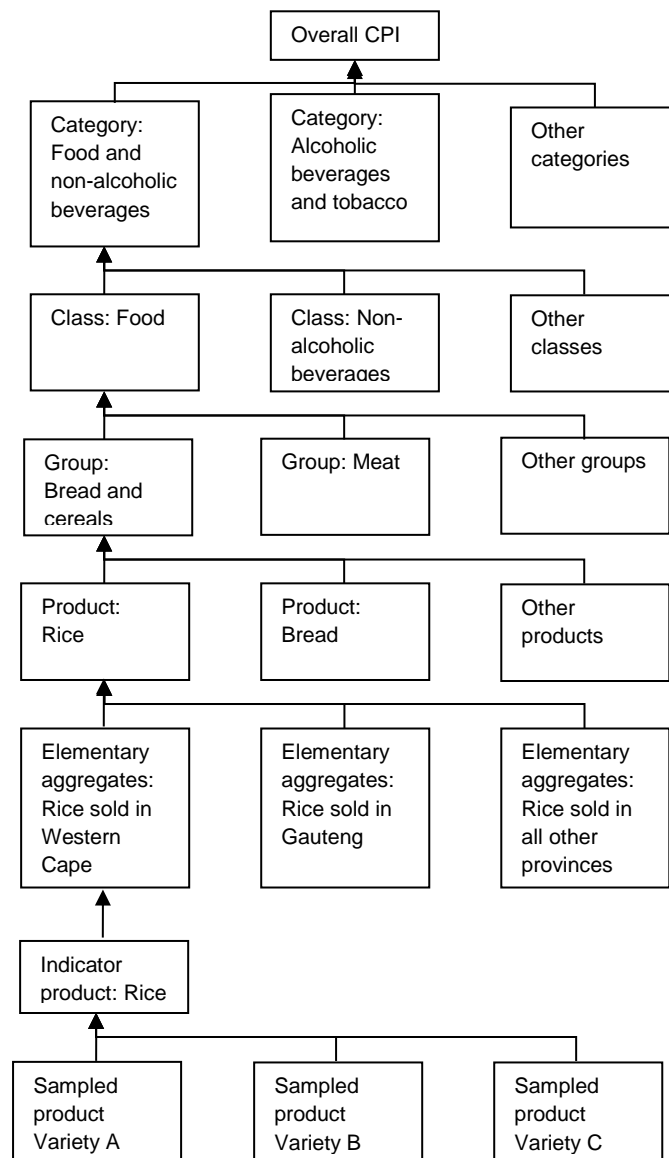
INSTANT COFFEE				
Product code		Previous index	Price relative	New index
01211001		139,2	1,00871	140,4
Product code	Description	New index	Weight in CPI	Weighted index
01211001	Instant coffee	140,4	0,30	42,12
01211002	Ground coffee and coffee beans	142,5	0,04	5,70
01212001	Ceylon/black tea	141,3	0,19	26,85
01212002	Rooibos tea	139,8	0,10	13,98
01213001	Drinking chocolate	138,5	0,02	2,77
0121	Hot beverages		0,65	140,64

Product code	Description	New index	Weight in CPI	
0121	Hot beverages	140,7	0,65	91,46
0122	Cold beverages	140,2	1,11	155,62
012	Non-alcoholic beverages		1,76	140,38
Product code	Description	New index	Weight in CPI	
011	Food	150,3	15,48	2326,64
012	Non-alcoholic beverages	140,4	1,76	247,104
01	Food and non-alcoholic beverages		17,24	149,28
Product code	Description	New index	Weight in CPI	
01	Food and non-alcoholic beverages	149,3	17,24	2573,93
02	Alcoholic beverages and tobacco	152,2	5,82	885,80
03	Clothing and footwear	165,4	3,83	633,48
04	Housing, water, electricity, gas and other fuels	174,9	24,62	4306,04
05	Furnishings, and household equipment	86	4,35	374,10
06	Health	122,8	1,4	171,92
07	Transport	146,1	14,28	2086,31
08	Communication	115,1	2,63	302,71
09	Recreation and culture	138,2	5,16	713,11
10	Education	164	2,53	414,92
11	Restaurants and hotels	145,8	3,09	450,52
12	Miscellaneous goods and services	123,4	15,05	1857,17
	CPI All Items (All urban areas)		100	147,70

Table 6: 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	145,8	147,7	1,30	7,42

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.

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 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. The link period may be a month or a year.
- 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 historical higher-level indices 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 2016 equals 100. All new product indices are at 100 in December 2016. Since all elementary (lowest-level) indices equal 100 in December 2016, all aggregations using the new weights also equal 100 in December 2016. The index levels for January 2017 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 2016 to January 2017 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 2016 = 100;
- All monthly changes in the CPI between December 2016 and January 2017 and onwards 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.

	January 2017	February 2017
Month-on-month	<u>Jan-17 (new weights)</u> Dec-16 (rebased to 100)*	<u>Feb-17 (new weights)</u> Jan-17 (new weights)
Year-on-year	<u>Jan-17 (new weights)</u> Jan-16 (old weights, rebased)	<u>Feb-17 (new weights)</u> Feb-16 (old weights, rebased)

Chapter 8: 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.

2. Methods of imputations

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.

2.3 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.

2.3 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 the least preferred procedure or solution to the problem.

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 to the sampled products only.

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 or shortages in the market. 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).

The carry-forward approach is applied to annual, bi-annual, 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 to the sampled products only.

Chapter 9: Quality and quantity adjustments in the CPI

1. Quality adjustments in the CPI

The objective of the CPI is to measure pure price change over time, so ideally identical goods and services should be priced from one period to the next. This is called pricing to constant quality. However, in practice, new products appear on the market and replace older products. These new products have different attributes (or quality). For price index purposes, it is necessary to measure these changes in quality, and to remove any change in price attributable purely to the change in quality, from the inflationary movement in the price.

South African CPI applies quality adjustment in the cases where 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.

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. 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** – different 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.

The products where quality adjustments are conducted are: motor vehicles, cellphones, decoders, DVD players and TVs.

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.

2. Quantity adjustments in the CPI

A quantity adjustment is a form of quality adjustment where a 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. Quantity adjustments are applied 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 available item. This is accomplished by scaling the price of the old or new product by the ratio of quantities.

Definitions

Acquisitions approach	The acquisitions approach 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.
Aggregate	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.
Aggregation	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.
Auditing	The process of applying more extensive methods of measurement to a subsample during the scheduled conduct of a survey in order to determine the effect of non-sampling errors.
Base period	The base period is usually understood to mean the period with which all the other periods are compared.
Basket	A specified set of goods and services.
Bias	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.
Category	In COICOP: classification of goods and service at 2-digit level.
Chain index	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.
Chaining	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 period (OECD).

Class	In COICOP: classification of goods and services at 3-digit level.
COICOP	Classification of individual consumption by purpose.
Collection frequency	Frequency of data collection, e.g. monthly, quarterly or annually.
Collection method	The methods of collection include the use of direct (field) collection, internet, email, post or fax.
Consumer price index (CPI)	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.
Consumption expenditure	Expenditure on goods and services acquired and privately used by household members, including imputed values for items produced and consumed by the household itself.
Cost of living index (COLI)	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).
CPI collection areas	The cities, towns or municipalities from which sample prices for indicator products are collected.
CPI compilation	The process of calculating the CPI.
CPI core index	CPI excluding items that are policy determined, seasonal or volatile.
Data editing	A process of cleaning raw data to remove coverage or content errors by applying a set of pre-determined rules.
Deflator	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.
Democratic weights	Each household is given equal weight in the calculation of the index, irrespectively of the size of its expenditures.
Depreciation	Depreciation is the loss in value of an asset due to consumption and ageing.
Diary method	A data collection method whereby respondents are given open-ended forms (diaries) to record all purchases (acquisitions) on a

	daily basis.
Durables	A consumption good that can be used repeatedly or continuously for purposes of consumption over a long period of time, typically several years.
Dwelling unit	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.
Elementary aggregates	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.
Exchange rate	Exchange rates are the price of one country's' currency in relation to another.
Expenditure weights	See weights.
Field collection	The direct collection of prices from outlets by fieldworkers (price collectors).
Fisher price index	The geometric average of the Laspeyres price index and the Paasche price index.
GDP	Gross Domestic Product. The total value of goods and services produced within the geographic boundaries of a country for a specified period of time.
Geometric mean	A method of calculating an average by taking the nth root of the product of n items.
Harmonised consumer price index (HCPI)	Consumer price index developed from concepts, definitions and methods that are comparable by Member State.
Head office collection	The collection of prices by staff based at Stats SA head office via internet, email and telephone.
Headline CPI	This monthly price index is compiled and published measuring changes in the prices of consumption goods and services for all urban areas.
Hedonic regression	A regression technique in which observed prices of different

	qualities or models of the same generic good or service are expressed as a function of the characteristics of the goods or services in question.
Household	Households may be individual persons living alone, or groups of persons living together who make common provision for food or other essentials for living.
Household Expenditure Survey	Sample survey of households in which the households are asked to provide data on, or estimates of, the amounts they spend on consumption goods and services over a given period of time.
Imputation	Data imputation is the substitution of estimated values for missing or inconsistent data items.
Index number	An index number is a figure reflecting price or quantity compared with a standard or base value.
Index reference period	The period for which the value of the index is set equal to 100.
Indexation	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.
Indicator products	Representative products within an elementary aggregate for which a sample of prices is collected.
Inflation	The persistent change in the general level of prices.
Inflation rate	The percentage change in the CPI.
Initiation	Initiation occurs when the price of an item is recorded for the first time.
Interest rate on mortgage bond	An interest rate is the cost of capital borrowed for the purpose of purchasing a house, which is in turn used by the lender (e.g. banks) as surety for the loan.
Jevons price index	An elementary price index defined as the unweighted geometric average of the sample price relatives.
Laspeyres price index	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.
Link factor	A ratio used to join a new index series to an old index series to form a continuous series.
Linking	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 the other sequence so that the value in the overlap period is the same in both sequences, and the spliced sequences form one continuous series.
Low index	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.
Minibus taxi	A motor vehicle that usually seats about 15 passengers and is used for public transport.
Month-on-month changes	Changes in levels expressed with respect to the previous month.
Municipality	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.
Net expenditure approach	Household expenditure less claims or income received.
Non-durables	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.
Opportunity cost	The concept of opportunity cost is commonly used in economics; it is measured by reference to the opportunities foregone at the time an asset or resource is used, as distinct from the costs incurred at some time in the past to acquire the asset, or the payments which could be realized by an alternative use of a resource (e.g. the use of labour in a voluntary capacity being valued at the wages which could have been earned in a paid job).
Ottawa Group	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.

Owner-occupied housing	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 being included within the scope of the CPI.
Owners' equivalent rent	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.
Paasche price index	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.
Payments approach	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.
Plutocratic weights	Households are given different weights in the calculation of the index according to their relative importance, which is mostly based on expenditure.
Price reference period	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 or t-1.
Price relative	The ratio of the price of an individual product in one period to the price of that same product in some other period.
Price updating	A procedure whereby the quantities in the weight reference period are revalued at the prices of a later period that serves as the price reference period, typically the period preceding the current period. In other words, revaluing the weights in order to ensure that they are effectively based on the underlying quantities or volumes of the price reference period.
Provincial basket	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.
Purchasing power parity	PPPs are the rates of currency conversion that equalise the purchasing power of different currencies by eliminating the differences in price levels between countries. In their simplest form, PPPs are simply price relatives that show the ratio of the prices in national currencies of the same good or service in different countries. PPPs are also calculated for product groups and for each of the various levels of aggregation up to and including GDP.
Purposive sampling	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.
Quality adjustments	<p>Quality adjustments are the process – or 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.</p> <p>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.</p>
Rebasing	<p>Rebasing may mean:</p> <ul style="list-style-type: none"> – changing the price reference period used for a series of indices; or – changing the index reference period for a series of indices. <p>The price reference period and index reference period may be changed separately or at the same time.</p>
Recall method	A data collection method whereby respondents are asked to recall information for a reference period several months prior to the current survey month.
Reference period	The period of time relevant for a particular survey.
Reference population	The set of households included within the scope of the index.
Regulated prices	Regulated prices are those administered prices that are controlled by government policy. To this end, price regulation does not necessarily imply the presence of an economic regulator, but the restriction on the extent to which prices may vary, depending on government's policy objective. Products and services included are

	water, electricity, paraffin, petrol, diesel, and telephone fees.
Rental equivalence	The estimation of the imputed rents payable by owner-occupiers based on the rents payable in the market for accommodation of the same type.
Respondent	The person or organisation that answers survey questions or completes the questionnaire.
Reweighting	Replacing the weights used in an index by a new set of weights.
Sampling	Selecting elements from a population in such a way that they are representative of the population.
Sampling frame	A comprehensive list of distinct and distinguishable units within a population from which a sample is drawn.
Scope	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.
Semi-durables	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.
Services	A service is the diametrically opposed non-material counterpart of a physical good. A service provision comprises a sequence of activities that does not result in ownership of the outcome.
Substitution	<ul style="list-style-type: none"> – of outlets: Substitution of similar outlets occurs to replace outlets that have closed down. – of products: Substitution of similar products occurs to replace items that have become permanently unavailable.
Substitution bias	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.
Survey	A process which collects, examines, and reports on data concerning variables of interest for a reference period.

System of National Accounts (SNA)	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.
Urban	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 and suburbs are typical urban areas.
User cost	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.
Utility	The satisfaction derived from consumption of a good or service.
Value	Price X quantity.
Volume seller	The volume seller is based on the quantity sold. In general, the volume seller is assumed to be the brand and unit with the most shelf space allocated to it.
Weights	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.
Weights reference period	The period, usually one or more years, of which the expenditures serve as weights for the index.
Year-on-year	Changes in levels expressed over the corresponding period (month or quarter in relation to the frequency of the data) of the previous year.
Young index	An index calculated as a weighted arithmetic average of the individual price relatives, holding constant the expenditure shares of the weight reference period.

References

1. Armknecht, P. and Maitland-Smith, F. 1999. "Price Imputation and Other Techniques for Dealing with Missing Observations, Seasonality and Quality Change in Price Indices," IMF Working Paper 99/78.
2. Classifications registry, United Nations Statistics Division (UNSD), <http://unstats.un.org/unsd/methods.htm>
3. Consumer Price Index (CPI) ILO Manual, International Labour Organization, <http://www.ilo.org/public/english/bureau/stat/guides/cpi/index.htm#manual>
4. Educational Info, South African Reserve Bank (SARB), <http://www.reservebank.co.za/>
5. International Comparison Program, World Bank, <http://web.worldbank.org>
6. Practical Guide to Producing Consumer Price Indices, United Nations, 2009
7. Statistical Concepts and Definitions, Statistics South Africa.

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

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.	Food and non-alcoholic beverages			19.15	17.24
01.1.	Food			17.24	15.48
01.1.1	Bread			3.91	3.21
01.1.1.1	01111001	Rice	All provinces	0.49	0.38
01.1.1.2	01112001	White bread	All provinces	0.46	0.46
01.1.1.2	01112002	Brown bread	All provinces	0.71	0.58
01.1.1.2	01112003	Sweet biscuits	All provinces	0.07	0.06
01.1.1.2	01112004	Savoury biscuits	WC, EC, NC, NW	0.01	0.01
01.1.1.2	01112005	Bread rolls	All provinces	0.04	0.05
01.1.1.2	01112301	Rusks	WC, EC, NC, FS, KZN, NW, GP, MP	0.01	0.02

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.1.3	01113001	Spaghetti	All provinces	0.04	0.05
01.1.1.3	01113002	Macaroni	All provinces	0.06	0.07
01.1.1.3	01113003	Other pasta	All provinces	0.04	0.04
01.1.1.3	01113004	Instant noodles	All provinces	0.06	0.06
01.1.1.4	01114001	Cakes and tarts	All provinces	0.20	0.20
01.1.1.4	01114002	Frozen pastry products (Pizza or Pies)	All provinces	0.17	0.16
01.1.1.6	01116001	Cake flour	All provinces	0.15	0.10
01.1.1.6	01116002	Bread flour	WC, EC, NC, FS, KZN, NW, GP, LP	0.04	0.03
01.1.1.6	01116005	Cold cereal	All provinces	0.11	0.11
01.1.1.6	01116008	Super maize	All provinces	0.96	0.63
01.1.1.6	01116009	Special maize	All provinces	0.22	0.14
01.1.1.6	01116010	Hot cereals (porridge) including instant porridge	All provinces	0.06	0.05
01.1.1.6	01116011	Ready-mix flour	WC, EC, NC, KZN, NW, GP, LP	0.01	0.01
01.1.2	Meat			5.77	5.46
01.1.2.1	01121005	Beef - Mince	All provinces	0.36	0.36

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.2.1	01121010	Beef offal	All provinces	0.11	0.11
01.1.2.1	01121011	Beef - Steak	All provinces	0.32	0.32
01.1.2.1	01121012	Beef - Stewing beef/brisket/chuck	All provinces	0.64	0.65
01.1.2.2	01122099	Pork - combined	All provinces	0.16	0.17
01.1.2.3	01123099	Mutton and lamb - combined	All provinces	0.64	0.68
01.1.2.4	01124001	Whole chicken - Fresh	All provinces	0.09	0.07
01.1.2.4	01124002	Chicken portions - Fresh	All provinces	0.61	0.53
01.1.2.4	01124005	IQF chicken portions	All provinces	1.01	0.88
01.1.2.4	01124006	Chicken portions frozen – Non-IQF	All provinces	0.51	0.45
01.1.2.4	01124007	Chicken giblets (neck, gizzard, hearts, etc.)	All provinces	0.22	0.19
01.1.2.5	01125004	Polony	All provinces	0.20	0.19
01.1.2.5	01125005	Ham	All provinces	0.05	0.05
01.1.2.5	01125006	Biltong	All provinces	0.06	0.06
01.1.2.5	01125007	Bacon	All provinces	0.06	0.06

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.2.5	01125009	Sausage	All provinces	0.69	0.66
01.1.2.6	01126002	Meat extract	All provinces	0.03	0.02
01.1.2.6	01126005	Corned beef	All provinces	0.01	0.01
01.1.3	Fish			0.47	0.40
01.1.3.1	01131001	Hake - frozen	All provinces	0.12	0.10
01.1.3.4	01134001	Fish fingers - frozen	All provinces	0.04	0.04
01.1.3.4	01134002	Tuna - tinned	WC, EC, NC, FS, KZN, NW, GP, MP	0.03	0.04
01.1.3.4	01134003	Fish (excluding tuna) - tinned	All provinces	0.28	0.22
01.1.4	Milk, cheese and eggs			2.67	2.57
01.1.4.1	01141001	Fresh full cream milk	All provinces	0.79	0.80
01.1.4.1	01141002	Long life full cream milk	All provinces	0.25	0.23
01.1.4.2	01142001	Low fat milk - Fresh	All provinces	0.08	0.09
01.1.4.2	01142002	Low fat milk – Long life	All provinces	0.04	0.05
01.1.4.3	01143001	Powdered milk	All provinces	0.07	0.05
01.1.4.3	01143002	Whiteners (Cremora, Ellis Brown)	All provinces	0.11	0.09

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.4.3	01143003	Condensed milk	WC, NC, FS, NW, LP	0.01	0.01
01.1.4.4	01144001	Plain yogurt	All provinces	0.03	0.03
01.1.4.4	01144002	Flavoured yogurt	All provinces	0.19	0.18
01.1.4.5	01145001	Cheddar cheese	All provinces	0.08	0.09
01.1.4.5	01145002	Gouda cheese	All provinces	0.09	0.10
01.1.4.5	01145003	Cheese spread	All provinces	0.02	0.03
01.1.4.5	01145004	Feta cheese	All provinces	0.10	0.11
01.1.4.6	01146001	Fresh cream	WC, NC, FS, KZN, NW, GP, LP	0.02	0.02
01.1.4.6	01146002	Sour milk/maas	All provinces	0.26	0.20
01.1.4.6	01146003	Prepared custard (e.g. Ultramel)	All provinces	0.05	0.05
01.1.4.6	01146004	Amageu	All provinces	0.02	0.02
01.1.4.6	01146005	Flavoured milk	WC, EC, FS, GP, LP	0.02	0.02
01.1.4.7	01147001	Eggs	All provinces	0.44	0.40
01.1.5	Oils and fats			0.54	0.45
01.1.5.2	01152001	Margarine	All provinces	0.12	0.11

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.5.2	01152002	Yellow brick margarine	All provinces	0.05	0.04
01.1.5.2	01152003	Peanut butter	All provinces	0.05	0.05
01.1.5.4	01154001	Edible oils (e.g. cooking oils)	All provinces	0.32	0.25
01.1.6	Fruit			0.34	0.34
01.1.6.2	01162001	Bananas - fresh	All provinces	0.09	0.09
01.1.6.3	01163001	Apples - fresh	All provinces	0.09	0.08
01.1.6.8	01168004	Peanuts	WC, EC, FS, KZN, NW, GP, MP, LP	0.02	0.02
01.1.6.7	01167099	Seasonal fruit	All provinces	0.14	0.15
01.1.7	Vegetables			1.47	1.30
01.1.7.1	01171001	Lettuce	All provinces	0.03	0.03
01.1.7.1	01171002	Spinach/morogo fresh	All provinces	0.03	0.03
01.1.7.2	01172001	Cabbage fresh	All provinces	0.07	0.05
01.1.7.2	01172002	Cauliflower fresh	WC, EC, KZN, GP	0.01	0.01
01.1.7.2	01172003	Broccoli fresh	WC, EC, NC, KZN, GP	0.01	0.01
01.1.7.3	01173001	Tomatoes fresh	All provinces	0.20	0.17
01.1.7.3	01173002	Pumpkin (Butternut) fresh	All provinces	0.04	0.04

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.7.3	01173003	Green/red/yellow pepper fresh	All provinces	0.05	0.05
01.1.7.3	01173004	Vegetables (excluding peas and carrots) - frozen	All provinces	0.04	0.05
01.1.7.3	01173006	Cucumber fresh	All provinces	0.01	0.01
01.1.7.4	01174001	Onions	All provinces	0.15	0.13
01.1.7.4	01174002	Carrots fresh	All provinces	0.04	0.04
01.1.7.4	01174003	Beetroot	All provinces	0.02	0.02
01.1.7.4	01174005	Mushrooms	WC, EC, FS, KZN, NW, GP	0.01	0.02
01.1.7.5	01175002	Beans dried	All provinces	0.06	0.03
01.1.7.6	01176002	Baked beans in tomato sauce	All provinces	0.07	0.06
01.1.7.6	01176005	Prepared salads	WC, EC, NC, FS, GP, LP	0.01	0.01
01.1.7.6	01176006	Atchaar	NC, FS, KZN, NW, GP, MP, LP	0.02	0.02
01.1.7.6	01176007	Mixed vegetables - tinned	All provinces	0.02	0.01
01.1.7.7	01177001	Potatoes	All provinces	0.44	0.36
01.1.7.8	01178001	Sweet potatoes - fresh	WC, KZN, GP, MP, LP	0.01	0.01

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.7.8	01178002	Potato chips frozen	WC, EC, NC, FS, KZN, NW, GP, MP	0.01	0.02
01.1.7.8	01178003	Potato crisps	All provinces	0.09	0.09
01.1.7.8	01178004	Corn/Maize chips	All provinces	0.03	0.03
01.1.8	Sugar, jam, honey, chocolate and confectionary			0.71	0.56
01.1.8.1	01181001	White sugar	All provinces	0.42	0.32
01.1.8.1	01181002	Brown sugar	All provinces	0.15	0.10
01.1.8.3	01183001	Chocolate slab	All provinces	0.03	0.03
01.1.8.3	01183002	Chocolate bar	All provinces	0.02	0.02
01.1.8.4	01184001	Sweets	All provinces	0.05	0.05
01.1.8.4	01184002	Chewing gum	All provinces	0.01	0.01
01.1.8.5	01185001	Ice cream	All provinces	0.03	0.03
01.1.9	Food products not elsewhere classified			1.36	1.19
01.1.9.1	01191001	Vinegar	All provinces	0.02	0.02
01.1.9.1	01191002	Chutney	All provinces	0.04	0.04
01.1.9.1	01191004	Tomato sauce	All provinces	0.11	0.10

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.1.9.1	01191005	Mayonnaise	All provinces	0.18	0.17
01.1.9.1	01191006	Salad dressing	WC, EC, FS, KZN, NW, GP, MP, LP	0.03	0.03
01.1.9.2	01192001	Salt	All provinces	0.03	0.03
01.1.9.2	01192002	Spice (excluding salt and curry powder)	All provinces	0.20	0.19
01.1.9.2	01192003	Curry powder	All provinces	0.05	0.04
01.1.9.3	01193001	Baby food - Cereal	All provinces	0.07	0.07
01.1.9.3	01193003	Baby food – Milk formula	All provinces	0.32	0.28
01.1.9.3	01193004	Instant yeast	All provinces	0.04	0.03
01.1.9.3	01193005	Baking powder	WC, NC, FS, KZN, NW, GP, MP, LP	0.02	0.01
01.1.9.3	01193006	Soup powder	All provinces	0.25	0.18
01.2.	Non-alcoholic beverages			1.91	1.76
01.2.1	Coffee, tea and cocoa			0.68	0.65
01.2.1.1	01211001	Instant coffee	All provinces	0.29	0.30
01.2.1.1	01211002	Ground coffee and coffee beans	All provinces	0.04	0.04
01.2.1.2	01212001	Ceylon tea	All provinces	0.22	0.19

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
01.2.1.2	01212002	Rooibos tea	All provinces	0.11	0.10
01.2.1.3	01213001	Drinking chocolate	All provinces	0.02	0.02
01.2.2	Mineral waters, soft drinks, fruit and vegetable juices			1.23	1.11
01.2.2.1	01221001	Mineral water/spring water (aerated and still)	All provinces	0.04	0.04
01.2.2.2	01222001	Fizzy drinks - can	All provinces	0.15	0.13
01.2.2.2	01222002	Fizzy drinks - bottle	All provinces	0.63	0.56
01.2.2.2	01222003	Other drinks excluding fizzy and fruit drinks	All provinces	0.05	0.04
01.2.2.3	01223001	Fruit juices	All provinces	0.25	0.25
01.2.2.3	01223002	Fruit juice concentrate	All provinces	0.11	0.09
02.					
02.1.	Alcoholic beverages			3.96	3.89
02.1.1	Spirits			0.82	0.86
02.1.1.1	02111001	Spirits - Brandy	All provinces	0.23	0.24
02.1.1.1	02111002	Spirits - Whiskey	All provinces	0.38	0.40

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
02.1.1.1	02111003	Spirits - Liqueur	All provinces	0.07	0.07
02.1.1.1	02111004	Spirits - Vodka	All provinces	0.14	0.15
02.1.2	Wine			1.00	1.05
02.1.2.1	02121001	Wine from grapes or other fruit - Red wine	All provinces	0.23	0.25
02.1.2.1	02121002	Wine from grapes or other fruit - White wine	All provinces	0.19	0.21
02.1.2.2	02122001	Spirit coolers (cider, hooch etc.) not from a food service place	All provinces	0.58	0.59
02.1.3	Beer			2.14	1.98
02.1.3.1	02131004	Beer	All provinces	2.14	1.98
02.2.	Tobacco			1.92	1.93
02.2.1	Tobacco			1.92	1.93
02.2.1.1	02211001	Cigarettes	All provinces	1.74	1.82
02.2.1.3	02213001	Tobacco	All provinces	0.18	0.11
03.					
03.1.	Clothing			2.83	2.71

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
03.1.2	Garments			2.83	2.71
03.1.2.1	03121002	Trousers – (excluding jeans)	All provinces	0.07	0.07
03.1.2.1	03121003	Jeans	All provinces	0.27	0.26
03.1.2.1	03121004	Shirts - formal	All provinces	0.06	0.06
03.1.2.1	03121005	Jackets	All provinces	0.06	0.05
03.1.2.1	03121007	Underpants	All provinces	0.18	0.18
03.1.2.1	03121008	Trousers - casual	All provinces	0.13	0.12
03.1.2.1	03121009	Shirts - casual	All provinces	0.07	0.07
03.1.2.1	03121010	Shorts	All provinces	0.09	0.09
03.1.2.1	03121011	Tops (including T-shirts)	All provinces	0.09	0.09
03.1.2.2	03122001	Jacket	All provinces	0.06	0.06
03.1.2.2	03122005	Jeans	All provinces	0.16	0.16
03.1.2.2	03122006	Knitwear	All provinces	0.18	0.18
03.1.2.2	03122008	Bra	All provinces	0.15	0.15
03.1.2.2	03122009	Panty	All provinces	0.16	0.16
03.1.2.2	03122013	Dress	All provinces	0.07	0.06

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
03.1.2.2	03122014	Pants (+trousers)	All provinces	0.08	0.08
03.1.2.2	03122015	Tops (T-shirt)	All provinces	0.13	0.13
03.1.2.3	03123001	Dress	All provinces	0.01	0.01
03.1.2.3	03123002	T-shirt	All provinces	0.05	0.04
03.1.2.3	03123003	Panties	All provinces	0.02	0.02
03.1.2.3	03123005	Shorts	All provinces	0.02	0.02
03.1.2.3	03123006	Shirt	All provinces	0.04	0.03
03.1.2.3	03123010	Baby grows	All provinces	0.04	0.04
03.1.2.3	03123013	Jacket - boys	All provinces	0.06	0.06
03.1.2.3	03123014	Jacket - infants	All provinces	0.02	0.02
03.1.2.3	03123015	Jeans - boys	All provinces	0.05	0.05
03.1.2.3	03123016	Jeans - girls	All provinces	0.03	0.02
03.1.2.3	03123017	Knitwear	All provinces	0.07	0.07
03.1.2.3	03123018	Pants	All provinces	0.05	0.05
03.1.2.3	03123019	Pants (called Bottoms) (+bottoms + jeans + shorts)	All provinces	0.02	0.02
03.1.2.3	03123020	Sets	All provinces	0.04	0.03

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
03.1.2.3	03123021	Skirts	All provinces	0.03	0.03
03.1.2.3	03123022	Sleepwear - infants	All provinces	0.03	0.02
03.1.2.3	03123023	Sleepwear - girls	All provinces	0.02	0.02
03.1.2.3	03123024	Tops (+ shirts + T-shirts) as tops - infants	WC, EC, NC, KZN, NW, MP, LP	0.01	0.00
03.1.2.3	03123025	Tops (excluding T-shirts) (+shirts) as tops	All provinces	0.02	0.02
03.1.2.3	03123026	Trousers (+tracksuit trousers)	All provinces	0.10	0.09
03.1.2.3	03123027	T-shirt (+ tops) as tops	All provinces	0.06	0.05
03.1.2.3	03123028	Underwear	All provinces	0.02	0.02
03.1.2.3	03123029	Vests - infants	All provinces	0.01	0.01
03.2.	Footwear			1.21	1.12
03.2.1	Footwear			1.21	1.12
03.2.1.1	03211002	Sports shoes	All provinces	0.22	0.21
03.2.1.1	03211004	Sandals	All provinces	0.02	0.02
03.2.1.1	03211005	Shoes (+ other + slippers)	All provinces	0.23	0.22

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
03.2.1.2	03212001	Shoes	All provinces	0.25	0.24
03.2.1.2	03212002	Sandals	All provinces	0.04	0.04
03.2.1.2	03212003	Sports shoes	All provinces	0.07	0.06
03.2.1.2	03212004	Slippers	All provinces	0.01	0.01
03.2.1.3	03213001	Shoes	All provinces	0.05	0.04
03.2.1.3	03213002	Sandals - girls	All provinces	0.01	0.01
03.2.1.3	03213003	Sports footwear - girls	All provinces	0.09	0.08
03.2.1.3	03213006	Sandals - boys	All provinces	0.04	0.03
03.2.1.3	03213007	Sports footwear - boys	All provinces	0.09	0.08
03.2.1.3	03213009	Infants' footwear	All provinces	0.03	0.03
03.2.1.3	03213010	Shoes + Other+ Slippers	All provinces	0.06	0.05
04.					
04.1.	Actual rentals for housing			3.17	3.52
04.1.1	Actual rentals paid by tenants			3.17	3.52
04.1.1.1	04111001	Rent dwelling - House	All provinces	1.88	2.05

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
04.1.1.1	04111002	Rent dwelling – Flat	All provinces	0.88	1.00
04.1.1.1	04111003	Rent dwelling – Townhouse	All provinces	0.41	0.47
04.2.	Imputed rentals for housing			11.93	13.32
04.2.1	Imputed rentals of owner-occupiers			11.93	13.32
04.2.1.1	04211001	Imputed rent on owned dwelling 5,77% per year of dwelling – House	All provinces	10.28	11.58
04.2.1.1	04211002	Imputed rent on owned dwelling 5,77% per year of dwelling – House	All provinces	0.41	0.47
04.2.1.1	04211003	Imputed rent on owned dwelling 5,77% per year of dwelling – House	All provinces	1.24	1.27
04.3.	Maintenance and repair of the dwelling			0.83	0.82
04.3.1	Materials for the maintenance and repair of the dwelling			0.54	0.53
04.3.1.1	04311003	Paint	All provinces	0.14	0.14
04.3.1.1	04311006	Plaster	All provinces	0.04	0.04

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
04.3.1.1	04311009	Bricks	All provinces	0.05	0.04
04.3.1.1	04311010	Cement	All provinces	0.23	0.23
04.3.1.1	04311011	Door and doorframe	All provinces	0.04	0.04
04.3.1.1	04311012	Branding	All provinces	0.04	0.04
04.3.2	Services for the maintenance and repair of the dwelling			0.29	0.29
04.3.2.1	04321001	Electricians	WC, FS, KZN, GP, MP, LP	0.21	0.21
04.3.2.1	04321002	Plumbers	WC, FS, KZN, GP, MP, LP	0.08	0.08
04.4.	Water supply and miscellaneous services relating to the dwelling			2.81	3.16
04.4.1	Water supply			0.99	1.08
04.4.1.1	04411001	Water	All provinces	0.99	1.08
04.4.4	Other services relating to the dwelling not elsewhere classified.			1.82	2.08
04.4.4.1	04441001	Rate and taxes/Assessment rates	All provinces	1.13	1.30

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
04.4.4.1	04441002	Levies	All provinces	0.69	0.78
04.5.	Electricity, gas and other fuels			3.81	3.80
04.5.1	Electricity			3.74	3.75
04.5.1.1	04511001	Electricity	All provinces	3.74	3.75
04.5.3	Gas			0.07	0.05
04.5.3.1	04531001	Paraffin	All provinces	0.07	0.05
05.					
05.1.	Furniture and furnishings, carpets and other floor coverings			0.42	0.35
05.1.1	Furniture and furnishings			0.42	0.35
05.1.1.1	05111001	Bedroom suite	All provinces	0.09	0.07
05.1.1.1	05111003	Lounge suite	All provinces	0.23	0.20
05.1.1.1	05111005	Dining room and kitchen furniture	All provinces	0.10	0.08
05.2.	Household textiles			0.50	0.46
05.2.1	Household textiles			0.50	0.46

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
05.2.1.1	05211001	Duvet cover and pillowcase set	All provinces	0.10	0.09
05.2.1.1	05211002	Blankets	All provinces	0.08	0.07
05.2.1.1	05211003	Curtains (including making and hanging charges) and material for curtains	All provinces	0.08	0.08
05.2.1.1	05211006	Bed bases and mattresses	All provinces	0.21	0.19
05.2.1.1	05211007	Sheets and/or pillowcases	All provinces	0.03	0.03
05.3.	Household appliances			0.49	0.46
05.3.1	Major household appliances whether or not electrical			0.41	0.37
05.3.1.1	05311002	Refrigerator/Freezer and refrigerator combination	All provinces	0.21	0.18
05.3.1.2	05312001	Washing machines	All provinces	0.08	0.08
05.3.1.3	05313002	Microwave oven	All provinces	0.04	0.04
05.3.1.3	05313004	Stove and/or oven	All provinces	0.08	0.07
05.3.2	Small electrical household appliances			0.08	0.09

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
05.3.2.1	05321001	Irons	All provinces	0.02	0.02
05.3.2.1	05321002	Kettle	All provinces	0.03	0.03
05.3.2.1	05321004	Toaster/Sandwich maker	WC, EC, NC, NW, MP, LP	0.00	0.01
05.3.2.1	05321006	Hotplates	All provinces	0.03	0.03
05.4.	Glassware, tableware and household utensils			0.15	0.15
05.4.1	Glassware, tableware and household utensils			0.15	0.15
05.4.1.1	05411004	Coffee mug	EC, NC, FS, KZN, NW, GP, MP, LP	0.01	0.01
05.4.1.1	05411005	Crockery	All provinces	0.04	0.04
05.4.1.1	05411006	Glassware	All provinces	0.01	0.01
05.4.1.2	05412001	Cutlery set	All provinces	0.03	0.03
05.4.1.2	05412002	Teaspoon	All provinces	0.01	0.01
05.4.1.3	05413003	Non-electrical frying pan	WC, NC, FS, KZN, NW, GP, MP	0.01	0.01
05.4.1.3	05413005	Grater	WC, EC, NC, FS, KZN, NW, GP, MP	0.01	0.01
05.4.1.3	05413006	Cooking pot	All provinces	0.03	0.03
05.5.	Tools and equipment for house and garden			0.10	0.12

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
05.5.1	Major tools and equipment			0.03	0.03
05.5.1.1	05511001	Power drills	WC, EC, NC, FS, NW, GP, LP	0.01	0.01
05.5.1.1	05511002	Power-driven garden tools - lawnmower	WC, NC, FS, KZN, NW, GP, MP, LP	0.02	0.02
05.5.2	Small tools and miscellaneous accessories			0.07	0.09
05.5.2.1	05521001	Household batteries	WC, GP	0.00	0.01
05.5.2.1	05521003	Light bulb	All provinces	0.02	0.02
05.5.2.1	05521005	Garden hand tools (such as spades)	All provinces	0.01	0.01
05.5.2.1	05521006	Garden water sprinkler	WC, NC, NW, GP, MP	0.02	0.03
05.5.2.1	05521007	Light bulbs - energy savers	All provinces	0.02	0.02
05.6.	Goods and services for routine household maintenance			2.67	2.81
05.6.1	Non-durable household goods			0.39	0.36
05.6.1.1	05611002	Laundry soap	All provinces	0.07	0.06
05.6.1.1	05611003	Washing powder	All provinces	0.22	0.20

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
05.6.1.1	05611004	Dish-washing liquid	All provinces	0.06	0.06
05.6.1.1	05611005	Wax shoe polish	All provinces	0.02	0.02
05.6.1.1	05611007	Indoor insecticide	All provinces	0.01	0.01
05.6.1.1	05611008	Toilet care	All provinces	0.01	0.01
05.6.2	Domestic services and household services			2.28	2.45
05.6.2.1	05621001	Domestic workers	All provinces	2.28	2.45
06.					
06.1.	Medical products, appliances and equipment			0.53	0.53
06.1.1	Pharmaceutical products			0.53	0.53
06.1.1.1	06111001	Painkillers	All provinces	0.10	0.10
06.1.1.1	06111002	Cough mixture	All provinces	0.02	0.02
06.1.1.1	06111003	Vitamin and mineral supplements	All provinces	0.09	0.09
06.1.1.1	06111006	Cold and flu medication	All provinces	0.01	0.01
06.1.1.1	06111007	Heartburn (+Anti-acids)	All provinces	0.02	0.02

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
06.1.1.1	06111009	Sore throat lozenges	All provinces	0.01	0.01
06.1.1.1	06111010	Laxatives	All provinces	0.02	0.02
06.1.1.1	06111011	Prescription medicine	All provinces	0.23	0.23
06.1.1.1	06111012	Dispensing fees	All provinces	0.02	0.02
06.1.1.1	06111013	Eye drops	All provinces	0.01	0.01
06.2.	Out-patient services			0.69	0.83
06.2.1	Medical services			0.62	0.75
06.2.1.1	06211001	Private - General practitioners	All provinces	0.39	0.46
06.2.1.1	06211002	Private - Gynaecologists	All provinces	0.08	0.10
06.2.1.1	06211003	Private - Physicians	All provinces	0.07	0.08
06.2.1.1	06211004	Private - Paediatricians	WC, FS, KZN, NW, GP, MP, LP	0.05	0.06
06.2.1.1	06211005	Public - General practitioners	WC, KZN, NW, GP, MP	0.02	0.03
06.2.1.1	06211006	Public - Medical specialists	WC, KZN, NW, GP	0.01	0.02
06.2.2	Dental services			0.07	0.08
06.2.2.1	06221001	Dentists	All provinces	0.07	0.08

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
06.3.	Hospital services			0.04	0.04
06.3.1	Hospital services			0.04	0.04
06.3.1.1	06311001	Private - Ward fees	WC, NC, FS, KZN, GP, MP, LP	0.03	0.03
06.3.1.1	06311002	Private - Theatre fees	WC, NC, FS, KZN, GP, MP	0.01	0.01
07.					
07.1.	Purchase of vehicles			6.14	6.12
07.1.1	Motor-cars			6.14	6.12
07.1.1.1	07111001	Hatchback	All provinces	2.23	2.24
07.1.1.1	07111002	Sedan	All provinces	2.20	2.23
07.1.1.1	07111003	New SUVs/MPVs including four-wheel drive vehicles	EC, FS, GP, KZN, LP, NW, WC	0.71	0.70
07.1.1.1	07111004	New bakkies	All provinces	0.50	0.45
07.1.1.2	07112001	Hatchback	All provinces	0.20	0.21
07.1.1.2	07112002	Sedan	All provinces	0.19	0.19
07.1.1.2	07112003	Used SUVs/MPVs including four-wheel drive vehicles	WC, EC, NC, FS, KZN, GP, MP, LP	0.04	0.04
07.1.1.2	07112004	Used bakkies	All provinces	0.07	0.06

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
07.2.	Operation of personal transport equipment			5.60	5.86
07.2.1	Spare parts and accessories			0.48	0.48
07.2.1.1	07211001	New tyres and tubes	All provinces	0.27	0.27
07.2.1.1	07211002	Shock absorbers	All provinces	0.03	0.03
07.2.1.1	07211003	Disc pads	All provinces	0.04	0.04
07.2.1.1	07211006	Spark plugs	All provinces	0.02	0.02
07.2.1.1	07211008	Clutch kits	All provinces	0.03	0.03
07.2.1.1	07211009	Battery	All provinces	0.09	0.09
07.2.2	Fuels and lubricants			4.36	4.58
07.2.2.1	07221001	Unleaded petrol	All provinces	3.14	3.30
07.2.2.1	07221002	Diesel	All provinces	1.22	1.28
07.2.3	Maintenance and repair			0.37	0.40
07.2.3.1	07231004	Car services	All provinces	0.27	0.30
07.2.3.1	07231005	Car wash/Valet services	All provinces	0.10	0.10
07.2.4	Other services in respect of personal transport equipment			0.39	0.40

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
07.2.4.1	07241002	Motor vehicle license and registration fees	All provinces	0.13	0.13
07.2.4.1	07241004	Toll fees	All provinces	0.08	0.09
07.2.4.1	07241006	Driving lessons	All provinces	0.06	0.05
07.2.4.1	07241007	Driving licenses	All provinces	0.12	0.13
07.3.	Transport services			2.98	2.30
07.3.1	Passenger transport by railway			0.11	0.13
07.3.1.1	07311001	Train fees	WC, EC, NC, KZN, NW, GP	0.11	0.13
07.3.2	Passenger transport by road			2.61	1.87
07.3.2.1	07321001	Local bus fees	All provinces	0.07	0.04
07.3.2.1	07321002	Taxi fares	All provinces	2.22	1.50
07.3.2.1	07321003	Long-distance bus fares	All provinces	0.04	0.02
07.3.2.1	07321007	Car rental	All provinces	0.28	0.31
07.3.3	Passenger transport by air			0.26	0.30
07.3.3.1	07331001	Airfares	All provinces	0.26	0.30

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
08.					
08.1.	Postal services			0.03	0.03
08.1.1	Postal services			0.03	0.03
08.1.1.1	08111002	Renting of post boxes	All provinces	0.02	0.02
08.1.1.1	08111003	Courier services	WC, NC, FS, KZN, NW, GP, MP, LP	0.01	0.01
08.2.	Telephone and telefax equipment			0.02	0.02
08.2.1	Telephone and telefax equipment			0.01	0.01
08.2.1.1	08211001	Cellular phones	All provinces	0.21	0.20
08.3.	Telephone and telefax services			2.38	2.40
08.3.1	Telephone and telefax services			2.38	2.40
08.3.1.1	08311001	Telephone fees	All provinces	0.08	0.09
08.3.1.1	08311002	Cellphone fees	All provinces	2.22	2.22
08.3.1.1	08311003	Internet usage costs	All provinces	0.08	0.09
09.					

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
09.1.	Audio-visual, photographic and information processing equipment			0.54	0.55
09.1.1	Equipment for the reception, recording and reproduction of sound and pictures			0.19	0.19
09.1.1.2	09112001	Television	All provinces	0.13	0.13
09.1.1.2	09112002	Subscription television decoder	All provinces	0.01	0.01
09.1.1.2	09112003	DVD player	All provinces	0.03	0.03
09.1.1.2	09112004	Aerials and satellite dishes	All provinces	0.02	0.02
09.1.2	Photographic equipment			0.02	0.02
09.1.2.1	09121001	Camera	All provinces	0.02	0.02
09.1.3	Information processing equipment			0.30	0.31
09.1.3.1	09131002	Laptops	All provinces	0.21	0.22
09.1.3.1	09131004	Tablets	All provinces	0.09	0.09
09.1.4	Recording media			0.03	0.03
09.1.4.1	09141001	Pre-recorded CD	All provinces	0.03	0.03

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
09.2.	Other major durables for recreation and culture			0.02	0.02
09.2.2	Musical instrument			0.02	0.02
09.2.2.1	09221001	Musical instruments: Pianos, organs and other musical instruments	WC, NC, FS, KZN, NW, GP	0.02	0.02
09.3.	Other recreational items and equipment, gardens and pets			0.64	0.68
09.3.1	Games, toys and hobbies			0.08	0.09
09.3.1.1	09311003	Doll	All provinces	0.02	0.02
09.3.1.1	09311004	Teddy bears	All provinces	0.01	0.01
09.3.1.1	09311005	Toy cars	All provinces	0.02	0.03
09.3.1.1	09311006	Video games	All provinces	0.03	0.03
09.3.2	Equipment for sport, camping and open-air recreation			0.22	0.24

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
09.3.2.1	09321001	Swimming pool chlorine	All provinces	0.11	0.13
09.3.2.1	09321003	Sleeping bag	WC, EC, NC, FS, KZN, NW, GP	0.02	0.02
09.3.2.1	09321004	Sports boots	All provinces	0.03	0.03
09.3.2.1	09321005	Swimming pool cleaning equipment	All provinces	0.05	0.05
09.3.2.1	09321006	Soccer ball	All provinces	0.01	0.01
09.3.3	Gardens, plants and flowers			0.08	0.08
09.3.3.1	09331002	Seeds	All provinces	0.05	0.05
09.3.3.1	09331004	Plant pots	All provinces	0.03	0.03
09.3.4	Pets and related products			0.26	0.27
09.3.4.1	09341001	Dog food - pellets	All provinces	0.15	0.16
09.3.4.1	09341002	Dog food - tinned	All provinces	0.03	0.03
09.3.4.1	09341003	Cat food - tinned	All provinces	0.03	0.03
09.3.4.1	09341004	Cat food - pellets	All provinces	0.05	0.05
09.4.	Recreational and cultural services			2.92	3.10
09.4.1	Recreational and sporting			0.19	0.20

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
	services				
09.4.1.1	09411002	Membership fees for gymnasiums, health, sport and social clubs	All provinces	0.15	0.16
09.4.1.1	09411003	Rugby tickets	WC, EC, FS, KZN, GP, MP	0.01	0.01
09.4.1.1	09411004	Soccer tickets	WC, EC, FS, KZN, GP, MP	0.01	0.01
09.4.1.1	09411005	Cricket tickets	WC, EC, FS, KZN, GP, MP	0.02	0.02
09.4.2	Cultural services			1.10	1.15
09.4.2.1	09421001	Movie tickets	All provinces	0.09	0.10
09.4.2.3	09423001	Television licenses	All provinces	0.04	0.04
09.4.2.3	09423002	Subscription to pay TV channels	All provinces	0.97	1.01
09.4.3	Games of chance			1.63	1.75
09.4.3.1	09431001	Other gambling	All provinces	1.63	1.75
09.5.	Newspapers, books and stationery			0.59	0.64

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
09.5.1	Books			0.14	0.15
09.5.1.1	09511001	Books (excluding those in 1614)	All provinces	0.04	0.04
09.5.1.1	09511002	Textbooks	All provinces	0.10	0.11
09.5.2	Newspapers and periodicals			0.31	0.34
09.5.2.1	09521001	Newspapers	All provinces	0.27	0.29
09.5.2.1	09521002	Magazines	All provinces	0.04	0.05
09.5.4	Stationery and drawing materials			0.14	0.15
09.5.4.1	09541001	Books (including exam pads)	All provinces	0.02	0.02
09.5.4.1	09541003	Pens	All provinces	0.05	0.05
09.5.4.1	09541004	Files	All provinces	0.03	0.04
09.5.4.1	09541006	Crayons	All provinces	0.04	0.04
09.6.	Package holidays			0.15	0.17
09.6.1	Package holidays			0.15	0.17
09.6.1.1	09611001	Holiday tour package	EC, GP, KZN, LP, MP, NW, WC	0.15	0.17
10.					

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
10.1.	Pre-primary and primary education			0.69	0.76
10.1.1	Pre-primary and primary education			0.69	0.76
10.1.1.1	10111001	Pre-primary and primary education	All provinces	0.69	0.76
10.2.	Secondary education			0.70	0.78
10.2.1	Secondary education			0.70	0.78
10.2.1.1	10211001	Secondary education	All provinces	0.70	0.78
10.4.	Tertiary education			0.95	0.99
10.4.1	Tertiary education			0.95	0.99
10.4.1.1	10411001	Tertiary education and education not definable by level	All provinces	0.95	0.99
11.					
11.1.	Catering services			3.41	3.09
11.1.1	Restaurants, cafés and the like			2.38	1.98
11.1.1.1	11111001	Red meat-based products	All provinces	0.30	0.24

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
11.1.1.1	11111002	Poultry-based products	All provinces	0.58	0.46
11.1.1.1	11111003	Fish and other seafood-based products	All provinces	0.19	0.15
11.1.1.1	11111004	Pizzas	All provinces	0.34	0.27
11.1.1.1	11111005	Pies	All provinces	0.05	0.04
11.1.1.1	11111006	Cold beverages	All provinces	0.17	0.16
11.1.1.1	11111007	Hot beverages	WC, FS, KZN, NW, GP, MP, LP	0.03	0.04
11.1.1.1	11111008	Alcoholic beverages	All provinces	0.42	0.38
11.1.1.1	11111009	Hamburgers	All provinces	0.30	0.24
11.2.	Accommodation services			1.03	1.11
11.2.1	Accommodation services			1.03	1.11
11.2.1.1	11211001	University boarding fees	All provinces	0.06	0.06
11.2.1.1	11211003	Bed-and-breakfast/Guesthouses	All provinces	0.05	0.05
11.2.1.1	11211004	Hotels	All provinces	0.92	1.00
12.					
12.1.	Personal care			1.43	1.39

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
12.1.3	Other appliances, articles and products for personal care			1.43	1.39
12.1.3.1	12131001	Shampoo	All provinces	0.04	0.04
12.1.3.1	12131002	Conditioner	WC, NC, FS, NW, GP	0.01	0.01
12.1.3.1	12131003	Tissues	All provinces	0.03	0.04
12.1.3.1	12131004	Sanitary towels	All provinces	0.05	0.05
12.1.3.1	12131005	Tampons	All provinces	0.01	0.01
12.1.3.1	12131006	Bar of bath soap	All provinces	0.19	0.17
12.1.3.1	12131007	Toothbrush	All provinces	0.03	0.03
12.1.3.1	12131008	Skin lotion	All provinces	0.27	0.25
12.1.3.1	12131010	Toilet paper	All provinces	0.16	0.17
12.1.3.1	12131011	Disposable nappies	All provinces	0.34	0.32
12.1.3.1	12131012	Toothpaste	All provinces	0.07	0.07
12.1.3.1	12131013	Aerosol deodorant	All provinces	0.01	0.01
12.1.3.1	12131014	Hair relaxer	All provinces	0.04	0.04
12.1.3.1	12131015	Hair colour	WC, NC, FS, NW, GP, LP	0.00	0.01

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
12.1.3.1	12131016	Hair pieces	All provinces	0.03	0.03
12.1.3.1	12131017	Bubble bath	All provinces	0.03	0.03
12.1.3.1	12131018	Powder (including baby powder)	All provinces	0.12	0.11
12.3.	Personal effects not elsewhere classified			0.36	0.36
12.3.1	Jewellery, clocks and watches			0.11	0.12
12.3.1.1	12311001	Watches	All provinces	0.11	0.12
12.3.2	Other personal effects			0.25	0.24
12.3.2.1	12321001	Travelling bags	All provinces	0.07	0.06
12.3.2.1	12321002	School bags	All provinces	0.13	0.12
12.3.2.2	12322001	Goods for children and babies (Prams and push-carts)	All provinces	0.03	0.03
12.3.2.2	12322003	Sunglasses	All provinces	0.02	0.03
12.4.	Social protection			0.35	0.37
12.4.1	Social protection services			0.35	0.37

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
12.4.1.2	12412001	Crèche fees	All provinces	0.35	0.37
12.5.	Insurance			9.59	10.06
12.5.2	Insurance connected with the dwelling			1.04	1.14
12.5.2.1	12521001	Insurance on buildings	All provinces	0.73	0.79
12.5.2.1	12521002	Insurance on contents of dwellings	All provinces	0.31	0.35
12.5.3	Insurance connected with health			7.02	7.52
12.5.3.1	12531001	Medical-aid contributions	All provinces	7.02	7.52
12.5.4	Insurance connected with transport			0.54	0.58
12.5.4.1	12541001	Insurance for private transport	All provinces	0.54	0.58
12.5.5	Other insurance			0.99	0.82
12.5.5.1	12551001	Funeral policies	All provinces	0.99	0.82
12.6.	Financial service not elsewhere classified			1.47	1.53
12.6.2	Financial service not			1.47	1.53

COICOP code	Product code	Indicator product	Provincial baskets	Weight	
				Total Country	Headline
	elsewhere classified				
12.6.2.1	12621001	Bank charges	All provinces	1.47	1.53
12.7.	Other services not elsewhere classified			1.47	1.53
12.7.1	Other services not elsewhere classified			1.64	1.34
12.7.1.1	12711001	Funeral expenses	All provinces	0.69	0.76
12.7.1.1	12711002	Gravestones and maintenance of graves (excluding unveiling)	All provinces	0.69	0.76

Appendix 2: Collection methodology and summary of methodological changes

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
01.1 Food, 01.2 Non-alcoholic beverages	See Appendix 1	Supermarkets, convenience stores, specialty shops, e.g. butcheries, green grocers and markets	Field collection. Monthly
02.1 Alcoholic beverages, 02.2 Tobacco	02.1.1.1 Spirits, 02.1.2.1 Wine 02.1.3.1 Beer	Liquor stores and supermarkets	Field collection. Monthly
03.1 Clothing 03.2 Footwear	See Appendix 1	Clothing and footwear retailers, i.e. chain stores and smaller independent stores	Field collection. Monthly
04.1 Actual rentals for housing	04.1.1.1 Actual rentals paid by tenants	Letting agents in Stats SA's Rental Survey	Field collection. Quarterly: Jan-Mar; April-Jun; Jul-Sep; Oct-Dec
04.2 Owners' equivalent rent	04.2.1.1 Owners' equivalent rent	Letting agents in Stats SA's Rental Survey	Field collection. Quarterly: Jan-Mar; April-Jun; Jul-Sep; Oct-Dec
04.3 Maintenance and repair of the dwelling	04.3.1.1 Materials for the maintenance and repair of the dwelling	Hardware and DIY stores	Field collection. Monthly
04.3 Maintenance and repair of the dwelling	04.3.2.1 Services for maintenance	Electricians and plumbers in the CPI collection areas	Plumbers and electricians
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	All municipalities within CPI collection areas	Postal, e-mail, internet collection: Water supply: Jul/Aug depending on when tariff changes implemented, Assessment rates. Jul, Aug
04.5 Electricity, gas and other fuels	04.5.1.1 Electricity	All municipalities within CPI collection areas	Postal, e-mail, internet collection. Jul, Aug

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
	04.5.3.1 Paraffin		
05.1 Furniture and furnishings, carpets and other flooring	05.1.1.1 Furniture and furnishings	Furniture outlets and other major retailers who sell furniture in addition to other products, e.g. hypermarkets	Field collection. Monthly
05.2 Household textiles	05.2.1.1 Household textiles	Furniture outlets, hypermarkets and other independent suppliers of household textiles	Field collection. Monthly
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	Furniture outlets, hypermarkets and other major retailers of appliances, and other independent retailers	Field collection. Monthly
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	Retailers of glass, tableware and household utensils	Field collection. Monthly
05.5 Tools and equipment for house and garden	05.5.1.1 Major tools and equipment 05.5.2.1 Small tools and miscellaneous accessories	Major retailers of tools and equipment for house and garden, e.g. hardware stores, hypermarkets and other independent retailers	Field collection. Monthly
05.6 Goods and services for routine household maintenance	05.6.1.1 Non-durable household goods, 05.6.2.1 Domestic services	Supermarkets, hypermarkets and other independent retailers The UIF is a data source for domestic worker wages.	Field collection. Monthly. Domestic worker wages updated quarterly.

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
06.1 Medical products, appliances and equipment	06.1.1.1 Pharmaceutical products	Pharmacies, supermarkets and other retailers for pharmaceutical products	E-mail collection. Monthly.
06.2 Out-patient services	06.2.1.1 Medical services, 06.2.2.1 Dental services	Medical services include general practitioners, gynaecology, paediatricians and physicians. National Department of Health for Public General practitioners and medical specialists	Telephonic collection - Feb. E-mail and telephone collection for public hospitals - Apr
06.3 Hospital services	06.3.1.1 Hospital services	Private hospital groups	E-mail. Feb, May, Aug, Nov for private ward and private theatre fee.
07.1 Purchase of vehicles	07.1.1.1 Purchase of new motor-cars	Price list from major newspapers	Newspapers. Monthly
07.1 Purchase of vehicles	07.1.1.2 Purchase of second-hand motor-cars	Motor dealers based on advertised vehicles on the Autotrader website. Retail selling value for stock in specified condition obtained from Auto Dealer's guide.	Auto Dealer's guide. Monthly
07.2 Operation of personal transport equipment	07.2.1.1 Spare parts and accessories	Spares outlets	Field collection. Monthly
07.2 Operation of personal transport equipment	07.2.2.1 Fuels and lubricants	Departments of Mineral Resources and Energy	Internet collection. Monthly
07.2 Operation of personal transport equipment	07.2.3.1 Maintenance and repair	New motor vehicles	Telephonic collection. Monthly

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
07.2 Operation of personal transport equipment	07.2.4.1 Other services in respect of personal transport equipment	Department of Transport	E-mail: Monthly.
07.2 Operation of personal transport equipment	07.2.4.1 Other services in respect of personal transport equipment	Sample of toll gates based on annual traffic volumes	Internet collection. Mar.
07.3 Transport services	07.3.1.1 Passenger transport by railway	Rail company providing daily commuter services and Gautrain	E-mail/Telephonic collection. Mar, Jun, Sep, Dec
07.3 Transport services	07.3.2.1 Passenger transport by road	Bus operators, taxi ranks and other departure points	Field collection and Internet collections. Mar, Jun, Sep, Dec
07.3 Transport services	07.3.3.1 Passenger transport by air	Airlines which provide daily scheduled flights to and from destinations across South Africa. These are termed as domestic flights.	Internet collection. Monthly.
08.1 Postal services	08.1.1.1 Postal services	SA Post Office	Telephone. Jan.
08.1 Postal services	08.1.1.1 Postal services	Courier service providers	E-mail. Monthly
08.2 Telephone and telefax equipment	08.2.1.1 Telephone and telefax equipment	Cellphone retailers	Field collection. Monthly.
08.3 Telephone and telefax services	08.3.1.1 Telephone and telefax services	Telkom. Cellphone operators	Internet. Monthly.
09.1 Audio-visual, photographic and information processing equipment	09.1.1.2 Television sets, video-cassette players and recorders	Retailers of electronic and computer appliances.	Field collection. Monthly.
09.1 Audio-visual, photographic and	09.1.2.1 Photographic and	Retailers of electronic and computer	Field collection. Monthly.

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
information processing equipment	cinematographic equipment	appliances	
09.1 Audio-visual, photographic and information processing equipment	09.1.3.1 Information processing equipment	Retailers of electronic and computer appliances	Field collection. Monthly.
09.1 Audio-visual, photographic and information processing equipment	09.1.4.1 Recording media	Music stores maintaining a top 10 or top 20 list of branches nationwide	Internet collection. Monthly.
09.2 Other major durables for recreation and culture	09.2.2.1 Musical instruments	Musical instrument stores and other major retailers such as hypermarkets	Field collection. Monthly.
09.3 Other recreational items and equipment, gardens and pets	09.3.1.1 Games, toys and hobbies	Retailers of games and toys in the geographical CPI areas	Field collection. Monthly.
09.3 Other recreational items and equipment, gardens and pets	09.3.2.1 Equipment for sport, camping and open-air recreation	Retailers of swimming pool equipment, camping equipment and sports equipment in the geographical CPI areas	Field collection. Monthly.
09.3 Other recreational items and equipment, gardens and pets	09.3.3.1 Gardens, plants and flowers	Nurseries and retail outlets	Field collection. Monthly.
09.3 Other recreational items and equipment, gardens and pets	09.3.4.1 Pets and related products	Retailers of pet food and requirements	Field collection. Monthly.

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
09.4 Recreational and cultural services	09.4.1.1 Recreational and sporting services	Chain and independent gyms, sport stadiums	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	Nu Metro and Ster-Kinekor	Internet collection. Monthly.
09.4 Recreational and cultural services	09.4.2.3 Television and radio taxes and hire of equipment	South African Broadcasting Corporation (SABC)	Internet collection. Apr, Oct.
09.4 Recreational and cultural services	09.4.2.3 Television and radio taxes and the hire of equipment	MultiChoice and Top-TV	Internet collection. Monthly.
09.4 Recreational and cultural services	09.4.3.1 Games of chance	Gambling Board of South Africa	Internet collection. Jan.
09.5 Newspapers, books and stationery	09.5.1.1 Books	Book sellers maintaining a top 10 list with branches nationwide	Internet collection. Monthly.
09.5 Newspapers, books and stationery	09.5.1.1 Books	University textbooks from different book sellers	Internet collection. Monthly.
09.5 Newspapers, books and stationery	09.5.2.1 Newspapers and periodicals	Marketing departments of sampled newspapers and magazines	Telephonic collection. Monthly.
09.5 Newspapers, books and stationery	09.5.4 Stationery and drawing material	Stationery retailers	Field collection. Monthly.

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
09.6 Package holidays	09.6.1 Package holidays	Travel agencies	Telephonic collection. Monthly.
10.1 Pre-primary and primary education	10.1.1.1 Pre-primary and primary education	Pre-primary and primary schools	Telephonic collection. Mar.
10.2 Secondary education	10.2.1.1 Secondary education	Secondary schools	Telephonic collection. Mar.
10.4 Tertiary education	10.4.1.1 Tertiary education	Tertiary institutions within CPI collection areas	E-mail collection. Mar.
11.1 Catering services	11.1.1.1 Restaurants/11.1.1.2 Cafes, bars and the likes (take away outlets)	Chain and independent restaurants and take-away outlets	Field and internet collection. Monthly.
11.2 Accommodation services	11.2.1.1 Accommodation services	3-star hotels and bed-and-breakfast accommodation	Internet and telephonic collection. Monthly.
11.2 Accommodation services	11.2.1.1 Accommodation services	All universities within CPI collection areas	Postal and e-mail collection. Mar.
12.1 Personal care, 12.3 Personal effects not elsewhere classified	See Appendix 1	Supermarkets, convenience stores, specialty shops, e.g. Jewellery stores and others	Field collection. Monthly
12.4 Social protection	12.4.1.2 Crèches, nurseries	Crèches	Telephonic collection. Mar.
12.5 Insurance	12.5.2.1 Insurance connected with the dwelling	Sample of short-term insurance companies based on market share and customers' brand loyalty levels	E-mail and telephonic collection. Jan, Jul.
12.5 Insurance	12.5.3.1 Insurance connected with health	The three most significant "open" (not restricted) registered medical schemes were sampled as respondents based on the	Internet, e-mail, telephone collection. Feb.

3-digit COICOP code and description	5-digit COICOP code and description	Respondents	Collection method and frequency
		average number of members	
12.5 Insurance	12.5.4.1 Insurance connected with transport	Sample of short-term insurance companies. Mainstream insurance companies and specialist motor vehicle insurance companies are included in the sample	E-mail and telephonic collection. Mar, Jun, Sep, Dec.
12.5 Insurance	12.5.5.1 Other insurance	Financial institutions, funeral service providers	Internet collection. Jan, Apr, Jul, Oct.
12.6 Financial services not elsewhere classified	12.6.2.1 Financial services not elsewhere classified	Sample of banks	Internet collection. Monthly.
12.7 Other services not elsewhere classified	12.7.1.1 Other services	Funeral service providers	Telephonic collection. Jan, Apr, Jul, Oct.

Appendix 3

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

