Namibia Statistics Agency

NAMIBIA CONSUMER PRICE INDEX (NCPI)

Sources and Methods

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1. INTRODUCTION TO THE NAMIBIA CONSUMER PRICE INDEX (NCPI)

1.1. Consumer Price Index (CPI) definition

The CPI is an index that measures the rate at which the prices of consumption goods and services are changing from one period to another. In other words, a CPI is a measure of price changes of the goods and services purchased by households in their role as consumers. The prices are collected from shops or other retail outlets. The usual method of calculation is to take an average of the period-to-period price changes for the different products, using as weights the average amounts that households spend on them. CPIs are official statistics that are usually produced by **National Statistics Offices (NSOs)**. They are published as quickly as possible, generally within four weeks after the reference period.

1.2. Uses of the Consumer Price Index

- To serve as an economic indicator: The Consumer Price Index is a measure of the inflation faced by the end users. It can determine the purchasing power of a nation's currency. It is also a proxy for the effectiveness of a governments economic policy i.e., central banks use the CPI to monitor inflationary pressure through the adjustment of the monetary policy.

- To adjust other economic indicators for price changes: For example, components of national income could be adjusted using CPI. The CPI is used to deflate the national accounts to provide summary measures of the volume of goods and services produced and consumed.

- Provides cost of living adjustments for wage earners and social security beneficiaries and prevents an inflation-induced increase in tax rates.

1.3. History of the Consumer Price Index in Namibia

Until January 2005, the **Central Bureau of Statistics (CBS)** published a monthly index known as the **Interim Consumer Price Index (ICPI) for Windhoek**. It was introduced in January 1993 and replaced the **Republic of South Africa (RSA)** based index that had been running since 1973. The ICPI was constructed as a sub-national index of RSA. Its coverage was limited to the city of Windhoek and was calculated by comparing the prices of the basket of goods and services with the prices prevailing in December 1992. The ICPI was based on the expenditures of 800 households covered in the 1984/5 HIES. The basket contained only 183 items with prices collected from approximately 93 outlets. In total, around 570 price quotations were processed each month. Over time, with the changes in the consumption patterns of the population, the ICPI basket of goods and services became obsolete and the calculation of this index ceased in January 2005. The current index was rebased using the 2009/10 Namibia Household Income and Expenditure Survey (NHIES).

1.4. Alignment with international best practice and standards in CPI compilation

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 organizations including the **United Nations Statistics Division (UNSD), International Monetary Fund (IMF)** and the **World Bank (WB)**. 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. The Namibia Statistics Agency **(NSA)** follows the methodology guidelines in the ILO manual when compiling the CPI and 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 the Namibian conditions.

The NSA has committed itself to produce and disseminate relevant, quality, timely statistics and spatial data that are fit-for-purpose and use of methodology in accordance with NSA's Namibia Quality Assurance Framework and international standards and guidelines. Other statistical offices sources and methods documents and the IMF Consumer Price Index: Theory and practice manual was used as reference material.

2. NCPI GEOGRAPHICAL COVERAGE

Geographical coverage refers either to the geographical coverage of expenditure or the coverage of price collection. Ideally, these two should coincide, whether the CPI intends to be a national or a regional index. In general, for the geographical coverage of expenditure, the index should include expenditure made by all households, urban and rural, across the country.

The NCPI is designed to cover the entire economic territory of the country and includes urban and rural households of all income groups as derived from the NHIES. For the compilation of the National CPI, all administrative regions of the country were grouped into three Zones, with each zone considered as one geographic area (Table 1).

Table 1 1: NCPI coverage and price collection centers

Zone	Regions	Localities/Price collection centers
1	Kavango East, Kavango West, Kunene, Ohangwena, Omusati, Oshana, Oshikoto, Otjozondjupa and Zambezi	Oshakati, Katima Mulilo and Otjiwarongo
2	Khomas	Windhoek
3	//Karas, Erongo, Hardap, and Omaheke	Gobabis, Mariental, Keetmashoop and Swakopmund

The localities identified for price collection were selected based on a mixed criterion of:
- The relative importance of the locality as determined by its relative share;
- Percent of the total household expenditure at national level;
- Geographic distribution of economic activities; and regional capitals

2.1. Outlet and product sample selection

The goods and services were selected from the expenditure basket observed in the 2009/10 NHIES.
In the absence of a sampling framework for outlets, the selection of outlets is based on personal knowledge of the markets and their nature, a judgemental sampling frame. The well-established outlets and big department stores which are reasonably popular, easily accessible and located in densely populated areas were selected. The total number of outlets selected for regular pricing has increased from approximately 556 outlets in the ICPI to more than 900 outlets in the NCPI.

Zone 3 has the highest price quotations of 42 percent followed by Zone 2 with 31 percent and the least of 27 percent being collected from Zone 1. On average, 50 percent of all prices collected in each zone are for the Food division and 10 percent is for furnishing, household equipment and routine maintenance division. The least price quotes are collected for the division's "communication" and "education", between 1 percent and 2 percent in each zone respectively.

3. CLASSIFICATION OF GOODS AND SERVICES

3.1. Introduction

Classification is a central theme in the compilation of the CPI. Choosing a classification system is the first step in compiling the CPI because its sub aggregates must be defined in such a way that the expenditure weights and prices will relate precisely to the coverage of the sub aggregates. The classification is also important because it establishes the framework to define and draw the boundaries for the inclusion of the representative items in the index (and sometimes the outlets). In its broadest sense a classification is a procedure in which individual items are organized into categories (classes) and subcategories (subclasses) based on information on one or more characteristics inherent to the items.

3.2. Classification of Individual Consumption by Purpose (COICOP)

The **Classification of Individual Consumption by Purpose (COICOP)** serves as the international reference classification of household expenditure. COICOP provides a framework of homogeneous categories of goods and services, which are considered a function or purpose of household consumption expenditure. COICOP functions as an integral part of the System of National Accounts (SNA), but it is also used in several other statistical areas, such as the household budget survey or the CPI. The United Nations Statistical Division (UNSD) is the custodian of COICOP.

COICOP, as its name implies, is founded on the principle of "purpose". It is a purpose-type classification because throughout the aggregation program the products are grouped according to the purpose (or function) they usually fulfill such as transport, nourishment, shelter, and so on. Most national CPIs aim at measuring the change of the cost of a basket of goods and services, which is consumed for the purpose of satisfying certain needs. A purpose-based classification would therefore appear to be the logical classification system for a CPI.

The NCPI has fully adopted to COICOP. However, prostitution and narcotics are excluded from the Namibian CPI because they are illegal in Namibia. Further, the current NCPI follows the Classification of Individual Consumption by Purpose (COICOP) 1999 which is broken down into four levels namely 12 "Divisions", 42 "groups", 80 "classes" and 180 "items" (goods or services) and is specified by brand and weight or size. The main NCPI divisions as per the COICOP classification are illustrated in Table 2 below. It is important to note that (COICOP) 1999 has been revised to COICOP 2018 which will be adopted in the upcoming NHIES 2024/25.

Table 3-1: COICOP (1999) divisions

	COICOP Divisions
1	Food and non-alcoholic beverages
2	Alcoholic beverages and tobacco
3	Clothing and footwear
4	Housing, water, electricity, gas, and other fuels
5	Furnishings, household equipment and routine maintenance of the house
6	Health
7	Transport
8	Communication
9	Recreation and culture
10	Education
11	Hotels, cafes, and restaurants
12	Miscellaneous goods and services

[1] CONSUMER PRICE INDEX MANUAL: Concepts and Methods, IMF (2020)

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

Table 3 2: COICOP naming convention

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

The COICOP system differentiates between four distinct types of Subclasses and Items: Services (S), Non-durables (ND), Semi-durables (SD), and Durables (D). 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 as defined in COICOP are listed below:

Durables:

– furniture and furnishings;
– information processing equipment;
– major household appliances whether or not electrical;
– vehicles;

– musical instruments;
– telephone and fax equipment;
– equipment for the reception, recording and reproduction of sound and pictures;
– jewellery, clocks, and watches.

Semi-durables:
– clothing and footwear;
– household textiles;
– small electrical household appliances;
– glassware, table ware and household utensils;
– small tools and miscellaneous accessories;
– spare parts for vehicles;
– recording media;
– games, toys, hobbies;
– equipment for sport, camping, etc.;
– books;
– other personal effects.

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

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

3.3. CPI revision and basket update

The revision and updating of the **NCPI** basket and weights is required to reflect the changes in the consumption patterns but also to produce an index that is representative for the whole country. The basket for the ICPI was replaced in 2005 by the NCPI basket based on the results of the Namibia Household Income and expenditure Survey (NHIES)-1993/4. The rebasing exercise provided an opportunity to review the methods and procedures to calculate the CPI. The purpose is to make the CPI a more reliable, representative, and accurate indicator of consumer price movement at the national level. The current basket of goods and services is representative of the consumption patterns of all private households living in urban and rural areas of Namibia.

4. NCPI EXPENDITURE WEIGHTS

4.1. Introduction

The weight assigned to each item included in the index basket indicates its relative importance in the total household expenditure and is derived from the consumption patterns of the reference population by dividing the expenditure on the item with the total household expenditure in each zone which are expressed in percentages. Those items with relatively high weights will have a greater impact on the total index. The weights are meant to reflect the relative importance of the goods and services as measured by their shares in the total consumption of households. The weighted sum of changes in the price of specific products and services in the CPI provides the rate of inflation. Whereas the prices are updated on a monthly, quarterly or annual basis, the weights are normally updated only every five years.

The NHIES 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. This survey gauge changes in household consumption patterns, levels of income and income distribution. The HIES is the main source for deriving the CPI weights. The basket and weights are updated to consider changes that take place in the purchasing patterns of the population.

The weights used in the NCPI series were derived from expenditure data reported in the 2009/10 NHIES, replacing the 1993/94 basket. Although there is expenditure data available from the 2015/16 NHIES, the survey data could not be utilized for rebasing CPI due to changes in the survey methodology.

The 2009/10 NHIES estimated 436 795 private households during the survey, with an estimated household population of 2 066 398 . The targeted population of the NHIES 2009/10 was private households in Namibia. The population living in institutions, such as hospitals, hostels, police barracks and prisons were not covered in the survey.
A representative sample of about ten thousand households was selected over a twelve-month period consisting of 13 survey rounds. Two questionnaires were administered to sampled households. The sample design for the survey was a stratified two-stage probability sample, where the first stage units were geographical areas designated as the **Primary Sampling Units (PSUs)** and the second stage units were the households.

Table 4 1: NCPI weights by zones and by major divisions based on NHIES 2009/10

COICOP Divisions		Zone 1	Zone 2	Zone 3	National
1	Food and non-alcoholic beverages	20.5	12.3	16.5	16.5
2	Alcoholic beverages and tobacco	13.1	11.0	14.3	12.6
3	Clothing and footwear	3.9	2.5	2.6	3.1
4	Housing, water, electricity, gas, and other fuels	25.8	32.7	25.5	28.4
5	Furnishings, household equipment and routine maintenance of the house	5.8	5.2	5.3	5.5
6	Health	1.6	2.3	2.2	2.0
7	Transport	14.7	13.0	15.6	14.3
8	Communication	3.5	3.8	4.4	3.8
9	Recreation and culture	2.2	4.9	3.7	3.6
10	Education	3.2	4.5	3.1	3.7
11	Hotels, cafes, and restaurants	0.9	2.0	1.1	1.4
12	Miscellaneous goods and services	4.9	5.8	5.6	5.4
	All items	**100.0**	**100.0**	**100.0**	**100.0**

4.2. Need to update weights

The CPI measures the changes in the cost of a fixed and representative basket of goods and services. This involves weighing together aggregated prices for different categories of goods and services so that each takes an appropriate share to reflect the budgets of the households covered by the index. The inflation figures from the CPI represent a weighted average of price changes.

The use of expenditure weights, from the NHIES, in a CPI is often referred to as a CPI based on the concept of plutocratic weights as they are based on the total expenditure of the households in the scope of the CPI. This is consistent with UN guidelines for a general measure of inflation. Most countries, Namibia included, compute a “Laspeyres-type” index often described as a fixed weighted index or a fixed-basket index. The expenditure weights are kept constant until the next Household Budget Survey is conducted. As prices change, consumers tend to shift their purchases towards the goods and services whose relative prices have decreased, thereby, reducing any adverse consequences of the price changes on their cost of living. A fixed-basket index does not take account of this substitution effect and can become increasingly unrepresentative if the pattern of purchases changes over time.

Revisions to the fixed weights can have a significant effect on the level of the indices and therefore the introduction of new weights is viewed as the introduction of a new index series. To construct a continuous price series, it is necessary to link together the old and new sets of indices. The aim of rebasing to an index level of 100 in a common period, and linking the old and new series, is to ensure continuity and comparability of the indices following the introduction of a new basket of weights and items.

The introduction of new weights provides an opportunity to introduce into the basket of items that are priced and entered in the CPI calculation, new items which better reflect what people purchase and consume. Similarly, items which are no longer representative of consumer purchases are discontinued.

4.2.1. Factors to be considered when rebasing and chain-linking a CPI:

Below are features to be considered when rebasing the CPI and linking the new indices to the old series:

- Preserving the historical rates of change.
- Deciding on an appropriate base period (i.e., when all indices equal 100).
- Ensuring the comparability of price movements in the linking period.
- Maintaining additivity of indices through all levels of aggregation.

4.3. Method of linking and rebasing

All indices have been rebased so that December 2012 equals 100. Since all elementary (lowest level) indices will equal 100 in December 2012, all aggregations using the new weights will also equal 100 in December 2012. The index levels for January 2013 onwards have been calculated in the normal manner (the sum of lower-level indices multiplied by their new weights). This will ensure that all month on-month percentage changes from December 2012 to January 2013, are driven by price changes and the relative importance of each price change as determined by the new weights, and not by changes in expenditure weights. The latter will have no impact on the inflation figures which will reflect only price changes. Similarly, the CPI for February and all subsequent months have been calculated in the normal way. In principle, this method satisfies the following criteria:

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

5. NCPI COLLECTION METHODOLOGY

5.1. Price collection method and frequency

Basic price collection methods

- **Local price collection** where prices are obtained from retail outlets located around the country. This method includes licensed and unlicensed markets and street vendors. Normally the price collector will need to visit the outlet to observe the prices although the prices for some items may be collected by other means, including telephone and price lists. Namibia Statistics Agency utilizes this method of price collection.

In practice not all prices are collected each month. Further, the frequency of price collection depends on the nature of the commodity. Goods and services that are subject to infrequent price changes do not require monthly price collection refer to Table 6. Items like rents for example, are collected once a year; prices for public transport, municipal and telecom services, fuel, etc., are collected when announced by the relevant authorities. In these cases, the last recorded prices are carried over until the next pricing period.

Collection is done by Price Agents employed by the agency for 13 working days in a month. Staff from Head office also participate in the price collection activities when needs arise, especially when price Agents are on leave. The price collection is done consistently, during the first two weeks of each month. Altogether prices are collected from more than 900 retail outlets, some of course supplying a single item's price quote while in the case of supermarkets, prices are obtained for a list of items.

- **Central price collection** is often used where prices can be collected by the head office without the need for fieldwork. This may also include centrally regulated or centrally fixed prices which can be obtained from the regulatory authorities, although in these cases checks will need to be made to ensure that the goods and services in question are available and sold at the stated price. It is not unusual to find goods subject to price control being sold at a different "unofficial" price. NSA is currently exploring the use of the central price collection method i.e., Big Data Source (Scanner Data).

Table 5 1: NCPI surveys schedules/frequency

Yearly		
Period	**Goods/Services**	**COICOP Division**
January	Rentals'	Housing, water, electricity, gas, and other fuels
	Funeral services fees	Miscellaneous goods and services
	Domestic workers	Furnishing, household equipment and routine household maintenance
	Hospital services fees	Health
	Ambulance services	Health
	Private doctor's	Health
April	Holiday Travelling fares (holiday package)	Recreation and Culture
	Membership fees	Recreation and Culture
	Entrance fees	Miscellaneous goods and services
	Legal aid fees	Miscellaneous goods and services
	Schools' fees	Education
	Tertial education	Education
	Bank charges	Miscellaneous goods and services
	Car insurance	Miscellaneous goods and services
	TV Licence (collected upon implementation by authority)	Communication
	TV (Multi choice/ M-net)	Communication
	Transport by railway	Transport
July	Driving Licence	Transport
	Municipality water charges	Housing, water, electricity, gas and other fuels
	Electricity charges	Housing, water, electricity, gas and other fuels
September /October	Telecommunication	Communication
	Postal Services (Nampost)	Communication

December	Transport by road (collected upon implementation by authority)	Transport
Quarterly Collections		
Jan, April, July, October	Accommodation (Hotels and boarding school fees)	Hotels, cafes, and restaurants
	Barbers and hair salons	Miscellaneous goods and services
	Driving schools'	Transport
	Courier services'	Transport
	Shoe repair	Clothing and footwear
	Dry cleaner	Clothing and footwear
	Services for maintenance	Furnishing, household equipment and routine household maintenance
	Optics	Health
	Car wash	Transport
Monthly		
	Food and non-alcohol beverages	Food and non-alcohol beverage
	Alcoholic and tobacco	Alcoholic and tobacco
	Clothing and footwear	Clothing and Footwear
	Furniture's	Furnishing, household equipment and routine household maintenance
	Gravestones	Miscellaneous goods and services

Monthly		
January to December	Hardwares	Housing, water, electricity, gas and other fuels
	Pharmaceutical products	Health
	Rifflers/ ammunition	Recreation and Culture
	Air transport	Transport
	Car parts	Furnishing, household equipment and routine household maintenance
	Car dealer	Transport
	Labour charges (Cars)	Transport
	Filling stations'	Transport
	Photo studios'	Recreation and Culture
	Jewelleries	Miscellaneous goods and services
	Open markets'	Food and non-alcohol beverage

5.2 Reference period of the Index

The base period is when the time series of index values is normalized to 100. With the present update, December 2012=100 is the official base period for the NCPI. The base period of the NCPI series can be easily changed to suit the specific needs of users, or to correspond to that of other major series published by the NSA. In addition to the Dec.2012-time base, changes in consumer prices also appear with the following base periods:

The preceding month (for example, food price changes between February 2022 and January 2022); such changes are referred to as month-to-month changes; The same month of the preceding year (for example, clothing price changes between March 2022 and March 2021); such changes are referred to as changes over 12 months (or year-to-year changes). Indexes referring to any given year are derived as simple arithmetic averages of the twelve-month indexes, from January to December.

6. SPECIAL CASES AND EXCLUDED GOODS AND SERVICES

6.1 Introduction

Certain products have proven to be challenging for Consumer Price Index (CPI) compilers regarding developing weights and collecting prices. These include the treatment of seasonal products, internet purchases, housing, second-hand goods, own-account production, tariffs, telecommunications, transport services, health, education, social protection, and financial services. Below are the special cases treatment for the NCPI compilation;

6.2. Housing

There are two types of approaches that characterize the housing market, housing is either lived in by the owner of the property or rented out by a property owner to a tenant of owner-occupied housing services costs and then of the costs borne by tenants. The owner-occupied housing services costs in the CPI depends on the agreed-upon conceptual approach and the practical constraints relating to data availability. The treatment of rented accommodation is more straightforward, and the costs borne by tenants are often used to impute owner-occupied housing services costs.

The rental equivalence approach which is applied in the NCPI compilation attempts to measure the change in the price of the housing services paid by owner-occupiers by estimating the market value of those services. In other words, it is based on estimating how much owner-occupiers would have to pay to rent their dwelling. The rental equivalence approach is recommended in the 2008 SNA for measuring housing services to be included in the household final consumption expenditure estimates and is also used in constructing international comparisons of living standards. Moreover, the rental equivalence approach is considered as a viable option by many countries, but there is a requirement to have a transparent rental market and reliable information on rents by type of accommodation, location, and other rent-determining factors. Several countries use this approach for conceptual and practical reasons.

Furthermore, 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. A rental survey is carried out once at the beginning of every year by the NSA for the NCPI compilation purposes. The rental prices obtained from the database are kept constant throughout the year. These rental indicators include houses, townhouses, and flats. The rental survey is designed to cover areas within the scope of CPI. The sample is drawn from actual real estate agents, renting privately owned dwellings to the public in all NCPI zones. Further, the sample covers a wide geographic spread to ensure that all the NCPI zones are represented, as well as different housing types. The sample is composed of real properties (dwelling units), using actual locations (i.e., physical address, dwelling specification and tenants contact details), of rented properties.

6.3. Education

The NSA conducts a private schools survey at the beginning of every year which is incorporated into the NCPI compilation and kept constant throughout the year. The scope of the CPI is limited to payments (school fees) made by consumers. Consequently, fully publicly funded education is excluded from the scope of the NCPI.

6.4. Excluded goods and services

The CPI covers the consumption sector of the Namibian economy, which is defined as the purchase of goods and services for use by households. Consequently, the CPI excludes investment items, such as stocks, bonds, business expenses and Life insurance. The primary purpose of the CPI is to track inflation from the perspective of the average consumer. It aims to measure how the prices of goods and services that consumers buy regularly change over time. Investment items, business expenses, and financial instruments like stocks and

bonds are not part of the typical consumer's regular consumption basket. Health, household, and vehicle insurance are in the NCPI scope. Purchases of houses, antiques, and collectibles are viewed as investment expenditures and therefore excluded. Gambling losses, fines, cash gifts to individuals or charities, and child support and alimony payments also are out of scope. Interest costs and finance charges are also out of scope. The CPI excludes illegal goods and services and the value of home-produced items because of the practical difficulties of collecting the data.

6.5. Government-provided and government-subsidized items

The CPI treats any changes to fees that the government charges for items, such as admission to a national park, as in-scope changes in price. The CPI also counts the price of subsidized items that is available to the public. For example, governments may subsidize local transit operations. If the subsidy is cut and the fare is raised, the CPI will reflect this as a price increase. Changes in such subsidies are treated as changes to the recipient's income and are out of scope.

6.6. Taxes

The CPI excludes income tax and other direct taxes; however, it does include the effects of changes in sales taxes and other indirect taxes paid on consumer products. No attempt is made to reflect changes in the quantity or quality of government services paid for through taxes.

The calculation of item indices can be can best be described symbolically as follows. In any given period, the prices collected during that period are compared to the prices collected in the previous period,

These Month-to-month price relatives (short-term price relatives) are then averaged by using the geometric mean of price relative's formula and linked to the previous month price relatives by successive multiplication to calculate the change from the base period (long-term price relative).

7. NCPI COMPILATION

7.1 Formula and method of calculation

The NCPI is calculated in two steps. In the first step, the item indices are calculated by comparing prices in each period. In the second step, higher-level indices are calculated by aggregating the item indices. The item indices are calculated as unweighted geometric averages of price ratios. The higher-level indices are calculated as weighted averages of item indices by using chained Laspeyres index number formula.

7.2 Calculation of elementary aggregate indices (item indices)

Compilers of the CPI must 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 collected are described as the sampled products. Their prices are collected over a succession of time periods. An elementary price index is therefore typically calculated from two sets of matched price observations.
The price index for an aggregate is calculated as a weighted average of the price indices for the sub-aggregates, the (expenditure or sales) weights and type of average being determined by the index formula. The lowest level aggregates are called elementary aggregates. Since the elementary aggregates form the building blocks of a CPI, the choice of an inappropriate formula at this level can have a tremendous impact on the overall index. The definition of an elementary aggregate involves aggregation over four possible dimensions.

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

The calculation of item indices can be can best be described symbolically as follows. In any given period, the prices collected during that period are compared to the prices collected in the previous period, $\frac{p_i^t}{p_i^{t-1}}$.

These Month-to-month price relatives (short-term price relatives) are then averaged by using the geometric mean of price relative's formula and linked to the previous month price relatives by successive multiplication to calculate the change from the base period (long-term price relative).

$$I_I^{t/0} = \sqrt[n]{\prod_{i=1}^{n} \frac{P_i^t}{P_i^{t-1}}} \times \sqrt[n]{\prod_{i=1}^{n} \frac{P_i^t}{P_i^0}} = \sqrt[n]{\prod_{i=1}^{n} P_i^{\frac{t}{t}-1}} \times \sqrt[n]{\prod_{i=1}^{n} P_i^{t-1/0}}$$

where:

$I_I^{t/0}$ =Item index showing the change for the current period t compared to base period 0,

P_i^0 =Price of the item I in the i-th outlet in the base month 0

P_i^t =Price of the item I in the i-th outlet in the current month t

$I_I^{t/0}$ =Item index showing the change for the current period t compared to base period 0,

P_i^0 =Price of the item I in the i-th outlet in the base month 0

P_i^t =Price of the item I in the i-th outlet in the current month t

p_i^{t-1} = Price of the item I in the i-th outlet in the preceding month t-1

$\Pi_{i=1}^{n}$ Means the product of all price relatives for the item I

The advantage of the chained form is that it makes the estimation of missing prices and introduction of replacements easier and more relevant: replacement can be included in the index as soon as prices for two successive months are available without the need to estimate the price for the base period.

7.3. Calculation of group indices

Group and subgroup indices are calculated as weighted arithmetic averages of item indices by using chained Laspeyres formula. The chained Laspeyres' formula can be presented as follows:

$$I^{t/0} = \sum_{I=1}^{N} W_I^0 \times I_I^{t-1/0} \times I_I^{\frac{t}{t}-1}$$

where:

$I^{t/0}$ =Group index showing the change in the current month t compared to base month 0,

$I_I^{\frac{t}{t}-1}$ =Short-term price index for item I showing the change in the current month t compared to previous month t-1,

$I_I^{t-1/0}$ =Long term price index for item I showing the change in the previous month t-1 compared to base month 0,

w_I^0 =Weight of item I showing the importance of that item in the total expenditures in the base period 0

∑ - Means the summation over all selected items in the basket of goods and services

8. IMPUTATIONS IN THE NCPI

8.1. Introduction

Imputation is a procedure for handling missing information. The CPI uses imputation for several cases, including respondent refusals, items which are out of season or temporally unavailable for some other reason, and the inability to make a satisfactory estimate of the quality change. Replacement of items that can be neither directly compared nor quality adjusted are called noncomparable. For noncomparable replacements, an estimate of constant-quality price change is made by imputation. There are several imputation methods used by CPI compilers: **Overlap Pricing, Overall Mean Imputation,** and the **Class-mean imputation.**

8.2. Imputation method applied by Namibia Statistics Agency

The Namibia Statistics Agency uses the Class mean imputation method which is similar in procedure to the overall mean imputation, but uses only the price changes of "comparable" replacements to impute the overlap price, the replacements being limited to those that have exactly the same price-determining characteristics, or those items with replacements that have been declared comparable after review or have already been quality-adjusted through one of the "explicit" methods. Moreover, the Class-mean imputation calculates imputed price relatives using only the prices of comparable and, where appropriate, explicitly quality adjusted varieties or models. In general, it does not use the prices for the varieties or models that were not replaced, because these are likely to be different from those of new models. The prices of old models tend to fall as they become obsolete, while the new models (represented by the replacements) tend to have a higher price before falling.

Practically, for the NCPI compilation case, temporarily missing prices are imputed. If an item has been missing or out of stock for more than three consecutive months, a replacement item with similar characteristics is selected in consultation with the selling outlets.

The current excel-based index tabulation system automatically imputes missing prices for specifications that are temporarily unavailable. Item level price relatives are calculated based on the price quotation for the specific variety/specifications that are available in the current month. These item-level price relatives are then applied to the previous period's prices for the item specifications lacking prices in the current month to impute prices for these specifications in the current month. The imputed prices are then used for the next period's index tabulation. When a price for a previously unavailable specification becomes available, the imputation is automatically self-corrected by the system.

9. CPI QUALITY AND QUANTITY ADJUSTMENTS

9.1. CPI quality adjustments

A CPI should reflect the change in the cost of buying a fixed basket of goods and services of constant quality. In practice, this represents a challenge as products can permanently disappear or be replaced with new versions of a different quality or specification, and new products can also become available.

One of the most challenging problems faced in compiling a price index is the accurate measurement and treatment of quality change due to changing product specifications and consumption patterns. The concept of the CPI requires a measurement through time of the cost of purchasing an unchanging, constant-quality set of goods and services. Typically, products disappear, products are replaced with new versions, and new products emerge.

To measure price change from one period to the next, the price statistician tracks, for each elementary aggregate, the prices of a fixed sample of items. The detailed characteristics of the products, that is, the varieties of goods and services selected for pricing, are recorded to assist the price collector in fulfilling the aim of pricing the same product in the same outlet in the same location so that the CPI compares "like-to-like" in subsequent periods. Also, the recording of detailed characteristics, especially price determining features, can help when needing to adjust the recorded price due to changes in specification and hence quality. In practice, the product being priced in a specific outlet may become unavailable—for example, the product is discontinued, may be in temporary short supply, or may be a seasonal product which disappears when out of season.

9.2. CPI quantity adjustments

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

Quantity adjustment is one of the most straightforward explicit adjustments to undertake. It is applicable when the size of the replacement item differs from that of the previously priced item. This is accomplished by scaling the price of the old or new product by the ratio of quantities.

9.3. Substitution Procedures

If an outlet goes out of business/discontinued or refuses to participate in the price collection survey, it should be replaced with the same sort of outlet immediately by the price collectors which then is approved by the head office staff (for example, a market stall should be replaced with a market stall, or a single shop with a single shop) in the same location and conducting the same type of business (in other words selling the same types of goods). Further, if the previous shop was a butcher selling refrigerated meat, then another butcher selling refrigerated meat should replace it. If probability sampling was used to select the original outlet, the sampling frame should be revisited, and a replacement outlet selected from the same stratum. Regardless of how the replacement is found, the original outlet's sampled items should be assigned to the replacement outlet for price observation. If an outlet changes location, a decision on whether the price collector should follow the outlet to its new location needs to consider both sampling and operational issues:

Moreover, if a chosen product is temporarily missing and no price is recorded, a note to this effect should be made by the price collector. For a product temporarily missing, a price must be imputed. Non-seasonal items and varieties should be replaced if missing more than a predefined period. For example, if it is out of stock for three consecutive months, then the collector should be instructed to choose a replacement which matches as closely as possible the product description unless it is decided to take the opportunity of a disappearing good to update the sample. Where a product is permanently unavailable for pricing, procedures need to be in place for determining a replacement and then impute a new base price if the replacement is of a different quality.

Varieties may become temporary unavailable because of supply shortages or possibly because of some collection difficulty (e.g., an outlet was closed, or a price collector was ill). In the case of temporarily missing varieties, the price relatives are imputed by using the price changes at the next higher-level group. This method of imputation assumes that the missing price for the current period would have moved by the same proportionate change as other varieties that belong to the same group.

10. CORE INFLATION

10.1. Introduction

Core inflation attempts to measure the medium-term underlying trend of headline inflation by excluding transitory price movements. Inflation targeting central banks usually have their targets set in terms of CPI inflation for all items. However, some of the goods and services included in the total CPI have very volatile prices, whose movements tend to reverse themselves relatively quickly.

As such, core inflation is regularly used as an alternative to overall or headline inflation, to mitigate some of the weaknesses involved with the use of broader inflation measures. Core inflation is thus a measure of inflation that excludes highly volatile components of overall inflation, to provide a less volatile measure of inflation, which continues to illustrate the medium-term trend in overall inflation. A good measure of core inflation is therefore, one that represents a medium-run underlying trend in the price level. This is usually achieved by excluding transitory price changes from total inflation.

A further benefit to the use of core inflation, particularly in Namibia, is that it excludes exogenous price factors over which domestic monetary policy has little or no control. Examples of this include food and fuel prices, which are not only volatile, but are determined almost exclusively by exogenous factors (Namibia is a price taker). As such, monitoring these factors with regards to monetary policy may be erroneous.

10.2. Methods of calculating core inflation

The most used method for measuring core inflation is the one that permanently excludes certain components of the inflation basket (CPIX), which are found to experience high price volatility. Most of the price volatility that need to be netted out from headline inflation is one that emanates from short-term supply shocks - food and energy items are commonly excluded.

Namibia computes core inflation by excluding a selected food and energy items from headline inflation based on observed volatility in their inflation rates, which includes 75.7 percent of the total NCPI basket (total weight of excluded items add up to 24.3 percent). The specific sub-groups excluded from headline inflation to estimate core inflation for Namibia are depicted under Appendix 5.

Appendix 1: List of items in the CPI basket

	FOOD AND NON-ALCOHOLIC BEVERAGES
	Food
1	Bread
2	Cakes
3	Biscuits, rusks
4	Breakfast cereals
5	Baby foods, cereals
6	Bread, cake flour
7	Maize, meal/grain
8	Mahangu meal/grain
9	Rice
10	Mealie rice/malt
11	Macaroni, spaghetti, and noodles
12	Beef
13	Minced meat
14	Chicken, Birds
15	Game
16	Mutton/Lamb
17	Pork
18	Liver and kidneys

19	Bacon
20	Ham
21	Biltong
22	Sausages
23	Offal's and meat waste
24	Canned meat
25	Fresh, chilled & frozen fish
26	Bottled/Tinned fish
27	Dried, smoked, or salted fish & seafood
28	Fresh milk, long life milk etc.
29	Preserved milk
30	Cream
31	Baby milk powdered
32	Yoghurt/Clotted/Cultured milk
33	Cheese
34	Eggs
35	Cooking oil
36	Cooking fats
37	Margarine and margarine spreads
38	Peanut butter
39	Butter

40	Apples
41	Pears
42	Bananas
43	Citrus fruits
44	Avocados
45	Grapes
46	Watermelons
47	Dried fruits
48	Peanuts and mixed nuts,
49	Tinned fruits
50	Beans (fresh)
51	Beetroot
52	Cabbage
53	Carrots
54	Broccoli, cauliflower
55	Cucumber
56	Pumpkins and Squashes
57	Green pepper/Paprika
58	Lettuce
59	Mealie/ corn cob
60	Mushroom

61	Onion
62	Potatoes
63	Sweet potatoes
64	Spinach
65	Tomatoes
66	Chips and crisps
67	Dried vegetables
68	Frozeq vegetables, mixed vegetable
69	Tinned vegetables, pickled vegetables
70	Sugar
71	Syrup
72	Ice cream
73	Chocolate
74	Sweets
75	Honey
76	Jam
77	Yeast, baking powder
78	Bottled baby food
79	Cake essences
80	Custards and Puddings & jellies
81	Mayonnaise/mustard/salad dressings

82	Sauces,
83	Vinegar
84	Soups
85	Salt
86	Spices and condiments
87	Ready made frozen food
	Non-alcoholic beverages
88	Coffee
89	Tea
90	Chocolate drinks
91	Fruit juice and Squashes
92	Water/Mineral water/Soft drinks
	ALCOHOLIC BEVERAGES AND TOBACCO
	Alcoholic beverages
93	Brandies
94	White Spirits
95	Liqueurs
96	Whiskies
97	Wines
98	Sparkling wines/Champagnes
99	Beer/Ales/Ciders

	Tobacco
100	Cigarettes
101	Pipe tobacco
	CLOTHING AND FOOTWEAR
	Clothing
102	Clothing material
103	Suit, M
104	Coats and jackets, jersey and sweaters, M
105	Jeans and trousers, M
106	Shirts, M
107	Socks and stockings, M
108	Underwear M
109	Shorts, sport wear, M
110	Traditional wear, M
111	Dresses W
112	Suits, W
113	Coats and jackets, jersey and sweaters, W
114	Jeans and trousers, W
115	Shirts, W
116	Skirts, W
117	Night dresses, gowns and negligees, W

118	Pantyhose and socks, W
119	Underwear, W
120	Shorts, sportswear
121	Traditional wear, W
122	Suits, B
123	Jeans and trousers, B
124	Shirts B
125	Shorts, sportswear, B
126	Underwear B
127	Socks, B
128	School uniform B
129	Coats and jackets, jersey and sweaters, B
130	Dresses, G
131	Skirts, G
132	Jeans and trousers, G
133	Shirts, G
134	Shorts, sportwear, G
135	Underwear G
136	Pantyhose and socks, G
137	School uniform G
138	Coats and jackets, jersey and sweaters

139	Suits, G
140	Traditional wear G
141	Shirts I
142	Shorts I
143	Pantyhose and socks I
144	Other clothing articles and accessories M
145	Other clothing articles and accessories W
146	Other clothing articles and accessories C
147	Dry cleaning of clothing
	Footwear
148	Footwear, M
149	Footwear, W
150	Flowerchildren
151	Repair charges footwear
152	Threads, buttons, laces, zippers, etc.
	HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS
153	Rent in cash
154	Products for maintenance and repair of buildings
155	Services for maintenance and repair of buildings
156	Garden and garden garbage charges, refuse collection
157	Water, sewage, household garbage charges

158	Electricity charges
159	Gas
160	Paraffin, methylate spirits
161	Coal, charcoal
	FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE OF THE HOUSE
162	Bedroom furniture
163	Lounge furniture
164	Kitchen furniture
165	Bed bases and mattresses
166	Ornaments, paintings etc.
167	Garden and patio furniture
168	Cupboards/Wardrobes/Sideboard's
169	Loose carpets and rugs,
170	Repairs of furniture
171	Bedsheets and pillowcases
172	Blankets/Duvets
173	Towels
174	Curtains
175	Tablecloths
176	Stoves
177	Refrigerators/Deep freezers

178	Washing machines, dishwashers and tumble dryers
179	Sewing machines
180	Vacuum cleaners
181	Small electrical kitchen appliances
182	Repairs of electrical and non-electrical appliances
183	Cutlery
184	Plates and cups
185	Pots and pans, Frying pans woks
186	Small electrical accessories
187	Locks and doorknobs,
188	Lanterns, paraffin lamps and accessories
189	Iron boards
190	Baby feeding bottles
191	Buckets and basins
192	Tools for gardening, swimming pool
193	Power drive tools
194	Detergents, polish, softener, bleaches
195	Laundry soap,
196	Brushes, brooms, and mops
197	Shoe brushes and shoe polish
198	Candles, lighters, and matches

199	Needles and pins
200	Plastic bags for food storage, garbage bags
201	Laundry and dry cleaning of household goods
202	Payment domestic workers
	HEALTH
203	Medicine
204	Therapeutic appliances and equipment:
205	Medical services
206	Dental services
207	Hospital services
	TRANSPORT
208	Motor cars
209	Motorcycles
210	Bicycles
211	Spare Parts and Accessories,
212	Parking fees,
213	Petrol/Diesel
214	Lubrication
215	Service and repair charges
216	Driving lessons, license and tests
217	License and registration fees

218	Rail transportation
219	Bus transportation
220	Taxi transportation
221	Air transportation
222	Furniture removal and transport of goods
	COMMUNICATIONS
223	Postal service charges
224	Communication equipment's
225	Telecommunication charges
	RECREATION AND CULTURE
226	Radio/TV/Cassette, Record-and CD players
227	Cameras, video cameras, projectors, flashes and films
228	Laptops and computers, printers, typewriters, copiers
229	CDs
230	Camping equipment (tents, etc)
231	Musical instruments
232	Toys, games
233	Sports playground equipment
234	Rifles and ammunition and items for personal protection
235	Plants and flowers
236	Chemicals for gardening and pool
237	Pet foods, veterinary, collars, pets
238	Membership fees and contributions
239	M-net/NBC-licence fees
240	Photo printing and Film development
241	Books and textbooks
242	Newspapers, magazines and periodicals
243	Stationery
244	Holiday tour packages
	EDUCATION
245	Fees for pre-primary schools
246	Fees for primary and secondary schools
247	Fees for tertiary/higher education
	HOTELS, CAFES, AND RESTAURANTS
248	Plate of food/sit down meal
249	Take away, pies and pizzas
250	Ready-made coffee/tea/ chocolates, milk shakes
251	Holiday/resort rents
252	Boarding fees
	MISCELLANEOUS GOODS AND SERVICES
253	Services at barber and beauty saloons
254	Non-electrical razors and hair trimmer items

255	Toilet articles
256	Toilette paper/Tissues
257	Napkins/diapers / disposable napkins
258	Artificial hair, braids, and wigs
259	Watches and personal jewellery
260	Handbags, traveling bags, schoolbags etc
261	Articles for smokers, articles for babies, car seats, personnel articles etc.
262	Creches, day-care mothers, and playgroups - by HH
263	Insurance of motor vehicle
264	Bank charges
265	Legal aid charges
266	Funeral expenses

Appendix 2: NCPI zones and localities

Zone 1	Oshakati, Katima Mulilo and Otjiwarongo
Zone 2	Windhoek
Zone 3	Gobabis, Mariental, Keetmashoop and Swakopmund

Appendix 3: NHIES weights comparison between 1993/94 and 2009/10

	NHIES 1993/1994				NHIES 2009/10			
COICOP Division	Zone 1	Zone 2	Zone 3	National	Zone 1	Zone 2	Zone 3	National
Food and Non-Alcoholic Beverages	41.7	16.6	28.6	29.6	20.5	12.3	16.5	16.5
Alcoholic Beverages, Tobacco, and Narcotics	4.4	2.2	3.0	3.3	13.1	11.0	14.3	12.6
Clothing and Footwear	7.0	3.9	3.9	5.1	3.9	2.5	2.6	3.1
Housing, Water, Electricity, Gas and Other Fuels	12.8	28.0	22.8	20.6	25.8	32.7	25.5	28.4
Furnishings, Household Equipment and Routine	6.3	4.5	6.2	5.6	5.8	5.2	5.3	5.5

Maintenance of the House								
Health	1.6	1.4	1.6	1.5	1.6	2.3	2.2	2.0
Transport	10.9	20.6	12.7	14.8	14.7	13.0	15.6	14.3
Communication	0.7	1.0	1.0	0.9	3.5	3.8	4.4	3.8
Recreation and Culture	2.3	2.7	2.5	2.5	2.2	4.9	3.7	3.6
Education	6.3	9.3	7.9	7.4	3.2	4.5	3.1	3.7
Restaurants and Hotels	1.2	2.1	1.7	1.6	0.9	2.0	1.1	1.4
Miscellaneous Goods and Services	5.0	8.9	8.1	7.1	4.9	5.8	5.6	5.4
All Items	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix 4: NCPI weights vs. Core inflation weights

12 COICOP DIVISION	NCPI weights				Core inflation weights			
	Zone 1	Zone 2	Zone 3	National	Zone 1	Zone 2	Zone 3	National
FOOD AND NON-ALCOHOLIC BEVERAGES	20.4	12.3	16.5	16.4	0.0	0.0	0.0	0.0
ALCOHOLIC BEVERAGES AND TOBACCO	13.1	11	14.3	12.6	18.9	13.3	19.1	16.6
CLOTHING AND FOOTWEAR	3.9	2.4	2.6	3	5.6	3.0	3.5	4.0
HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS	25.8	32.7	25.5	28.4	29.2	39.1	31.0	33.7
FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE OF THE HOUSE	5.8	5.2	5.3	5.5	8.3	6.3	7.1	7.2
HEALTH	1.6	2.3	2.2	2	2.3	2.8	2.9	2.7
TRANSPORT	14.7	13	15.6	14.3	14.4	10.2	12.6	12.2
COMMUNICATIONS	3.5	3.8	4.4	3.8	5.0	4.6	5.9	5.0
RECREATION AND CULTURE	2.2	4.8	3.7	3.6	3.2	5.9	4.9	4.7
EDUCATION	3.2	4.5	3.1	3.6	4.6	5.4	4.1	4.8

HOTELS, CAFES AND RESTAURANTS	0.9	2	1.1	1.4	1.4	2.4	1.5	1.8
MISCELLANEOUS GOODS AND SERVICES	4.8	5.8	5.6	5.4	7.0	7.0	7.5	7.1
ALL ITEMS	100	100	100	100	100	100	100	100
EDUCATION, SCHOOL UNIFORM, STATIONARIES AND TEXTBOOKS	3.8	5.4	3.7	4.4	5.4	6.5	4.9	5.8
GOODS	64.4	46.6	59.7	56.6	48.7	35.5	46.2	42.6
SERVICES	35.6	53.4	40.3	43.4	51.3	64.5	53.8	57.4

Appendix 5: Items and sub classes excluded from Core Inflation Basket

COICOP Division and Group	Sub-group	Core Zonal and National excluded weights			
Food and non-alcoholic beverages	Bread and cereals (ND)	6.9	2.9	4.4	4.8
Food	*Bread*	1.4	0.9	1.1	1.2
	Cakes	0.0	0.1	0.1	0.1
	Biscuits, rusks	0.1	0.1	0.1	0.1
	Breakfast cereals	0.1	0.1	0.1	0.1
	Baby foods, cereals	0.0	0.0	0.0	0.0
	Bread, cake flour	0.3	0.2	0.6	0.3
	Maize, meal/grain	2.8	0.7	1.4	1.7
	Mahangu meal/grain	0.8	0.1	0.1	0.4
	Rice	0.8	0.3	0.4	0.5
	Mealie rice/malt	0.0	0.0	0.0	0.0
	Macaroni, spaghetti and noodles	0.6	0.3	0.5	0.5
	Meat (ND)	4.0	2.9	3.7	3.5
	Beef	2.1	1.0	0.7	1.3
	Minced meat	0.0	0.1	0.1	0.1

	Chicken, Birds	0.9	0.8	0.9	0.9
	Game	0.2	0.2	0.2	0.2
	Mutton/Lamb	0.3	0.2	1.0	0.4
	Pork	0.1	0.1	0.1	0.1
	Liver and kidneys	0.0	0.0	0.0	0.0
	Bacon	0.0	0.0	0.0	0.0
	Ham	0.0	0.0	0.0	0.0
	Biltong	0.0	0.0	0.1	0.0
	Sausages	0.2	0.3	0.4	0.3
	Offals and meat waste	0.1	0.1	0.1	0.1
	Canned meat	0.1	0.0	0.1	0.1
	Fish (ND)	**1.5**	**0.3**	**0.4**	**0.8**
	Fresh, chilled & frozen fish	1.1	0.2	0.3	0.6
	Bottled/Tinned fish	0.2	0.1	0.1	0.1
	Dried, smoked or salted fish & seafood	0.3	0.0	0.0	0.1
	Milk, cheese and eggs (ND)	**1.0**	**1.2**	**1.4**	**1.2**
	Fresh milk, long life milk etc.	0.3	0.5	0.7	0.5
	Preserved milk	0.1	0.1	0.1	0.1
	Cream	0.0	0.0	0.0	0.0
	Baby milk powdered	0.1	0.1	0.1	0.1

	Yoghurt/Clotted/Cultured milk	0.4	0.2	0.2	0.3
	Cheese	0.0	0.1	0.1	0.1
	Eggs	0.1	0.2	0.2	0.1
	Oils and fats (ND)	**1.0**	**0.5**	**0.8**	**0.8**
	Cooking oil	0.8	0.3	0.4	0.5
	Cooking fats	0.0	0.0	0.0	0.0
	Margarine and margarine spreads	0.1	0.1	0.2	0.1
	Peanut butter	0.0	0.1	0.1	0.0
	Butter	0.1	0.1	0.1	0.1
	Fruits (ND)	**0.3**	**0.3**	**0.3**	**0.3**
	Apples	0.1	0.1	0.1	0.1
	Pears	0.0	0.0	0.0	0.0
	Bananas	0.0	0.0	0.0	0.0
	Citrus fruits	0.0	0.0	0.1	0.0
	Avocados	0.0	0.0	0.0	0.0
	Grapes	0.0	0.0	0.0	0.0
	Watermelons	0.0	0.0	0.0	0.0
	Dried fruits	0.0	0.0	0.0	0.0
	Peanuts and mixed nuts,	0.0	0.0	0.0	0.0
	Tinned fruits	0.0	0.0	0.0	0.0

	Vegetables including potatoes and other tubers (ND)	**1.4**	**1.1**	**1.1**	**1.2**
	Beans (fresh)	0.0	0.0	0.0	0.0
	Beetroot	0.0	0.0	0.0	0.0
	Cabbage	0.2	0.0	0.0	0.1
	Carrots	0.0	0.0	0.0	0.0
	Broccoli, cauliflower	0.0	0.0	0.0	0.0
	Cucumber	0.0	0.0	0.0	0.0
	Pumpkins and Squashes	0.0	0.0	0.0	0.0
	Green pepper/Paprika	0.0	0.0	0.0	0.0
	Lettuce	0.0	0.0	0.0	0.0
	Mealie/ corn cob	0.0	0.0	0.0	0.0
	Mushroom	0.0	0.0	0.0	0.0
	Onion	0.1	0.1	0.1	0.1
	Potatoes	0.3	0.2	0.3	0.3
	Sweet potatoes	0.0	0.0	0.0	0.0
	Spinach	0.1	0.0	0.0	0.1
	Tomatoes	0.1	0.1	0.1	0.1
	Chips and crisps	0.1	0.2	0.2	0.2
	Dried vegetables	0.1	0.0	0.0	0.1

	Frozen vegetables, mixed vegetable	0.1	0.1	0.1	0.1
	Tinned vegetables, pickled vegetables	0.0	0.1	0.1	0.1
	Sugar, jam, honey, syrups, chocolate and confectionery (ND)	**1.8**	**0.9**	**1.8**	**1.4**
	Sugar	1.6	0.5	1.4	1.1
	Syrup	0.0	0.0	0.0	0.0
	Ice cream	0.0	0.1	0.0	0.0
	Chocolate	0.0	0.1	0.1	0.1
	Sweets	0.1	0.1	0.2	0.2
	Honey	0.0	0.0	0.0	0.0
	Jam	0.0	0.0	0.0	0.0
	Food products n.e.c. (ND)	**0.7**	**0.5**	**0.8**	**0.6**
	Yeast, baking powder	0.0	0.0	0.1	0.0
	Bottled baby food	0.0	0.0	0.0	0.0
	Cake essences	0.0	0.0	0.0	0.0
	Custards and Puddings & jellies	0.0	0.0	0.0	0.0
	Mayonnaise/mustard/salad dressings	0.1	0.1	0.1	0.1
	Sauces,	0.2	0.1	0.2	0.1

	Vinegar	0.0	0.0	0.0	0.0
	Soups	0.2	0.1	0.2	0.2
	Salt	0.1	0.0	0.0	0.1
	Spices and condiments	0.1	0.1	0.1	0.1
	Ready made frozen food	0.0	0.0	0.0	0.0
Non-alcoholic beverages	**Coffee, tea, and cocoa (ND)**	**0.2**	**0.2**	**0.6**	**0.3**
	Coffee	0.1	0.1	0.2	0.1
	Tea	0.1	0.1	0.3	0.2
	Chocolate drinks	0.0	0.0	0.0	0.0
	Mineral waters, soft drinks, and juices (ND)	**1.5**	**1.3**	**1.2**	**1.4**
	Fruit juice and Squashes	0.5	0.4	0.4	0.4
	Water/Mineral water/Soft drinks	1.0	0.9	0.8	0.9
	Electricity gas and other fuels(ND)	**5.6**	**0.4**	**2.3**	**2.8**
	Gas	0.2	0.1	0.2	0.1
	Paraffin, methylate spirits	0.1	0.1	0.0	0.1
	Coal, charcoal	5.3	0.1	2.1	2.6
Transport	**Operation of personal transport equipment**	**4.7**	**4.6**	**6.2**	**5.0**
	Petrol/Diesel	4.7	4.6	6.2	5.0
Total		30.7	17.3	25.0	24.3

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