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# National Accounts: Sources and Methods

Embargoed until:  
25 August 2021  
11:30

Report No. 04-04-04 (2021)

Statistics South Africa

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**National Accounts: Sources and Methods** / Statistics South Africa

Published by Statistics South Africa, Private Bag X44, Pretoria 0001

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Stats SA Library Cataloguing-in-Publication (CIP) Data

**National Accounts: Sources and Methods** / Statistics South Africa Pretoria: Statistics South Africa, 2021

**Report No. 04-04-04 (2021)**

**208 pages**

ISBN: 978-0-621-49662-8

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## Preface

Statistics South Africa (Stats SA) publishes the country's gross domestic product (GDP) every quarter. GDP measures the size of the economy and its growth rate over time, and is the most familiar and widely recognised feature of the national accounts. The international gold standard for national accounts compilation is the System of National Accounts 2008 (SNA 2008), published jointly by the European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and World Bank. SNA 2008 is the foundation and primary methodological source for Stats SA in calculating South Africa's GDP.

SNA 2008 describes itself as 'a statistical framework that provides a comprehensive, consistent and flexible set of macroeconomic accounts for policymaking, analysis and research purposes.' Although it is extraordinarily detailed, it cannot possibly address the individual circumstances of each and every country, which is why Stats SA has produced this sources and methods document specifically for South Africa. It covers the supply and use tables, the three different approaches to GDP (production, expenditure and income), and other related topics. We hope the publication will be of value to all our users who are interested in knowing more about the country's national accounts, such as which source data are used, and how and when and why. We encourage you to explore our sources and methods with a critical eye, and share your views with us about what you would like to see explained in more detail or otherwise expanded in future editions.

Because prices and economic structures change over time, the base year for the national accounts must be updated and the GDP estimates must be benchmarked using the latest available socio-economic surveys, some of which are only conducted at intervals of several years. Rebasing and benchmarking, along with the introduction of new sources and methods, are essential activities for maintaining GDP as a reliable measure of economic performance. Simultaneously with this sources and methods document, Stats SA is publishing newly benchmarked real (or volume) GDP measured at constant 2015 prices, which replaces the previous GDP measured at constant 2010 prices. We are also publishing revised estimates of nominal GDP measured at current prices, since these are inevitably affected by new methods, data sources and benchmarking.

We acknowledge the South African Reserve Bank (SARB), with whom we collaborate closely in producing the country's national accounts. The SARB provides Stats SA with crucial inputs for our compilation of GDP, and is itself responsible for the many dimensions of the national accounts that lie beyond GDP, all of which are accessible through its online datasets and Quarterly Bulletin publication. We thank our SARB colleagues for their expertise and support in bringing the latest national accounts rebasing and benchmarking to fruition.



**Risenga Maluleke**  
**Statistician-General**

## Contents

<b>Preface</b> .....	ii
<b>List of tables</b> .....	v
<b>List of figures</b> .....	vi
<b>Rebasing and benchmarking: revised time series</b> .....	1
<b>1. Introduction to sources and methods</b> .....	8
1.1 Source data for the national accounts .....	8
1.2 The System of National Accounts and supply and use tables .....	9
1.3 Benchmarking .....	10
1.4 Rebasing .....	13
1.5 Gross domestic product and related calculations .....	14
<b>2. New supply and use table system</b> .....	19
2.1 New framework for the supply and use tables .....	19
2.2 Industries (activities) .....	23
2.3 Commodities (products) .....	23
2.4 Calendarisation .....	23
2.5 Double deflation .....	24
<b>3. GDP measured by production</b> .....	25
3.1 Agriculture, hunting, forestry and fishing industry .....	25
3.2 Mining and quarrying industry .....	28
3.3 Manufacturing industry .....	28
3.4 Electricity, gas and water supply industry .....	29
3.5 Construction industry .....	31
3.6 Trade services industry .....	32
3.7 Transport, storage and communication services industry .....	34
3.8 Financial intermediation, insurance, real estate and business services industry .....	35
3.9 Community, social and personal services industry .....	38
3.10 Quarterly national accounts measured by production .....	42
<b>4. Compilation of other components of the supply and use tables</b> .....	52
4.1 Compilation of trade margins .....	52
4.2 Compilation of transport margins .....	54
4.3 Compilation of non-profit institutions .....	55
4.4 Compilation of taxes on products .....	55
4.5 Compilation of subsidies on products .....	59
4.6 Compilation of compensation of employees .....	59
4.7 Compilation of taxes less subsidies on production and imports .....	61

4.8	Compilation of gross operating surplus .....	62
4.9	Compilation of the rest of the world – trade .....	62
4.10	Compilation of the informal sector .....	64
4.11	Compilation of illegal activities .....	66
<b>5.</b>	<b>GDP measured by expenditure</b> .....	<b>68</b>
5.1	Household final consumption expenditure.....	68
5.2	Government final consumption expenditure .....	91
5.3	Gross fixed capital formation .....	102
5.4	Changes in inventories .....	125
5.5	Rest of the world – international trade .....	129
<b>6.</b>	<b>Supplementary notes</b> .....	<b>133</b>
6.1	Back series.....	133
6.2	Seasonal adjustment.....	133
6.3	South Africa’s system of trade and balance of payments adjustments.....	134
6.4	Publication and revision cycle of GDP estimates .....	135
6.5	Residual between GDP by production and GDP by expenditure .....	136
6.6	Gross domestic product by province .....	136
	<b>Abbreviations</b> .....	<b>137</b>
	<b>Annexures</b> .....	<b>139</b>
	Annexure A – Analysis of changes in value added (GDP by production) in the new base year (2015).....	139
	Annexure B – Analysis of changes in expenditure (GDP by expenditure) in the new base year (2015) .....	142
	Annexure 1 – Industry grouping description of the supply and use tables compilation .....	144
	Annexure 2 – Industry grouping description of the supply and use tables for publication .....	152
	Annexure 3 – Product grouping description of the supply and use tables compilation.....	157
	Annexure 4 – Product grouping description of the supply and use tables for publication.....	162
	Annexure 5 – Price indices used for output product deflators .....	167
	Annexure 6 – Price indices used for intermediate consumption product deflators .....	177
	Annexure 7 – Deflators for household final consumption expenditure .....	188
	Annexure 8 – HFCE commodities with little or no adjustment needed.....	190
	Annexure 9 – Deflators for changes in inventories.....	192
	<b>Glossary</b> .....	<b>194</b>
	<b>Key reference materials and guides</b> .....	<b>201</b>

## List of tables

Table A – Comparison of previous and revised GDP estimates.....	1
Table 1 – Comparison of the supply and use tables in benchmark years .....	11
Table 2 – Goods and services account, 2015 .....	15
Table 3 – Production account, 2015.....	17
Table 4 – Generation of income account, 2015.....	17
Table 5 – Example of Annual Financial Statistics survey questions used for the new supply and use framework.....	19
Table 6 – Illustration of calculations used in the new supply and use framework based on the Annual Financial Statistics survey questions.....	21
Table 7 – Data sources used for the agriculture, hunting, forestry and fishing industry .....	26
Table 8 – Output variables used for the agriculture and hunting industry .....	26
Table 9 – Intermediate consumption variables used for the agriculture and hunting industry .....	27
Table 10 – Data sources used for the mining and quarrying industry .....	28
Table 11 – Data sources used for the manufacturing industry .....	29
Table 12 – Data sources used for the electricity, gas and water supply industry .....	30
Table 13 – Data sources used for the construction industry.....	31
Table 14 – Data sources used for the trade services industry.....	33
Table 15 – Data sources used for the transport, storage and communication services industry.....	34
Table 16 – Data sources used for the financial corporations industry .....	36
Table 17 – Data sources used for the real estate and business services industry .....	37
Table 18 – Data sources used for the government services industry.....	38
Table 19 – Data sources used for the personal services industry .....	41
Table 20 – Sources and methods used for the estimation of quarterly GDP .....	43
Table 21 – Data sources used for trade margins .....	52
Table 22 – Data sources used for informal-sector trade margins.....	53
Table 23 – Data sources used for transport margins .....	54
Table 24 – Data sources used for non-profit institutions .....	55
Table 25 – Data sources used for taxes on products .....	57
Table 26 – Data sources used for subsidies on products.....	59
Table 27 – Data sources used for compensation of employees.....	60
Table 28 – Data sources used for taxes less subsidies on production and imports .....	61
Table 29 – Data sources used for the rest of the world – trade.....	63
Table 30 – Data sources used for the informal sector.....	64
Table 31 – Data sources used for illegal activities .....	66
Table 32 – Data sources for household final consumption expenditure (at current prices unless otherwise indicated) ....	70
Table 33 – Data sources for government final consumption expenditure (at current prices unless otherwise indicated) .	96
Table 34 – Data sources for GFCE price deflators.....	101
Table 35 – Data sources for GFCF by asset type (at current prices unless otherwise indicated) .....	105
Table 36 – Operational characteristics of source data for GFCF by asset type .....	114
Table 37 – Data sources for GFCF deflators by asset type.....	122
Table 38 – Data sources for changes in inventories by industry (at current prices unless otherwise indicated) .....	127
Table 39 – Operational characteristics of source data for inventories by industry.....	128
Table 40 – Data sources for international trade by trade type (at current prices).....	130
Table 41 – Operational characteristics of source data for international trade by trade type.....	131
Table 42 – Normal publication calendar for GDP .....	135

## List of figures

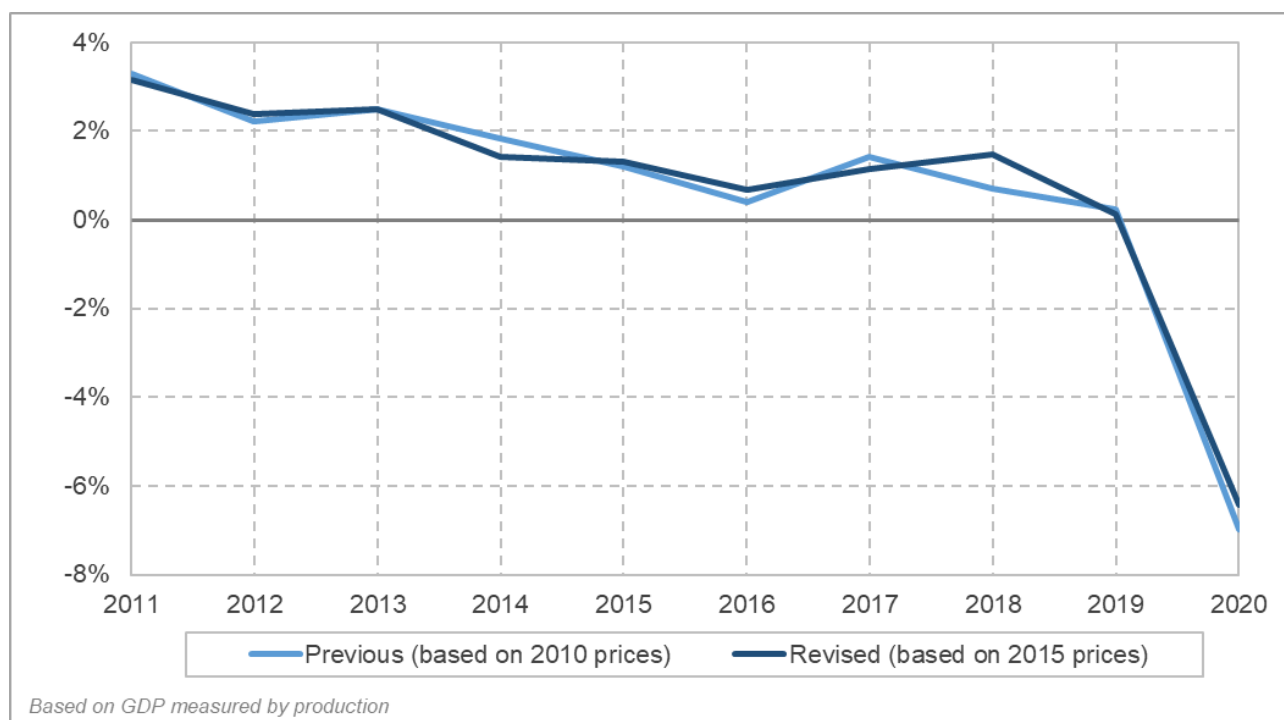
Figure A – Real GDP growth rate.....	1
Figure B – Level of GDP at current prices.....	2
Figure C – Components of value added in 2015 base year .....	2
Figure D – Components of expenditure on GDP in 2015 base year .....	4
Figure E – Gross fixed capital formation as a percentage of GDP (expenditure).....	5
Figure F – Observed and non-observed economy as a percentage of value added .....	6
Figure G – Disaggregation of the non-observed economy in 2015 base year.....	6
Figure H – Real GDP growth rate, quarter-on-quarter, seasonally adjusted (not annualised).....	7
Figure 1 – New data sources used for the current benchmarking .....	12
Figure 2 – New methodology used for the current benchmarking .....	12
Figure 3 – A visual representation of calendarisation.....	24
Figure 4 – Components of HFCE as a percentage of total HFCE in 2018 .....	69
Figure 5 – Components of GFCE as a percentage of total GFCE in 2018.....	94
Figure 6 – GFCF by institutional sector as a percentage of total GFCF in 2018 .....	103
Figure 7 – GFCF by asset type as a percentage of total GFCF in 2018 .....	103
Figure 8 – Composition of international trade, percentage of total exports / imports in 2018.....	130
Figure 9 – Residual as a percentage of GDP measured by production .....	136

## Rebasing and benchmarking: revised time series

The new base year for the national accounts is 2015, i.e. real gross domestic product (GDP) is now measured at constant 2015 prices instead of 2010 prices. Together with new methods, data sources and benchmarking, all of which are explained in detail in this publication, this has resulted in revisions to the entire set of GDP-related time series.

Figure A and Table A show the previous and revised growth rates in real GDP between 2011 and 2020. The growth rates are similar in magnitude and in pattern, with the largest difference occurring in 2018. The growth rate was positive in all years during 2011–2019, averaging 1,6% per annum on the revised series and 1,5% on the previous series. Both the revised and previous series show the severe impact of COVID-19 in 2020 (-6,4% revised and -7,0% previous).

**Figure A – Real GDP growth rate**



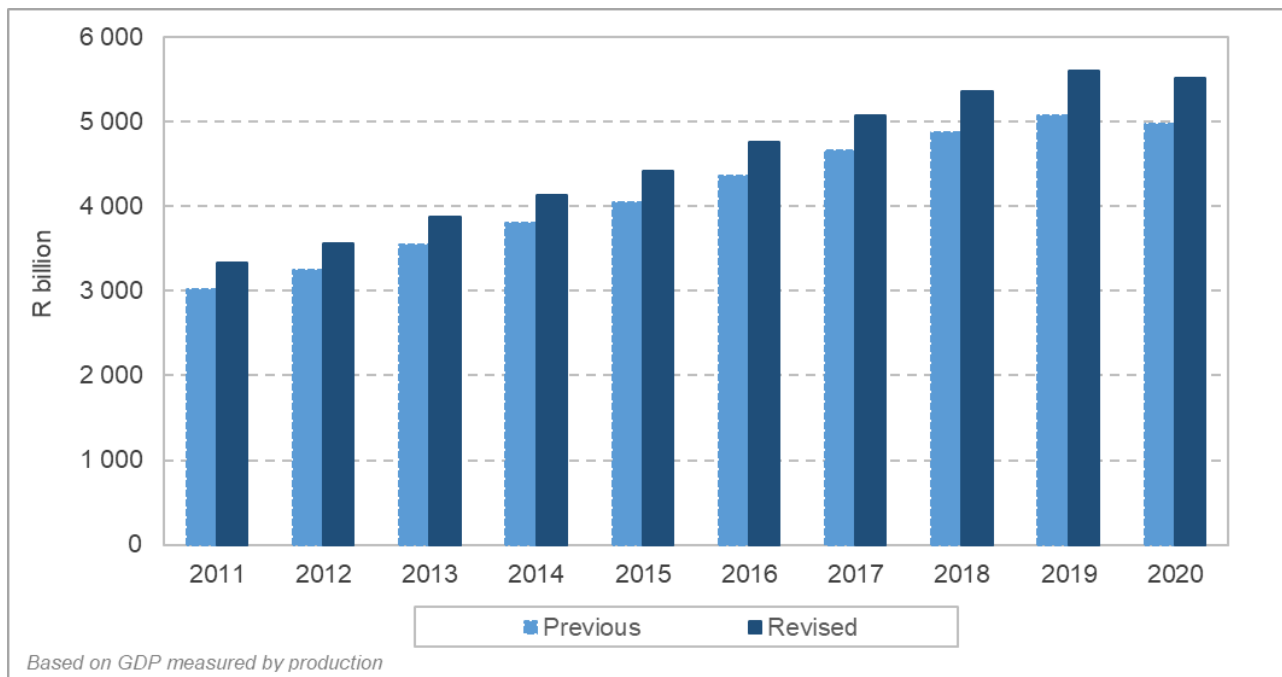
**Table A – Comparison of previous and revised GDP estimates**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Real GDP growth rate (% per year)</b>										
Previous (2010 prices)	3,3	2,2	2,5	1,8	1,2	0,4	1,4	0,8	0,2	-7,0
Revised (2015 prices)	3,2	2,4	2,5	1,4	1,3	0,7	1,2	1,5	0,1	-6,4
Difference (% points)	-0,1	0,2	0,0	-0,4	0,1	0,3	-0,2	0,7	-0,1	0,6
<b>Level of GDP at current prices (R billion)</b>										
Previous	3 024	3 254	3 540	3 805	4 050	4 359	4 654	4 874	5 078	4 973
Revised	3 327	3 566	3 869	4 134	4 421	4 760	5 078	5 358	5 605	5 521
Difference	303	313	329	329	371	400	425	484	527	548
Difference (%)	10,0	9,6	9,3	8,6	9,2	9,2	9,1	9,9	10,4	11,0



Historically, benchmarking GDP has resulted in estimates that show an increase in the size of the economy. Over the last two decades, and using the new base year in each case as a measure, these increases have ranged between 1,8% (2005 new base year, published in 2009) and 13,5% (1995 new base year, published in 1999). In this benchmark cycle the size of the economy is 9,2% larger in the new base year of 2015, as measured by GDP at current prices (based on the production approach, which is the official measure of GDP). In the 10 years between 2011 and 2020, the percentage difference between the previous and revised levels averaged 9,6%, and ranged between 8,6% in 2014 and 11,0% in 2020, all based on current prices (Table A and Figure B).

**Figure B – Level of GDP at current prices**



**Figure C – Components of value added in 2015 base year**

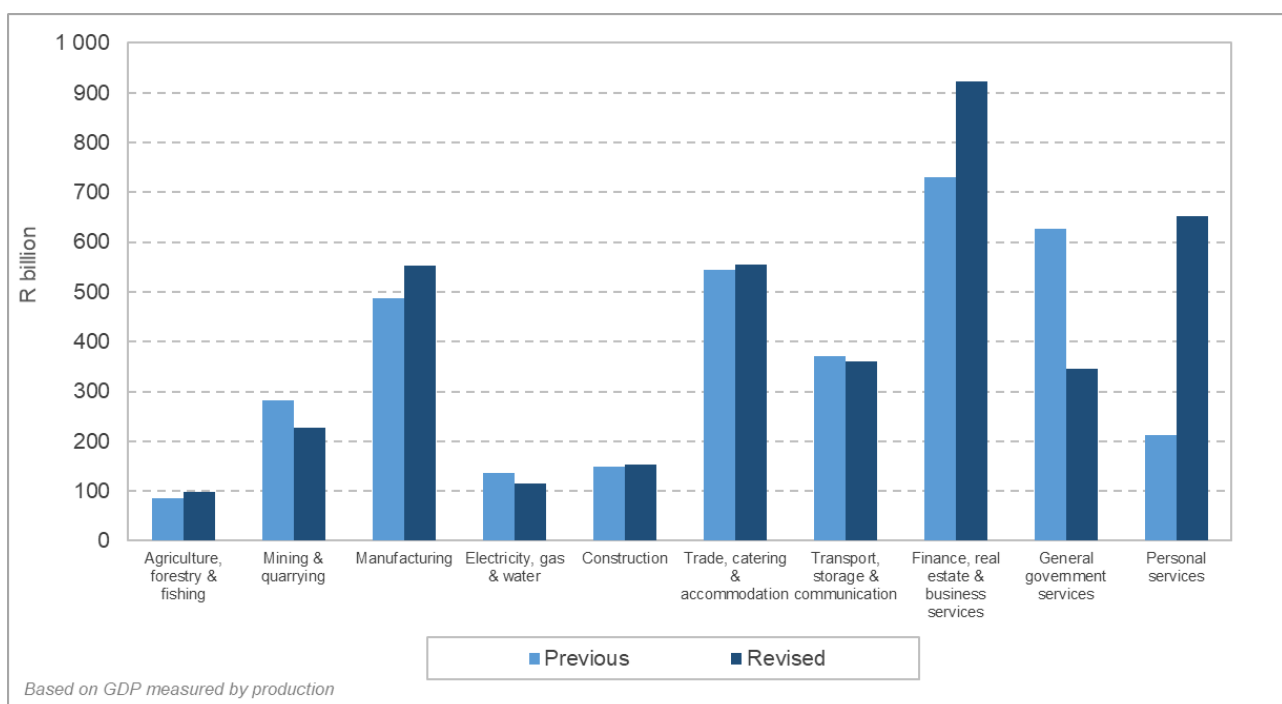


Figure C provides a comparison between the previous and revised levels of value added in the new 2015 base year. The largest changes occurred in finance, real estate and business services (26% higher); general government services (45% lower); and personal services (206% higher).

There are three main reasons for the increase in finance, real estate and business services. First, there was an improvement in the methodology for compiling owner-occupied housing estimates in real estate activities (SIC 84 – this is the industry classification for real estate activities in the Standard Industrial Classification of All Economic Activities). Separate estimates were compiled for owner-occupied dwellings and dwellings rented out by unincorporated enterprises, using information from household final consumption expenditure. Second, there were improvements in the coverage of services in computer and related activities (SIC 86). Third, there was an increase in ‘other’ business activities (SIC 88) because of expanded coverage of the economy – the inclusion of unclassified business that were active on the business register but previously not included in the Annual Financial Statistics survey, which covers the formal business sector and is conducted by Statistics South Africa (Stats SA); it is a key data source for the national accounts.

The steep fall in general government (SIC 91) and sharp rise in personal services are closely linked. Education (SIC 92) and health (SIC 931) activities that were previously classified under government have been reclassified under personal services, as a result of an adjustment in methodology. The reclassification during this benchmark cycle was implemented to conform as closely as possible to the establishment basis (classification) recommended in the System of National Accounts (2008), and was made possible through information sourced from National Treasury’s Vulindlela database and Statistics South Africa’s Financial Statistics of Consolidated General Government publication. Provincial government output, intermediate consumption, and compensation of employees were reduced by the amount reclassified to education and health. Not only does the reclassification allow for a better understanding of the structure of the economy, but it also enhances quality as price indices (for deflation) can be linked at a more accurate level.

There are several additional factors that account for the increase in personal services. Education (SIC 92) now includes new estimates for private education (based on household final consumption expenditure). Sewage and refuse disposable and sanitation (SIC 94) now includes local trading entities. Recreational, cultural and sporting activities (SIC 96) now includes municipal sport, recreation and environmental protection activities, all derived from Stats SA’s Quarterly Financial Statistics of Municipalities. There was an improvement in methodology for estimates of the informal sector and illegal activities.

Further information on the changes in value added is provided in Annexure A.

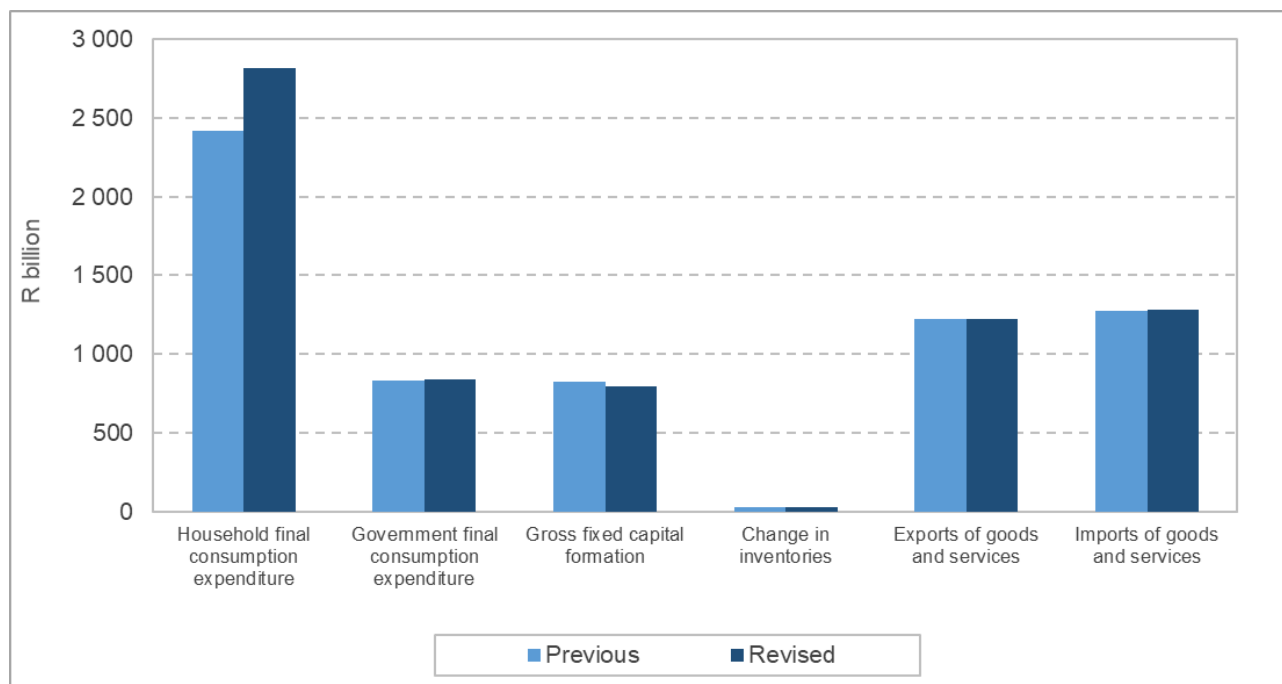
On the expenditure side of the economy, the main difference between the previous and revised levels in 2015 is in household final consumption expenditure (Figure D). The revised value for household consumption is 16% higher. The three categories of household expenditure contributing the most to this increase are recreation and culture; restaurants and hotels; and miscellaneous goods and services. There was a decrease in one category, namely food and non-alcoholic beverages.

Previous estimates for household recreation and culture expenditure were very low and have been revised upwards substantially (84% higher in the 2015 base year), based on survey data from Stats SA’s Living Conditions Survey (2014/15) and Annual Financial Statistics. A new gambling component, not previously included, was added for net revenue from the National Lottery; this is consistent with changes that were made in deriving the last set of consumer price index weights. Incorporating data for recreational goods from the 2015 retail trade structural industry survey also contributed to the upward revision.

Household spending on restaurants and hotels was revised upwards by 125% (2015). Stats SA’s structural industry surveys on food and beverages (i.e. catering) and tourist accommodation were used to estimate sales

by formal businesses. An adjustment to include value-added tax was also made (this had not been done for the previous estimates), and a significant addition was made for sales of alcohol by shebeens and taverns.

**Figure D – Components of expenditure on GDP in 2015 base year**



In the miscellaneous goods and services category (which was raised by 28% in the new base year), there were significant upward revisions in life insurance, FISIM (financial intermediation services indirectly measured – see section 5.1.4.2.3), financial services, and insurance service charges. Estimates for informal hairdressing and social protection were also increased. These increases were partially offset by a larger deduction for expenditure in South Africa by non-residents (expenditure by *business travellers* was also deducted; previously only foreign *tourist* expenditure in SA was deducted).

The estimate for household spending on food and beverages was reduced by 20% (2015). The revised values include sales by formal businesses derived from the structural industry surveys of retail, wholesale and motor trade, and are based on a more direct estimation method than in the past, including a thorough review of the source data. Estimates were also included for spaza shops, subsistence agriculture and backyard food production.

Further information on changes in household final consumption expenditure (and other components of expenditure) is provided in Annexure B.

Government final consumption expenditure increased by 1,3% between its 2015 previous and revised levels. The most important contributing factors were data sources (e.g. the introduction of new entities and reclassifications of large entities); the inclusion of local housing in local government; and data from the South African Reserve Bank (SARB), namely FISIM, SARB output, and consumption of fixed capital.

There is a marked contrast between the large drop in general government value added in Figure C and the small rise in government consumption in Figure D. But there is no contradiction between these movements. The estimates of production by the three spheres of general government are often confused with final government consumption expenditure. Although both refer to general government, the estimates reflect different economic activities and will not be equal and will not necessarily change in the same way. In the supply and use tables, *when viewed as an industry on the supply side of the economy (Figure C)*, the

government (I110, I111 and I112) produces two products, namely research and development (P96) and public administration (P102). Both these products are provided by other industries as well. As part of the production process, a variety of products are consumed as intermediate consumption expenditure. In addition, there are expenditures associated with employees' compensation, taxes paid, and the realisation of gross operating surplus. *When viewed as a component of the demand side of the economy (Figure D)*, government consumption reflects the expenditure of public administration (P102), education (P103), and health (P104). Sources and methods for government-related estimates are discussed in section 3.9.1 (production, supply side) and section 5.2 (consumption, demand side) (and also parts of section 5.3, which covers investment).

Figure E shows a decrease in gross fixed capital formation (i.e. investment spending) in the new 2015 base year compared with previous estimates. The downward revision (-3,2%) is mainly in construction works, machinery and equipment, and non-residential buildings. Important data sources for the new estimates include Stats SA's Capital Expenditure by the Public Sector and Annual Financial Statistics. Figure E shows the revised investment / GDP ratio, which is approximately two percentage points lower on average over the period 2011–2020.

**Figure E – Gross fixed capital formation as a percentage of GDP (expenditure)**

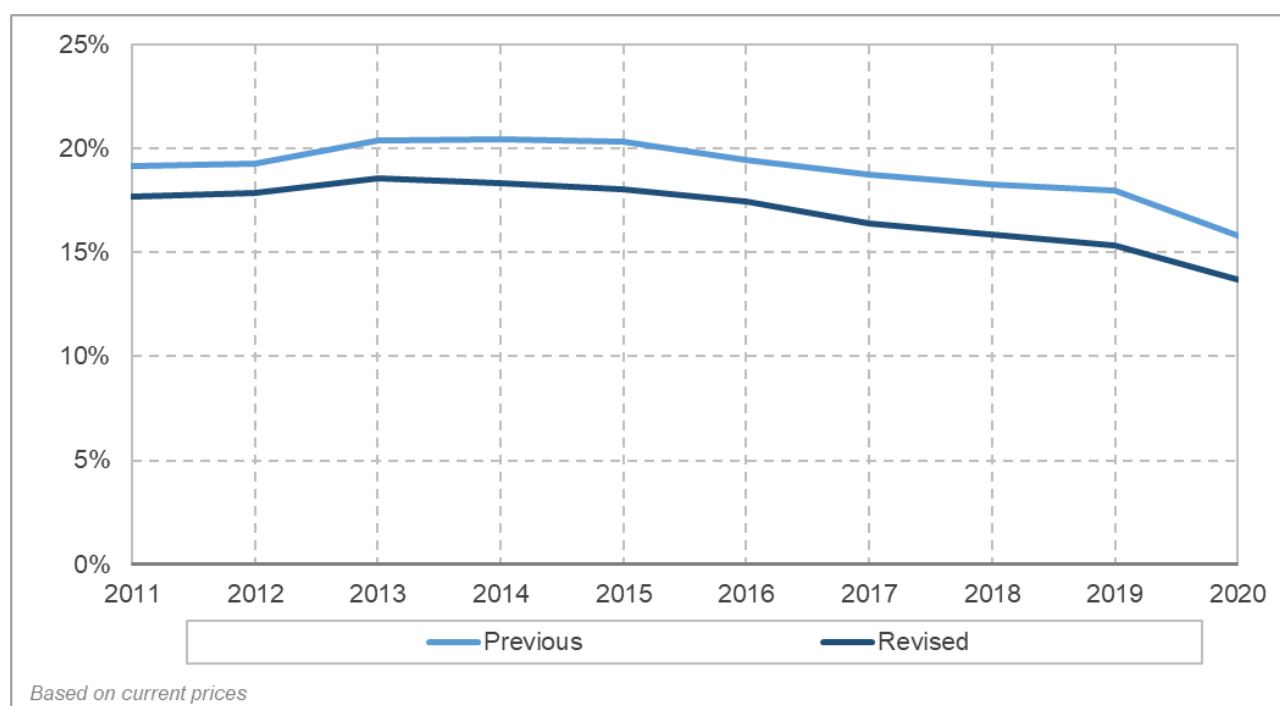


Figure F shows the composition of the South African economy (based on the GDP production approach) split between the observed and non-observed economy for 2013 to 2018. Many countries compile estimates of production that cover the non-observed as well as the ordinary or 'observed' economy. The term 'non-observed' is used to describe activities that, for one reason or another, are not captured in regular statistical enquiries. The non-observed economy overlaps with, but is not the same as, the informal sector. One reason for being non-observed may be that the activity is informal and thus escapes the attention of surveys geared to formal activities; another reason may be that the producer is anxious to conceal a legal activity; or yet another may be that the activity is illegal. There may be no clear borderline between the non-observed economy and illegal production, and it is not necessary for the purposes of SNA 2008 to try to fix the precise borderline between non-observed and illegal production, because both are included within the production boundary. Between 2013 and 2018, on average the non-observed economy accounted for 8% of total value added.

**Figure F – Observed and non-observed economy as a percentage of value added**

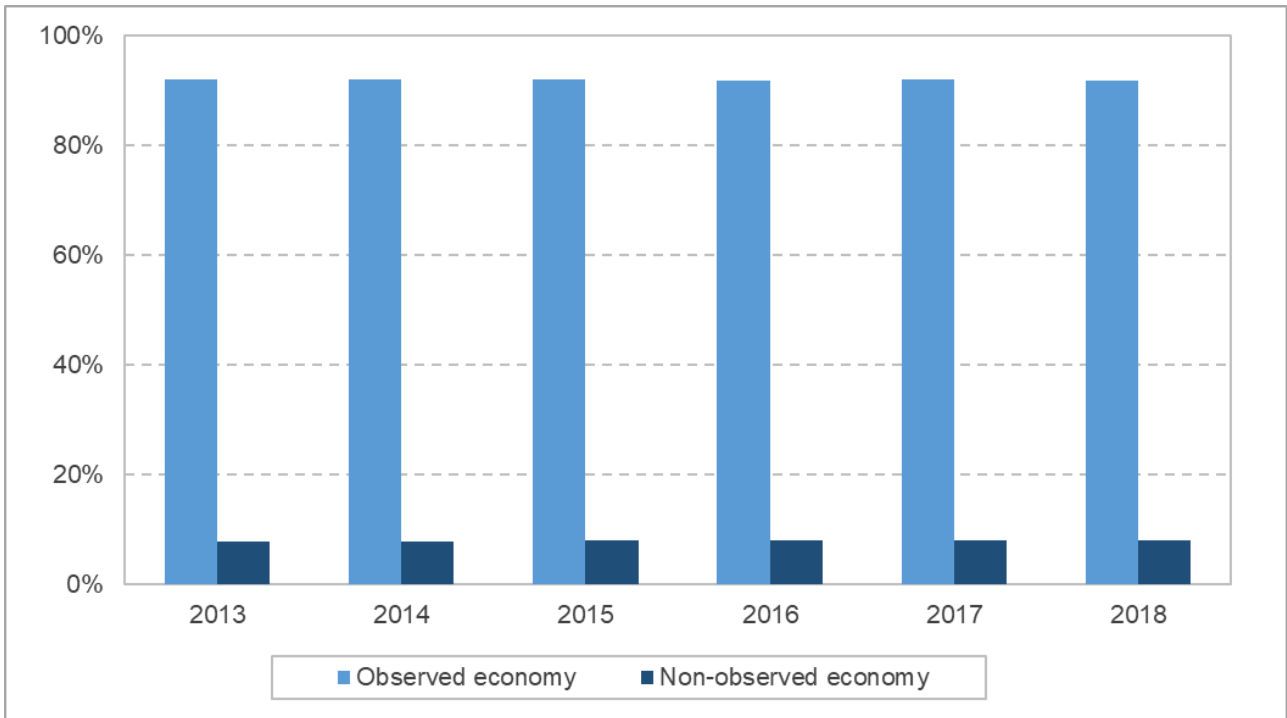
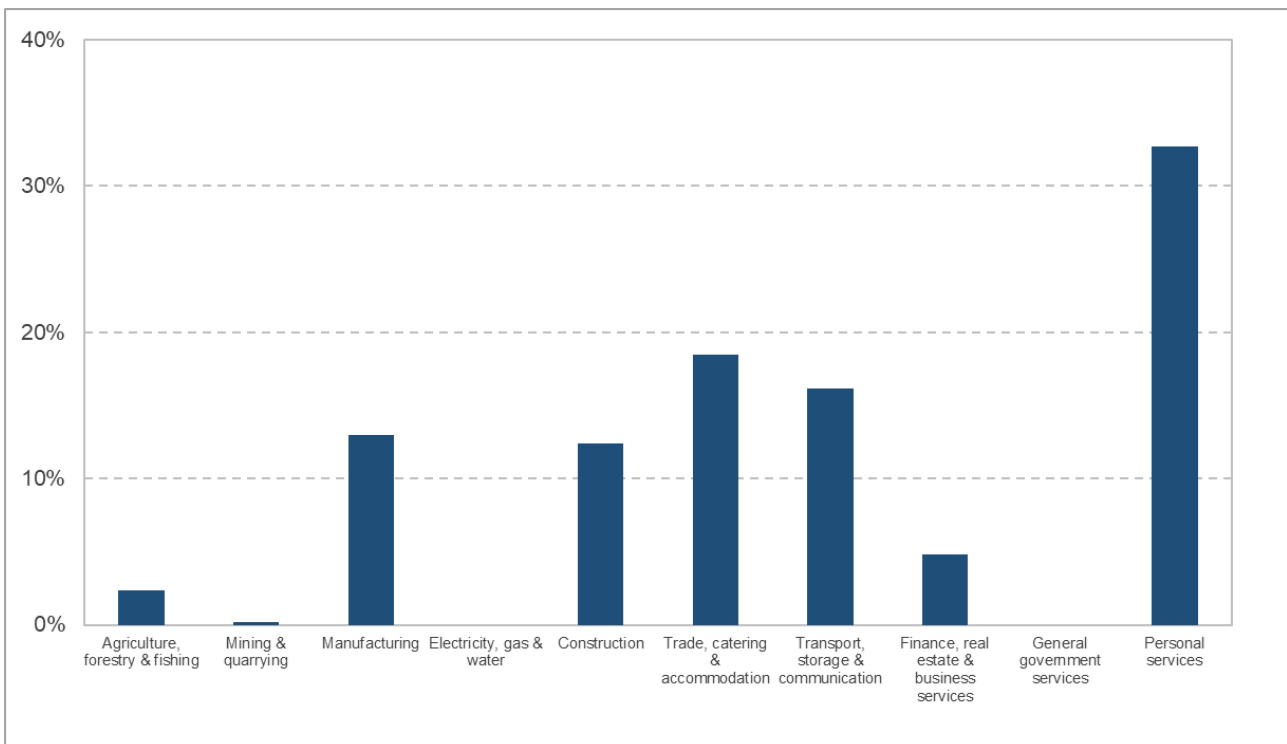


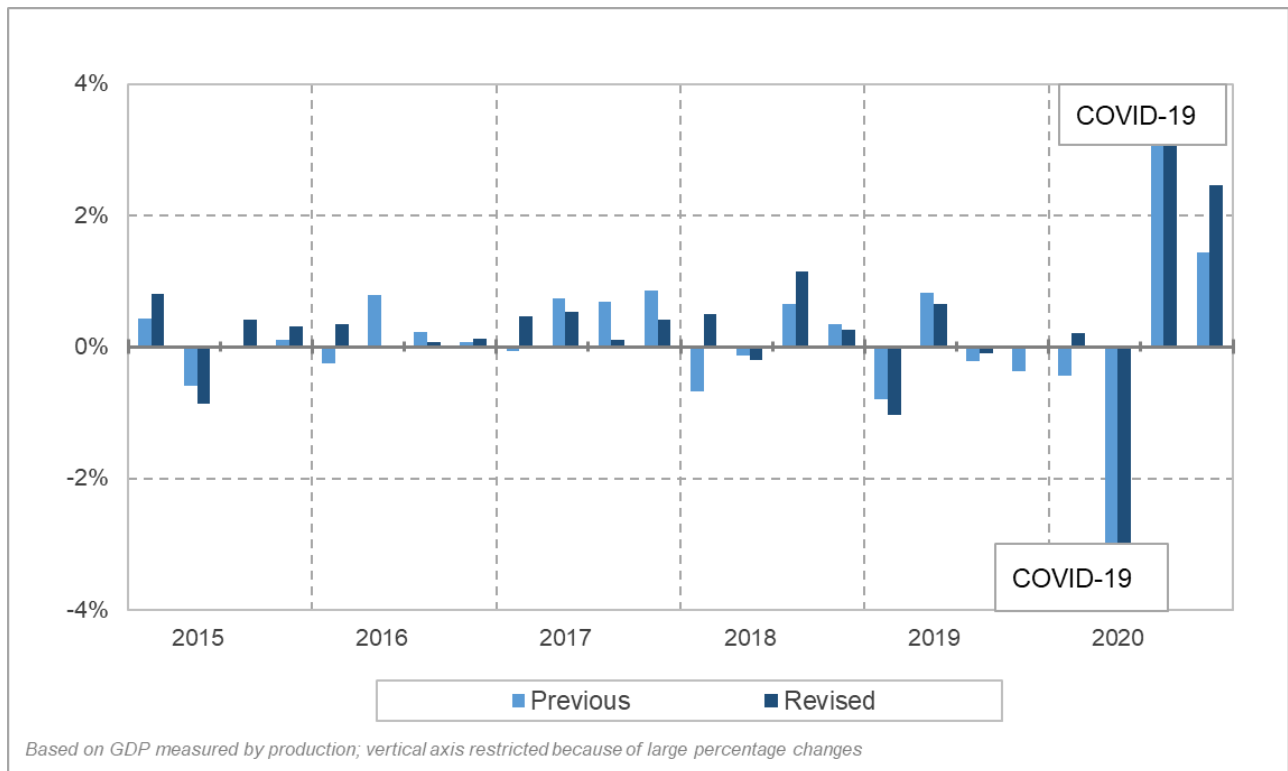
Figure G shows the distribution of the non-observed economy in the 2015 base year. The highest level of activity took place in the personal services industry (33%), followed by trade, catering and accommodation (18%), transport, storage and communication (16%), and manufacturing (13%).

**Figure G – Disaggregation of the non-observed economy in 2015 base year**



The newly benchmarked and rebased time series for GDP and the supply and use tables are available in Excel files on Stats SA’s website. The revised quarterly time series are available up to the fourth quarter of 2020, and a comparison of previous and revised quarterly growth rates (both *not* annualised) is shown in Figure H. Revised quarterly GDP statistics for the first quarter of 2021 will be published on 7 September 2021 with preliminary GDP results for the second quarter of 2021. As announced previously, the headline GDP growth rate will no longer be annualised. A note on annualisation is available in the previous quarterly GDP statistical release: <http://www.statssa.gov.za/publications/P0441/P04411stQuarter2021.pdf>

**Figure H – Real GDP growth rate, quarter-on-quarter, seasonally adjusted (not annualised)**



## 1. Introduction to sources and methods

### 1.1 Source data for the national accounts

National accounting estimates are seldom the result of direct measurement. Some data are derived from statistical inquiries, as is the case with sample surveys and censuses of business activity. Other basic information is derived from the administration of taxes and duties by the South African Revenue Service (SARS). For example, information derived from excise taxes is used to estimate the annual expenditure of households on alcoholic beverages and tobacco.

Statistics South Africa (Stats SA), as South Africa's national statistical office, is the official producer of the country's social, economic and environmental statistics, as prescribed by the Statistics Act, No.6 of 1999. In the compilation of national accounts the use of official source data is preferred, even when there are competing data available from other sources. There are several reasons for this preference: the methods involved are subject to public scrutiny, they are conceptually comparable to similar data available in other countries, and there are generally accepted processes to certify them as fit for purpose. However, when official data are available late, or are not available with the desired frequency, or do not have the right coverage, or when concepts are at odds with what is specifically demanded for compatibility with the national accounting framework, all other available alternatives are considered. Various cases are discussed below.

*Source data available late (i.e. not in time):* The results of Stats SA's Quarterly Financial Statistics (QFS) survey are used in the estimation of various components such as gross fixed capital formation and changes in inventories, but they are available too late for inclusion in the quarterly estimates to which they refer.<sup>1</sup> Accordingly, the first GDP estimates reflect preliminary QFS data, and the estimates are revised in the following quarter when the final results become available.

*Compatible concepts but insufficient frequency of availability:* Structural industry surveys of retail and wholesale trade are periodic surveys that provide much greater detail than the corresponding monthly surveys (which report sales only). The structural surveys are based on samples of private and public enterprises operating in retail and wholesale trade industries. The samples are drawn from Stats SA's business register. The business register is based mainly on the value-added tax (VAT) database of SARS. The structural surveys are conducted regularly in a cycle of three to five years.

*Incompatible concepts:* Value-added tax (VAT) is excluded in the source data for motor trade. As household final consumption expenditure is measured VAT-inclusive, VAT is added to the source data for motor vehicles to estimate household expenditure on motor vehicles.

*Unavailability of source data:* Certain data sources to measure components of household final consumption expenditure are available annually only. This is the case for services provided by, for example, hairdressing salons and personal grooming establishments.<sup>2</sup> But because of their limited weight they have a minimal impact on totals, and can be estimated at quarterly intervals by means of a straight-line trend.

This document provides detailed information on the source data used for compiling South Africa's gross domestic product (GDP) in terms of production, expenditure and income.

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<sup>1</sup> The QFS is a quarterly sample survey which collects a range of financial statistics in respect of enterprises in the formal business sector of the South African economy, excluding agriculture, hunting, forestry, fishing, financial intermediation, insurance, government, and educational institutions.

<sup>2</sup> Although both the QFS and SARS (VAT data) have data on sales of hairdressing services by establishments, these data are volatile and appear to have low coverage. Until such time as improvements are made to the quality of these data, quarterly estimates are derived by an estimated trend.

## 1.2 The System of National Accounts and supply and use tables

All countries produce their macroeconomic statistics using a range of international guidelines, classifications and related manuals. At the heart of all this are the System of National Accounts (SNA) and the Quarterly National Accounts Manual.

SNA 1993 was implemented in South Africa in conjunction with rebasing and benchmarking of GDP estimates. As an extension of the implementation of SNA 1993, Stats SA compiled the first official supply and use tables (SUTs) for South Africa for the 1993 reference year according to the recommendations of SNA 1993, and published them in December 1999. The information contained in the SUTs reconciles with other components of the national accounts, such as GDP and expenditure on GDP.<sup>3</sup> SNA 2008 is an updated version of SNA 1993, and brings the national accounting framework into line with the needs of data users. SNA 2008 is also consistent with related manuals such as the balance of payments, government finance statistics, and monetary and financial statistics.

This sources and methods document serves as a general information guideline for stakeholders on how South Africa's SUTs were compiled and benchmarked for the reference period 2013 to 2018. The year 2015 is the base year for the current benchmarking of the SUTs. Stats SA has already published the benchmarked SUTs for the 1995, 2000, 2005 and 2010 reference years. The SUTs are intended to include all transactions taking place in goods and services in an economy during a specific year in a matrix format. The SUTs, often regarded as the cornerstone of SNA 2008, have both statistical and analytical functions.

As a statistical tool the SUTs provide a co-ordinating framework for checking the consistency of economic statistics for flows of goods and services obtained from quite different kinds of statistical sources, e.g. industrial surveys, household expenditure surveys, investment surveys, foreign trade statistics. Furthermore, the SUTs serve as a basis for detecting weaknesses in economic data and for compiling the national accounts.

As an analytical tool, the SUTs are conveniently integrated into macroeconomic models in order to analyse the links and interactions between final demand and industrial output. This type of analysis, which is also known as impact analysis, enables users at a broad range of institutions to use the tables for sophisticated research – including market and productivity analysis.

The SUTs are an integral part of SNA 2008. They form the central framework for the compilation of a single and coherent estimate of GDP; they integrate all the components of the production, income and expenditure approaches to GDP; and they provide key links to other parts of the SNA 2008 framework.

In their simplest form, the SUTs describe how products (goods and services) are brought into an economy in the supply table (either as a result of domestic production or imports from other countries), and how those same products are used in the use table (in the form of intermediate consumption; final consumption by households, non-profit institutions serving households, and general government; gross capital formation; and exports).<sup>4</sup>

Detailed SUTs, in the form of matrices, record how supplies of different kinds of goods and services originate from domestic industries and imports, and how those supplies are allocated among various intermediate or final uses (including exports). These SUTs involve the compilation of a set of integrated production and generation of income accounts for industries by drawing on detailed data from industry surveys. The SUTs provide an accounting framework for systematically exploiting the product flow method of compiling national accounts, whereby the total supplies and uses of individual types of goods and services have to be balanced

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<sup>3</sup> The consequences of the implementation of the supply and use tables in South Africa, 2000.

<sup>4</sup> Handbook on Supply and Use Tables and Input-Output Tables with Extensions and Applications, 2018.



with each other. The SUTs also provide the basic information for the derivation of detailed input-output tables that may be used for purposes of economic analysis and projections (SNA 2008).

SUTs are therefore a powerful tool with which to compare and contrast data from various sources and improve the coherence of the economic information system. They permit the analysis of industries, markets and productivity at various levels of disaggregation. When SUTs are built from establishment data (as is usually the case), they provide a link to detailed economic statistics outside the scope of SNA 2008 (SNA 2008).

A use table at purchasers' prices consists of a set of product balances covering all products available in an economy arranged in the form of a rectangular matrix with the products, valued at purchasers' prices, appearing in the rows, and the columns indicating the disposition of the products to various types of use. A supply table at purchasers' prices consists of a rectangular matrix: rows correspond to the same groups of products as the matching use tables; columns correspond to the supply from domestic production valued at basic prices; and there are columns for imports and the valuation adjustments necessary to have the total supply of each product or group of products valued at purchasers' prices (SNA 2008).

The SUT framework not only constrains the current-value estimates of supply and use to balance exactly, but also provides a way to ensure that the corresponding volume estimates – expressed in the prices of another year – are in balance, and that the series of prices implied by the existence of one table in current prices and one in volume terms are strictly consistent. In general, the best way to ensure mutual consistency is to prepare the SUTs in current values and in volume terms at the same time (SNA 2008). Stats SA's SUTs are fully balanced in current prices only.

### 1.3 Benchmarking

The national accounts benchmarking process, undertaken by Stats SA in collaboration with the South African Reserve Bank (SARB), provides an integrated, coherent set of economic statistics to inform users about the dynamics of the South African economy.

The revisions in the national accounts arising from the latest benchmarking were largely the result of:

- a change of the base year (from 2010 to 2015) for the estimates at constant prices;
- the availability of new sources of information including results of intermittent structural industry surveys (previously called large sample surveys);
- improvements in methodology; and
- revisions and improvements in basic economic datasets as part of Stats SA's economic statistics improvement strategy.

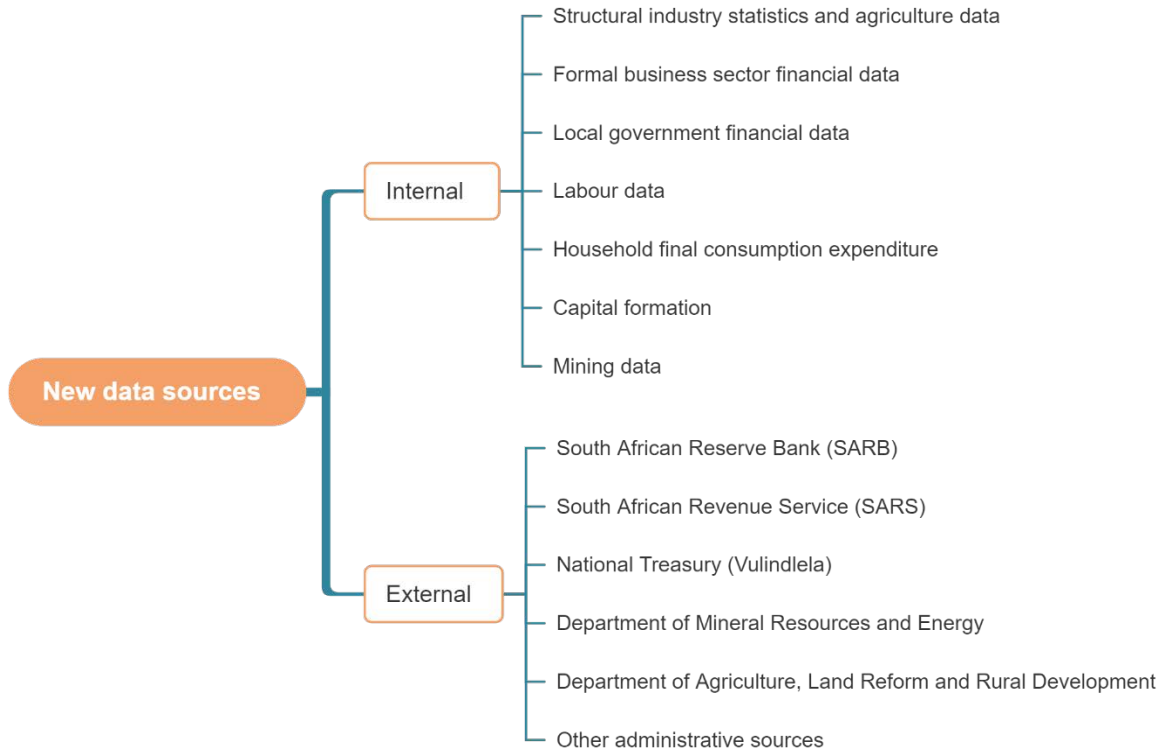
Table 1 provides a high-level comparison between the 1995, 2000, 2005, 2010 and 2015 SUTs of benchmark years regarding methodology, industry and product-level of detail, and improvements made.

**Table 1 – Comparison of the supply and use tables in benchmark years**

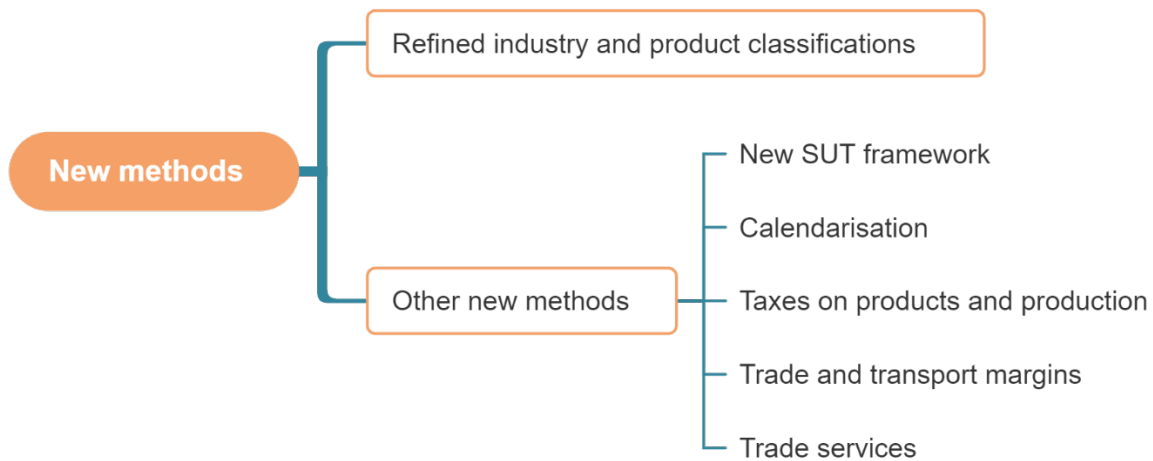
Benchmark year	1995	2000	2005	2010	2015
<b>Methodology</b>	SNA 1993	SNA 1993	SNA 1993	SNA 2008	SNA 2008
<b>Classification:</b>					
<b>Industries</b>	SIC 3 <sup>rd</sup> edition	SIC 3 <sup>rd</sup> edition	SIC 5 <sup>th</sup> edition	SIC 5 <sup>th</sup> edition	SIC 5 <sup>th</sup> edition
<b>Products</b>	SIC 3 <sup>rd</sup> edition	SIC 3 <sup>rd</sup> edition	CPC V2.00	CPC V2.00	CPC V2.01
<b>Industries and products</b>	Compilation level of 94 industries and 94 products	Compilation level of 94 industries and 153 products	Compilation level of 292 industries and 105 products	Compilation level of 292 industries and 105 products	Compilation level of 213 industries and 118 products
<b>Improvements</b>	<p>First SUT was published for reference year 1993</p> <p>New sectors included, i.e. informal and telecommunications</p>	<p>New taxation-based business register</p> <p>Introduced SUTs to calculate annual estimates</p>	<p>Introduced the non-observed economy</p> <p>Increased the compilation level of SUTs</p>	<p>Implemented SNA 2008</p> <p>Treatment of employment stock options as compensation of employees</p> <p>Capitalisation of research and development</p> <p>Capitalisation of expenditure on weapon systems</p> <p>Refined method for calculating financial intermediation services indirectly measured</p>	<p>New industry and products classification</p> <p>New SUT framework</p> <p>Refined method for calendarisation</p> <p>Refined method for calculating taxes on products and production</p> <p>Refined method for calculating trade and transport margins</p> <p>Refined method for calculating trade services</p>
<b>Percentage change in level of GDP at current prices</b>	+13,5%	+3,8%	+1,8%	+2,8%	+9,2%
<p>CPC: Central Product Classification  SIC: Standard Industrial Classification of All Economic Activities  SNA: System of National Accounts  SUTs: Supply and use tables</p>					

Figure 1 shows the high-level new data sources used for the current benchmarking, and Figure 2 shows the high-level new methodology used for the current benchmarking.

**Figure 1 – New data sources used for the current benchmarking <sup>5</sup>**



**Figure 2 – New methodology used for the current benchmarking <sup>6</sup>**



<sup>5</sup> Data sources used in the current benchmark are listed in more detail in the data tables from section 3 to section 5 of this document.

<sup>6</sup> Methodology used in the current benchmark is described in more detail from section 2 to section 5 of this document.

Benchmarking is the process in which datasets with different characteristics are combined in a concerted attempt to benefit from the strengths of each series. The development of the national accounts is data-intensive. Generally speaking, the more detailed and frequent the data are, the higher is the quality of GDP estimates. However, in practice it is not feasible to collect high-frequency data that are very detailed. This is due to financial constraints (as structural industry surveys are expensive) as well as practical considerations (collecting timely data implies shorter questionnaires, and detailed surveys place a heavier burden on respondents).

Infrequent (periodic) datasets provide the basis for the development of benchmarked estimates of GDP, e.g. income and expenditure surveys of households, structural industry surveys of industries, and population censuses. In order to develop consistent annual and quarterly time-series of GDP estimates, the data need to be combined with more frequent (although less detailed) annual, quarterly and monthly datasets.

The various datasets are often designed to serve different purposes and report on different aspects of the economy. They may produce results that initially seem to be inconsistent. The result of the benchmarking process is an integrated, coherent set of statistics that will inform users about the dynamics of the economy.

Benchmarking methods in the national accounts are used to derive quarterly series that are consistent with their corresponding annual benchmarks; they preserve the short-term movements of quarterly economic indicators; and they deal with the problem of combining series of high-frequency data (e.g. quarterly) with series of low-frequency data (e.g. annual). The high-frequency series are benchmarked to the low-frequency series (International Monetary Fund: Quarterly National Accounts Manual, 2017 – IMF QNAM 2017).

Benchmarking can also be useful to identify and correct distortions in the national accounts compilation, and reduce revisions in the preliminary estimates of quarterly national accounts (QNA). Poor-quality results of benchmarking can highlight inconsistencies between quarterly and annual sources as soon as they occur. The use of benchmarking methods could help to identify areas of research to improve consistency between annual and quarterly accounts data. In seasonal adjustment, benchmarking can detect when seasonally adjusted results drift away from unadjusted data (IMF QNAM 2017).

Benchmarking of annual data also affects corresponding quarterly time series. According to IMF QNAM 2017, benchmarking serves two purposes (also refer to section 6.1):

- quarterly distribution (or interpolation) of annual data to construct time series of benchmarked QNA estimates ('back series'); and
- quarterly extrapolation to derive QNA estimates for quarters for which annual national accounts (ANA) benchmarks are not yet available ('forward series').

In IMF QNAM 2017, the main objectives of benchmarking are listed as the following:

- to estimate quarterly data that are temporally consistent with the ANA data – that is, to ensure that the sum (or the average) of the quarterly data is equal to the annual benchmark;
- to preserve as far as possible the quarterly movements in the indicator under the restrictions provided by the ANA data; and
- to ensure, for forward series, that the sum of the four quarters of the current year is as close as possible to the unknown future ANA data.

#### **1.4 Rebasing**

The base year for the national accounts estimates at constant prices has been changed from 2010 to 2015 in the current benchmarking. This is in accordance with international best practice and the recommendations of the United Nations (UN) to update the base year regularly. Historically in South Africa this has been done

every five years. The current rebasing and benchmarking project was delayed as a result of the COVID-19 pandemic.

In order to analyse the behaviour of GDP over time independently of the influence of price changes, GDP is calculated for each industry at constant prices. In general terms, constant-price measures reflect the volume of goods and services produced independently of changes in prices. The GDP series at constant prices are calculated by selecting a reference period in the past, called the base year, and valuing the production of goods and services in all years at the prices of the base year.

The selection of the base year may have significant consequences, as different base years may yield different growth rates in total GDP and other aggregates. Consider, for example, an industry whose output price has risen, relative to that of other industries, between two years. The contribution of this industry to total output will be higher when valued at prices of the later period instead of the earlier period. Movements in the industry would also have more impact on movements in total output: if the industry's output were growing faster than average, valuing output at the (relatively higher) prices of the later period would result in a total GDP measure that grows faster than if output had been valued at the (relatively lower) prices of the earlier period.

Ideally the base year is a typical year, followed by a number of years in which the relative prices of commodities remain stable. In a dynamic economy, however, relative prices continually shift due to factors such as uneven technological developments in different industries, variations in productivity, shifts in consumer demand, and cycles in economic growth. The more remote a base year becomes in time, the more today's relative prices will have changed compared with those of the base year, and the less relevant will prices of the base year be for the current period. The usefulness of constant-price estimates therefore diminishes as we move away from the base year. The rate of obsolescence depends on the degree of relative price changes. The frequency of rebasing is a compromise between using a more representative reference period and maintaining a stable definition of output for a reasonable length of time.

Changing to a new base year will cause a discontinuity in GDP by industry if the change is not calculated for preceding periods. There are two alternative approaches for providing continuous constant monetary (rand) estimates. In the first approach, the methodology used for the current period (i.e. from the new base year forward) is simply applied to preceding periods. In other words, the lowest-level component is revalued at the new base-year prices, and these are summed to obtain higher-level aggregates. In the second method, data prior to the new base year are multiplied by a constant to link them to the new base year. The constant is the ratio of GDP in the new base year valued at new and old base-year prices. Each series, regardless of the level of aggregation, is linked in this way.

Each method has its own merits. The first preserves additivity. The components will sum to the aggregates, and the new estimates will yield growth rates that differ from those in the earlier series. However, using current prices to weight the volume of production in the distant past, when technology and social values were different, may not be meaningful. The second method overcomes this problem to a certain degree. It does not change real growth rates in past periods because each series, whether a component (of GDP) or an aggregate, is scaled by a constant. Since the constants may all be different, however, the components will not necessarily add up to the aggregates. Stats SA has used the second method for back-casting.

## **1.5 Gross domestic product and related calculations**

There are three broad approaches to measuring GDP, namely the production, income and expenditure approaches. In practice there are small differences in the results, and in South Africa official GDP is measured by the production approach. Measured from the production side, GDP is the total value of goods and services produced in an economic territory after deducting the cost of goods and services used in the production process. This is commonly known as the value-added approach.

The goods and services account shows – for the total economy – how the total amount of product available (i.e. resources) is equal to the total amount used. Resources are shown on the left-hand side and uses are shown on the right-hand side of the goods and services account. Table 2 shows the goods and services account for 2015.

**Table 2 – Goods and services account, 2015**

<b>Resources</b>	<b>R million</b>	<b>Uses</b>	<b>R million</b>
<b>Output</b>	<b>8 766 617</b>	<b>Intermediate consumption</b>	<b>4 784 859</b>
<b>Taxes on products</b>	<b>449 367</b>	<b>Final consumption expenditure</b>	<b>3 654 501</b>
<b>Subsidies on products</b>	<b>-10 332</b>	Private consumption expenditure	2 815 210
<b>Imports of goods and services</b>	<b>1 282 606</b>	Government consumption expenditure	839 291
		<b>Gross capital formation</b>	<b>823 735</b>
		Gross fixed capital formation	796 138
		Changes in inventories	27 597
		<b>Exports of goods and services</b>	<b>1 225 162</b>
<b>Total resources</b>	<b>10 488 258</b>	<b>Total uses</b>	<b>10 488 258</b>

The production account emphasises the concept of GDP or value added as one of the main balancing items in the SNA. The SNA recommends the calculation of GDP for the entire economy and the calculation of value added for the various industries. GDP is essentially a production measure as it is obtained through the sum of the gross value added of all resident institutional units, in their capacities as producers, plus the values of any taxes, less subsidies, on production or imports not already included in the values of the outputs and values added by resident producers.

Value added measures the value created by production and may be calculated either before ('gross') or after ('net') deducting the consumption of fixed capital relating to the fixed assets used. Gross value added is defined as the value of output less the value of intermediate consumption. Gross value added (or net value added) is the balancing item in the production account for an institutional unit, sector, establishment or industry, while gross domestic product (or net domestic product) is the balancing item in the production accounts for the total economy.

Essentially, value added is measured as the difference between output and intermediate consumption. Output is the value of all goods and services produced during a period, irrespective of whether they are produced for sale or for own use. Intermediate consumption consists of the value of goods and services consumed as inputs (transformed or used up) in the production process.

Output consists only of those goods and services that are produced within an establishment and that become available for use outside that establishment and for own final use in that establishment. Output may be valued in various ways. SNA 2008 prescribes three ways in which output of goods and services may be measured, namely at basic prices, producers' prices, or purchasers' prices.

The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output *minus* any tax payable (e.g. excise duties, value-added tax) *plus* any subsidy receivable

on that unit as a consequence of its production or sale. Basic prices *exclude* any transport charges invoiced separately by the producer.

The producer's price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output *minus* any value-added tax (VAT), or similar deductible tax, invoiced to the purchaser. It *excludes* any transport charges invoiced separately by the producer.

The purchaser's price is the amount paid by the purchaser, *excluding* any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good *includes* any transport charges paid separately by the purchaser to take delivery at the required time and place.

The relationship between the above-mentioned concepts can be expressed as follows:

Output at basic prices

*plus* taxes on products (excluding VAT)

*less* subsidies on products

*equals* output at producers' prices

*plus* trade and transport margins

*plus* non-deductible VAT

*equals* output at purchasers' prices

Basic prices are the preferred method of valuing output of goods and services produced for the market, especially when a system of VAT is in operation.

With regard to the valuation of intermediate consumption, i.e. expenditure by enterprises on goods and services consumed as inputs in the production process, SNA 2008 recommends that it should be valued at purchasers' prices. Intermediate inputs purchased and/or transferred from other establishments belonging to the same enterprise should be valued at the same prices as used to value them as outputs of those establishments, plus any additional transport charges not included in the output values.

SNA 2008 recommends that gross value added by the various industries be valued at basic prices, both at current and constant prices. It is important to note that gross value added at basic prices excludes any taxes payable on products and includes any subsidies receivable on products. Because the basic price measures the amount retained by the producer, it is the price most relevant for the producer's decision-taking. Gross value added at basic prices is also the measure preferred and adopted by Stats SA.

In order to derive GDP at market prices, taxes less subsidies on products must be added to total gross value added at basic prices. It should be noted that GDP at market prices is a measure which is applicable to the total economy only.

It is important to note that value added does not cover all transactions linked to the production process, but only to the result of production, i.e. output and the utilisation of goods and services when producing this output, i.e. intermediate consumption. In other words, it includes output as a resource (see right-hand side of the production account) and intermediate consumption as a use (see left-hand side of production account). As the consumption of fixed capital is not shown separately, the resulting balancing item is gross domestic product. Table 3 shows the production account for 2015.

**Table 3 – Production account, 2015**

Uses	R million	Resources	R million
<b>Intermediate consumption</b>	<b>4 784 859</b>	<b>Output</b>	<b>8 766 617</b>
		<b>Taxes on products</b>	<b>449 367</b>
		<b>Subsidies on products</b>	<b>-10 332</b>
<i>Gross domestic product</i>	<i>4 420 793</i>		

The generation of income account records distributive transactions resulting from the production process. Distributive transactions consist of transactions by which the value added generated by production is distributed to labour, capital and government, and transactions involving the redistribution of income and wealth (taxes on income and other transfers).

Thus, the resources include GDP and the uses refer to compensation of employees as well as taxes less subsidies on production and imports. The balancing item is gross operating surplus / mixed income.<sup>7</sup> Mixed income refers to the balancing item in the generation of income account for the household sector. The reason for this is that the surplus generated by unincorporated household enterprises includes both remuneration for the labour of the owner as well as a return to entrepreneurship and capital employed. Table 4 shows the generation of income account for 2015.

**Table 4 – Generation of income account, 2015**

Uses	R million	Resources	R million
<b>Compensation of employees</b>	<b>2 168 500</b>	<b>Gross domestic product</b>	<b>4 420 793</b>
<b>Taxes on production and imports</b>	<b>540 527</b>		
Taxes on products	449 367		
Other taxes on production	91 160		
<b>Subsidies on production and imports</b>	<b>-21 705</b>		
Subsidies on products	-10 332		
Other subsidies on production	-11 373		
<i>Gross operating surplus / mixed income</i>	<i>1 733 471</i>		

Value added and operating surplus are derived gross of consumption of fixed capital. Consumption of fixed capital is a cost of production reflecting the wear and tear of capital assets used in the production process.

According to the production method, data on output and intermediate consumption are used to derive value added. In practice, estimates must in many cases rely on single indicators for output and the estimate of intermediate consumption must rely on assumptions that can be checked when, for instance, results from an intermittent economic sample survey or census become available.

The components of value added are other taxes on production, other subsidies (a negative item), compensation of employees, and operating surplus / mixed income. The latter two make up value added at

<sup>7</sup> 'Gross operating surplus / mixed income' is the balancing item in the generation of income account, i.e. gross domestic product *minus* compensation of employees payable *minus* taxes on production and imports payable *plus* subsidies on production and imports receivable.



factor cost. According to the income method, data on the components of value added are compiled and added up. By its nature, it is difficult to obtain reliable data on operating surplus / mixed income, which in important respects differs from the concept of profit in business accounting. To a certain extent, the income method is used as a complement to the production method, notably for mining and manufacturing, relying on the financial statistics of Stats SA.

The concept of mixed income indicates that working proprietors and self-employed persons do not, by definition, receive wages and salaries. The surplus of their activities – the residual after deducting all costs from their income – must provide for both remuneration for their labour and a return on their capital. Hence, the term mixed income does not appear for general government services and other producers. There are no self-employed persons in these activities.

## 2. New supply and use table system

There was a need to change and update the existing SUT framework to fully integrate the GDP expenditure side (or approach), which in the previous benchmarking and rebasing exercise was compiled by the SARB. The decision was taken to develop a new SUT framework as part of this benchmark process. This was undertaken in order to include all the new changes that had to be implemented to achieve Stats SA's first SUT series with Stats SA compiling all three GDP approaches (production approach, income approach and expenditure approach).

The classification of both industries and commodities was re-examined based on stakeholder requirements and the need for closer links to the data available from the current surveys, namely the Annual Financial Statistics (AFS) survey and the structural industry surveys.

### 2.1 New framework for the supply and use tables

The new SUT framework was designed to have time series from 2013 onwards, and is based on using the AFS as the primary data source for financial statistics for non-financial industries. The calculations were based on the 291 industry groups from the AFS, which forms the starting point of the SUT framework. The AFS data were used to calculate the benchmarked levels of intermediate consumption, output, compensation of employees, value added, and gross operating surplus for each of the industry groupings.

The SUTs were thus compiled using the calendarised AFS data as well as many additional data sources, for example government finance statistics, financial industries (data from the SARB), and household surveys. Individual industry compilation is discussed in detail in section 3.

Table 5 shows an example of the questions in the AFS survey, which is used for the calculations of inventories, output, intermediate consumption, value added (production approach), compensation of employees, other taxes on production, other subsidies, and operating surplus (production approach), all used for the new SUT framework.

**Table 5 – Example of Annual Financial Statistics survey questions used for the new supply and use framework**

Annual Financial Statistics (statistical release P0021)	
No.	Part 3 - Income items
5.	Sales of goods
6.	Services rendered
7.	Dividends received
8.	Gov - subsidies and incentives
9.	Gov - capital transfers
10.	Interest received
11.	Leasing vehicles
12.	Leasing machinery
13.	Mineral rights leases
14.	Profit on assets
15.	Profit on financial liabilities
16.	Profit on foreign exchange
17.	Provisions
18.	Rental and leasing of land
19.	Research and development
20.	Royalties received

<b>Annual Financial Statistics (statistical release P0021)</b>	
21.	Other income
22.	<b>Total income (AFS no. 5 - 21)</b>
	<b>Part 4 - Inventory</b>
<i>Opening values:</i>	
23.	Raw materials
24.	Work in progress
25.	Finished goods produced
26.	Finished goods not produced
27.	<b>Total opening inventory values (AFS no. 23 - 26)</b>
<i>Closing values:</i>	
28.	Raw materials
29.	Work in progress
30.	Finished goods produced
31.	Finished goods not produced
32.	<b>Total closing inventory values (AFS no. 28 - 31)</b>
	<b>Part 5 - Expenditure items:</b>
33.	Purchases
34.	Accommodation
35.	Advertising
36.	Amortisation
37.	Bank charges
38.	Bursaries
39.	Computer expenses
40.	Containers and packaging
41.	Depreciation
42.	Employment costs
43.	Entertainment
44.	Excise and customs
45.	IT security services
46.	Insurance
47.	Interest
48.	Leasing of machinery
49.	Losses on assets
50.	Losses on financial liabilities
51.	Losses on foreign exchange
52.	Mineral rights leased
53.	Motor vehicle expenses
54.	Paper, stationery
55.	Postal or courier services
56.	Property tax
57.	Provisions
58.	Railage and transport-out
59.	Rental of buildings
60.	Repair and maintenance
61.	Research and development
62.	Royalties, copyright
63.	Security services
64.	Severance, termination payments

<b>Annual Financial Statistics (statistical release P0021)</b>	
65.	Staff training
66.	Subcontractors
67.	Telecommunication services
68.	Travelling
69.	Water and electricity
70.	Other expenditure
71.	<b>Total expenditure (AFS no. 33 - 70)</b>
<b>Part 6 - Profit or loss:</b>	
72.	Net profit or loss before tax
73.	Company tax
74.	Net profit or loss after tax
75.	Dividends paid

Table 6 shows the calculations of inventories including inventory valuation adjustments, output at basic prices, intermediate consumption, value added (production approach), compensation of employees, other taxes on production, other subsidies, and operating surplus (production approach), all used for the new SUT framework. The inventory valuation adjustments (calculations A to E) are used to adjust the changes in inventories to remove inventory price effects within the survey year. The price indices used (see Annexures 5 and 6) are a combination of producer and consumer price indices, based on the products typically produced, sold or consumed by the various industry groupings.

**Table 6 – Illustration of calculations used in the new supply and use framework based on the Annual Financial Statistics survey questions**

<b>Calculation reference</b>	<b>Calculations</b>
<b>Valuation adjustment - price index</b>	
	Price index - opening value
	Price index - closing value
	<b>Price index - average</b>
<b>Valuation adjustment - inventories</b>	
<b>A</b>	Raw materials
<b>B</b>	Work in progress
<b>C</b>	Finished goods produced
<b>D</b>	Finished goods not produced
<b>E</b>	<b>Total valuation adjustment (Calc. no. A+B+C+D)</b>
<b>Changes in inventories (CI) - calculations</b>	
	<b>Raw materials:</b>
	+ Closing values (AFS no. 28)
	- Opening values (AFS no. 23)
	- Valuation adjustment (Calc. no. A)
<b>F</b>	<b>= CI: Raw materials</b>
	<b>Work in progress:</b>
	+ Closing values (AFS no. 29)
	- Opening values (AFS no. 24)
	- Valuation adjustment (Calc. no. B)
<b>G</b>	<b>= CI: Work in progress</b>

Calculation reference	Calculations
	<b>Finished goods produced:</b>
	+ Closing values (AFS no. 30)
	- Opening values (AFS no. 25)
	- Valuation adjustment (Calc. no. C)
<b>H</b>	<b>= CI: Finished goods produced</b>
	<b>Finished goods not produced:</b>
	+ Closing values (AFS no. 31)
	- Opening values (AFS no. 26)
	- Valuation adjustment (Calc. no. D)
<b>I</b>	<b>= CI: Finished goods not produced</b>
<b>J</b>	<b>Total changes in inventories (Calc. no. F+G+H+I)</b>
	+ Sales of goods (AFS no. 5)
	+ Services rendered (AFS no. 6)
	+/- CI: Work in progress (Calc. no. G)
	+/- CI: Finished goods produced (Calc. no. H)
<b>K</b>	<b>= Output</b>
	+ Sales of goods (AFS no. 5)
	- Purchases (AFS no. 33)
	+/- CI: Finished goods not produced (Calc. no. I)
<b>L</b>	<b>= Output, trade margins</b>
	+ Leasing vehicles (AFS no. 11)
	+ Leasing machinery (AFS no. 12)
	+ Mineral rights leases (AFS no. 13)
	+ Provisions (AFS no. 17)
	+ Rental and leasing of land (AFS no. 18)
	+ Research and development (AFS no. 19)
	+ Royalties received (AFS no. 20)
	+ Other income (AFS no. 21)
<b>M</b>	<b>= Output, miscellaneous services</b>
<b>N</b>	<b>Output at producers' prices (Calc. no. K+L+M)</b>
	- Excise and customs duty (AFS no. 44)
<b>O</b>	<b>= Output at basic prices</b>
	+ Purchases (AFS no. 33)
	+ Accommodation (AFS no. 34)
	+ Advertising (AFS no. 35)
	+ Bank charges (AFS no. 37)
	+ Computer expenses (AFS no. 39)
	+ Containers and packaging (AFS no. 40)
	+ Entertainment (AFS no. 43)
	+ IT security services (AFS no. 45)
	+ Insurance premiums (AFS no. 46) (only 20%)
	+ Leasing of machinery (AFS no. 48)
	+ Mineral rights leased (AFS no. 52)
	+ Motor vehicle expenses (AFS no. 53)
	+ Paper, stationery (AFS no. 54)
	+ Postal or courier services (AFS no. 55)

Calculation reference	Calculations
	+ Railage and transport-out (AFS no. 58)
	+ Rental of buildings (AFS no. 59) (only 75%)
	+ Repair and maintenance (AFS no. 60)
	+ Royalties, copyright (AFS no. 62)
	+ Security services (AFS no. 63)
	+ Staff training (AFS no. 65)
	+ Subcontractors (AFS no. 66)
	+ Telecommunication services (AFS no. 67)
	+ Travelling (AFS no. 68)
	+ Water and electricity (AFS no. 69)
	+ Other expenditure (AFS no. 70) (only 50%)
	+/- CI: Raw materials (Calc. no. F)
<b>P</b>	<b>= Intermediate consumption</b>
<b>Q</b>	<b>Value added at basic prices (Calc. no. O-P)</b>
	+ Employment costs (AFS no. 42)
	+ Severance, termination payments (AFS no. 64)
<b>R</b>	<b>= Compensation of employees</b>
	+ Property tax (AFS no. 56)
<b>S</b>	<b>= Other taxes on production</b>
	+ Gov - subsidies and incentives (AFS no. 8)
<b>T</b>	<b>= Other subsidies</b>
<b>U</b>	<b>Operating surplus (Calc. no. Q-R-S+T)</b>

## 2.2 Industries (activities)

The Standard Industrial Classification of All Economic Activities (SIC) (5<sup>th</sup> edition) was used to classify industries in the SUTs. The previous SUT compilation had 292 industry groupings, which was reduced to 213 industry groupings (see Annexure 1) in the current SUT time series. This change was necessitated by economic shifts within industry classifications since the previous benchmark. The reduction of industry groupings took place mostly in the manufacturing industries. Although there was a reduction in the total number of industry groupings, the personal services industry groupings increased in the current SUT time series.

## 2.3 Commodities (products)

The Central Product Classification (CPC) version 2.01 was used for commodity classification in the SUTs. The previous commodity compilation level in the SUTs was 105 commodity groupings, which was increased to 118 commodity groupings (see Annexure 3) in the current SUT time series. This change in commodity groupings was due to the availability of more detailed data and price statistics for the relevant compilation industries.

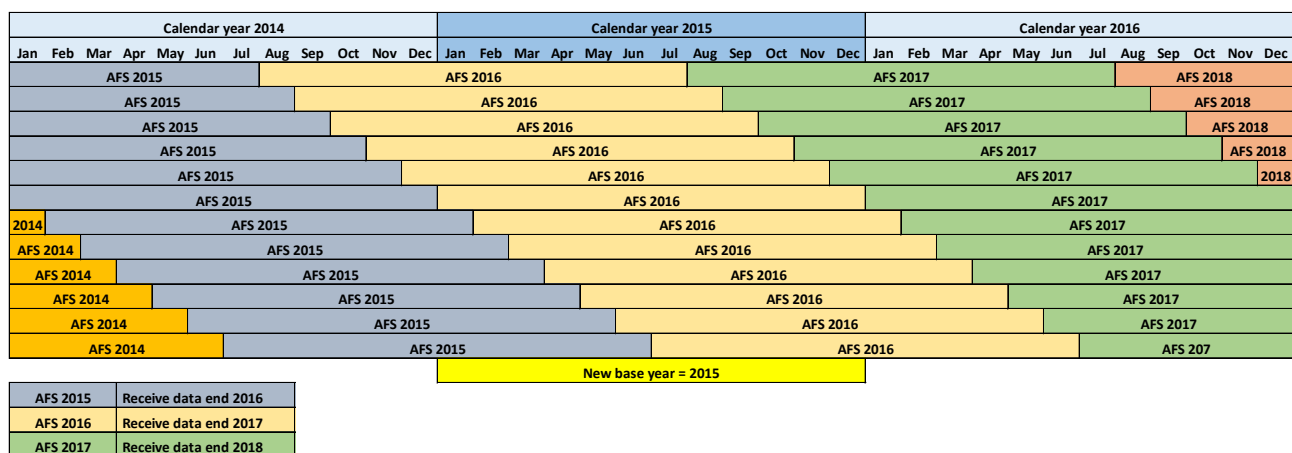
## 2.4 Calendarisation

The AFS data for a specific industry grouping are based on industries with different financial-year endings. SNA 2008 requires reporting based on a calendar year, and therefore a calendarisation process was developed to transform the AFS financial-year data for each industry grouping into calendar-year data. This was done to ensure that value added and GDP are based on calendar years. This process is known as calendarisation.

An improvement to the previous calendarisation method was made. Previously industries were calendarised at the one-digit SIC level by assuming that all enterprises in that industry had a financial year that ended at the end of the predominant quarter, which was taken to be the quarter in which companies whose financial year ended in that quarter had the most turnover. This calendarisation method was replaced by allocating the financial-year data for each variable to a calendar-year basis at the three-digit SIC level. The financial-year data were allocated to two adjacent calendar years based on the number of months falling in each calendar year.

Figure 3 illustrates the calendarisation process. The estimate for the 2015 calendar year requires the results of three consecutive annual surveys.

**Figure 3 – A visual representation of calendarisation**



## 2.5 Double deflation

In this benchmark, double deflation was used to derive the volume estimates of output and intermediate consumption as recommended in SNA 2008. Double deflation is a process of deflating output and intermediate consumption separately using relevant output and input price indices. This ensures that there is greater coherence in the national accounts, where growth of real GDP from the expenditure side should equal growth of real GDP from the production side.

A wide range of prices for a variety of goods and services was used (see Annexures 5 and 6) to derive the volume estimates of output and intermediate consumption. According to SNA 2008, different price indices are necessary for two reasons. The first is that the goods and services included in intermediate consumption for any industry are not the same as the output of that industry. The second reason is that intermediate inputs are always measured at purchasers' prices whereas output is measured at either basic prices or producers' prices (SNA 2008).

In this benchmark, deflation was carried out at the detailed product and industry level. Accordingly, constant-price value added was calculated by subtracting constant-price intermediate consumption from constant-price output.

### 3. GDP measured by production

GDP measured by production requires the measurement of each industry. The SIC is a classification of economic activities of industries. Industry compilation follows the SIC, which is based on the International Standard Industrial Classification of All Economic Activities (ISIC), with suitable adaptations for local conditions. The SIC was designed for the classification of establishments according to kind of economic activity, and provides a standardised framework for the collection, tabulation, analysis and presentation of statistical data for establishments. An industry consists of establishments engaged in the same or closely related kind of economic activity based mainly on the principal class of goods produced or services rendered. The term 'industry' is used in the widest sense to cover all economic activity, from the primary industries of agriculture, forestry, fishing and mining to the rendering of social, recreational, cultural and personal services.<sup>8</sup>

The major industry divisions in the SIC are:

1. Agriculture, hunting, forestry and fishing
2. Mining and quarrying
3. Manufacturing
4. Electricity, gas and water supply
5. Construction
6. Wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants
7. Transport, storage and communication
8. Financial intermediation, insurance, real estate and business services
9. Community, social and personal services
10. Private households, extraterritorial organisations, representatives of foreign governments and other activities not adequately defined

The following sections provide details as to how the major industry divisions (one-digit SIC) were compiled for the benchmarked SUTs.

#### 3.1 Agriculture, hunting, forestry and fishing industry

The compilation of the agriculture, hunting, forestry and fishing industry (SIC 1) has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008.

##### 3.1.1 Data sources used for the compilation of the agriculture, hunting, forestry and fishing industry

Table 7 lists the source data used for the compilation of the agriculture, hunting, forestry and fishing industry.

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<sup>8</sup> Standard Industrial Classification of All Economic Activities, 1993.



**Table 7 – Data sources used for the agriculture, hunting, forestry and fishing industry**

Component	Indicator variable and unit of measurement	Source	Period
Agriculture, hunting, forestry and fishing industry and products	Total sales and purchases of agriculture, hunting, forestry and fishing goods; Rand values	Stats SA: Agricultural Survey (P1101)	2013–2017
	Compensation of employees; Rand values	Stats SA: Census of Commercial Agriculture (Report 11-02-01)	2017
		Department of Agriculture, Land Reform and Rural Development: Subsistence data	2013–2017
		Stats SA: Annual Financial Statistics (P0021)	2014–2019 <sup>9</sup>

### 3.1.2 Methodology for the compilation of the agriculture, hunting, forestry and fishing industry

The Agricultural Survey was used to benchmark the agriculture industry output, intermediate consumption and value added estimates at the two-digit SIC level. The Census of Commercial Agriculture (CoCA) was also used to calculate the more recent years. An improvement to the previous benchmarking was made to the agriculture industry. Previously, Stats SA used the Department of Agriculture, Land Reform and Rural Development (DALRRD) data to calculate the output and intermediate consumption for agriculture. In this benchmark cycle, Stats SA used its Agricultural Survey because the survey data were considered to be more reliable than the DALRRD data. The Agricultural Survey data provide more variables compared with the DALRRD data, especially for intermediate consumption. Previously output included four variables only, namely field crops, horticulture, animal products and other agricultural products. The Agricultural Survey output data also include other income from services rendered and rental income. Table 8 shows the additional output variables included in the Agricultural Survey.

**Table 8 – Output variables used for the agriculture and hunting industry**

<b>Output</b>
<b>Total income</b>
Income from field crops
Income from horticultural crops and products
Income from animals and animal products
Income from other agricultural products
Other income
Income from services rendered
Rental income

<sup>9</sup> The AFS 2014 data relate to the 2013 reference year.

More variables were added for intermediate consumption. The data from Stats SA included five more variables, shown in Table 9, that were not included previously. Also, other purchases from Stats SA were more detailed and included many more variables that were not used before.

**Table 9 – Intermediate consumption variables used for the agriculture and hunting industry**

<b>Intermediate Consumption</b>
<b>Details of expenditure in agriculture and related services</b>
Expenditure on feeds and supplements of livestock, poultry and aquaculture
Expenditure on animals
Expenditure on fertilisers, both manure and inorganic fertilisers and lime
Expenditure on seeds, seedlings and other plant material
Expenditure on fuel, lubricants and grease
Expenditure on remedies for forage, field and horticultural crops
Expenditure on containers, pallets and packing materials
Expenditure on field crops
Expenditure on horticultural products
Expenditure on remedies for combating diseases and pests in livestock and poultry
Expenditure on animal products
<b>Expenditure on other purchases</b>
Expenditure on repairs and maintenance
Expenditure on railage and transport-out
Expenditure on water and electricity
Expenditure on rental, usufruct and grazing rights
Expenditure on services rendered by contractors, co-farmers, etc.
Expenditure on insurance
Expenditure on advertising and marketing expenses
Expenditure on share farming expenses
Expenditure on leasing and hiring of plant, machinery, equipment and vehicles
Expenditure on import and export costs
Expenditure on bank charges
Expenditure on payment to labour brokers
Expenditure on security services and maintenance cost of security system
Expenditure on telecommunication services
Other expenditure

For subsistence farming, Stats SA used the DALRRD data because the Agricultural Survey does not cover subsistence farming.

The AFS was used to benchmark the forestry and fishing industries' output, intermediate consumption and value added estimates at the two-digit SIC level. For the calculation of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption.

## 3.2 Mining and quarrying industry

The compilation of the mining and quarrying industry (SIC 2) has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008.

### 3.2.1 Data sources used for the compilation of the mining and quarrying industry

Table 10 lists the source data used for the compilation of the mining and quarrying industry.

**Table 10 – Data sources used for the mining and quarrying industry**

Component	Indicator variable and unit of measurement	Source	Period
Mining and quarrying industry and products	Total sales and purchases of mining goods; Rand values	Stats SA: SIS – Mining Industry (Report 20-01-02)	2015
		Stats SA: Annual Financial Statistics (P0021)	2014–2019
		Department of Mineral Resources and Energy	2013–2018
SIS: structural industry survey (these are detailed industry surveys, typically undertaken every three to five years).			

### 3.2.2 Methodology for the compilation of the mining and quarrying industry

The mining industry structural industry survey (SIS) was used to benchmark the mining and quarrying industry output, intermediate consumption and value added estimates. Using the SIS data, which are establishment-based, the SUTs were compiled for mining. Where the mining SIS did not cover certain four-digit SIC industries, for example upstream petroleum and gas activity, AFS data were used. Production data from the Department of Mineral Resources and Energy (DMRE) were used to calculate the benchmark data from 2011 to 2018. Where the DMRE data did not cover a particular four-digit SIC industry, AFS data were used as an indicator. The intermediate consumption and output ratios were estimated based on the mining SIS and AFS data.

The AFS data, which are enterprise-based, were used for total mining. The establishment-based data for each year were benchmarked to the AFS output and intermediate consumption. The mineral processing activities in the AFS were added to other metal mining. The subcomponent of the mining and quarrying industry engaged in the processing of minerals is based on the DMRE data on processed minerals. The output and input product structures were based on the mining SIS.

## 3.3 Manufacturing industry

The manufacturing industry (SIC 3) compilation has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008. The AFS enterprise-based manufacturing industry data include a portion of trade activities in addition to their manufacturing activities. The trade activities in the manufacturing industry were identified and moved to the relevant trade services SIC classification. As a result, the manufacturing industry includes manufacturing activities only.

### 3.3.1 Data sources used for the compilation of the Manufacturing industry

Table 11 lists the source data used for the compilation of the manufacturing industry.

**Table 11 – Data sources used for the manufacturing industry**

Component	Indicator variable and unit of measurement	Source	Period
Manufacturing industry and products	Detailed sales and purchases of manufactured goods and services; Rand values	Stats SA: SIS – Manufacturing, 2014 (Report 30-02-04)	2014
	Compensation of employees; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
	Detailed inventory data; Rand values		
	Other applicable financial data; Rand values	Stats SA: Producer Price Index (P0142.1)	2013–2018
Producer price index			

### 3.3.2 Methodology for the compilation of the manufacturing industry

The AFS was used to benchmark the manufacturing industry output, intermediate consumption and value added at the four-digit SIC level. For the calculation of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption.

The benchmarked levels of output and intermediate consumption were further disaggregated to the detailed commodity level by using the manufacturing SIS. To mitigate the effect of inflation, an inventory valuation adjustment was applied to inventory book values using price data. This was done before the inventory data were used in the calculation of intermediate consumption and output levels.

As part of the improvement, trade services were removed from manufacturing industries. This ensures that the size of manufacturing activity in South Africa is more accurately reflected than before. Accordingly, trade services were reclassified to their correct places in SIC 6 (i.e. trade industry). These adjustments and reclassifications were based on sales data from the manufacturing SIS. Consequently, this approach also leads to an improvement in the quality of the trade margin calculations.

Price indices were used to deflate current-price levels of output and intermediate consumption to constant-price levels. The price indices were based on the most appropriate per product, and details of specific price indices are contained in Annexures 5 and 6.

### 3.4 Electricity, gas and water supply industry

The electricity, gas and water supply industry (SIC 4) has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008.

#### 3.4.1 Data sources used for the compilation of the electricity, gas and water supply industry

Table 12 lists the source data used for the compilation of the electricity, gas and water supply industry.

**Table 12 – Data sources used for the electricity, gas and water supply industry**

Component	Indicator variable and unit of measurement	Source	Period
Electricity, gas and water supply industry and products	Detailed purchases and sales of electricity, gas and water; Rand values	Stats SA: SIS – Electricity, Gas & Water Supply (Report 41-01-02)	2013
	Compensation of employees; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
	Other applicable financial data; Rand values		
	Producer price index	Stats SA: Producer Price Index (P0142.1)	2013–2018
	Detailed purchases and sales of electricity of local municipalities; Rand values	Stats SA: Quarterly Financial Statistics of Municipalities (P9110)	2013–2018
	Detailed purchases and sales of water of local municipalities; Rand values		
Water fetching and fire wood collection	Stats SA: Quarterly Labour Force Survey (P0211)	2013–2018	
	Stats SA: General Household Survey (P0318)		

### 3.4.2 Methodology for the compilation of the electricity, gas and water supply industry

Stats SA used the AFS to benchmark the output, intermediate consumption and value added estimates at the four-digit SIC level for the electricity, gas and water supply industry, as well as municipal electricity and water data and own-water collection. For the calculation methodology of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption.

Quarterly Financial Statistics of Municipalities (QFSM) data were used to compile municipal water and electricity production and detailed municipal (local) government commodity expenditure. Data from the electricity, gas and water SIS were used for the further detailed breakdown of commodities. The calculation methodology for local electricity and water distribution for output and intermediate consumption is based on sum of costs. For an example of the methodology to calculate sum of costs, output and intermediate consumption, see section 3.9.1.3.

Research was conducted to distinguish municipal production of electricity and water from the electricity and water purchased from Eskom and water boards, respectively.

Price indices were used to deflate current-price levels of output and intermediate consumption to constant-price levels. The price indices were based on the most appropriate per product, and details of specific price indices are contained in Annexures 5 and 6. In addition, for local electricity and water distribution, refer to section 5.2 (government final consumption expenditure).

### 3.4.3 Methodology for the compilation of the own account for the electricity, gas and water supply industry

Two approaches were used to estimate the value of output for water fetching.<sup>10</sup> The non-market activities data obtained from the Quarterly Labour Force Survey (QLFS) include both water fetching and collection of firewood. An estimate was compiled for the total time spent on water fetching and collection of firewood. The output for these non-market activities was obtained by multiplying the informal sector average earnings for SIC 1 (agriculture) by the time spent on water fetching and collection of firewood. This total output was then split between the two activities using anecdotal information.

An alternative estimate for water fetching was obtained as a product of the number of households without a formal water supply, average annual usage of water per household, and price per kilolitre of water. In determining the final output for water fetching a higher weight was given to the estimate obtained using the second method.

### 3.5 Construction industry

The compilation of the construction industry (SIC 5) has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008. Research was undertaken to include more data on own-account construction linked to the mining and electricity industries.

#### 3.5.1 Data sources used for the compilation of the construction industry

Table 13 lists the source data used for the compilation of the construction industry.

**Table 13 – Data sources used for the construction industry**

Component	Indicator variable and unit of measurement	Source	Period
Construction industry and products	Detailed sales and purchases of goods and services of the construction industries; Rand values	Stats SA: SIS – Construction (Report 50-02-01)	2014
	Compensation of employees; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
	Other applicable financial data; Rand values	Stats SA: Producer Price Index (P0142.1)	2013–2018
	Producer price index		
	Government own-account construction, Rand values	Stats SA: Financial Statistics of National Government (P9119.3)	2013–2018

#### 3.5.2 Methodology for the compilation of the construction industry

The AFS was used to benchmark the construction industry output, intermediate consumption and value added estimates at the four-digit SIC level. For the calculation of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption.

<sup>10</sup> Own-account production of goods by households is defined in SNA 2008 to include water fetching (SNA 2008, 6.32).

These benchmarked levels were further disaggregated to the detailed commodity level by using the construction SIS. To mitigate the effect of inflation, an inventory valuation adjustment was applied to inventory book values using price data. This was done before the inventory data were used in the calculation of intermediate consumption and output levels.

Price indices were used to deflate current-price levels of output and intermediate consumption to constant-price levels. The price indices were based on the most appropriate per product, and details of specific price indices are contained in Annexures 5 and 6.

### **3.5.3 Methodology for the compilation of the own account for the construction industry**

In this benchmark cycle the published 2015 SUT output level for own-account construction was used. The level seemed reasonable given anecdotal information. The 2015 benchmark was estimated back to 2013 and forward to 2018 using the growth rates of gross fixed capital formation in construction.

A further sectoral breakdown of own-account construction was made to split out government and households from the total. Government own-account construction was available from the annual Financial Statistics of National Government unpublished data.

Household own-account construction was estimated using the 2015 SUT. The values were estimated back to 2013 and forward to 2018 using the growth rates of gross fixed capital formation in private residential buildings. The residual represents own-account construction carried out by the mining, electricity and other industries.

## **3.6 Trade services industry**

The trade services industry (SIC 6)<sup>11</sup> has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008. The trade services industry now includes the manufacturing industry's trade service activities. This moves both industry groupings closer to an establishment rather than an enterprise basis. The trade margin output was moved from the manufacturing industry grouping to relevant parts of the trade services industry. Consequently, the trade services industry includes trade activities that were previously accounted for in the manufacturing industry.

### **3.6.1 Data sources used for the compilation of the trade services industry**

Table 14 lists the source data used for the compilation of the trade services industry.

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<sup>11</sup> Wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants.

**Table 14 – Data sources used for the trade services industry**

Component	Indicator variable and unit of measurement	Source	Period
Trade services industry and products	Detailed sales and purchases of goods and services; Rand values	Stats SA: SIS – Retail Industry (Report 62-01-02)	2015
	Compensation of employees; Rand values	Stats SA: SIS – Wholesale Industry (Report 62-01-01)	2015
	Detailed inventory data; Rand values	Stats SA: SIS – Food and Beverages Industry (Report 64-20-01)	2015
	Other applicable financial data; Rand values	Stats SA: SIS – Accommodation Industry (Report 64-11-01)	2015
	Producer price index	Stats SA: SIS – Motor Industry (Report 63-01-02)	2015
		Stats SA: Annual Financial Statistics (P0021)	2014–2019
		Stats SA: Producer Price Index (P0142.1)	2013–2018

### 3.6.2 Methodology for the compilation of the trade services industry

The AFS was used to benchmark the trade services industry output, intermediate consumption and value added estimates at the four-digit SIC level. For the calculation of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption.

The output and intermediate consumption of the trade services industry were further broken down into detailed commodities using various SIS datasets, namely retail, wholesale, food and beverages, motor, and accommodation. To mitigate the effect of inflation, an inventory valuation adjustment was applied to inventory book values using price data. This was done before the inventory data were used in the calculation of intermediate consumption and output levels.

As part of the improvement, trade services were removed from manufacturing industries. These trade activities were reclassified to their correct trade industries. These adjustments and reclassifications were based on sales data from the manufacturing SIS. This ensures that the size of the trade services industry in South Africa is more accurately reflected than before. Consequently, this approach also leads to an improvement in the quality of the trade margin calculations.

Price indices were used to deflate current-price levels of output and intermediate consumption to constant-price levels. The price indices were based on the most appropriate per product, and details of specific price indices are contained in Annexures 5 and 6.



### 3.7 Transport, storage and communication services industry

The compilation of the transport, storage and communication services industry (SIC 7) has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008. The transport, storage and communication services industry now includes the municipal transport trading entities, which have been classified under other scheduled passenger land transport (SIC 7121).

#### 3.7.1 Data sources used for the compilation of the transport, storage and communication services industry

Table 15 lists the source data used for the compilation of the transport, storage and communication services industry.

**Table 15 – Data sources used for the transport, storage and communication services industry**

Component	Indicator variable and unit of measurement	Source	Period
Transport, storage and communication industry and products	Detailed purchases of goods and services; Rand values	Stats SA: SIS – Transport and Storage (Report 71-02-01)	2013
	Compensation of employees; Rand values	SIS – Post and Telecommunications Industry (Report 75-01-01)	
	Detailed inventory data; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
	Other applicable financial data; Rand values	Stats SA: Quarterly Financial Statistics of Municipalities (P9110)	2013–2018
	Producer price index (PPI)	Stats SA: Producer Price Index (P0142.1)	2013–2018

#### 3.7.2 Methodology for the compilation of the transport, storage and communication services industry

The AFS was used to benchmark the output, intermediate consumption and value added estimates at the four-digit SIC level for the transport, storage and communication services industry. For the calculation of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption.

The output and intermediate consumption of the transport, storage and communication services industry were further disaggregated to the detailed commodity level using the SIS for transport, storage and communication. To mitigate the effect of inflation, an inventory valuation adjustment was applied to inventory book values using price data. This was done before the inventory data were used in the calculation of intermediate consumption and output levels.

As part of the improvement, the municipal transport trading entities were removed from local government (SIC 91) to the transport, storage and communication services industry. These municipal trading activities were reclassified in the transport, storage and communication services industry as other scheduled passenger land transport (SIC 7121). The QFSM was used to compile detailed municipal (local) government commodity

details. This also provided the breakdown of the municipal trading entities, including municipal passenger transportation trading activities.

Price indices were used to deflate current-price levels of output and intermediate consumption to constant-price levels. The price indices were based on the most appropriate per product and details of specific price indices, are contained in Annexures 5 and 6.

### **3.8 Financial intermediation, insurance, real estate and business services industry**

The financial intermediation, insurance, real estate and business services industry (SIC 8) is grouped into financial corporations (SIC 81 to 83) and real estate and business services (SIC 84 to 88).

#### **3.8.1 Financial corporations industry**

The financial corporations industry, which is also referred to as insurance and finance services (SIC 81 to 83), has been improved in this benchmark cycle, as recommended in SNA 2008. The main outputs of SIC 81 to 83 are financial and insurance services. Financial corporations are classified as SIC 81 to 83.

Four product categories i.e. financial intermediation services indirectly measured (FISIM), other financial services, insurance and pension services, and auxiliary financial services are distinguished in the Stats SA national accounts and SUTs. Financial corporations may also rent out dwellings and non-residential buildings to households or other businesses. Such activity is recorded under other real estate services (see section 3.8.2).

Banks and other financial institutions do not cover all of their expenses by explicit charges for their intermediation services. They are able to operate profitably because the rate of interest received on their loans is higher than the rate of interest they pay out on deposits. In the national accounts an imputation is made to recognise that borrowers and depositors are paying indirectly for the intermediation services they are receiving. This imputation is called FISIM. It is included in the output of financial institutions in SIC 81 (financial intermediation), as well as in the intermediate consumption or final consumption of their customers.

Other financial services include the explicit charges which are levied by banks on their customers such as loan establishment fees and account-keeping fees. Also included are the services provided by the SARB to national general government.

Insurance and pension services include the service charges associated with operating life insurance funds, pension funds, health insurance funds, and non-life insurance. Note that only part of non-life insurance premiums are regarded as a service charge and included in the output of insurance companies.

Auxiliary financial services include the services provided by financial advisers, stockbrokers, insurance brokers, and loss assessors. These businesses charge directly for the services they provide.

##### **3.8.1.1 Data sources used for the compilation of the financial corporations industry**

Table 16 lists the source data used for the compilation of the financial corporations industry.

**Table 16 – Data sources used for the financial corporations industry**

Component	Indicator variable and unit of measurement	Source	Period
Financial corporations industry and products	Output and intermediate consumption; Rand values	South African Reserve Bank	2013–2018
	Household final consumption expenditure; Rand values	Stats SA: Gross Domestic Product (P0441) South African Reserve Bank	2013–2018

### 3.8.1.2 Methodology for the compilation of the financial corporations industry

Stats SA used financial statistics for financial corporations from the SARB to prepare estimates for output, intermediate consumption and value added for the eight sub-industries of SIC 81 to 83.<sup>12</sup> The SARB also provided details of the use of financial products by institutional sector.

The calculation of output for the compilation of financial corporations consists of FISIM, other financial services, insurance and pension services, auxiliary financial services, and other real estate services, using SARB data.

Intermediate consumption for financial corporations consists of a wide range of expense items associated with operating a financial corporation, including one or more of the four finance products (FISIM, other financial services, insurance and pension services, and auxiliary financial services). For the calculation of the other expenditure structures, product information data from the SARB was used for distribution. These products were classified according to the CPC. For example, the wholesale trade services value was allocated to the following products using appropriate ratios: electricity and steam, natural water, pulp and paper, printing, petroleum oils, rubber tyres and tubes, furniture, office machinery, postal and courier services, and telecommunications. Similarly, the passenger transport services value was allocated to the following products also using ratios: accommodation, food-serving services, and passenger long-distance travel. The calculated ratios were multiplied by the SARB totals to create a SUT input product structure.

Stats SA subtracted the intermediate consumption of finance products for financial corporations (provided by the SARB) to generate new industry sub-totals. The new industry sub-totals for intermediate consumption (excluding the finance products) were then allocated to the relevant CPCs as discussed in the previous paragraph.

In addition, Stats SA prepared VAT estimates using data from the SARB on output, intermediate consumption, imports, exports, and financial product intermediate consumption for general government.

### 3.8.1.3 Methodology for constant-price estimates for financial corporations

Value added for financial corporations was derived using double deflation. Constant-price output estimates were provided by the SARB for each of the eight sub-industries of the finance and insurance industries. The SARB also provided constant-price estimates for each of the four financial products when used as inputs by other financial corporations. The remaining intermediate consumption for each sub-industry of financial corporations was obtained by deflating the current-price CPC products using deflators applicable to each CPC

<sup>12</sup> SIC 81 to 83 comprise the following sub-industries: monetary intermediation (8110); other financial services (8120-90); life insurance (8211); pension funds (8212); medical aid (8213); other insurance (8219); auxiliary financial services (8311, 8312, 8319); and auxiliary insurance and pension fund services (8320).

product. Value added at constant prices for each of the eight finance sub-industries was then obtained by subtracting constant-price intermediate consumption from constant-price output.

### 3.8.2 Real estate and business services industry

The compilation of the real estate and business services industry (SIC 84 to 88) has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008.

#### 3.8.2.1 Data sources used for the compilation of the real estate and business services industry

Table 17 lists the source data used for the compilation of the real estate and business services industry.

**Table 17 – Data sources used for the real estate and business services industry**

Component	Indicator variable and unit of measurement	Source	Period
Owner-occupied dwellings	Imputed rent; Rand values	South African Reserve Bank	2013–2018
	Purchases of goods and services; Rand values	Stats SA: Living Conditions Survey (P0310) Stats SA: SIS – Retail Industry (Report 62-01-02)	2014/15 2015
Dwellings rented out by unincorporated enterprises	Actual rent paid by tenants; Rand values		
	Purchases of goods and services; Rand values		
Real estate and business services industry and products	Detailed purchases of goods and services; Rand values	Stats SA: SIS – Real Estate, Activities Auxiliary to Financial Intermediation and Business Services Industry (Report 80-04-02)	2016
	Compensation of employees; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
	Detailed inventory data; Rand values	South African Reserve Bank	2013–2018
	Other applicable financial data; Rand values		
	Producer price index	Stats SA: Producer Price Index (P0142.1)	2013–2018

#### 3.8.2.2 Methodology for the compilation of the real estate and business services industry

The AFS was used to benchmark output, intermediate consumption and value added estimates at the four-digit SIC level for the non-financial industries of the SIC 8 industry grouping. For the calculation of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption.

The output and intermediate consumption of the non-financial industries were further disaggregated into detailed commodities based on the real estate and business services SIS. Separate estimates were compiled for owner-occupied dwellings and dwellings rented out by unincorporated enterprises. Output estimates for owner-occupied dwellings were obtained from the household final consumption expenditure item for 'imputed

rentals for housing', while the output for dwellings rented out by unincorporated enterprises was derived from the household final consumption expenditure item for 'actual rents paid by tenants'. As data on the ownership of rented dwellings are not available, an assumption was made that half of the rented dwellings were owned by unincorporated enterprises. Activities related to the renting out of dwellings by unincorporated enterprises are not included in the AFS data for the real estate rental industry.

Estimates for intermediate consumption were compiled from various sources, including the SARB for data on FISIM and dwelling insurance service charges paid by owner-occupied dwellings. The Living Conditions Survey was used for the estimation of maintenance expenditure and body corporate fees. The retail SIS was used to allocate materials used for dwelling maintenance by product.

Price indices were used to deflate current-price levels of output and intermediate consumption to constant-price levels. The price indices were based on the most appropriate per product, and details of specific price indices are contained in Annexures 5 and 6.

### 3.9 Community, social and personal services industry

The compilation of the community, social and personal services industry (SIC 9) has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008.

#### 3.9.1 Government services industry

The compilation of general government (SIC 91 – public administration and defence activities) has changed from the previous benchmarking cycle, most notably with the separate compilation of education (SIC 92) and human health activities (SIC 931). The local-government estimates have also been improved with additional estimates for local trading entities, which are now included in their main activity industry groupings. The local-government trading entities include transport trading entities (now under SIC 7121), health (now under SIC 931), and sport, recreation and environmental protection (now under SIC 96).

##### 3.9.1.1 Data sources used for the compilation of the government services industry

Table 18 lists the source data used for the compilation of the government services industry.

**Table 18 – Data sources used for the government services industry**

Component	Indicator variable and unit of measurement	Source	Period
Government services industry and products (national, provincial and local)	Total sales and purchases of government; Rand values	National Treasury: Vulindlela government database	2013–2018
	Compensation of employees; Rand values	Stats SA: Financial Statistics of Consolidated General Government (P9119.4)	2013–2018
		Stats SA: Financial Census of Municipalities (P9114)	2013–2018
		Stats SA: Quarterly Financial Statistics of Municipalities (P9110)	2013–2018
		Stats SA: Gross Domestic Product (P0441)	2013–2018

Component	Indicator variable and unit of measurement	Source	Period
Research and development	Expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge; Rand values	South African National Survey of Research and Experimental Development – Centre for Science, Technology and Innovation Indicators, Human Sciences Research Council	2013–2018

### 3.9.1.2 Methodology for the compilation of the national and provincial government services industry

Stats SA used National Treasury's Vulindlela database to compile commodity details of government expenditure at national and provincial levels. The annual benchmarks are based on Stats SA's Financial Statistics of Consolidated General Government. The data were obtained from the National Treasury's Vulindlela database and are classified according to the 2014 Government Finance Statistics (GFS) Manual for each functional department.

National and provincial government are compiled as the sum of costs as they are non-market producers. For national government, the basic formula is shown below as an example:

Intermediate consumption is calculated as:

The sum of the purchases of goods and services of national government, extra-budgetary institutions and social security

*plus* FISIM

*plus* SARB output

*less* a portion of national government research and development (R&D).

Output is calculated as:

The sum of compensation of employees

*plus* purchases of goods and services of the national government, extra-budgetary institutions and social security

*plus* FISIM

*plus* SARB output

*plus* national government taxes on production

*plus* national government portion of consumption of fixed capital

*less* a portion of national government R&D.

Gross value added is calculated as:

The sum of compensation of employees for national government and extra-budgetary institutions and social security

*plus* national government portion of consumption of fixed capital

*plus* national government taxes on production.

Compensation of employees is the sum of employment costs of national government, extra-budgetary institutions and social security. Other taxes on production is the sum of national government, extra-budgetary institutions and social security taxes on production.

For provincial government, the basic formula is shown below as an example:

Intermediate consumption is calculated as the purchases of goods and services of provincial government.

Compensation of employees is the employment costs of provincial government. Other taxes on production is the provincial government portion of taxes on production.

Output is calculated as:

The sum of compensation of employees

*plus* purchases of goods and services of the provincial government

*plus* provincial government taxes on production

*plus* provincial government portion of consumption of fixed capital.

Gross value added is calculated as:

Compensation of employees for provincial government

*plus* provincial government portion of consumption of fixed capital

*plus* provincial government taxes on production.

The treatment of government in the SUTs differs from previous SUT publications in that government education and health output and corresponding intermediate consumption are now classified under the education (SIC 92) and human health (SIC 931) industries. The Vulindlela information on government expenditure on education and health is used together with compensation of employees data to provide expenditure and compensation ratios between education, health, and other provincial expenditure and compensation of employees. This is to allow for the calculation of government education and health intermediate consumption and compensation of employees. Output for education, health, and other provincial activities are derived once intermediate consumption and compensation of employees have been calculated. Education, health activities, and other provincial activities are derived from total provincial government intermediate consumption, compensation of employees, and output. Education and health activities have been reclassified from provincial government to SIC 92 and SIC 931 respectively. Provincial government output, intermediate compensation, and compensation of employees were reduced by the amount reclassified to education and health activities.

The SARB receives audited financial statements annually from the Department of Higher Education and Training for higher education institutions.<sup>13</sup> These data are benchmarked to Stats SA's annual Financial Statistics of Higher Education Institutions. The higher education institutions (HEI) are then classified under education (SIC 92). HEI R&D is derived using R&D annual estimates obtained from the Centre for Science, Technology and Innovation Indicators, which publishes the South African National Survey of Research and Experimental Development. HEI R&D is removed from national government R&D estimates. HEI consumption of fixed capital is estimated using data from gross fixed capital formation.

### **3.9.1.3 Methodology for the compilation of the local government services industry**

The QFSM was used to compile detailed municipal (local) government commodity details as well as to provide a breakdown of the local trading entities. Local water distribution (SIC 42), local electricity distribution (SIC 41), waste water and sewage activities (SIC 94), municipal passenger transportation trading activities (SIC 7121), municipal human health activities (SIC 931), and municipal sport, recreation and environmental protection activities (SIC 96) are all derived from the QFSM.

Financial data from the QFSM were used to provide product distributions for intermediate consumption. For additional detailed product distributions for the municipal trading activities, the product distributions for the respective industry groupings were used (where the municipal trading activities are classified). Additional municipal electricity and water detailed product distributions were based on financial data of the water boards and Eskom.

For local government, the basic formula is shown below as an example:

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<sup>13</sup> Comprising all learning programmes leading to qualifications higher than Grade 12 or its equivalent.

Intermediate consumption is calculated as the purchases of goods and services of local government. Compensation of employees is the employment costs of local government. Other taxes on production is the local government portion of taxes on production.

Output is calculated as:

The sum of compensation of employees

*plus* purchases of goods and services of local government

*plus* local government taxes on production

*plus* local government portion of consumption of fixed capital.

Gross value added is calculated as:

Compensation of employees for local government

*plus* local government portion of consumption of fixed capital

*plus* local government taxes on production.

### 3.9.2 Personal services industry

The compilation of the personal services industry has been improved in this benchmark cycle through becoming closer to an establishment basis, as recommended in SNA 2008. The improvement relates to more detailed source data, now available at a four-digit SIC level. In the previous SUT framework system, personal services data were available at a two-digit SIC level only.

#### 3.9.2.1 Data sources used for the compilation of the personal services industry

Table 19 lists the source data used for the compilation of the personal services industry.

**Table 19 – Data sources used for the personal services industry**

Component	Indicator variable and unit of measurement	Source	Period
Personal services industry and products	Detailed purchases and sales of goods and services; Rand values	Stats SA: SIS – Personal Services Industry (Report 90-01-01)	2008
	Compensation of employees; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
	Detailed inventory data; Rand values	Stats SA: Producer Price Index (P0142.1)	2013–2018
	Other applicable financial data; Rand values	Stats SA: Quarterly Financial Statistics of Municipalities (P9110)	2013–2018
	Producer price index		

#### 3.9.2.2 Methodology for the compilation of the personal services industry

The AFS was used to benchmark output, intermediate consumption and value added estimates for the personal services industry. For the calculation of output and intermediate consumption see Table 6, calculations O and P respectively. Value added was calculated as output less intermediate consumption. The output and intermediate consumption of the personal services industry were further disaggregated into detailed commodities based on the personal services SIS.



### 3.10 Quarterly national accounts measured by production

Many macroeconomic statistics are based on a wide variety of data sources such as periodic structural industry surveys, monthly and quarterly economic surveys, administrative sources, etc. There is always a tricky balance between *accurate* and *timely* measures of GDP. And *there* lies an important distinction between ANA and QNA.<sup>14</sup> To compile ANA statistics, comprehensive data on output and related expenditure are required. These types of data typically have longer time-lags, making them less desirable to measure short-term economic events. To bridge that gap, QNA statistics offer an intermediate alternative.

According to IMF QNAM 2017, the main purpose of QNA is to provide a picture of current economic developments that is more timely than that provided by ANA, and more comprehensive than that provided by individual short-term indicators. To meet this goal, QNA should be timely, coherent, accurate, comprehensive, and reasonably detailed. If QNA statistics fulfil these criteria, they can serve as a framework for assessing, analysing and monitoring current economic developments. Furthermore, by providing quarterly time series of macroeconomic aggregates in a coherent accounting framework, QNA statistics facilitate the analysis of the dynamic relationships between these aggregates (particularly leads and lags).

Since QNA statistics are published within a reasonably short period and at a lower level of detail than the annual estimates, detailed information on output and intermediate consumption is not available. Therefore, in many instances, the QNA information is based on indirect sales and production indicators published monthly or quarterly.

Broadly speaking, there are two main procedures for estimating quarterly values at current and constant prices, namely estimating constant-price values first and then inflating the values to estimate current-price values, or estimating current-price values first and then deflating the values to estimate constant-price values. For example, in some cases the short-term indicators are proxies for volume growth in value added that could be used to move the constant-price estimates. The current-price estimates are then derived using the constant-price estimates and corresponding price indices.

Table 20 provides sources and methods information for quarterly GDP estimates. Note that some sub-industries are not estimated quarterly because quarterly source data are insufficiently detailed or not available in time, and in these cases they follow the same trend as other sub-industries in their division; data revisions are discussed in section 6.4.

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<sup>14</sup> ANA – annual national accounts; QNA – quarterly national accounts.

**Table 20 – Sources and methods used for the estimation of quarterly GDP**

Industry	Data sources	Current prices	Constant prices
<b>Agriculture, forestry and fishing: SIC 1</b>			
Agriculture	Department of Agriculture, Land Reform and Rural Development  – Annual forecast  – Quarterly estimates (field crops, horticulture and animal products)	Gross income from agricultural products at current prices  <i>Field crops</i> Maize (kg), Wheat (tons), Sorghum, Groundnuts, Sunflower seed, Soya beans, Barley, Dry beans, Sugar cane (tons), Chicory, Cotton, Tobacco, Wattle bark, Oats, Canola  <i>Horticulture</i> Viticulture, Citrus fruit, Subtropical fruit, Deciduous and other fruits, Dried fruit, Vegetables, Tea, Flowers and bulbs  <i>Animal products</i> Wool, Mohair, Ostrich feathers, Poultry products, Cattle and calves slaughtered, Sheep and goats slaughtered, Pigs slaughtered, Milk, Other livestock products	Gross income from agricultural products at constant prices  <i>Field crops</i> Maize (kg), Wheat (tons), Sorghum, Groundnuts, Sunflower seed, Soya beans, Barley, Dry beans, Sugar cane (tons), Chicory, Cotton, Tobacco, Wattle bark, Oats, Canola  <i>Horticulture</i> Viticulture, Citrus fruit, Subtropical fruit, Deciduous and other fruits, Dried fruit, Vegetables, Tea, Flowers and bulbs  <i>Animal products</i> Wool, Mohair, Ostrich feathers, Poultry products, Cattle and calves slaughtered, Sheep and goats slaughtered, Pigs slaughtered, Milk, Other livestock products
		Changes in livestock inventories at current prices	Changes in livestock inventories at constant prices
		Own construction and services at current prices	Own construction and services at constant prices
		Expenditure on intermediate goods and services at current prices	Expenditure on intermediate goods and services at constant prices
Forestry	Stats SA: Annual Financial Statistics (P0021)	Constant-price estimates inflated using: – CPI: Fuel and power – PPI: Agriculture	Data trended from annuals for both market and own

Industry	Data sources	Current prices	Constant prices
Fishing	Stats SA: Annual Financial Statistics (P0021)	Constant-price estimates inflated using PPI: Fishing	Data trended from annuals
<b>Mining and quarrying: SIC 2</b>			
Coal	Stats SA: Mining: Production and Sales (P2041)	Mineral sales: Coal	Index of volume of mining production: Coal
Gold		Mineral sales: Gold	Index of volume of mining production: Gold
Platinum group metals		Mineral sales: Platinum group metals	Index of volume of mining production: Platinum group metals
Other metal ores		Mineral sales: Iron ore, Copper, Chromium ore, Manganese ore, Nickel, Other metallic minerals	Indices of mining production volume: Iron ore, Copper, Chromium ore, Manganese ore, Nickel, Other metallic minerals
Other mining and quarrying		Mineral sales: Diamonds, Building materials, Other non-metallic minerals	Index of volume of mining production: Diamonds, Building materials, Other non-metallic minerals
<b>Manufacturing: SIC 3</b>			
Food, beverages and tobacco	Stats SA: Manufacturing: Production and Sales (P3041.2)	Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>- Food</li> <li>- Beverages</li> <li>- Tobacco</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>- Food</li> <li>- Beverage</li> <li>- Tobacco products</li> </ul>
Textiles, clothing and leather goods		Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>- Textiles</li> <li>- Wearing apparel, dressing</li> <li>- Leather products</li> <li>- Footwear</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>- Textiles</li> <li>- Wearing apparel, dressing</li> <li>- Leather products</li> <li>- Footwear</li> </ul>

Industry	Data sources	Current prices	Constant prices
Wood and paper; publishing and printing	Stats SA: Manufacturing: Production and Sales (P3041.2)	Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>– Wood and wood products</li> <li>– Paper and paper products</li> <li>– Publishing, printing, reproduction of recorded media</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Wood and products</li> <li>– Paper and products</li> <li>– Publishing, printing, reproduction of recorded media</li> </ul>
Petroleum products, chemicals, rubber and plastic		Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>– Petroleum refineries: coke and petroleum products</li> <li>– Basic chemicals</li> <li>– Other chemical products</li> <li>– Rubber products</li> <li>– Plastic products</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Petroleum refineries: coke and petroleum products</li> <li>– Basic chemicals</li> <li>– Other chemical products</li> <li>– Rubber products</li> <li>– Plastic products</li> </ul>
Other non-metal mineral products		Constant-price estimate inflated using PPI: <ul style="list-style-type: none"> <li>– Glass and glass products</li> <li>– Non-metallic products</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Glass and products</li> <li>– Non-metallic products</li> </ul>
Metals, metal products, machinery and equipment		Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>– Basic iron and steel, casting of iron and steel</li> <li>– Fabricated metal products</li> <li>– Machinery and household appliances</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Basic iron and steel</li> <li>– Fabricated metal products</li> <li>– Machinery and household appliances</li> </ul>
Electrical machinery and apparatus		Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>– Electrical machinery and apparatus</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Electrical machinery and apparatus</li> </ul>
Radio, television, instruments, watches and clocks		Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>– Electrical machinery and apparatus</li> <li>– Medical, precision and optical instruments, watches, clocks</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Radio, television and communication equipment</li> <li>– Medical, precision and optical instruments, watches, clocks</li> </ul>
Transport equipment		Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>– Motor vehicles and trailers</li> <li>– Other transport equipment</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Motor vehicles and trailers</li> <li>– Other transport equipment</li> </ul>

Industry	Data sources	Current prices	Constant prices
Furniture and other manufacturing	Stats SA: Manufacturing: Production and Sales (P3041.2)	Constant-price estimates inflated using PPI: <ul style="list-style-type: none"> <li>– Furniture</li> <li>– Recycling</li> <li>– N.e.c.</li> </ul>	Index of manufacturing production volume: <ul style="list-style-type: none"> <li>– Furniture</li> <li>– Recycling</li> <li>– N.e.c.</li> </ul>
<b>Electricity, gas and water: SIC 4</b>			
Electricity and gas	Stats SA: Electricity generated and available for distribution (P4141)	Constant-price estimates inflated using PPI: Electricity	Volume of electricity distributed in South Africa (gigawatt-hours)
Water	<p>Selected reports from the main water boards:</p> <ul style="list-style-type: none"> <li>– Rand Water</li> <li>– Umgeni</li> <li>– Magalies</li> <li>– Lepelle</li> <li>– Sedibeng</li> <li>– Mhlathuze</li> <li>– Bloem Water</li> </ul> <p>Stats SA: Quarterly Financial Statistics of Selected Municipalities (P9110.1)</p>	<p>Sales of water</p> <ul style="list-style-type: none"> <li>– Local authorities</li> <li>– Regional (District) services councils</li> </ul> <p>Constant-price estimates inflated using PPI: Water</p>	Water quantities (kilolitres)
<b>Construction: SIC 5</b>			
Construction	Stats SA: GDP by expenditure	Data based on the trends of gross fixed capital formation at current prices for: <ul style="list-style-type: none"> <li>– Residential buildings</li> <li>– Non-residential buildings</li> <li>– Construction works</li> </ul>	Data based on the trends of gross fixed capital formation at constant prices for: <ul style="list-style-type: none"> <li>– Residential buildings</li> <li>– Non-residential buildings</li> <li>– Construction works</li> </ul>

Industry	Data sources	Current prices	Constant prices
<b>Trade (wholesale, retail, motor), catering and accommodation SIC 6</b>			
Wholesale trade	Stats SA: Wholesale Trade Sales (P6141.2)	<i>Sales by type of dealer:</i>	<i>Current-price values deflated using:</i>
		Wholesale trade on fee or contract basis	PPI: Final manufacturing
		Wholesale trade in agricultural raw materials and livestock	PPI: Agriculture
		Wholesale trade in food, beverages and tobacco	PPI: Food, beverages and tobacco
		Wholesale trade in textiles, clothing and footwear	PPI: Textiles, clothing and footwear
		Wholesale trade in other household goods except precious stones	PPI: Final manufacturing
		Wholesale trade in precious stones, jewellery and silverware	PPI: Final manufacturing
		Wholesale trade in solid, liquid and gaseous fuels and related products	PPI: Coal and petroleum products
		Wholesale trade in metals and metal ores	PPI: Final manufacturing
		Wholesale trade in construction and building materials	PPI: Final manufacturing
		Wholesale trade in other intermediate products, waste and scrap	PPI: Final manufacturing
		Wholesale trade in machinery, equipment and supplies	PPI: Machinery, equipment and supplies
		Wholesale trade in other goods	PPI: Final manufacturing
Retail trade and repair of household goods	Stats SA: Retail Trade Sales (P6242.1)	<i>Sales by type of retailer:</i>	<i>Current-price values deflated using:</i>
		Retail trade in non-specialised in stores (general dealers)	CPI: General dealers
		Retail trade in food, beverages and tobacco	CPI: Food, beverages and tobacco
		Retail trade in pharmaceutical and medical goods, cosmetics and toiletries	CPI: Pharmaceutical and medical goods, cosmetics and toiletries
		Retail trade in textiles, clothing, footwear and leather goods	CPI: Textiles, clothing, footwear and leather goods
		Retail trade in household furniture, appliances and equipment	CPI: Household furniture, appliances and equipment
		Retail trade in hardware, paint and glass	CPI: Hardware, paint and glass
		Retail trade in all other retailers	CPI: All other

Industry	Data sources	Current prices	Constant prices
Motor trade and repair of motor vehicles	Stats SA: Motor Trade Sales (P6343.2)	<i>Sales by type of activity:</i>	<i>Current-price values deflated using:</i>
		New vehicle sales	CPI: Vehicles
		Used vehicle sales	CPI: Vehicles
		Workshop income	CPI: Running costs (transport)
		Income from the sales of accessories	CPI: Running costs (transport)
		Income from fuel sales	CPI: Fuel (transport)
		Income from convenience store sales	CPI: Running costs (transport)
Catering and accommodation	Stats SA: Food and Beverages (P6420)	<i>Sales and income:</i>	<i>Current-price values deflated using:</i>
		Income from food sales	CPI: Food
		Income from bar sales	CPI: average alcoholic and non-alcoholic beverages
		Income from other sales	CPI: All items excluding food
	Stats SA: Tourist Accommodation (P6410)	Income from restaurant and bar sales	CPI: Food
		Income from other sales	CPI: All items excluding food
		Total income from accommodation sold	CPI: Hotels
<b>Transport, storage and communication: SIC 7</b>			
Land transport	Stats SA: Land Transport (P7162)	<i>Rail transport</i> – Rail freight income – Rail passenger income	<i>Rail transport</i> – Freight transportation - payload – Passenger journeys
	Transnet: Transport via pipeline	<i>Road transport</i> – Road freight income (payload income) – Road passenger income	<i>Road transport</i> – Freight (payload) – Passenger journeys  <i>Transport via pipeline</i> – Million litres per kilometre (ML KM report): Petrol, Diesel, Crude oil, Other

Industry	Data sources	Current prices	Constant prices
Air transport	Airports Company of South Africa	Current prices derived using implied price index, value added	<ul style="list-style-type: none"> <li>– Cargo handled - international, regional and domestic</li> <li>– Consolidated passenger traffic (international, domestic and unscheduled)</li> </ul>
Transport support services	Transnet Stats SA: Tourism and Migration (P0351)	Constant-price estimates inflated using an implied price index, value added	<p><i>Cargo handling</i> Volume indices - freight by rail, freight by road, freight by South African Airways</p> <p><i>Operation of terminals:</i></p> <ul style="list-style-type: none"> <li>– Total cargo shipped (excluding vehicles)</li> <li>– Vessel arrivals (total)</li> <li>– Arrivals/departures by domestic residents</li> <li>– Arrivals/departures by foreign travellers</li> </ul> <p><i>Travel agencies:</i></p> <ul style="list-style-type: none"> <li>– Volume index - average of total unit nights sold</li> <li>– Passengers (Airports Company South Africa)</li> </ul>
Communication	Stats SA: Quarterly Financial Statistics (P0044)	Current-price estimates based on QFS turnover	Current-price values deflated using CPI: Communications
<b>Finance, real estate and business services: SIC 8</b>			
Finance and insurance	South African Reserve Bank	Current-price value added estimates provided by SARB	Constant-price value added estimates provided by SARB
Real estate	Stats SA: GDP by expenditure	<p><i>Value added calculated using HFCE estimates</i></p> <ul style="list-style-type: none"> <li>– Total value spent by households on actual and imputed rents</li> <li>– Insurance connected with the dwelling</li> <li>– Services for the maintenance and repair of the dwelling</li> <li>– Materials for the maintenance and repair of the dwelling</li> <li>– FISIM</li> <li>– Levy</li> </ul>	<ul style="list-style-type: none"> <li>– Stock of housing as calculated by SARB is used to derive constant-price actual and imputed rents</li> <li>– FISIM and insurance connected with dwellings is from SARB</li> <li>– Services for maintenance and repair of the dwelling is trended</li> <li>– Deflator for materials for maintenance and repair of the dwelling is corresponding CPI</li> </ul>



Industry	Data sources	Current prices	Constant prices
Business services	Stats SA: Quarterly Financial Statistics (P0044)	Current-price estimates based on QFS turnover	Current-price estimates deflated using CPI: All items
<b>General government services: SIC 91</b>			
National government	<p>Vulindlela: Financial information for national departments</p> <p>SARB: Higher education institutions, extra-budgetary institutions, and social security survey</p> <p>SARB: other GVA components (FISIM, SARB output, taxes on production, and COFC)</p>	<ul style="list-style-type: none"> <li>– Compensation of employees</li> <li>– Purchases of goods and services</li> <li>– Taxes on production</li> <li>– Consumption of fixed capital</li> <li>– FISIM</li> <li>– SARB output</li> </ul>	<ul style="list-style-type: none"> <li>– Compensation of employees: deflated using QES volume index</li> <li>– Purchases of goods and services: deflated using weighted price index composed of PPI, CPI and wage rate index derived from QES Finance, real estate and business services volumes</li> <li>– Taxes on production: deflated using GFCE implied deflators</li> <li>– Consumption of fixed capital: provided by SARB</li> <li>– FISIM: provided by SARB</li> <li>– SARB output: deflated using weighted price index</li> </ul>
Provincial government	<p>Vulindlela: Financial information for provincial departments</p> <p>SARB: other GVA components (taxes on production and COFC)</p>	<ul style="list-style-type: none"> <li>– Compensation of employees</li> <li>– Purchases of goods and services</li> <li>– Taxes on production</li> <li>– Consumption of fixed capital</li> </ul>	<ul style="list-style-type: none"> <li>– Compensation of employees: deflated using QES volume index</li> <li>– Purchases of goods and services: deflated using weighted price index composed of PPI, CPI and wage rate index derived from QES Finance, real estate and business services volumes</li> <li>– Taxes on production: deflated using GFCE implied deflators</li> <li>– Consumption of fixed capital: provided by SARB</li> <li>– FISIM: provided by SARB</li> <li>– SARB output: deflated using weighted price index</li> </ul>

Industry	Data sources	Current prices	Constant prices
Local government	Stats SA: Quarterly Financial Statistics of Selected Municipalities (P9110.1)  SARB: other GVA components (taxes on production and COFC)	<ul style="list-style-type: none"> <li>– Compensation of employees</li> <li>– Purchases of goods and services</li> <li>– Taxes on production</li> <li>– Consumption of fixed capital</li> </ul>	<ul style="list-style-type: none"> <li>– Compensation of employees: deflated using QES volume index</li> <li>– Purchases of goods and services: deflated using weighted price index composed of PPI, CPI and wage rate index derived from QES Finance, real estate and business services volumes</li> <li>– Taxes on production: deflated using GFCE implied deflators</li> <li>– Consumption of fixed capital: provided by SARB</li> <li>– FISIM: provided by SARB</li> <li>– SARB output: deflated using weighted price index</li> </ul>
<b>Community, social and personal services: SIC 92–96</b>			
Community, social and personal services	Stats SA: GDP by expenditure	Health and social work based on the current-price trend of private consumption of medical services  Other community, social and personal services based on the current-price trends from HFCE on: <ul style="list-style-type: none"> <li>– Laundry</li> <li>– Recreation and cultural activities</li> <li>– Personal care</li> </ul>	Health and social work based on the constant-price trend of private consumption of medical services  Other community, social and personal services deflated using CPI: Services
Other producers	Stats SA: GDP by expenditure	Constant price estimates inflated using CPI: All items	Data trended from annuals for both households with employed persons and non-profit institutions serving households

## 4. Compilation of other components of the supply and use tables

This section discusses the other components of the SUTs that are not classified as an industry in the SIC. The other components of the SUTs include the following:

- trade margins,
- transport margins,
- non-profit institutions,
- taxes on products,
- subsidies on products,
- taxes less subsidies on production and imports,
- rest of the world – trade,
- informal sector, and
- illegal activities.

### 4.1 Compilation of trade margins

Trade margins have been compiled as recommended in SNA 2008 in this benchmark cycle. SNA 2008 defines trade margins as the difference between the actual or imputed price realised on a good purchased for resale and the price that would have to be paid by the distributor to replace the good at the time it is sold or otherwise disposed of. The difference between the price at which a merchant purchased a product and the price at which the merchant sold the product to another party is called the trade margin.

#### 4.1.1 Data sources used for the compilation of trade margins

Table 21 lists the source data used for the compilation of trade margins.

**Table 21 – Data sources used for trade margins**

Component	Indicator variable and unit of measurement	Source	Period
Wholesale trade products	Wholesale trade sales; Rand values	Stats SA: SIS – Wholesale Trade Industry (Report 61-01-01)	2015
Retail trade products	Retail trade sales; Rand values	Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	2015
Motor trade products	Motor trade sales; Rand values	Stats SA: SIS – Motor Trade Industry (Report 63-01-02)	2015
Output trade margins	Output trade margins; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019

#### 4.1.2 Methodology for the compilation of trade margins

Trade margins are derived as the difference between the trading sales and the costs of goods purchased for resale, adjusted by changes in inventories (and, if possible, adjusted too by holding gains and losses):

Trade sales (at basic prices)

*less* costs of goods purchased for resale (at purchasers' prices)  
*less* trading stock at the beginning of the period (at purchasers' prices)  
*plus* trading stock at the end of the period (at purchasers' prices)  
*equals* trade margin (at basic prices).

The data from the wholesale, retail and motor trade SISs were re-classified according to the CPC. Where there was a product that needed to be further disaggregated, data from Stats SA's Income and Expenditure Survey were used.

The AFS was used to benchmark the trade margins. The AFS provides data on the total output of trade margins by industry, which is then disaggregated using SIS data into margins by product. The trade output margins are derived separately as the difference between sales and purchases of goods for resale. Wholesale, retail and motor output trade margins are calculated separately from the AFS. Manufacturing industries often trade in products similar to those that they produce, or trade in complementary products, and such sales are usually of a wholesale type, although some may be sold directly to consumers. Manufacturing industries may also trade in similar imported goods, and such trade should be classified as wholesale trade.

These benchmarked levels were further disaggregated to the detailed commodity level by using the wholesale, retail and motor trade SISs. After calculating the trade output margins, the next step is to allocate the wholesale, retail and motor trade margins to the products to which the margins apply. The SIS data are used to calculate the product-specific margin ratios. The product-specific margin ratios for retail are multiplied by the retail trade output margin to derive the trade margin of the allocated products. The same methods are applied to allocate the wholesale and motor trade output margins. The three trade margins (wholesale, retail and motor trade) are added together and are called trade margins in the supply table; the informal-sector trade margin is added as well.

#### 4.1.3 Informal-sector trade margins

Informal-sector trade margins were compiled as recommended in SNA 2008 in this benchmark cycle.

##### 4.1.3.1 Data sources used for the compilation of informal-sector trade margins

Table 22 lists the source data used for the compilation of informal-sector trade margins.

**Table 22 – Data sources used for informal-sector trade margins**

Component	Indicator variable and unit of measurement	Source	Period
Informal retail trade	Output; Rand values	Stats SA: Quarterly Labour Force Survey (P0211)	2013–2018
Informal accommodation and informal food-serving services	Accommodation and food serving; Rand values	Internal research and media reports	2013–2018

#### 4.1.3.2 Methodology for the compilation of informal-sector trade margins

Retail trade margins are included for informal retail businesses such as spaza shops and roadside stalls. The output estimates were obtained using data from the QLFS as described in section 4.10.2. The total output estimate for the informal trade services industry (SIC 6) was disaggregated into three components: retail margin, informal accommodation, and informal food-serving services (including shebeens and taverns). The informal retail trade margin was allocated to products using internal research and media reports regarding the products sold by informal retail outlets and their relative magnitudes.

#### 4.2 Compilation of transport margins

The transport margin compilation has been improved in this benchmark cycle as recommended in SNA 2008. In this benchmark cycle, in addition to trade margins, transport margins were used as another valuation component relating to the delivery chain of products from the producer to the final user.

Transport margins represent freight transportation services when invoiced separately by the seller; transport margins are transport charges paid separately by the purchaser to take delivery of products at the required time and place. They are included in the use of products at purchasers' prices, and not in the basic price of manufacturers' output or in the trade margins of wholesalers or retailers.<sup>15</sup>

##### 4.2.1 Data sources used for the compilation of transport margins

Table 23 lists the source data used for the compilation of transport margins.

**Table 23 – Data sources used for transport margins**

Component	Indicator variable and unit of measurement	Source	Period
Agriculture products	Expenditure by railage-out transportation; Rand values	Stats SA: Census of Commercial Agriculture (Report 11-02-01)	2017
Forestry, fishing, mining and manufacturing products	Expenditure by railage-out transportation; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
Freight transport by rail or road	Turnover by rail and road freight transportation; Rand values	Stats SA: Land Transport (P7162)	2013–2018

##### 4.2.2 Methodology for the compilation of transport margins

The transport-margin data were sourced from the AFS and the CoCA, in particular the variable called 'railage-out'. The variable railage-out shows the transport of goods from the place where they are manufactured or sold to the place where the purchaser takes delivery – if the manufacturer or trader pays a third party for the transport, and if this amount is invoiced separately to the purchaser. The CoCA railage-out was used to benchmark the transport of agriculture products, while the AFS railage-out was used to benchmark the transport of all non-agriculture products. This means that the manufacturer, wholesaler or retailer has arranged the transport of goods in such a way that the purchaser has to pay separately for the transport costs, even

<sup>15</sup> Source: SNA Handbook on Supply, Use and Input-Output Tables with Extensions and Applications.

when the seller provides the transport. The transport costs are either invoiced separately or they are shown as a separate, measurable line item in the sales statement (i.e. they are excluded from the sale of the item).

Not all of the railage-out variable from the AFS can be treated as a transport margin. There are transport services for goods not considered as products in the AFS railage-out data. These include the transport of used goods (including removal services); scrap and waste; and earth and similar goods in relation to construction projects. In the AFS data, railage-out products are those from the forestry industry to the manufacturing industry. The railage-out data from the AFS and CoCA were classified based on a classification concordance from SIC (industries) to CPC (products).

Stats SA's monthly Land Transport survey was used to adjust AFS and CoCA data to a calendar-year basis, as the AFS and CoCA collect data according to respondents' financial years. The monthly survey of land transport covers passenger and freight transportation by rail and road. The data used for calendarisation are freight transportation by rail and road when invoiced separately by the seller. The total value of the CoCA railage-out and AFS railage-out was multiplied by the calendarised value to determine the total annual transport margin.

### 4.3 Compilation of non-profit institutions

Estimates for non-profit institutions (NPIs) have been compiled as recommended in SNA 2008.

#### 4.3.1 Data sources used for the compilation of non-profit institutions

Table 24 lists the source data used for the compilation of non-profit institutions.

**Table 24 – Data sources used for non-profit institutions**

Component	Indicator variable and unit of measurement	Source	Period
Non-profit institution goods and services	Output, intermediate consumption, and compensation of employees; Rand values	Stats SA: Gross Domestic Product (P0441)	2013–2018
	NPI expenditure and income; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019

#### 4.3.2 Methodology for the compilation of non-profit institutions

The GDP's NPI estimates were used to benchmark the output, intermediate consumption, value added, and compensation of employees estimates for the NPI sector. These benchmarked levels were further disaggregated to the detailed product level using AFS data. The intermediate consumption and output product distributions were calculated using AFS income and expenditure data.

### 4.4 Compilation of taxes on products

Taxes on products have been compiled as recommended in SNA 2008 in this benchmark cycle. Taxes on products are required to compile purchasers' prices from basic prices on a commodity (product) basis. Taxes on products were compiled for nine main tax categories, namely:

- value-added tax (VAT),
- customs duties,
- excise duties,
- fuel levy,
- equalisation fund,
- provincial taxes,
- sundry receipts,
- transfer duties, and
- extra-budgetary.

#### 4.4.1 Compilation of taxes on products: value-added tax

VAT is an indirect tax on the consumption of goods and services in the economy, and it is calculated using three components, namely: intermediate consumption VAT, household final consumption expenditure (HFCE) VAT, and gross fixed capital formation (GFCF) VAT. The estimates of intermediate consumption VAT, HFCE VAT and GFCF VAT were then aggregated by SUT product. The total VAT estimate by SUT product was then prorated annually to the VAT accrual estimate. The estimated VAT using the methodology described in section 4.4.3 is calibrated to the VAT collection data from National Treasury.

The taxable portion was estimated by product using information on taxable, zero-rated and tax-exempt products from the VAT legislation.

The following transactions or goods are zero-rated:

- 19 basic food items,<sup>16</sup>
- petrol and diesel,
- paraffin,
- certain government grants,
- sale of a going concern (property or business that is still trading),
- export of goods,
- international transport of goods and passengers,
- certain services supplied to non-residents, and
- services physically rendered outside South Africa.

The following transactions are exempt for VAT purposes:

- residential rental accommodation,
- public road and rail passenger transport,
- educational services provided by an approved educational institute, and
- non-fee related financial services, such as interest.

#### 4.4.2 Data sources used for the compilation of taxes on products

Table 25 lists the source data used for the compilation of taxes on products.

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<sup>16</sup> Brown bread, maize meal, samp, mealie rice, dried mealies, dried beans, lentils, pilchards / sardinella in tins, milk powder, dairy powder blend, rice, vegetables, fruit, vegetable oil, milk, cultured milk, brown wheaten meal, eggs, edible legumes and pulses of leguminous plants.

**Table 25 – Data sources used for taxes on products**

Component	Indicator variable and unit of measurement	Source	Period
National, provincial and local government components	Total sales and purchases of government; Rand values	National Treasury: Vulindlela government database	2013–2018
Insurance, financial, and non-financial services	Output and intermediate consumption; Rand values	South African Reserve Bank	2013–2018
	Owner-occupied property; Rand values	Stats SA: Gross Domestic Product (P0441)	2013–2018
Transport industry and products	Detailed purchases of goods and services; Rand values	Stats SA: SIS – Transport and Storage Industry (Report 71-02-01)	2013 and 2016
		Stats SA: Quarterly Financial Statistics of Municipalities (P9110)	2013–2018
		Stats SA: Annual Financial Statistics (P0021)	2014–2019

#### 4.4.3 Methodology for the compilation of intermediate consumption value-added tax

This section deals with the non-refundable portion of VAT (also known as input tax) that certain industries pay on their purchases, i.e. intermediate consumption.

The following industries were identified for intermediate consumption VAT compilation:

- railway transport (SIC 7111),
- other scheduled passenger transport (SIC 7121),
- other non-scheduled passenger transport (SIC 7122),
- monetary (SIC 8110),
- other financial (SIC 8120-90),
- life insurance (SIC 8211),
- pension (SIC 8212),
- medical aid (SIC 8213),
- owner-occupied (SIC 84 own),
- central government (SIC 91 central),
- provincial government (SIC 91 provincial),
- local government (SIC 91 local), and
- education (SIC 9200).

AFS and SIS (transport and communications) data were used for the transport output and intermediate consumption product distribution (see section 3.7). Stats SA used data from the SARB to create the monetary, other financial, life insurance, pensions, medical aid, and owner-occupied output and intermediate consumption product distribution (see section 3.8). For the government (central and provincial) and education



industries, the Vulindlela database (sourced from National Treasury – [www.vulindlela.gov.za](http://www.vulindlela.gov.za)) was used to distribute the intermediate consumption product levels. The QFSM was used to compile detailed municipal (local) government commodity details as well as provide a breakdown of local trading entities' product distribution (see section 3.9).

From the product structures, the zero-rated products and VAT-exempt services (see section 4.4.1) were subtracted from the respective original industry totals to create new industry totals. A new product distribution was calculated using industry ratios in a bottom-up approach.

For each of the SUT industry totals, a VAT-taxable portion was estimated. The VAT-taxable portion was multiplied by the new industry totals. This estimated portion was used to calculate new industry totals for intermediate consumption VAT industries. The industries are aggregated by product to create an intermediate consumption VAT distribution.

#### **4.4.4 Methodology for the compilation of household final consumption expenditure value-added tax**

The HFCE VAT estimates were compiled at the level of the SUT products. For each of the SUT products purchased by households, a VAT-taxable portion was estimated. The HFCE estimates, which are compiled as part of GDP measured by expenditure, are multiplied by the VAT-taxable portion and by the VAT tax rate, yielding an estimate of VAT paid by households.<sup>17</sup> The taxable portions by product were derived as follows.

For SUT products that contain a combination of taxable and non-taxable purchases, e.g. food, the taxable portion was based on detailed expenditure data derived from the Income and Expenditure Survey. The taxable portion represents taxable food products divided by total food purchased by households. For products such as used car margins and the service cost of household insurance, it is the sales or gross premiums that are taxed, and not the net expenditure measured in HFCE. These data are based on motor trade data in the case of sales of used cars, and SARB data in the case of insurance premiums. For these 'net expenditure' products a tax portion of greater than 100% was estimated in order to estimate the proper level of VAT paid by households. Sales to households by the informal sector and illegal sales were assumed to be sold without attracting VAT.

#### **4.4.5 Methodology for the compilation of gross fixed capital formation value-added tax**

The estimates of GFCF VAT were calculated using an approach similar to the HFCE estimates. A taxable portion was estimated by SUT product and cross-referenced to each of the GFCF subcomponents. Taxable portions were estimated based on VAT legislation, which describes which private and public institutions are eligible for input tax credits on GFCF purchases. For example, most businesses selling taxable supplies are eligible for a full input credit on their building, machinery and equipment purchases. In these cases, the taxable portion is zero. For other institutions, including some levels of government selling tax-exempt supplies, and for households and landlords purchasing products for additions and alterations for residential properties, an estimate of VAT was compiled. Renovation activity on owned and rented dwellings is included in GFCF. These institutions selling tax-exempt supplies as well as households are not eligible for input credits on the VAT they pay on their GFCF purchases.

#### **4.4.6 Methodology for the compilation of other taxes on products**

While the total amount of taxes on products is received from the SARB, detailed breakdowns of this total amount of taxes on products into commodities are calculated separately.

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<sup>17</sup> The VAT tax rate is the legislated rate of VAT.

The customs duty commodity breakdown is based on customs duty data from SARS. These data are based on the Harmonised System (HS) classification and represent the values of customs duties received for each HS grouping. The data were reclassified to CPC classifications based on import-trade commodity structures. The total customs duty amount was then applied and distributed using this commodity structure.

The excise duty commodity breakdown was received from SARS (tobacco, fuel levy and alcohol excise revenues). This allowed for the correct allocation of the excise duties within the SUTs. While the Road Accident Fund excise is included in the excise duty total, it was allocated within the SUT framework to be included under the fuel levy.

The total fuel levy amount was received from SARS and was allocated to petroleum oils (P43 in Annexure 3). The Road Accident Fund excise was combined with the fuel levy and was also allocated to petroleum oils.

The total transfer duty amount was received from SARS and was allocated to legal and accounting services. The total equalisation fund, provincial tax, sundry receipts, and extra-budgetary amounts were received from SARS. Their respective commodity distributions were compiled based on the function of the tax and the products the tax would apply to.

#### 4.5 Compilation of subsidies on products

Subsidies on products have been compiled as recommended in SNA 2008 in this benchmark cycle. Subsidies on products are required to compile purchasers' prices from basic prices on a commodity (product) basis. Subsidies on products are subsidies payable per unit of a good or service produced or imported.

##### 4.5.1 Data sources used for the compilation of subsidies on products

Table 26 lists the source data used for the compilation of subsidies on products.

**Table 26 – Data sources used for subsidies on products**

Component	Indicator variable and unit of measurement	Source	Period
Subsidies on products	Total subsidies on products; Rand values	South African Reserve Bank	2013–2018
		South African Revenue Service	2013–2018

##### 4.5.2 Methodology for the compilation of subsidies on products

The data used to compile subsidies on products are sourced from the SARB and SARS for the totals and commodity structures. The commodity structure for the allocation of subsidies is determined by internal research with data provided by the SARB and SARS. The subsidy commodity structures (where the subsidies are allocated) consist of transportation products and telecommunications. The transportation subsidy is allocated between local and long-distance transport based on the size proportions of the two products.

#### 4.6 Compilation of compensation of employees

The compilation of compensation of employees has been compiled as recommended in SNA 2008 in this benchmark cycle. Compensation of employees is defined in SNA 2008 as the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period. It is not always self-evident whether a person is an employee or self-employed; for example, some

workers who are paid based on results may be employees of an establishment, while others may be self-employed.

Compensation of employees is recorded on an accrual basis; that is, it is measured by the value of the remuneration in cash or in kind that an employee becomes entitled to receive from an employer in respect of work done during the relevant period, whether paid in advance, simultaneously, or in arrears of the work itself.

Compensation of employees has two main components:

- wages and salaries payable in cash or in kind; and
- social insurance contributions payable by employers, which include contributions to social security schemes; actual social contributions to other employment-related social insurance schemes; and imputed social contributions to other employment-related social insurance schemes.

#### 4.6.1 Data sources used for the compilation of compensation of employees

Table 27 lists the source data used for the compilation of compensation of employees.

**Table 27 – Data sources used for compensation of employees**

Component	Indicator variable and unit of measurement	Source	Period
Agricultural industry	Salaries and wages; Rand values	Stats SA: Agricultural Survey (P1101)	2013–2017
Mining and quarrying, manufacturing, electricity and water, trade services, construction, transport and communication, and personal services	Employment costs; Rand values  Severance and termination payments; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
Local electricity and water	Employee related costs; Rand values  Remuneration of board of directors and councillors; Rand values	Stats SA: Quarterly Financial Statistics of Municipalities (P9110)	2013–2018
Government	Wages, salaries and social contributions; Rand values <sup>18</sup>	Stats SA: Financial Statistics of Consolidated General Government (P9119.4)	2013–2018
Informal sector <sup>19</sup>	Number of people employed  Average monthly earnings; Rand values  Average monthly earnings for self-employed workers; Rand values	Stats SA: Quarterly Labour Force Survey (P0211)	2013–2018

<sup>18</sup> These are social contributions made on behalf of the employee by the employer to social insurance schemes.

<sup>19</sup> Electricity, water and passenger transport are measured as explained in the methodology for the compilation of the informal sector.

#### 4.6.2 Methodology for the compilation of compensation of employees

For all the industry groupings that were based on data from the AFS, compensation of employees was compiled as the sum of employment costs and the costs of severance and termination. For the local electricity and water industry groupings, compensation of employees was compiled from the QFSM as the sum of employee-related costs and the remuneration of boards of directors and councillors. General government compensation of employees was compiled using the wages, salaries and social contributions variable from the Financial Statistics of Consolidated General Government. For the informal sector, compensation of employees was estimated by multiplying average monthly earnings per person (employee) by the corresponding number of people employed, using the QLFS.

#### 4.7 Compilation of taxes less subsidies on production and imports

The compilation of taxes less subsidies on production and imports has been improved in this benchmark cycle through greater detail, as recommended in SNA 2008. Taxes less subsidies on production and imports consist of (1) taxes payable or subsidies receivable on goods or services produced as outputs and imports, and (2) other taxes or subsidies on production and imports, such as those payable or receivable in respect of the labour, machinery, buildings or other assets used in production. Taxes on production and imports do not include any income taxes payable by the recipients of incomes accruing from production, whether they are employers or employees.

##### 4.7.1 Data sources used for the compilation of taxes less subsidies on production and imports

Table 28 lists the source data used for the compilation of taxes less subsidies on production and imports.

**Table 28 – Data sources used for taxes less subsidies on production and imports**

Component	Indicator variable and unit of measurement	Source	Period
Taxes less subsidies on production and imports	Value added; Rand values	Stats SA: Financial Statistics of National Government (P9119.3)	2013–2018
	Compensation of employees; Rand values		
	Petroleum oils; Rand values	Stats SA: Annual Financial Statistics (P0021)	2014–2019
	Taxes and subsidies on production; Rand values	South African Reserve Bank	2013–2018

##### 4.7.2 Methodology for the compilation of taxes less subsidies on production and imports

The SARB provides data for taxes on production and imports classified according to the nature of the tax. Each tax on production was allocated to the appropriate industries using the most appropriate indicator series from the SUTs. For example, payroll taxes were allocated using compensation of employees, except that no allocation was made to informal businesses. The extra-budgetary tax on production was allocated to central government. Expenditure on petroleum oil products was used to allocate the motor vehicle tax on business enterprises and the motor vehicle emissions tax.

The major categories from the SARB include taxes levied by central and provincial governments, and local-government property taxes. Central and provincial-government taxes include:

- stamp duties and fees,
- marketable securities tax,

- vehicle taxes: business enterprises,
- total taxes on payroll and workforce,
- extra-budgetary tax on production,
- plastic bag levy,
- electricity levy,
- incandescent light bulb levy,
- carbon dioxide (CO<sub>2</sub>) tax – motor vehicle emissions,
- tyre levy, and
- International Oil Pollution Compensation Fund levy.

For local-government rates the SARB provided an estimate for owner-occupied dwellings, with the remainder being allocated by industry using the AFS total balance sheet values for land, residential buildings, and non-residential buildings.

All levels of government (national, provincial and local) provide subsidies to public corporations and private businesses. Financial Statistics of National Government data for subsidies classified by function were used to allocate the total SARB estimate by industry.<sup>20</sup>

#### 4.8 Compilation of gross operating surplus

The estimates of gross operating surplus have been compiled as recommended in SNA 2008 in this benchmark cycle. Operating surplus and mixed income represent the contribution of capital to the generation of value added. The components of value added are other taxes on production, other subsidies (a negative item), compensation of employees, and operating surplus / mixed income. By its nature, it is difficult to obtain reliable information on operating surplus / mixed income, which in important respects differs from the concept of profit in business accounting.

##### 4.8.1 Methodology for the compilation of gross operating surplus

Gross operating surplus / mixed income is the balancing item in the generation of income account, and can be expressed as follows:

Gross domestic product

*minus* compensation of employees payable

*minus* taxes on production payable

*plus* subsidies on production and imports receivable.

#### 4.9 Compilation of the rest of the world – trade

Trade with the rest of the world has been compiled as recommended in SNA 2008 in this benchmark cycle. The compilation of the trade data consists of the calculation of trade exports and imports (goods and services); cost, insurance and freight (CIF); and adjustments for purchases of residents abroad and purchases of non-residents within the domestic economy.

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<sup>20</sup> National government functions include the following: basic research, police services, general economic and commercial affairs, general labour affairs, agriculture, electricity, manufacturing, road transport, railway transport, air transport, communication, tourism, waste management, waste water management, protection of biodiversity and landscape, housing development, water supply, recreation and sporting services, cultural services, broadcasting and publishing services, pre-primary and primary education, and secondary education.

#### 4.9.1 Data sources used for the compilation of the rest of the world – trade

Table 29 lists the source data used for the compilation of the rest of the world – trade.

**Table 29 – Data sources used for the rest of the world – trade**

Component	Indicator variable and unit of measurement	Source	Period
Import and exports of products	Detailed trade in services data; Rand values	South African Reserve Bank	2013–2018
	Detailed merchandise trade; Rand values	South African Revenue Service	2013–2018
	Cost, insurance and freight data; Rand values		
	Expenditure data for non-resident visitors domestically and resident visitors abroad; Rand values	Stats SA: Tourism Satellite Account (Report 04-05-07)	2013–2018

#### 4.9.2 Methodology for the compilation of the rest of the world – trade

Stats SA used data supplied by SARS to benchmark detailed merchandise trade. The SARS trade data are classified according to the HS, whereas the products in the SUTs are classified according to the CPC. To allow for a breakdown of the classification of goods according to the CPC classification, a detailed concordance table between the HS and CPC systems was developed. This was necessary for the SUT compilation. This detailed breakdown was then aggregated up to the level of CPC detail used within the SUTs. This benchmarked data provided the imports and exports of goods on an annual basis.

Furthermore, a balance of payments (BoP) adjustment is also made to certain goods. This adjustment was based on additional data from the SARB as part of the BoP estimates. International Merchandise Trade Statistics (IMTS) is a framework that contains guidelines for the compilation of international merchandise trade statistics. The customs data are on an IMTS basis, i.e. border-crossing, rather than the desired SNA 2008 change-of-ownership convention. More specifically, ‘the main conceptual difference is that international merchandise trade statistics are based on the general principle to record all goods that add to or subtract from the stock of material resources of a country by either entering (imports) or leaving (exports) its economic territory. The recording of transactions in the BoP is based on the principle of change of ownership between residents and non-residents’ (IMTS). These differences are addressed to the extent possible in the BoP adjustments and are outlined in the IMTS and BoP manuals.

Imports and exports of services are compiled based on BoP data provided by the SARB. The data are then used as inputs into the SUT system, where adjustments are applied for CIF and the purchases of residents abroad and of non-residents domestically. The CIF adjustments are made to imported goods to take into account the cost of insurance and freight of the goods, as the original imported data are free on board (FOB), and adjustments are made to change imported goods to CIF. It is not applicable to exports as exports are reported in the SUTs as FOB. The CIF adjustments were used to distribute the CIF total to imported goods. The CIF data totals are obtained from SARS.

The adjustments for purchases by residents abroad and purchases by non-residents domestically were obtained from the SARB. A product distribution for the purchases, both by residents abroad and non-residents domestically, was compiled using Stats SA’s Tourism Satellite Account as well as research undertaken for the inbound visitor expenditure of other countries (for South African residents). This provided estimates for the

expenditure of inbound and outbound visitors, facilitating the adjustment of purchases by residents abroad and purchases by non-residents domestically. The Tourism Satellite Account was used to disaggregate inbound travel receipts into detailed services and purchases of goods. The additional research that was undertaken examining other countries' inbound visitor data (for South African residents) was used to disaggregate outbound travel receipts into detailed services and purchases of goods.

#### 4.10 Compilation of the informal sector

The informal sector was compiled as recommended in SNA 2008 in this benchmark cycle. SNA 2008 defines the informal sector as units, businesses or people in the production process with the objective of creating jobs for themselves. It comprises units that operate on a small scale with little or no capital investment. These business activities are not covered by business surveys, which is why independent estimates are prepared. Labour is based on casual employment, personal employment, or relatives employed in the business.

##### 4.10.1 Data sources used for the compilation of the informal sector

Table 30 lists the source data used for the compilation of the informal sector.

**Table 30 – Data sources used for the informal sector**

Component	Indicator variable and unit of measurement	Source	Period
Informal sector <sup>21</sup>	Number of people employed	Stats SA: Quarterly Labour Force Survey (P0211)	2013–2018
	Average monthly earnings; Rand values		
	Average monthly earnings for self-employed workers; Rand values		
Electricity and water	Total number of households	Stats SA: Mid-year Population Estimates (P0302)	2013–2018
	Number of households that do not have access to electricity	Stats SA: General Household Survey Series V: Energy (Report 03-18-04)	2013–2017
	Price of electricity; Cents per kilowatt-hour	Department of Mineral Resources and Energy: South Africa energy price report	2013–2018
	Usage of electricity by households; Kilowatt-hours	Supporting African Municipalities in Sustainable Energy Transitions: Household energy use in selected areas in and around Cape Town	2015
	Number of households that do not have access to water	Stats SA: General Household Survey (P0318)	2013–2017

<sup>21</sup> Electricity, water and passenger transport are measured as explained in the methodology for the compilation of the informal sector.

Component	Indicator variable and unit of measurement	Source	Period
Electricity and water (continued)	Price of water; Cents per kilolitre	Department of Water and Sanitation National Treasury	2013–2018
	Usage of water; Litres	Department of Water and Sanitation Empirical research	2015
Passenger transport	Registered minibus taxis; Number Estimated revenue from taxi fares; Rand values	Estimates based on research and media statements	2017 back-cast to 2014

#### 4.10.2 Methodology for the compilation of the informal sector

In the QLFS, informal-sector employment has two components namely:

- employees who are not registered for income tax and who work in establishments that employ fewer than five persons; and
- employers, self-employed workers, and persons helping unpaid in their household business, who are not registered for either income tax or VAT.

Accordingly, value added for the informal sector was estimated using the income approach, where gross value added is the sum of compensation of employees and gross operating surplus. The compensation of employees component was estimated by multiplying average monthly earnings per person (employee) by the number of people employed. Similarly, gross operating surplus was estimated by multiplying average monthly earnings per person (employer) by the number of self-employed workers. The compensation of employees and gross operating surplus estimates were annualised by multiplying by 12.

In general, informal-sector intermediate consumption and output were estimated using ratios from formal industries identified as being closely linked to possible informal activity in that sector. Thus, output to value added ratios for these identified formal industries were used to estimate output levels for corresponding industries in the informal sector. Similarly, intermediate consumption to value added ratios were used to estimate intermediate consumption levels. However, the informal-sector electricity, water and passenger transport levels were estimated differently from the other industries described above.

Output for informal-sector electricity was estimated as the product of the number of households that do not have access to electricity, daily electricity usage, and the price of electricity. Similarly, output for informal-sector water was estimated as the product of the number of households that do not have access to water, daily water usage, and the price of water. Informal intermediate consumption was estimated using intermediate consumption to output ratios calculated from previous SUTs.

Output for informal-sector passenger transport was calculated using the revenue from taxi fares for 2017. This was supported by media statements covering the taxi industry, and revenue was back-cast to 2014 using movements in the consumer price index for public transport.

The informal output and intermediate consumption structures were based on the identified formal industry structures for the relevant informal industry groupings.



#### 4.11 Compilation of illegal activities

Illegal activities have been compiled as recommended in SNA 2008 in this benchmark cycle. While illegal activities are prevalent in almost all industries, their estimation in this benchmarking relates to illegal activities in the following sectors: agriculture, mining, manufacturing, trade, and personal services.

Estimates for illegal activities cover chiefly illegal production and sales in the following: cannabis; abalone; diamonds; precious metals; alcohol; piracy; medicaments; other drugs (narcotics); counterfeit cigarettes; counterfeit clothing (including second-hand clothing); counterfeit footwear; firearms, ammunition and explosives; motor vehicles; and prostitution.

##### 4.11.1 Data sources used for the compilation of illegal activities

Table 31 lists the source data used for the compilation of illegal activities.

**Table 31 – Data sources used for illegal activities**

Component	Indicator variable and unit of measurement	Source	Period
Agricultural products	Cannabis and abalone; Quantities and rand value/cost	South African Police Service South African Revenue Services Stats SA: Gross Domestic Product (P0441) Department of Agriculture, Land Reform and Rural Development	2013–2018
Mining and quarrying products	Diamond and precious metal seizures; Quantities and rand cost/value	South African Revenue Service South African Police Service Stats SA: Mining: Production and Sales (P2041) Stats SA: Quarterly Employment Statistics (P0277)	2013–2018
Manufacturing products	Alcohol, piracy and medicaments; Quantities and rand value/cost	South African Police Service South African Revenue Service Media reports	2015–2018
Wholesale, retail and motor trade, and hotel and restaurant products	Drugs (narcotics); cigarettes; clothing (including second-hand); footwear; firearms, ammunition and explosives; and motor vehicles; Quantities and rand cost/value	South African Police Service South African Revenue Service Media reports Stats SA: Wholesale Trade Sales (P6141.2) Stats SA: Gross Domestic Product (P0441)	2013–2018

Component	Indicator variable and unit of measurement	Source	Period
Personal services	Number of sex workers; population by sex	Sex Workers Education and Advocacy Taskforce  Stats SA: Mid-year Population Estimates (P0302)  Stats SA: Gross Domestic Product (P0441)	2014–2018

#### 4.11.2 Methodology for the compilation of illegal activities

For all industries, output for each commodity was derived from the product (multiplication) of quantity and cost. Intermediate consumption was derived as a share of output, with cost adjustments based on consumer price indices for food, housing and utilities, transport, communication, and other (raw materials and equipment).

In instances where data were not complete (referring to volume and cost), a number of indices and growth rate indicators were used to inflate or deflate the production and values and to impute the missing data points.

Output for illegal activities in agriculture was estimated using quantities and cost data for cannabis and abalone from SARS, the South African Police Service (SAPS), and DALRRD. Given that there were no consistent time series available, growth rates of excise duty and household expenditure on tobacco were used to extrapolate for the missing years.

Data from SARS and SAPS on quantities and costs of illegal mining activities relating to gold, diamonds and platinum were used to estimate output levels. In cases where there was a single data point, monthly mining survey growth rates were used to extrapolate production quantities, and QES data were used for mining costs.

Quantity and cost data from SARS and SAPS were used to estimate the illegal manufacturing commodities, namely: alcohol, medicaments, and piracy (CDs and DVDs). Growth rates of household expenditure and SARS excise duty were used to extrapolate for the missing years.

Estimates of illegal activities in wholesale, retail and motor trade, hotels and restaurants were compiled using data from SARS and SAPS. Quantities and costs for contraband such as cigarettes; drugs; counterfeits of clothing and footwear and other goods; firearms and ammunition; and motor vehicles were used to estimate output. Growth rates of household expenditure, the consumer price index, and wholesale sales were used to extrapolate the levels.

Illegal activities in the personal services industry comprise prostitution services of female sex workers. Numbers of sex workers and costs for 2013 were sourced from Sex Workers Education and Advocacy Taskforce. For the missing years, numbers were estimated using mid-year population growth rates (females between 15 and 59 years); for cost extrapolation, the CPI for personal services was used.

## 5. GDP measured by expenditure

### 5.1 Household final consumption expenditure

#### 5.1.1 Introduction (HFCE)

Household final consumption expenditure (HFCE) forms the largest part of GDP measured by expenditure, with a contribution of 63,6% in 2018. It consists of expenditure incurred by resident households on consumption goods and services (SNA 2008, 9.56). Such expenditure is included in HFCE regardless of where it occurs. Thus, payments made by residents while travelling or studying abroad (other than business-related expenditures) are included in HFCE, while those made by foreigners within the borders of South Africa are excluded.<sup>22</sup>

Along with consumption of goods and services, HFCE also includes the following:

- (a) *Owner-occupied housing.* Individuals living in dwellings which they own are deemed to be providing housing services to themselves. As a result, imputed expenditure on such services (termed imputed rent) is included in HFCE. In 2018, this series accounted for 8,0% of HFCE at current prices.
- (b) *Expenditure on financial intermediation, the service charge component of premiums on insurance, and the cost of services provided by pension funds.* In 2018, this expenditure accounted for 6,8% of HFCE at current prices.
- (c) *Own-account production of goods,* including agricultural products produced and consumed by the same household.
- (d) *Minor repairs and maintenance to the dwelling,* including purchases of materials used in the process. Fees charged by builders, carpenters, electricians, etc. are also included. In 2018, this expenditure accounted for 0,3% of HFCE at current prices.

Item (c) above is relatively small and difficult to isolate from other household expenses.

Excluded from HFCE is any business expenditure by households on behalf of unincorporated enterprises which they own. In addition, the following items are also excluded:

- (a) *Expenditure on fixed or non-financial assets such as dwellings, as well as expenditure on major improvements to land and dwellings.* These are excluded as they form part of gross fixed capital formation.
- (b) *Valuables.* These are usually acquired as a store of value but are excluded from HFCE. They are included in production-based GDP, and included in the expenditure accounts according to the institutional sector that purchased them. They are recorded as GFCF if they are produced within the current period and only if their value is above a certain threshold. In practice, no estimates are currently included for valuables in the South African national accounts.

#### 5.1.2 Composition of HFCE

HFCE is classified by purpose using the Classification of Individual Consumption According to Purpose (COICOP), developed by the United Nations.<sup>23</sup> Consumer price indices (CPIs), used to deflate HFCE, are also classified according to COICOP. Currently, 94 commodities and services are estimated, based on the 3-digit

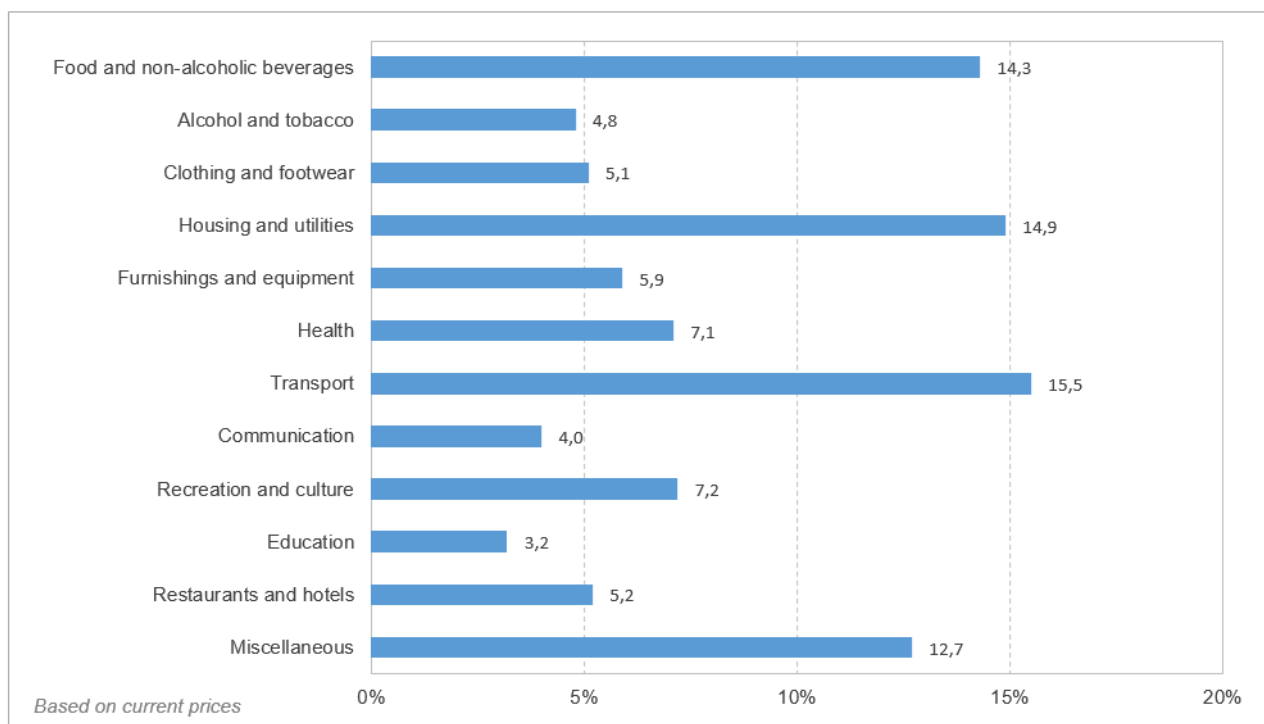
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<sup>22</sup> Expenditures by foreign tourists and business travellers while in South Africa are included in the balance of payments current account, forming part of exports of goods and services. Expenditure by South African residents while abroad (other than business-related expenditure) is included in imports of goods and services.

<sup>23</sup> HFCE is also classified by durability, according to the following four broad groups: durable goods, semi-durable goods, non-durable goods, and services.

COICOP level. These in turn are grouped and published according to the 2-digit COICOP level. Figure 4 shows the 2-digit COICOP categories as a percentage of total HFCE in 2018.

**Figure 4 – Components of HFCE as a percentage of total HFCE in 2018**



### 5.1.3 Overview of source data (HFCE)

The majority of the source data used in the compilation of quarterly and annual current-price HFCE estimates originates from statistical surveys conducted by Stats SA (see Table 32 for a list of the surveys in question). Currently, HFCE estimates are measured using various supply-side data sources. Important data sources include Stats SA's Retail Trade Sales (RTS) and Motor Trade Sales (MTS) surveys, which are available monthly; the QFS survey of the formal business sector, the QFS survey of selected municipalities, and the structural industry survey (SIS) of retail trade. The retail SIS and monthly RTS provide information on the majority of the retail trade commodities.<sup>24</sup>

Ideally, current-price HFCE estimates ought to be compiled using a household-based survey, such as the Income and Expenditure Survey (IES) and Living Conditions Survey (LCS) conducted by Stats SA. The latest available IES and LCS are for the reference periods 2010/11 and 2014/15 respectively. Their low frequency makes them unusable for annual benchmarking purposes. In addition, households tend to under-report certain expenditures, especially those related to the consumption of alcoholic beverages and tobacco. This in turn requires adjustments so as to accurately reflect consumption expenditure patterns.

Table 32 lists the source data for quarterly and annual HFCE estimation by commodity level of COICOP (current prices). The final column shows data sources used for the latest SUT benchmarking.

<sup>24</sup> 'Commodities' refers to a group of goods and services.

**Table 32 – Data sources for household final consumption expenditure (at current prices unless otherwise indicated)**

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Food	13,0	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail trade and other industries
Non-alcoholic beverages	1,4	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail trade and other industries
Alcoholic beverages	3,0	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Annual volume estimates are derived from excise data and reflatd using average price data	SARS: excise duties
Tobacco	1,7	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Annual volume estimates are derived from excise data and reflatd using average price data	SARS: excise duties Tobacco Institute of Southern Africa
Clothing	3,8	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Shoes and other footwear	1,2	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade

<sup>25</sup> Based on 2018 current prices.

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Water supply	1,0	Water expenditure	Stats SA: Quarterly Financial Statistics of Selected Municipalities (P9110.1)	Stats SA: Annual Financial Statistics (P0021)	Stats SA: Living Conditions Survey 2014/15
Sewage collection	0,2	Sewage collection	Stats SA: Quarterly Financial Statistics of Selected Municipalities (P9110.1)	Stats SA: Annual Financial Statistics (P0021)	Stats SA: Living Conditions Survey 2014/15
Refuse collection	0,1	Refuse collection	Stats SA: Quarterly Financial Statistics of Selected Municipalities (P9110.1)	Stats SA: Annual Financial Statistics (P0021)	Stats SA: Living Conditions Survey 2014/15
Electricity	2,8	Electricity	Stats SA: Quarterly Financial Statistics (P0044)	Stats SA: Annual Financial Statistics (P0021)	Stats SA: Living Conditions Survey 2014/15
Actual rents paid by tenants	2,1	Stock of residential housing (i.e. buildings) at constant prices used as quarterly indicator of constant-price actual and imputed rentals <sup>26</sup>  Proportions of actual and imputed rent to total rent based on 2015 current-price SARB benchmarks, to calculate quarterly constant-price estimates; quarterly current-price estimates are calculated by inflating the constant-price quarterly estimates by the CPIs for actual and imputed rent	SARB: capital stock	Sum of four quarters	Stats SA: Living Conditions Survey 2014/15 <sup>27</sup>  Stats SA: Consumer Price Index (P0141)
Imputed rentals for housing	8,0				

<sup>26</sup> Stock of residential housing is estimated by the SARB using gross fixed capital formation estimates compiled by Stats SA.

<sup>27</sup> The 2015 benchmark for both paid and owner-occupied rents was constructed using LCS dwelling counts multiplied by average rents by type of dwelling compiled as part of the CPI programme. The rental equivalence approach as recommended by the SNA was used for owner-occupied dwellings.

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Materials for the maintenance and repair of the dwelling	0,2	Retail trade sales  Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1)  Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Services for the maintenance and repair of the dwelling	0,1	Includes co-proprietor charges for caretaking, gardening, stairwell cleaning, heating and lighting, maintenance of lifts and refuse disposal chutes, etc.	Trended series	Sum of four quarters	Stats SA: Living Conditions Survey 2014/15
Other services relating to the dwelling	0,1	Includes other payments (e.g. cell phone-based intercoms, maintenance and repairs), security systems, and contribution towards communal services	Trended series	Sum of four quarters	Stats SA: Living Conditions Survey 2014/15
Domestic and household services	2,4	Number of employees  Current-price levels are derived using the number of employees and CPI for domestic wages	Stats SA: Quarterly Labour Force Survey (P0211)  Stats SA: Consumer Price Index (P0141)	Sum of four quarters	Stats SA: Quarterly Labour Force Survey (P0211)  Stats SA: Living Conditions Survey 2014/15
Liquid fuels	0,1	Fuels and lubricants for personal transport equipment	Trended series	Sum of four quarters	Stats SA: Living Conditions Survey 2014/15

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Solid fuels	0,2	Liquid fuels	Trended series	Sum of four quarters	Stats SA: Living Conditions Survey 2014/15
Furniture and furnishings	1,4	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Household textiles	0,6	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Major household appliances whether electric or not electric	0,3	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Small electric household appliances	0,1	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Glassware, tableware and household utensils	0,3	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade



Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Major tools and equipment	0,2	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Small tools and miscellaneous accessories	0,3	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Non-durable household goods	0,4	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Motor cars	3,3	eNaTIS Proportions (passenger and light commercial vehicles) NAAMSA proportions	Stats SA: Motor Trade Sales (P6343.2) NAAMSA eNaTIS	Stats SA: Annual Financial Statistics (P0021)	Stats SA: SIS – motor trade
Motorcycles	0,2	New vehicle and motorcycle ratios	Stats SA: Motor Trade Sales (P6343.2)	Sum of four quarters	Stats SA: SIS – motor trade
Bicycles	0,1	Personal transport equipment	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – wholesale trade
Used cars profit	0,5	Used vehicle sales	Stats SA: Motor Trade Sales (P6343.2)	Sum of four quarters	Stats SA: SIS – motor trade

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Spare parts and accessories for personal transport equipment	1,5	Income from the sales of accessories	Stats SA: Motor Trade Sales (P6343.2)	Sum of four quarters	Stats SA: SIS – motor trade
Fuels and lubricants for personal transport equipment	3,1	Income from fuel sales	Stats SA: Motor Trade Sales (P6343.2)	Sum of four quarters	Stats SA: SIS – motor trade
Maintenance and repair of personal transport equipment	1,6	Workshop income	Stats SA: Motor Trade Sales (P6343.2)	Sum of four quarters	Stats SA: SIS – motor trade
Other services in respect of personal transport equipment	0,5	Trended series	Trended series	Sum of four quarters	Benchmark estimate for 2014 based on LCS data and AFS data for transport hiring services
Passenger transport by railway	0,2	Income from rail passenger transportation	Stats SA: Land Transport (P7162)	Sum of four quarters	Stats SA: SIS – transport PRASA annual report
Passenger transport by road	3,2	Income from road passenger transportation	Stats SA: Land Transport (P7162)	Sum of four quarters	Stats SA: SIS – transport Estimates for informal taxis

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Passenger transport by air	1,1	Air transport	Stats SA: Quarterly Financial Statistics (P0044)	Sum of four quarters	Stats SA: SIS – transport
Pharmaceutical products	2,0	Retail trade sales at current prices Goods weights derived from SIS per store type; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Therapeutical appliances and equipment	0,3	Retail trade sales at current prices Goods weights derived from SIS per store type; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Medical services	2,2	Net claims incurred	Council for Medical Schemes Stats SA: Living Conditions Survey 2014/15	Sum of four quarters	Council for Medical Schemes Stats SA: Living Conditions Survey 2014/15
Dental services	0,2				
Paramedical services	0,2				
Hospital services	2,2				
Postal services	0,1	Number of postage items handled	South African Post Office	Sum of four quarters	Stats SA: SIS – post and telecommunications
Telephone and telefax equipment	1,1	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Telephone and telefax services	2,8	Quarterly Financial Statistics: turnover	Stats SA: Quarterly Financial Statistics (P0044)	Sum of four quarters	Stats SA: SIS – post and telecommunications
Equipment for the reception, recording and reproduction of sound and pictures	0,5	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Photographic and cinematographic equipment and optical instruments	0,1	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Information processing equipment	0,4	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Recording media	0,1	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Major durables for outdoor recreation	0,2	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Musical instruments and major durables for indoor recreation	0,02	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Games, toys and hobbies	0,2	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Equipment for sport, camping and open-air recreation	0,3	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Gardens, plants and flowers	0,2	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Pets and related products	0,3	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Recreational and sporting services	1,3	Quarterly Financial Statistics: turnover (recreation enterprises)	Stats SA: Quarterly Financial Statistics (P0044)	Stats SA: Annual Financial Statistics (P0021)	Stats SA: Annual Financial Statistics

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Cultural services	1,6	Quarterly Financial Statistics: turnover (recreation enterprises)	Stats SA: Quarterly Financial Statistics (P0044)	Stats SA: Annual Financial Statistics (P0021)	Stats SA: Annual Financial Statistics
Games of chance	1,1	Expenditure on casinos, betting, bingo and limited payout machines	National Gambling Board	Sum of four quarters	National Gambling Board National Lottery
Books	0,1	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Newspapers and periodicals	0,2	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Stationery and drawing materials	0,3	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Pre-primary and primary education	1,0	Number of learners CPI for pre-primary and primary education	Department of Basic Education	Sum of four quarters	Department of Basic Education Federation of Governing Bodies of South African Schools

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Secondary education	0,9	Number of learners CPI for secondary education	Department of Basic Education	Sum of four quarters	Department of Basic Education  Federation of Governing Bodies of South African Schools
Tertiary education	1,2	Number of learners CPI for tertiary education	Stats SA: Financial Statistics of Higher Education Institutions (P9103.1) – benchmarks	Stats SA: Financial Statistics of Higher Education Institutions (P9103.1)	Stats SA: Financial Statistics of Higher Education Institutions (P9103.1)
Restaurants, cafes and the like	3,7	Total income: restaurants and coffee shops; take-away and fast food outlets	Stats SA: Food and Beverages (P6420)	Sum of four quarters	Stats SA: SIS – food and beverages
Canteens	0,1	Total income: catering services	Stats SA: Food and Beverages (P6420)	Sum of four quarters	Stats SA: SIS – food and beverages
Tourist accommodation services	1,4	Total income: tourist accommodation	Stats SA: Tourist Accommodation (P6410)	Sum of four quarters	Stats SA: SIS - accommodation
Electric appliances for personal care	0,2	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Other appliances, articles and products for personal care	1,7	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Jewellery, clocks and watches	0,5	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Other personal effects	0,3	Retail trade sales Goods weights by store type derived from retail SIS; Percentage	Stats SA: Retail Trade Sales (P6242.1) Stats SA: SIS – Retail Trade Industry (Report 62-01-02)	Sum of four quarters	Stats SA: SIS – retail and wholesale trade
Life insurance	3,5	Life insurance	SARB	Sum of four quarters	SARB annuals
Insurance connected with the dwelling	0,1	Insurance service charges connected with the dwelling	SARB	Sum of four quarters	SARB annuals
Insurance connected with health	0,6	Insurance service charges connected with health	SARB	Sum of four quarters	SARB annuals
Insurance connected with transport	0,5	Insurance service charges connected with transport	SARB	Sum of four quarters	SARB annuals
Other non-life insurance	0,1	Insurance service charges for other non-life insurance	SARB	Sum of four quarters	SARB annuals
FISIM	1,9	Financial intermediation services indirectly measured (FISIM)	SARB	Sum of four quarters	SARB annuals



Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Other financial services n.e.c.	2,0	Other financial services n.e.c.	SARB	Sum of four quarters	SARB annuals
Residents: spending outside South Africa	1,8	Imports of services	SARB	Sum of four quarters	SARB: balance of payments annuals (sum of four quarters)
Non-residents: spending in South Africa	-3,8	Exports of services	SARB	Sum of four quarters	SARB: balance of payments annuals (sum of four quarters)
Narcotics	0,05	Trended	Trended series	Sum of four quarters	Re-estimated as part of the revamped illegal sector estimates
Cleaning, repair and hire of clothing	0,03	Trended	Trended series	Sum of four quarters	Re-estimated using LCS data and the revamped informal sector estimates
Repair and hire of footwear	0,04	Trended	Trended series	Sum of four quarters	Re-estimated using LCS data and the revamped informal sector estimates
Repair of furniture, furnishings and floor coverings	0,02	Trended	Trended series	Sum of four quarters	Re-estimated using LCS data and the revamped informal sector estimates
Repair of household appliances	0,02	Trended	Trended series	Sum of four quarters	Re-estimated using LCS data and the revamped informal sector estimates

Component	Component as % of total HFCE <sup>25</sup>	Indicator variable	Quarterly	Annual	Data source for SUT benchmarking
Passenger transport by sea and inland waterway	0,01	Trended	Trended series	Sum of four quarters	Benchmark estimate for 2014 based on data from the transport SIS
Other purchased transport services	0,3	Trended	Trended series	Sum of four quarters	Benchmark estimate for 2014 based on AFS data for travel agencies (SIC 7414)
Maintenance and repair of other major durables for recreation and culture	0,3	Trended	Trended series	Sum of four quarters	Re-estimated using LCS data and the revamped informal sector estimates
Veterinary and other services for pets	0,2	Trended	Trended series	Sum of four quarters	Annual benchmark estimates are based on AFS data for veterinary services
Hairdressing salons and personal grooming establishments	0,8	Trended	Trended series	Sum of four quarters	Re-estimated using LCS data and the revamped informal sector estimates
Prostitution	0,2	Trended	Trended series	Sum of four quarters	Re-estimated as part of the revamped illegal sector estimates
Social protection	0,6	Trended	Trended series	Sum of four quarters	Benchmark estimate for 2014 based on LCS data
Other services n.e.c.	1,6	Trended	Trended series	Sum of four quarters	Benchmark estimate for 2014 based on LCS data

Annual source data are used to support the estimation of quarterly indicators, particularly where the quarterly data sources are not sufficiently robust. Although annual data sources often have a lag, they are an important source in the estimation process, given their comprehensiveness and accuracy. Annual sources are used in the estimation of a number of quarterly indicators, for example in the estimation of HFCE on education. Furthermore, these data sources are also used in the benchmarking of quarterly indicators, thus ensuring alignment between the quarterly and annual records.

Source data for HFCE are divided into two groups: source data used to estimate final consumption expenditure on goods, and source data used to estimate final consumption expenditure on services. Within each group, further distinctions and groupings are made, based on goods or services that use similar sources of data.

#### **5.1.4 Data sources by commodity type (HFCE)**

##### **5.1.4.1 Goods**

###### **5.1.4.1.1 Retail trade goods**

Stats SA's monthly Retail Trade Sales and retail trade SIS are used to estimate the majority of the consumption goods within HFCE, termed 'retail trade commodities'.<sup>28</sup> These supply-side sample surveys, conducted by Stats SA, provide data for the compilation of the national accounts. Sampled enterprises sell goods and services to final consumers including households, governments and businesses.

The monthly RTS collects revenue by store type and not by type of good. Weights for goods are derived from the retail trade SIS, which collects sales of enterprises in the retail trade sector by groups of goods.<sup>29 30</sup> Weights calculated from the SIS are then applied to store-type sales from the monthly RTS.<sup>31</sup>

For SUT benchmarks, the 2015 SIS retail and wholesale sales by commodity (detailed) were used for classification according to COICOP. Sales by type of client were used to calculate the household proportion for both retail and wholesale. VAT was added to both retail and wholesale trade. The motor trade SIS was used to account for convenience store sales (which are typically food and beverages) and to estimate the household proportion (using sales by type of client); and VAT was added.

There is a new category previously not included in the framework called 'miscellaneous goods'. The values for these goods were reallocated to all the relevant COICOP components that make up retail trade.

###### **5.1.4.1.2 Alcoholic beverages and tobacco**

The monthly RTS as well as annual excise duty and tax data from SARS are used to estimate HFCE on alcoholic beverages and tobacco. The quarterly estimates are interpolated by applying weights obtained from the RTS, while the excise duty and tax data are used as the annual benchmark values.

When dealing with SUT benchmarks the 2014 current-price values derived from excise data from SARS were converted to a retail value by removing VAT, and then to a wholesale value by removing the estimated retail

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<sup>28</sup> There are approximately 40 commodity types.

<sup>29</sup> Supply-side surveys of retail trade have at least two advantages. There are many fewer enterprises in number than there are households, which allows for easier collection and follow-up queries. In addition, there is no evidence of persistently underestimating the total value of sales by enterprises. However, the supply-side surveys are not without their limitations. Supply-side surveys do not include sales in the informal sector or non-store sales to households. Further, sales cannot be separated into sales to households and sales to the rest of the economy.

<sup>30</sup> Commodity data are required for both analytical and for deflation purposes. Price indices (e.g. consumer price indices) are collected at the commodity level and not by store-type.

<sup>31</sup> Differences in store-type weights between the monthly RTS and the retail trade SIS are generally within 5 percentage points.

component. This calculated wholesale value implied that there was an undercount. A profit margin of 15% was assumed for informal outlets such as spaza shops, taverns and shebeens.

The combined sales to the informal sector are estimated as the sum of manufacturers' direct sales and wholesalers' sales applicable to the informal sector. It has been assumed that 45% of these sales form part of HFCE on alcoholic beverages and 55% should be added to HFCE on restaurants, cafes etc. These percentages are subjective and will be adjusted if any other information becomes available to provide a more accurate split. In addition, informal taverns and shebeens sell illegally produced alcohol on which no excise or VAT is paid.

Illegally produced alcohol is estimated by Euromonitor International to be worth R12,9 billion in 2017 and to have an average price of 51% of the formal-sector price. Illegally produced alcohol was also estimated to be equivalent to 14,5% of the total supply. In order to line up with the sales value of R12,9 billion the estimated market share has been reduced slightly to 13,4%.

As a check on the alcohol consumption estimates for the formal sector, an estimate was compiled from production data plus imports less exports. These estimates also indicate that a significant proportion of alcohol on which excise has been paid is likely to have been sold through informal outlets. There are CPI components for beer, wine and spirits, so the volumes of these were reflatated separately.

For tobacco, revised volume estimates (excise data) for cigarettes, cigarette tobacco, pipe tobacco and cigars were received from SARS.

Excise duties on various tobacco products from National Treasury's budget documents were used to calculate the number of packets of cigarettes sold. Data from the Tobacco Institute of Southern Africa were used to account for illicit cigarette trade. Illegal sales of tobacco products are significant, estimated to be at least 23% of total sales.

#### **5.1.4.1.3 Purchase and operation of vehicles**

The Motor Trade Sales survey is a Stats SA monthly survey of enterprises in the motor trade industry (including vehicle dealers, filling stations and repair workshops). The sales variables from this data source are used in the estimation of household expenditure on the purchase and operation of vehicles.

New vehicle sales provided by the National Association of Automobile Manufacturers of South Africa (NAAMSA), new vehicle registrations provided by the Electronic National Administration Traffic Information System (eNaTIS), and dealer margins derived from Stats SA's Annual Financial Statistics (AFS) also form part of the calculation to determine the household share of new vehicle sales.

SUT benchmarks for new vehicle purchases rely on the 2015 motor trade SIS, which includes both retail and wholesale trade in motor vehicles. To determine profits on used vehicles, margins for used vehicles are calculated from retail and wholesale trade in used vehicles, i.e. sales (cars, hatchbacks and other used vehicles) *minus* purchases *plus* disposals by car hire companies.

#### **5.1.4.2 Services**

##### **5.1.4.2.1 Electricity, water supply, and miscellaneous services relating to the dwelling**

Electricity, water supply and municipal services estimates are provided by the Quarterly Financial Statistics of Selected Municipalities (QFSSM). The QFSSM is a quarterly survey that covers local, district and metropolitan municipalities in South Africa. With effect from the September 2020 quarter, Stats SA reduced the scope of

the survey from all 257 municipalities ('Quarterly Financial Statistics of Municipalities') to the 130 largest municipalities (QFSSM).

The average household consumption expenditure from LCS 2014/15 was multiplied by the number of households from the same LCS publication. This was then split according to the separate LCS values for water and electricity, giving 20,3% for water and 79,7% for electricity.

The South African Petroleum Industry Association 2015 annual report was used to determine the consumption of petroleum products in South Africa. Volumes were multiplied by corresponding prices from the Department of Mineral Resources and Energy (DMRE) website. The proportions assumed to be used by households were 100% for paraffin and 17% for liquefied petroleum gas (based on DMRE information).

#### **5.1.4.2.2 Actual and imputed rentals for housing**

The stock of residential housing (i.e. buildings) at constant prices is used as a quarterly indicator of constant-price actual and imputed rentals. Proportions of actual and imputed rent to total rent are based on 2015 current-price SARB benchmarks and used to calculate quarterly constant-price estimates; quarterly current-price estimates are calculated by inflating the constant-price quarterly estimates by the CPIs for actual and imputed rent.

#### **5.1.4.2.3 Insurance, FISIM, financial services n.e.c., and travel receipts and payments**

The SARB provides estimates for insurance, financial intermediation services indirectly measured (FISIM),<sup>32</sup> and other financial services based on quarterly surveys conducted among various institutions in the financial sector. Travel receipts and payments data are estimated as part of the SARB's work on South Africa's balance of payments.

#### **5.1.4.2.4 Domestic and household services**

The volume indicator for domestic and household services is obtained from the Quarterly Labour Force Survey (QLFS). The QLFS is a household-based survey conducted by Stats SA on a quarterly basis. Among other objectives, the QLFS collects data on the number of employees employed by the private household sector. This data series, along with the CPI for domestic worker wages, is used in the compilation of domestic and household services.

SUT benchmarks used the published HFCE estimates, which are derived using the number of employees from the QLFS and CPI for domestic wages. The published data were annualised and supplemented by annual household expenditure from LCS 2014/15 for services for the maintenance and repair of the dwelling (plumbers, electricians, and carpenters) as well as labour/services for other maintenance and repairs.

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<sup>32</sup> FISIM is the implicit financial service fee arising from the process whereby a financial institution, such as a bank, accepts deposits from investors wishing to receive interest on their funds, and lends these funds to entities wishing to acquire loans. The bank, acting as a financial intermediary, manages the flow of funds between the two entities. The entity or person depositing the funds accepts a rate of interest lower than that paid by the borrower. Between these two interest rates stands a 'reference' rate of interest. The difference between the reference interest rate applied to the levels of loans and deposits and the interest actually paid to depositors and charged to borrowers is known as FISIM.

#### **5.1.4.2.5 Outpatient and hospital services, and recreational and cultural services**

The turnover from the sales of services variable from the QFS of the formal business sector is used in the estimation of recreational and cultural services (SIC 96).<sup>33</sup> Quarterly information for medical services (SIC 931) is provided by the Council for Medical Schemes.

For SUT benchmarking purposes, 'total benefits paid' from the Council for Medical Schemes was used. This is the expenditure data based on the previous year's claims experience, which is actual expenditure on general practitioners, medical specialists, supplementary and allied health professionals, and hospitals (private and provincial). The proportions from these data are applied to the annual net claims incurred, supplemented by out-of-pocket payments by households.

The benchmark estimate for recreational and cultural services is estimated turnover from AFS 2015 data, supplemented by the SIC 9 (community, social and personal services) informal-sector data from GDP (production) as well as recreational services from the 2015 tourist accommodation SIS.

#### **5.1.4.2.6 Postal services**

Postal services comprise both postal and courier activities. A significant portion of the revenue of the South African Post Office is generated from its postal activities, such that the number of postage items handled is used as the indicator for the relevant volume measure. Although Postbank could be a quite successful enterprise for the Post Office, its courier service, Courier Freight Group, handles only 1% of South Africa's courier business. The CPI in turn is used to derive constant-price estimates. The 2013 and 2016 post and telecommunications SISs were used for SUT benchmarking. The household share of sales was obtained from the SIS publications. Estimates for sales for 2014 and 2015 were interpolated between the values for 2013 and 2016.

#### **5.1.4.2.7 Games of chance**

Expenditure on games of chance is measured by the net surplus of gambling activities from lotteries, casinos and other gambling establishments, gaming machines, and other designated areas such as bingo halls. Net surplus is defined as the difference between the amounts paid for lottery tickets or placed in bets and the amounts paid out to winners. Annual estimates for the net surplus from gaming activities were obtained from the National Gambling Board and the National Lottery for SUT benchmarking.

#### **5.1.4.2.8 Telephone and telefax services**

The turnover variable from the QFS of the formal business sector survey is used to estimate expenditure on telephone and telefax services (SIC 7520). The post and telecommunications SIS was used for SUT benchmarking.

#### **5.1.4.2.9 Passenger transport by railway and road services**

The Land Transport survey is a monthly sample survey conducted by Stats SA, covering enterprises engaged in passenger and freight transportation services. The income variable is used to measure expenditure on transportation by rail and road. The transport and storage SIS was used for SUT benchmarking.

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<sup>33</sup> SIC refers to standard industrial classification. See Standard Industrial Classification of All Economic Activities, fifth edition, 1993, Report No. 09-90-02.

#### **5.1.4.2.10 Air transportation services**

The QFS of the formal business sector survey is used to calculate estimates of expenditure on air transportation services, using the turnover variable. The transport and storage SIS was used for SUT benchmarking.

#### **5.1.4.2.11 Education**

##### **5.1.4.2.11.1 Primary and secondary education**

'Education Statistics in South Africa' is an annual census conducted by the Department of Basic Education (DBE). The main purpose of this annual census is to help education policy planning and implementation at a provincial and national level. For HFCE estimation purposes, the number of learners in South African schools is the indicator chosen. Annual SUT values of primary and secondary education, along with the CPI for both these education levels, are also used in the estimations.

##### **5.1.4.2.11.2 Tertiary education**

Stats SA's Financial Statistics of Higher Education Institutions is an annual census of higher education institutions in South Africa. The value of income from education fees is used for the compilation of expenditure on tertiary education. For SUT benchmarking, data from the Financial Statistics of Higher Education Institutions were used, and this was supplemented by data for private universities and colleges in South Africa.

The estimates for private universities and colleges were based on numbers of students attending private universities and colleges, obtained from the Department of Higher Education and Training. The number of students attending public universities and colleges was used to estimate average public tuition fees and average public boarding fees. Average private tuition fees and boarding fees were set at double the average public fees (by assumption), and total values were derived by multiplying average private fees by the number of private tertiary students.

##### **5.1.4.2.12 Restaurants and hotels**

The Food and Beverages and Tourist Accommodation monthly surveys are used in estimating expenditures on catering and accommodation services. The surveys cover both public and private enterprises. Food and Beverages covers enterprises involved in the preparation of meals and drinks for immediate consumption, while Tourist Accommodation covers short-stay accommodation. Incomes from these activities are used in the estimates of HFCE on restaurant and hotel services. The food and beverages SIS and tourist accommodation SIS were used for SUT benchmarking. In addition estimates were included for sales of alcohol by informal businesses operating shebeens and taverns.

##### **5.1.4.2.13 Other goods and services**

These estimates (other goods and services) are derived by linear trend using relevant annual benchmarks, owing to a lack of suitable quarterly data sources.<sup>34</sup> SUT benchmarking information is provided in Table 32. These account for 4,9% of HFCE.

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<sup>34</sup> These include the following: narcotics; cleaning, repair and hire of clothing; repair and hire of footwear; other services relating to the dwelling n.e.c.; repair of furniture; furnishings and floor coverings; repair of household appliances; other services in respect of personal transport services; passenger transport by sea and inland waterway; other purchased transport services; repair of audio-visual, photographic and information processing equipment; maintenance and repair of other major durables for recreation and culture; veterinary and other services for pets; hairdressing salons and personal grooming establishments; prostitution; social protection; and other services n.e.c.

## 5.1.5 Estimation methods (HFCE)

### 5.1.5.1 Current-price estimation

Most current-price quarterly series for HFCE are estimated from value data. Where value data are not available, separate information on prices and quantities is required. For instance, estimates of HFCE on domestic and household services are calculated from the number of people employed and quarterly average wages of domestic workers.

Furthermore, some data require adjustment prior to usage to ensure compliance with the national accounts framework, while other data are used without further adjustments. An example of source data used without further adjustments in HFCE estimation is the growth rate of sales made to households. With the exception of sales of motor vehicles to households, it is assumed that all sales made to households grow at the same rate as the sales made to businesses and government, as reported and captured in supply-side surveys such as the QFS and the monthly RTS. However, once the HFCE estimates have been included in the annual SUT process, a differentiation between purchases made by households and other institutional sectors is made. Unless otherwise stated, all HFCE estimates are in purchasers' prices.

The following sections discuss selected data which require adjustments prior to usage (see Annexure 8 for a list of components that require minimal or no adjustments).

#### 5.1.5.1.1 Retail trade commodities

HFCE on retail trade commodities is currently estimated using monthly sales data by store-type from the monthly RTS.<sup>35</sup> The goods weights from the retail trade SIS, which show the percentage sold of each good per store-type, are used in combination with the monthly RTS information to obtain detailed expenditure estimates by commodity. Goods weights are extrapolated between the data points provided by the SIS.

#### 5.1.5.1.2 New vehicles and motorcycles

New vehicle sales from the MTS form the basis for estimates of sales of new vehicles and motorcycles. Sales of motorcycles are separated from the aggregate vehicle sales by using supply and use tables.

To arrive at an estimate for new vehicle sales to households, we remove the value of sales of motorcycles and then use data from NAAMSA and eNaTIS. NAAMSA data are used to derive the proportions of passenger and light commercial vehicle sales via the dealer market channel, while eNaTIS data are used to derive the household portion of these sales using registration data for passenger and light commercial vehicle sales.

Analysis has been conducted to confirm that the movements and levels of all three sources are comparable. A portion of the light commercial vehicle category is included in HFCE estimation because households buy and use light commercial vehicles for general household use.

Used car margins are calculated from the motor trade SIS.

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<sup>35</sup> The monthly RTS defines store-types as follows: 6211 (Non-specialised stores with food, beverages and tobacco predominating); 6219 (Other non-specialised stores); 6220 (Retailers of food, beverages and tobacco in specialised stores); 6231 (Retailers in pharmaceutical and medical goods, cosmetics and toiletries); 6232 (Retailers in textiles, clothing, footwear and leather goods); 6233 (Retailers in household furniture, appliances and equipment); 6234 (Retailers in hardware, paint and glass); and 6239 (All other retailers). The retail trade SIS provides the same coverage but in greater detail.



### **5.1.5.1.3 Domestic services and household services**

Household expenditure on domestic services and household services is estimated by considering price and quantity variables independently.

The price component consists of two subcomponents. The first subcomponent is the basic wage (per month) received by domestic workers in 2015, provided by the QLFS. The second subcomponent is the wages-in-kind portion for 2015. In 2015 the basic wage component was estimated to be about 51%, with wages in kind making up the other 49%.<sup>36</sup> These proportions have been used for the entire time series. A time series is formed from these 2015 wage levels using the CPI for domestic wages; each salary band is assumed to have the same growth rate.

The quantity component consists of the number of employees employed in private households per salary band for each quarter. These data are provided by the QLFS. The price and the quantity components are multiplied together to form the quarterly series for expenditure on domestic and household services.

### **5.1.5.1.4 Postal and courier services**

HFCE on postal and courier services is estimated by considering price and quantity variables independently. The quantity component consists of the number of postal articles handled by the South African Post Office, and the price component consists of the weighted postal service price levels.

### **5.1.5.1.5 Education**

#### **5.1.5.1.5.1 Primary and secondary education**

Expenditure on primary and secondary education<sup>37</sup> is estimated by considering price and quantity variables independently. The quantity component consists of the number of learners in primary and secondary school enrolments (two separate series). These data are provided by the DBE. Boarding school fees are calculated using the number of learners from the DBE multiplied by fees from the Federation of Governing Bodies of South African Schools.

#### **5.1.5.1.5.2 Tertiary education**

Information from Stats SA's Financial Statistics of Higher Education Institutions was used for public education, and this was supplemented by data for private universities and colleges. The official data source for tertiary education is published annually with a lag of 38 weeks after the reference period, and as a result the latest quarters are extrapolated.

### **5.1.5.1.6 Other goods and services**

Expenditures on some goods and services are interpolated and extrapolated from available annual data due to the lack of suitable quarterly data sources and/or the weaknesses in quality of these sources. This is the case for education, where we use the proportional Denton method to establish quarters based on the annual data (see section 6.1).

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<sup>36</sup> Data for this wages-in-kind component are provided by Stats SA, which conducted a survey in 2010 regarding the various forms of payments in kind received by respondents.

<sup>37</sup> Two separate series: pre-primary and primary education; and secondary education.

### 5.1.5.2 Constant-price estimation – deflators

Deflation removes the change in value of a statistic caused by changes in its price component. Deflation consists of dividing a value by a matched price index. A price index is considered to be matched if its commodity constituents are roughly the same as those in the value statistic to which it is applied. Thus, if the value statistic refers to the change in value of all fruit sales, its price change component could be removed by dividing it by a measure of the change in the price of fruit.

The application of a deflator to a series of current-price values results in a new series measured at *constant prices*. In the case of HFCE, its constituent expenditures on goods and services are deflated individually at the 3-digit COICOP level (see Annexure 7 for a complete list of HFCE deflators).

Deflators used for HFCE are generally limited to components of the CPI. However, a number of goods and services do not have exact CPI deflators. In these instances, inexact matched-price indices (proxies) or price indices of other countries are used. An example of an inexact deflator is for the good ‘solid fuels’. As no exact deflator exists with which to deflate solid fuels, the CPI of ‘liquid fuels’ is used instead.<sup>38</sup>

#### 5.1.5.2.1 Travel payments

Travel payments refer to expenditure made by South African resident households while travelling abroad. These expenditures are included in the household consumption estimates of expenditure-based GDP, and then offset in imports of services (imports are subtracted when calculating expenditure-based GDP).

The travel payments deflator is compiled from the exchange-rate-adjusted CPIs of the top five inbound tourism countries.

#### 5.1.5.2.2 Travel receipts

Travel receipts refer to expenditure by non-residents within South Africa. These expenditures need to be excluded from HFCE, because they are implicitly included in the supply-side source data used to estimate the various HFCE series, e.g. restaurants and accommodation. Travel receipts are included in exports within the expenditure-based GDP. A weighted CPI consisting of a basket of tourism-related products is compiled for this indicator.<sup>39</sup>

## 5.2 Government final consumption expenditure

### 5.2.1 Introduction (GFCE)

Government final consumption expenditure (GFCE) measures expenditure incurred by general government, either on collective services or on selected individual goods or services (SNA 2008, 9.84). The sum of the production costs in delivering these goods and services to the public is referred to as final consumption expenditure by government (SNA 2008, 9.87). Also included is output produced for own final use and some output which is market in nature (SNA 2008, 9.87).

Although collective services benefit the community (or certain sections of the community) rather than the government, the actual consumption of these services cannot be distributed among individual households, or

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<sup>38</sup> Other examples can be found in Annexure 7.

<sup>39</sup> The Tourism Satellite Account for South Africa provides data on the expenditure levels by tourists on products. These include accommodation; restaurants and the like; railway, road and water transport services; transport rentals; travel agency services and the like; cultural services; sports and recreational services; tourism-connected products; and non-specific products.

even groups of households such as subsectors of the household sector, or enterprises. It is therefore attributed to the government units that incur the corresponding expenditures (SNA 2008, 9.103).

Final consumption expenditure of government is derived as follows:

The value of all types of output of general government,

*less* the value of output for own-account capital formation,

*less* the value of sales of goods and services irrespective of price,

*plus* the value of goods and services purchased from market producers for delivery to households free or at nominal prices (SNA 2008, 9.90),

*plus* the value of the consumption of fixed capital (COFC).

### 5.2.2 Composition of GFCE

GFCE is estimated for three levels of government. They are:

- Central government (comprising national government departments, extra-budgetary accounts and funds, higher education institutions, and social security funds);
- Provincial government (comprising provincial departments); and
- Local government (comprising 8 metropolitan, 44 district and 205 local municipalities).

For each level of government there are three main components used to measure GFCE. These are as follows:

- (a) Compensation of employees (COE) – this refers to the total remuneration, in cash or in kind, payable to a government employee in return for work done during the accounting period, except work done in connection with own-account capital formation, which is capitalised and shown separately. Remuneration includes both wages and salaries and social contributions made on behalf of employees to social insurance schemes. Excluded from remuneration are amounts payable to contractors, self-employed workers, and other workers who are not employees of general government units. Any such amounts are recorded under purchases of goods and services ([www.vulindlela.gov.za](http://www.vulindlela.gov.za)).
- (b) Purchases of goods and services – this refers to goods and services purchased and completely used up in the production process or for the direct satisfaction of individual or collective human needs or wants. The purchase of goods and services in the government account can also be referred to as government intermediate consumption, and is included in the value of output by government in the value-added calculation.
- (c) Sales of goods and services (revenue) – this refers to the value of sales of goods and services sold irrespective of price (SNA 2008, 9.90). This component is deducted to derive GFCE.

For the estimation of aggregate GFCE, the following items are also included:

- (d) Financial intermediation services indirectly measured (FISIM) – an indirect measure of the value of financial intermediation services provided to governments by financial corporations such as banks, for which no explicit charges are made.
- (e) Consumption of fixed capital – the decline during the accounting period in the current value of the stock of fixed assets owned and used by government as a result of physical deterioration, normal obsolescence or normal accidental damage (Government Finance Statistics Manual of 2014 (GFSM 2014), 6.53).

- (f) SARB output – the output value of collective monetary services provided by the central bank (South African Reserve Bank) to the government at non-market prices.

Excluded from GFCE:

- (g) Expenditure on research and development (R&D) – which is the value of expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including the knowledge of man, culture and society, and to use of this stock of knowledge to derive new applications. This does not extend to including human capital as an asset within the SNA (SNA 2008, 10.103). R&D is instead treated as GFCF, except in cases where it is clear that the activity does not entail any economic benefit for its owner, in which case it is treated as intermediate consumption (SNA 2008, 6.230).

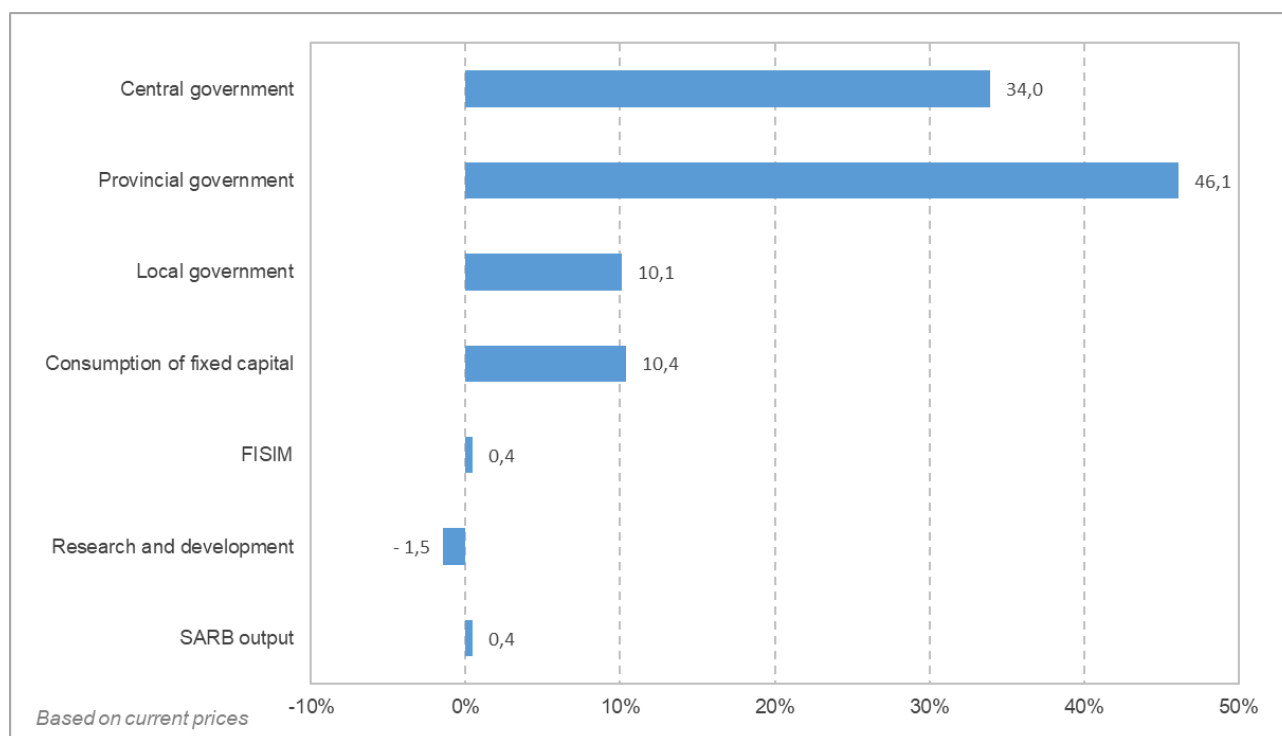
### 5.2.3 Overview of source data (GFCE)

#### 5.2.3.1 National and provincial government

Daily transactional data relating to national and provincial government departments on purchases and sales of non-financial assets, revenue generated, expenditures made, and liabilities incurred are recorded on National Treasury's Vulindlela website ([www.vulindlela.gov.za](http://www.vulindlela.gov.za)). Purchases and sales of non-financial assets are used to derive GFCF by national and provincial government departments, while COE, purchases of goods and services, and sales of goods and services are used as inputs in deriving GFCE. The data are classified according to GFSM 2014 for each functional department, based on the financial year-ends of the national and provincial government departments.

While this system provides the bulk of the information required to estimate GFCE, the expenditure data are only available from the second quarter of 2002, and the revenue data are available from the second quarter of 2007. Although the financial information is available on a monthly basis, with a lag of approximately two weeks in order to allow for possible revisions, there are key elements which are not recorded in the system, and these are discussed below. The quarterly estimates of GFCE for national and provincial government departments are obtained from the monthly data on Vulindlela for COE, purchases of goods and services, and sales of goods and services, which are summed into quarters. Since the data on Vulindlela are not audited, these estimates are benchmarked to the relevant annual estimates obtained from Stats SA's Financial Statistics of Consolidated General Government (FSCGG) publication, based on the government's fiscal year, which runs from 1 April to 31 March.

The FSCGG provides a summary of audited cash-based annual financial data which consolidates national, provincial and local governments, extra-budgetary accounts and funds, and higher education institutions. Although SNA (2008) recommends the use of accrual estimates for the compilation of national accounts, national and provincial governments do not have accrual estimates. To have uniformity in the source of annual estimates of general government, the FSCGG is used for all levels of government except higher education institutions. Selected GFCE components and their magnitudes are shown in Figure 5.

**Figure 5 – Components of GFCE as a percentage of total GFCE in 2018**

### 5.2.3.2 Local government

Local government data are not included in Vulindlela, and are sourced from Stats SA's QFSSM. The QFSSM is a quarterly survey covering the largest 130 municipalities (8 metropolitan, 27 district, and 95 local). The information obtained from this publication is used to estimate municipalities' COE, purchases of goods and services, and revenue from the sales of goods and services. It also includes expenditure on the administration of local housing by government.

The data obtained from the QFSSM are on an accrual basis, and each publication contains revisions to the previous quarter. Stats SA's annual Financial Census of Municipalities publication (covering all municipalities) contains revised figures for all four quarters of the financial year.

The quarterly figures for COE are benchmarked to the annual estimates for municipalities obtained from Stats SA's FSCGG. The purchases of goods and services and sales of goods and services are benchmarked to the annual estimates from the Financial Census of Municipalities.

### 5.2.3.3 Extra-budgetary accounts and funds, social security funds, and higher education institutions

The quarterly estimates for extra-budgetary accounts and funds, social security funds, and higher education institutions are obtained from the SARB through its surveys.

The SARB receives audited financial statements annually from the Department of Higher Education and Training in respect of higher education institutions, which comprise all learning programmes leading to qualifications higher than Grade 12 or its equivalent. Higher education quarterly estimates and Stats SA's annual publication Financial Statistics of Higher Education Institutions are available on a calendar-year basis (January to December), while the consolidated publication, which is used to benchmark all the other levels of government, is on a fiscal-year basis (April to March).

Extra-budgetary accounts and funds are accounts and funds of national and provincial government departments which are excluded from the normal budget as they do not operate through normal parliamentary budgetary procedures, e.g. trading accounts. Audited financial statements are used to verify the indicator series from the quarterly survey. Included within the extra-budgetary accounts and funds are social security funds, which are funds that are organised separately from the other activities of government units, hold their own assets and incur liabilities separately, and engage in financial transactions on their own account (SNA 2008, 22.21).

The quarterly figures for extra-budgetary accounts and funds as well as those for social security funds are benchmarked to the relevant annual estimates obtained from Stats SA's FSCGG.

Table 33 shows GFCE data sources by component.

**Table 33 – Data sources for government final consumption expenditure (at current prices unless otherwise indicated) <sup>40</sup>**

Component	Component as % of total GFCE <sup>41</sup>	Indicator variable (rand values)	Quarterly	Annual
Compensation of employees	65,9	Wages, salaries and social contributions <sup>42</sup>	<i>National &amp; provincial government</i>  National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>All levels of government except higher education institutions and local government</i>  Stats SA: Financial Statistics of Consolidated General Government (P9119.4) Table A GFS code 21 (compensation of employees), code 22 (purchases of goods and services), code 14 (sales of goods and services)
Purchases of goods and services	33,5	Goods and services consumed <sup>43</sup>	<i>Extra-budgetary &amp; higher education institutions</i>  SARB  <i>Local government (including local housing by municipalities)</i>	<i>Higher education institutions</i>  Stats SA: Financial Statistics of Higher Education Institutions (P9103.1) Table A GFS code 21 (compensation of employees), code 22 (purchases of goods and services), code 14 (sales of goods and services)
Sales of goods and services	-9,1	Sales of goods and services by market and non-market establishments <sup>44</sup>	Stats SA: Quarterly Financial Statistics of Selected Municipalities (P9110.1)	<i>Local government (including local housing by municipalities)</i>  Stats SA: Financial Census of Municipalities (P9114) (for the purchases and sales of goods and service of local government)

<sup>40</sup> Stats SA's Financial Statistics of Consolidated General Government does not give a breakdown of components of GFCE by level of government. However, Table 9 in the disaggregated tables of the FSCGG provides data for all levels of government and can be obtained from [www.statssa.gov.za](http://www.statssa.gov.za).

<sup>41</sup> Based on 2018 current prices.

<sup>42</sup> These include social contributions made on behalf of the employee by the employer to social insurance schemes.

<sup>43</sup> These are goods and services consumed as inputs during the production process and include, for example, commercial rent and operating expenses such as business and professional services, fuel, oil and gas, etc.

<sup>44</sup> Also included in here are administrative fees, incidental sales by non-market establishments, and imputed sales of goods and services.

Component	Component as % of total GFCE	Indicator variable (rand values)	Quarterly	Annual
Consumption of fixed capital	10,4	Physical deterioration, normal obsolescence or normal accidental damage at current and constant prices	Quarterly estimates for COFC, SARB output and FISIM are provided by the SARB	SARB
SARB output	0,4	Collective services, such as monetary services provided by the SARB		
FISIM	0,4	Financial intermediation services provided by financial corporations		
Research and development	-1,5	Expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge	Quarterly R&D estimates are extrapolated using the annual South African National Survey of Research and Experimental Development – Centre for Science, Technology and Innovation Indicators, Human Sciences Research Council	South African National Survey of Research and Experimental Development – Centre for Science, Technology and Innovation Indicators, Human Sciences Research Council



## **5.2.4 Estimation methods (GFCE)**

GFCE is estimated by the sum of COE, purchases of goods and services, COFC<sup>45</sup>, SARB output, and FISIM<sup>46</sup>, less R&D and sales of goods and services for all levels of government.

### **5.2.4.1 Current-price estimation**

#### **5.2.4.1.1 National and provincial government**

Although the Vulindlela system provides data for national and provincial government departments, it does not include data for Parliament. The data for Parliament are instead obtained from National Treasury's monthly Section 32 Report, which records cash-based data on revenue and expenditure for each function of government by level of government.

##### **5.2.4.1.1.1 Compensation of employees**

COE is the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period (SNA 2008, 7.5).

##### **5.2.4.1.1.2 Purchases of goods and services**

Consumption of goods and services is the act of completely using up the goods and services in the process of production or for the direct satisfaction of individual or collective needs or wants (SNA 2008, 9.39).

##### **5.2.4.1.1.3 Sales of goods and services**

Sales of goods and services include sales by market establishments, administrative fees, incidental sales by non-market establishments, and imputed sales of goods and services (GFSM 2014, 5.136).

##### **5.2.4.1.1.4 Local government**

The QFSSM covers financial information for the 130 largest municipalities. The information obtained from this publication is used to estimate municipalities' expenditure on COE, purchases of goods and services, and revenue from sales of goods and services. Local-government finances are estimated according to the accrual accounting method, so no adjustments are made to the information. Since the published information becomes available 12 weeks after the end of the reference period, preliminary estimates are used for the most recent quarter. These preliminary estimates are revised when published data become available.

##### **5.2.4.1.1.5 Extra-budgetary accounts and funds, social security institutions, and higher education institutions**

Current-price data on COE, purchases of goods and services, and sales of goods and services are obtained from the SARB and are used for the estimates.

#### **5.2.4.1.2 Consumption of fixed capital, SARB output, and FISIM**

Current-price estimates of COFC, SARB output, and FISIM are obtained directly from the SARB and added to GFCE estimates without any adjustments.

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<sup>45</sup> Estimates of COFC are received from the SARB for all government levels (current and constant prices).

<sup>46</sup> Only current-price estimates are received from the SARB; the weighted goods and services deflator is used to derive constant-price estimates.

### 5.2.4.1.3 Research and development

The Centre for Science, Technology and Innovation Indicators conducts the annual National Survey of Research and Experimental Development on behalf of the Department of Science and Technology. The annual estimates presented in the annual report are allocated to quarters using the proportional Denton method.

### 5.2.4.2 Constant-price estimation – deflators

Deflation is the process of excluding the effect of price variation from a measured variation in value. GFCE is deflated by component – COE; purchases of goods and services; and sales of goods and services – for each level of government. R&D and SARB output are deflated using a weighted index of the prices of purchases of goods and services.

The output of government is measured on the basis of the costs it incurs to produce public goods and services. Since government services are often delivered free or at notional prices, output prices are not available. Therefore, input prices are used to deflate each of the subcomponents individually.

#### 5.2.4.2.1 Compensation of employees

Quarterly volume estimates for COE by level of government are derived using a volume indicator method based on the number of employees recorded for total government. The data are obtained from Stats SA's Quarterly Employment Statistics (QES) publication and expressed as an index with base 2015 = 100.

The constant-price estimates for COE are obtained by using an employment volume indicator multiplied by the average value of current COE (benchmarked to respective annual sources) by level of government in the base year (2015). The volume indicator is derived by dividing the quarterly employment series by their average in the base year. Since the employment data are published 12 weeks after the period to which they relate, the employment number for the latest quarter is estimated based on partial information, and revised in the subsequent quarter as more complete data become available.

For national and provincial government, a quality index is applied to the employment volume series described above in the derivation of the constant-price COE data. The quality index is based on two assumptions. First, the quality of the output varies with the salary level at which it is performed, and promotion to a higher salary level implies improvement in the work quality. Second, quality is not an element of price; it is an element of quantity.

The addition of the quality index allows for labour productivity changes to be applied to the time series of COE over time. The quality adjustment is estimated using PERSAL data, which tabulates monthly employment by salary level over the time period.<sup>47</sup> A quality index is calculated for each quarter and multiplied by the initially compiled constant-price COE data. For local government, extra-budgetary funds, higher education, and social security funds, a quality adjustment is not applied as data by salary level are not available.

An implicit price deflator can then be derived for COE as the current-price series divided by the quality-adjusted constant-price series.

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<sup>47</sup> The Personnel and Salary System (PERSAL) is a civil service payment system for national and provincial government employees, administered by National Treasury.

#### **5.2.4.2.2 Purchases of goods and services**

Producer price indices (PPIs) are used for the deflation of each of the subcomponents for purchases of goods and services for which a matched PPI can be found. Where this is not the case, a CPI component series is used instead, e.g. in the case of communications. QES average earnings indices are used to deflate selected purchased services, e.g. business services.

#### **5.2.4.2.3 Sales of goods and services**

Sales of goods and services as reported in Vulindlela include licences, permits and fees, sales of waste paper, publications, services rendered for academic services, etc. The CPI for all urban areas excluding 'food, non-alcoholic beverages and fuel' is used as a deflator.

#### **5.2.4.2.4 SARB output**

Current-price estimates from the SARB are deflated using a weighted price index for goods and services.

#### **5.2.4.2.5 Consumption of fixed capital and FISIM**

Estimates are obtained directly from the SARB (current and constant prices).

#### **5.2.4.2.6 Research and Development**

Current-price estimates extrapolated from the South African National Survey of Research and Experimental Development report are deflated using a weighted price index for goods and services.

Table 34 shows the data sources for GFCE price deflators.

**Table 34 – Data sources for GFCE price deflators**

<b>Line item</b>	<b>Deflator and unit of measurement</b>	<b>Source</b>
Compensation of employees	<p><i>All levels of government</i></p> <p>Implicit price deflator, where the volume index is based on employment data by level of government in SIC 9 Volume index</p> <p>PERSAL data by salary level Volume index Used to make quality adjustments to national and provincial data</p>	<p>Stats SA: Quarterly Employment Statistics (P0277)</p> <p>National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a></p>
R&D and purchases of goods and services	<p><i>All levels of government</i></p> <p>Weighted price index made up of CPI and PPI components</p> <p>QES average wage price index – SIC 8: Real estate and business services</p>	<p>Stats SA: Consumer Price Index (P0141)</p> <p>Stats SA: Producer Price Index (P0142.1)</p> <p>Stats SA: Quarterly Employment Statistics (P0277)</p>
Sales of goods and services (revenue)	<p><i>All levels of government</i></p> <p>CPI for all urban areas excluding 'Food, non-alcoholic beverages &amp; fuel'</p>	<p>Stats SA: Consumer Price Index (P0141)</p>
Consumption of fixed capital	<p><i>All levels of government</i></p> <p>Implicit price deflator based on current- and constant-price estimates from the SARB</p>	<p>SARB</p>
SARB output	<p><i>All levels of government</i></p> <p>Weighted price index made up of CPI and PPI components</p>	<p>Stats SA: Consumer Price Index (P0141)</p> <p>Stats SA: Producer Price Index (P0142.1)</p>

## 5.3 Gross fixed capital formation

### 5.3.1 Introduction (GFCF)

Gross fixed capital formation (GFCF) groups transactions on the net acquisitions (acquisitions less disposals) of new capital assets by general government, private enterprises (i.e. private and quasi-corporations), and state-owned corporations (hereinafter public corporations); as well as households and unincorporated enterprises (as defined in SNA 2008, 10.32).<sup>48</sup>

Two exclusions are made in the coverage of relevant assets for purposes of estimating GFCF, namely consumer durables and small tools. According to SNA 2008 consumer durables are not capable of bringing economic benefits to their owners (SNA 2008, 2.34). The services they provide are therefore not counted within total GDP (expenditure) (SNA 2008, 3.47). Small tools, which are goods used repeatedly in the production process over long periods of time, but which are relatively small in value, are treated as materials or supplies used for intermediate consumption (SNA 2008, 10.35), and are thus also excluded from GFCF.

### 5.3.2 Composition of GFCF

GFCF estimates are grouped into various asset classes in accordance with recommendations set out in SNA 2008 and GFSM 2014, which is used to classify government revenue, expenditure, assets and liabilities. These groupings or asset classes are:

- (a) Residential buildings.
- (b) Non-residential buildings.
- (c) Construction works.
- (d) Machinery and equipment:<sup>49</sup>
  - transport equipment (including military transport equipment),<sup>50</sup>
  - information, computer and telecommunications (ICT) equipment,
  - other machinery and equipment (including other military equipment).
- (e) Cultivated biological resources.
- (f) Intellectual property products:<sup>51</sup>
  - computer software (including databases),
  - R&D,
  - mineral exploration and evaluation.
- (g) In addition, the costs incurred in selling an asset to another economic agent (including the costs of ownership transfer on non-produced assets) are also counted as part of total GFCF, and referred to as transfer costs.

For consistency, the government record of revenues and expenditures, i.e. the Vulindlela data, data from Stats SA's Capital Expenditure by the Public Sector (CEPS), and the AFS property, plant and equipment (PPE)

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<sup>48</sup> Net acquisitions of capital assets are divided into tangible and intangible capital assets. Repairs and maintenance undertaken on such assets to keep them in good working order without extending their life, increasing their capacities, or improving their performance are treated as intermediate consumption, and consequently are excluded from GFCF.

<sup>49</sup> SNA 2008 has a separate category called weapons systems under which military equipment is classified.

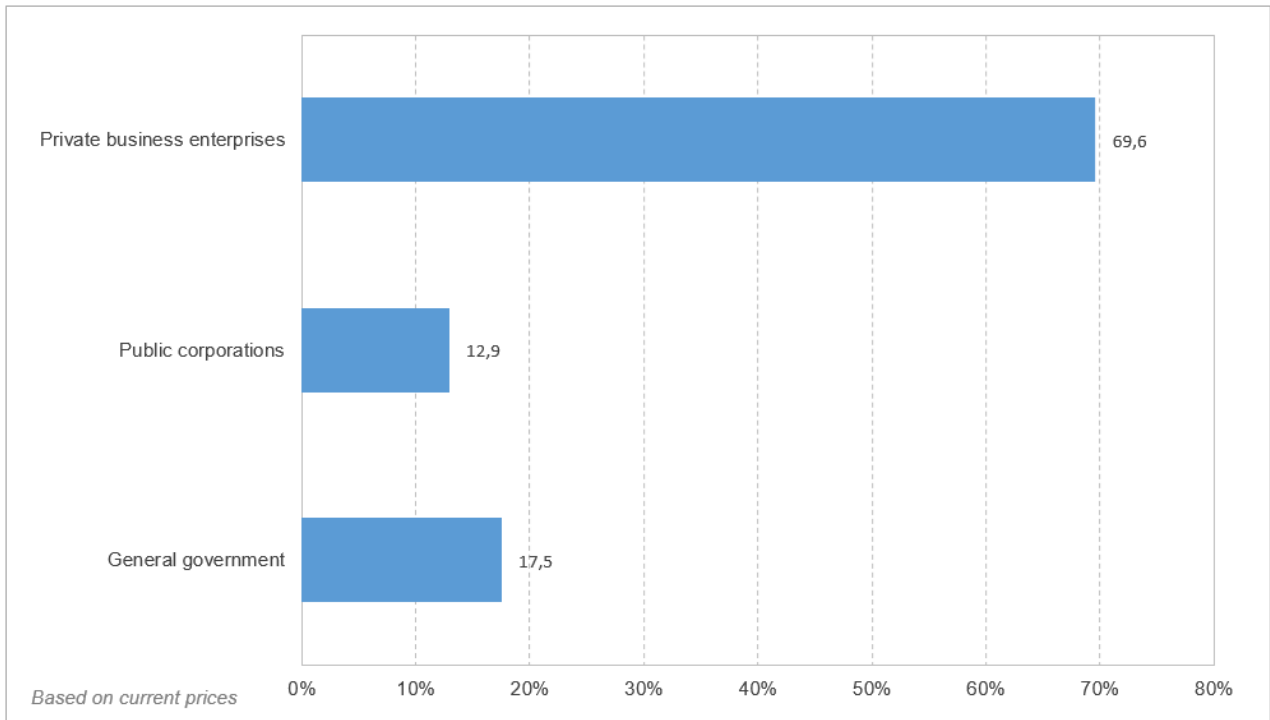
<sup>50</sup> The transport equipment asset class is divided into motor vehicles and other kinds of transport equipment.

<sup>51</sup> In 2014, South Africa implemented specific elements of SNA 2008. These included the capitalisation of R&D and weapons systems. The group 'intangible fixed assets' was also changed to exclude third-party rights, which are non-produced assets in the SNA.

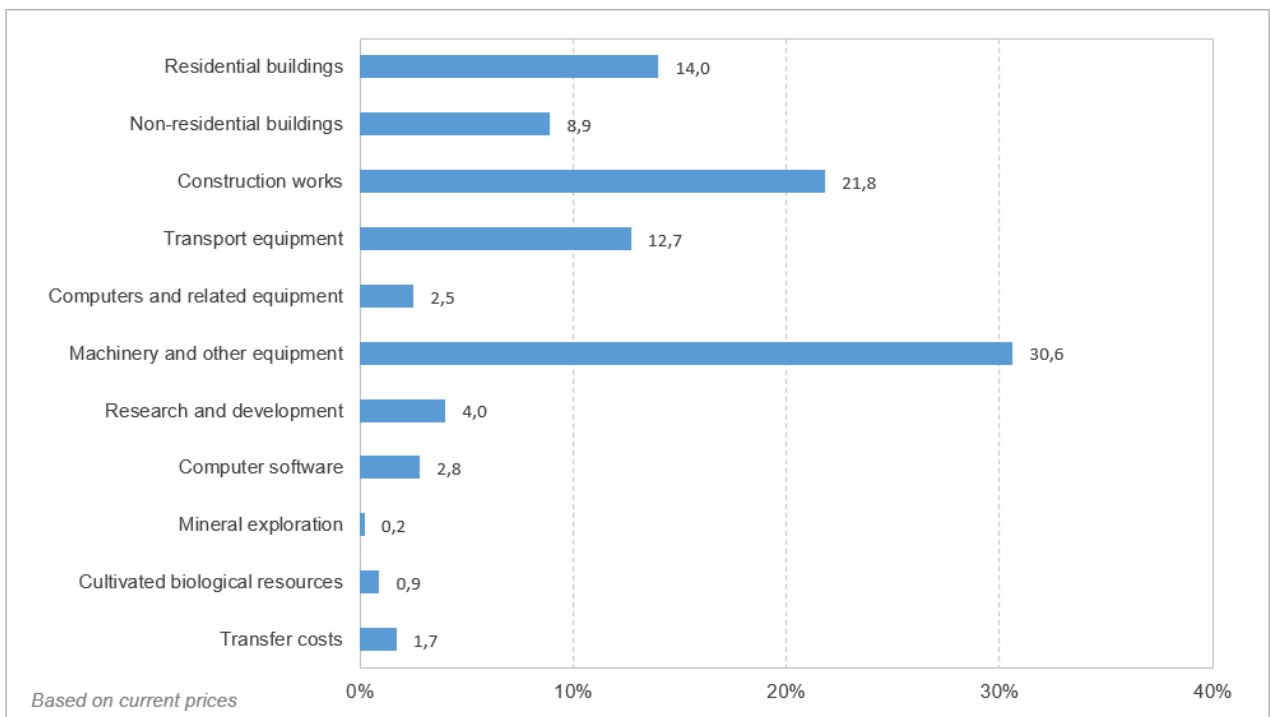
schedules are used as quarterly and annual benchmark source data respectively for capital expenditure, making use of an identical breakdown of asset types.

GFCF is shown by institutional sector in Figure 6 and by asset type in Figure 7, with the components shown as a percentage of total GFCF in each case.

**Figure 6 – GFCF by institutional sector as a percentage of total GFCF in 2018**



**Figure 7 – GFCF by asset type as a percentage of total GFCF in 2018**



### 5.3.3 Overview of source data (GFCF)

The compilation of GFCF estimates is based on two kinds of source data: official data compiled and published by Stats SA;<sup>52</sup> and data produced by other government organisations and compiled as part of those organisations' administrative duties, e.g. building plans passed and completed, required by law to demonstrate the local authority's capacity for effective governance. Table 35 shows data sources for GFCF by asset type. Table 36 shows operational characteristics of the source data by asset type.

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<sup>52</sup> This category also includes data compiled by other government and private entities certified as 'official statistics' by Stats SA in accordance with the South African Statistical Quality Assessment Framework.

**Table 35 – Data sources for GFCF by asset type (at current prices unless otherwise indicated)**

Asset type	Indicator variable	Quarterly	Annual
Residential and non-residential buildings	<p><i>Private enterprises and public corporations</i></p> <p>Building plans passed at current prices; Rand values</p> <p>Buildings completed at current prices, for the calculation of coverage factors; Rand values</p> <p>Building plans passed for alterations and additions to residential structures are grossed up to the 2005 IES level and then trended on buildings plans passed in subsequent years, at current prices (for residential buildings only); Rand values</p>	<p><i>Private enterprises &amp; public corporations</i></p> <p>Stats SA: Selected Building Statistics of the Private Sector as Reported by Local Government Institutions (P5041.1)</p> <p>Stats SA: Building Statistics (Report 50-11-01)</p> <p>National Department of Human Settlements: Low cost housing data, represented by the expenditure as per the subsidy quantum for completed units (houses) (for residential buildings only)</p> <p><i>Public corporations</i></p> <p>Stats SA: Quarterly Financial Statistics (P0044)*</p> <p>National Treasury: Public Entity Quarterly Reporting Template*</p> <p>* Data are used to obtain a growth direction for public corporations</p>	<p><i>Private enterprises</i></p> <p>Stats SA: Annual Financial Statistics (P0021): PPE schedules</p> <p>Stats SA: structural industry surveys: PPE schedules</p> <p>Stats SA: Supply and use tables</p> <p>Residential buildings only: sum of four quarters</p> <p>Alterations and additions for residential buildings Stats SA: Income and Expenditure Survey (P0100)</p> <p>South African Reserve Bank: National Accounts SIC 81-83 data</p> <p>Audited financial statements of financial and non-financial public corporations</p> <p>Stats SA: Agricultural Survey (P1101)</p> <p><i>Public corporations</i></p> <p>Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets</p>



Asset type	Indicator variable	Quarterly	Annual
Residential and non-residential buildings (continued)	<i>National &amp; provincial government</i> Purchases net of sales of non-financial assets; Rand values	<i>National and provincial government</i>  National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>General government</i>  Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets
	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i>  Purchases net of sales of non-financial assets at current prices; Rand values	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i>  South African Reserve Bank  National Treasury	Stats SA: Financial Statistics of National Government (P9119.3): sales of non-financial assets only  Stats SA: Financial Statistics of Provincial Government (P9121): sales of non-financial assets only  Stats SA: Financial Statistics of Extra-budgetary Accounts and Funds (P9102): sales of non-financial assets only
	<i>Local government</i>  Capital expenditure by municipalities Purchases net of sales of non-financial assets; Rand values	Section 71 – Municipal Borrowing Bulletin: annual data interpolated to derive quarterly estimates (historical series)	Stats SA: Financial Statistics of Higher Education Institutions (P9103.1): sales of non-financial assets only
Construction works	<i>Private enterprises &amp; public corporations</i>  Total construction; Weighted indicator comprising labour and material components  Labour: Product of number of employees and average earnings; Rand values  Materials; Rand values	<i>Private enterprises &amp; public corporations</i>  Stats SA: Quarterly Labour Force Survey (P0211)  Stats SA: Quarterly Employment Statistics (P0277)  Stats SA: Wholesale Trade Sales (P6141.2)  Stats SA: Retail Trade Sales (P6242.1)  Stats SA: Manufacturing: Production and Sales (P3041.2)	<i>Private enterprises</i>  Stats SA: Annual Financial Statistics (P0021): PPE schedules  Stats SA: structural industry survey: PPE schedules  Stats SA: Supply and use tables  Stats SA: Agricultural Survey (P1101)  South African Reserve Bank: SIC 81-83  Department of Mineral Resources and Energy: Independent Power Producers  <i>Public corporations</i>  Stats SA: Capital Expenditure by the Public Sector (P9101)

Asset type	Indicator variable	Quarterly	Annual
Construction works (continued)	<i>National &amp; provincial government</i> Purchases net of sales of non-financial assets; Rand values	<i>National &amp; provincial government</i>  National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>General government</i>  Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets
	<i>Local government</i> Purchases net of sales of non-financial assets; Rand values	Section 71 – Municipal Borrowing Bulletin: annual data interpolated to derive quarterly estimates (historical series)	Stats SA: Financial Statistics of National Government (P9119.3): sales of non-financial assets only  Stats SA: Financial Statistics of Provincial Government (P9121): sales of non-financial assets only
	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> Purchases net of sales of non-financial assets; Rand values	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i>  South African Reserve Bank: Public Finance Statistics  National Treasury: Public Finance Statistics	Stats SA: Financial Statistics of Extra-budgetary Accounts and Funds (P9102): sales of non-financial assets only  Stats SA: Financial Statistics of Higher Education Institutions (P9103.1): sales of non-financial assets only

Asset type	Indicator variable	Quarterly	Annual
Transport equipment	<p><i>Private enterprises &amp; public corporations</i></p> <p>Residual of total transport equipment comprising sales of new motor vehicles and imports of other transport equipment; Rand values</p>	<p><i>Private enterprises &amp; public corporations</i></p> <p>Stats SA: Motor Trade Sales (P6343.2)</p> <p>South African Revenue Service: import customs declarations</p>	<p><i>Private enterprises</i></p> <p>Stats SA: Annual Financial Statistics (P0021): PPE schedules</p> <p>Stats SA: structural industry survey: PPE schedules</p> <p>Stats SA: Supply and use tables</p> <p>South African Reserve Bank: National Accounts division SIC 81-83 data</p> <p>Audited financial Statements of financial and non-financial public corporations</p> <p>Lightstone Auto: informal purchases of minibuses</p> <p>Stats SA: Agricultural Survey (P1101)</p> <p><i>Public corporations</i></p> <p>Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets</p>

Asset type	Indicator variable	Quarterly	Annual
Transport equipment (continued)	<i>National &amp; provincial government</i> Purchases net of sales of non-financial assets; Rand values	<i>National &amp; provincial government</i> National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>General government</i> Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets
	<i>Local government</i> Purchases net of sales of non-financial assets; Rand values	<i>Local government</i> Section 71 – Municipal Borrowing Bulletin: annual data interpolated to derive quarterly estimates (historical series)	Stats SA: Financial Statistics of National Government (P9119.3): sales of non-financial assets only Stats SA: Financial Statistics of Provincial Government (P9121): sales of non-financial assets only
	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> Purchases net of sales of non-financial assets; Rand values	<i>Extra-budgetary &amp; higher-education institutions &amp; social security funds</i> South African Reserve Bank: Public Finance Statistics	Stats SA: Financial Statistics of Extra-budgetary Accounts and Funds (P9102): sales of non-financial assets only Stats SA: Financial Statistics of Higher Education Institutions (P9103.1): sales of non-financial assets only
Information, computer and telecommunications equipment	<i>Private enterprises &amp; public corporations</i> Residual of total imports of ICT equipment less GFCF by general government ICT equipment; Rand values	<i>Private enterprises &amp; public corporations</i> South African Revenue Service: import customs declarations	<i>Private enterprises</i> Stats SA: Annual Financial Statistics (P0021): PPE schedules Stats SA: structural industry survey: PPE schedules Stats SA: Supply and use tables South African Reserve Bank: National Accounts SIC 81-83 data Audited financial Statements of financial and non-financial public corporations <i>Public corporations</i> Stats SA: Capital Expenditure by the Public Sector (P9101)

Asset type	Indicator variable	Quarterly	Annual
Information, computer and telecommunications equipment (continued)	<i>National &amp; provincial government</i> Purchases net of sales of non-financial assets; Rand values	<i>National &amp; provincial government</i>  National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>General government</i>  Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets
	<i>Local government</i> Purchases net of sales of non-financial assets; Rand values	<i>Local government</i>  Section 71 – Municipal Borrowing Bulletin: annual data interpolated to derive quarterly estimates (historical series)	Stats SA: Financial Statistics of National Government (P9119.3): sales of non-financial assets only  Stats SA: Financial Statistics of Provincial Government (P9121): sales of non-financial assets only
	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> Purchases net of sales of non-financial assets; Rand values	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i>  South African Reserve Bank: Public Finance Statistics	Stats SA: Financial Statistics of Extra-budgetary Accounts and Funds (P9102): sales of non-financial assets only  Stats SA: Financial Statistics of Higher Education Institutions (P9103.1): sales of non-financial assets only
Other machinery and equipment	<i>Private enterprises &amp; public corporations</i> Residual of total machinery and equipment indicator comprising manufacturing sales of specific SIC 3 manufactures <i>less</i> exports <i>plus</i> imports of machinery; Rand values	<i>Private enterprises &amp; public corporations</i>  Stats SA: Manufacturing: Production and Sales (P3041.2)  South African Revenue Service: import customs declarations	<i>Private enterprises</i>  Stats SA: Annual Financial Statistics (P0021): PPE schedules  Stats SA: structural industry survey: PPE schedules  Stats SA: Supply and use tables  Stats SA: Agricultural Survey (P1101)  South African Reserve Bank: National Accounts SIC 81-83 data  Audited financial Statements of financial and non-financial public corporations  <i>Public corporations</i>  Statistics South Africa Stats SA: Capital Expenditure by the Public Sector (P9101)

Asset type	Indicator variable	Quarterly	Annual
Other machinery and equipment (continued)	<i>National &amp; provincial government</i> Purchases net of sales of non-financial assets; Rand values	<i>National &amp; provincial government</i> National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>General government</i> Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets
	<i>Local government</i> Purchases net of sales of non-financial assets; Rand values	<i>Local government</i> Section 71 – Municipal Borrowing Bulletin: annual data interpolated to derive quarterly estimates (historical series)	Stats SA: Financial Statistics of National Government (P9119.3): sales of non-financial assets only Stats SA: Financial Statistics of Provincial Government (P9121): sales of non-financial assets only
	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> Purchases net of sales of non-financial assets; Rand values	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> South African Reserve Bank: Public Finance Statistics	Stats SA: Financial Statistics of Extra-budgetary Accounts and Funds (P9102): sales of non-financial assets only Stats SA: Financial Statistics of Higher Education Institutions (P9103.1): sales of non-financial assets only
Intellectual property products: research and development	<i>Private enterprises, public corporations and general government</i> South African National Survey of Research and Experimental Development – Centre for Science, Technology and Innovation Indicators, Human Sciences Research Council: expenditure incurred in conduct of R&D; Rand values	<i>Private enterprises, public corporations and general government</i> No quarterly capital expenditure data are collected for capital expenditure on R&D; annual data are interpolated to derive quarterly estimates	<i>Private enterprises, public corporations and general government</i> South African National Survey of Research and Experimental Development – Centre for Science, Technology and Innovation Indicators, Human Sciences Research Council
Intellectual property products: computer software	<i>Private enterprises &amp; public corporations</i> Residual of total GFCF on computer software less computer software GFCF by general government; Rand values	<i>Private enterprises &amp; public corporations</i> South African Revenue Service: imports	<i>Private enterprises &amp; public corporations</i> Stats SA: Annual Financial Statistics (P0021): PPE schedules Stats SA: structural industry survey: PPE schedules Stats SA: Supply and use tables

<b>Asset type</b>	<b>Indicator variable</b>	<b>Quarterly</b>	<b>Annual</b>
Intellectual property products: computer software (continued)	<i>National &amp; provincial government</i> Purchases net of sales of non-financial assets; Rand values	<i>National &amp; provincial government</i> National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>General government</i> Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets
	<i>Local government</i> Purchases net of sales of non-financial assets; Rand values	<i>Local government</i> Section 71 – Municipal Borrowing Bulletin: annual data interpolated to derive quarterly estimates (historical series)	Stats SA: Financial Statistics of National Government (P9119.3): sales of non-financial assets only Stats SA: Financial Statistics of Provincial Government (P9121): sales of non-financial assets only
	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> Purchases net of sales of non-financial assets; Rand values	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> South African Reserve Bank: Public Finance Statistics	Stats SA: Financial Statistics of Extra-budgetary Accounts and Funds (P9102): sales of non-financial assets only Stats SA: Financial Statistics of Higher Education Institutions (P9103.1): sales of non-financial assets only
Intellectual property products: mineral exploration and evaluation	<i>Private enterprises &amp; public corporations</i> Total GFCF on mineral exploration and evaluation; Rand values	<i>Private enterprises only</i> No quarterly capital expenditure data are collected for capital expenditure on mineral exploration and evaluation; annual data are interpolated to derive quarterly estimates	<i>Private enterprises only</i> Stats SA: Annual Financial Statistics (P0021): PPE schedules
Cultivated biological resources	<i>Private enterprises &amp; public corporations</i> Residual of total GFCF on cultivated biological resources; Rand values Orchard development; Rand values Animals yielding repeat resources; Rand values	<i>Private enterprises &amp; public corporations</i> Department of Agriculture, Land Reform and Rural Development: Quarterly Agricultural Letter	<i>Private enterprises &amp; public corporations</i> Department of Agriculture, Land Reform and Rural Development: Quarterly Agricultural Letter Sum of four quarters

Asset type	Indicator variable	Quarterly	Annual
Cultivated biological resources (continued)	<i>National &amp; provincial government</i> Purchases net of sales of non-financial assets; Rand values	<i>National &amp; provincial government</i> National Treasury <a href="http://www.vulindlela.gov.za">www.vulindlela.gov.za</a>	<i>General government</i> Stats SA: Capital Expenditure by the Public Sector (P9101): purchases net of sales of non-financial assets
	<i>Local government</i> Purchases net of sales of non-financial assets; Rand values	Section 71 – Municipal Borrowing Bulletin: annual data interpolated to derive quarterly estimates (historical series)	Stats SA: Financial Statistics of National Government (P9119.3): sales of non-financial assets only Stats SA: Financial Statistics of Provincial Government (P9121): sales of non-financial assets only
	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> Purchases net of sales of non-financial assets; Rand values	<i>Extra-budgetary &amp; higher education institutions &amp; social security funds</i> South African Reserve Bank: Public Finance Statistics	Stats SA: Financial Statistics of Extra-budgetary Accounts and Funds (P9102): sales of non-financial assets only Stats SA: Financial Statistics of Higher Education Institutions (P9103.1): sales of non-financial assets only
Transfer costs	<i>Private enterprises &amp; public corporations</i> Transfer duties; Rand values SIC 842 turnover to calculate commission fees; Rand values Conveyancer fees (average fees multiplied by volumes of real estate transactions from Deeds Office); Rand values Deeds levies at current prices; Rand values	South African Revenue Service Stats SA: Quarterly Financial Statistics (P0044) Deeds Office	Sum of four quarters



**Table 36 – Operational characteristics of source data for GFCF by asset type**

<b>Asset type</b>	<b>Frequency</b>	<b>Lag</b>	<b>Data provider</b>
Residential buildings and non-residential buildings	<i>Private enterprises &amp; public corporations</i> Building plans passed – Monthly Building Statistics – Annual Income and Expenditure Survey; Living Conditions Survey – Periodic For residential buildings only	8 weeks after reference month 2 years after reference year 2 years after reference year	Statistics South Africa
	<i>National &amp; provincial government</i> Monthly	2 weeks after reference month	National Treasury
	<i>Extra-budgetary and higher education institutions and social security funds</i> Quarterly	12 weeks after reference quarter	South African Reserve Bank
	<i>Local government</i> Annual	24 months after reference period	Statistics South Africa
Construction works	<i>Private enterprises &amp; public corporations</i> QFS, QES & QLFS – Quarterly Wholesale, retail and manufacturing sales – Monthly	12 weeks after reference quarter 12 weeks after reference month	Statistics South Africa
	<i>National &amp; provincial government</i> Monthly	2 weeks after reference month	National Treasury

<b>Asset type</b>	<b>Frequency</b>	<b>Lag</b>	<b>Data provider</b>
Construction works (continued)	<i>Extra-budgetary and higher education institutions and social security funds</i> Quarterly	12 weeks after reference quarter	South African Reserve Bank
	<i>Local government</i> Annually	24 months after reference period	Statistics South Africa
Transport equipment	<i>Private enterprises &amp; public corporations</i> Motor trade sales – Monthly Imports of other transport equipment & BoP adjustments – Monthly	7 weeks after reference period 5 & 6 weeks after reference period	Statistics South Africa South African Revenue Service
	<i>National &amp; provincial government</i> Monthly	2 weeks after reference month	National Treasury
	<i>Extra-budgetary and higher education institutions and social security funds</i> Quarterly	12 weeks after reference quarter	South African Reserve Bank
	<i>Local government</i> Annually	24 months after reference period	Statistics South Africa National Treasury

<b>Asset type</b>	<b>Frequency</b>	<b>Lag</b>	<b>Data provider</b>
Information, computer and telecommunications equipment	<i>Private enterprises &amp; public corporations</i> Monthly Imports of computer equipment – Monthly	5 & 6 weeks after reference period	South African Revenue Service
	<i>National &amp; provincial government</i> Monthly	2 weeks after reference month	National Treasury
	<i>Extra-budgetary and higher education institutions and social security funds</i> Quarterly	12 weeks after reference quarter	South African Reserve Bank
	<i>Local government</i> Annually	24 months after reference period	Statistics South Africa
Machinery and equipment	<i>Private enterprises &amp; public corporations</i> Monthly Imports and exports of other machinery and equipment – Monthly	5 & 6 weeks after reference period	South African Revenue Service
	<i>Private enterprises &amp; public corporations</i> Manufacturing sales of certain industries' machinery and equipment – Monthly	4 weeks after end of reference quarter	Statistics South Africa
	<i>National &amp; provincial government</i> Monthly	2 weeks after reference month	National Treasury

<b>Asset type</b>	<b>Frequency</b>	<b>Lag</b>	<b>Data provider</b>
Machinery and equipment (continued)	<i>Extra-budgetary and higher education institutions and social security funds</i> Quarterly	12 weeks after reference quarter	South African Reserve Bank
	<i>Local government</i> Annually	24 months after reference period	Statistics South Africa
Research and development	<i>All institutional units</i> R&D GFCF Quarterly	None	Statistics South Africa
Computer software	<i>Private enterprises &amp; public corporations</i> Quarterly	12 weeks after reference quarter	South African Revenue Service Statistics South Africa
	<i>National &amp; provincial government</i> Monthly	2 weeks after reference month	National Treasury
	<i>Extra-budgetary and higher education institutions and social security funds</i> Quarterly	12 weeks after reference quarter	South African Reserve Bank
	<i>Local government</i> Annually	24 months after reference period	Statistics South Africa

Asset type	Frequency	Lag	Data provider
Mineral exploration and evaluation	<i>Private enterprises only</i> GFCF on mineral exploration and evaluation Quarterly	12 weeks after reference quarter	Statistics South Africa
Cultivated biological resources	<i>Private enterprises &amp; public corporations</i> Cultivated biological resources GFCF Quarterly	12 weeks after reference quarter	Department of Agriculture, Land Reform and Rural Development
	<i>National &amp; provincial government</i> Monthly	2 weeks after reference month	National Treasury
	<i>Extra-budgetary and higher education institutions and social security funds</i> Quarterly	12 weeks after reference quarter	South African Reserve Bank
	<i>Local government</i> Annually	24 months after reference period	Statistics South Africa
Transfer costs	<i>Private enterprises only</i> Transfer duties Monthly	1 month after reference month	South African Revenue Service
	Turnover of SIC 842 (real estate activities on a fee or contract basis) Quarterly	12 weeks after reference quarter	Statistics South Africa
	Deeds levies Monthly	1 month after reference month	Deeds office

### 5.3.4 Estimation methods (GFCF)

#### 5.3.4.1 Calculation of quarterly current-price estimates

##### 5.3.4.1.1 General government

Daily transactional data reported by general government departments are recorded on National Treasury's Vulindlela website ([www.vulindlela.gov.za](http://www.vulindlela.gov.za)). Estimates are provided for the purchases and sales of non-financial assets of all types (see section 5.3.2: Composition of GFCF) and for two levels of government (national and provincial). The classification of the data are set out in accordance with the GFSM 2014 recommendations, based on the financial year-ends of national and provincial government departments. Daily transactional data are saved on the website and are available on a monthly basis.

The CEPS provides estimates of purchases of and additions to non-financial assets by the general public sector, including local government institutions, as well as 257 local, district and metropolitan municipalities.<sup>53</sup> The data cover all the asset types and are available on an annual basis only, with a lag of two years. National Treasury's Section 71 publication on borrowings by municipalities also provides capital expenditure estimates, used to calculate and revise the quarterly estimates.

National Treasury's monthly Section 32 publication on the estimates of national government revenue and expenditure reports payments for capital assets by Parliament. The estimates serve as an indicator of capital expenditure by Parliament, and are revised using the interpolated quarterly estimates from the CEPS.

The estimates of GFCF for extra-budgetary and higher education institutions, as well as social security funds, are from the SARB. For extra-budgetary institutions specifically, comparisons are made with the Public Entities Quarterly Reporting Template from National Treasury. Preliminary data are received from the SARB approximately four weeks following the reference period. The data are revised when final estimates are published, with a lag of one quarter.

Since the data for general government are reported on a cash basis, accrual adjustments are made to the data. These adjustments preserve the annual value derived as the sum of the four quarters.

##### 5.3.4.1.2 Public corporations and private enterprises

Residential and non-residential building activity by the private sector (that is, private enterprises and public corporations) is estimated using approvals of building plans as well as additions and alterations, as measured in Stats SA's monthly Selected Building Statistics.<sup>54</sup> The data at current prices are available monthly with a lag of two months. The information is collected from major municipalities only. Full coverage is estimated using coverage factors from Stats SA's annual Buildings Statistics.

The quarterly private-sector estimates of construction works and engineering construction activity are based on a total construction indicator, which is adjusted upwards to the independently calculated annual values. The total construction indicator is total activity on residential and non-residential buildings and construction works. It is calculated from the supply side, comprising estimates of weighted labour costs and building materials. It covers the activities of all institutional units, including general government.

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<sup>53</sup> Stats SA's Government Finance Statistics Division publishes estimates of the sales/disposals of non-financial assets for the public sector.

<sup>54</sup> Selected Building Statistics of the Private Sector as Reported by Local Government Institutions.

Data for the building materials component are obtained from the monthly surveys of wholesale trade, retail trade and manufacturing. Average earnings in the construction industry are obtained from the QES, while the numbers of construction industry employees (both for formal and informal employment) are obtained from the QLFS.

Capital expenditure on transport equipment is broken down into motor vehicles and other transport equipment. The data on sales of new motor vehicles come from the MTS, and are used as the control total for total motor vehicle sales, from which motor vehicle sales to households are subtracted. The value calculated serves as an indicator of capital expenditure on motor vehicles by the private and general government sectors, and are obtainable seven weeks after the end of the reference period. Import data for other transport equipment are obtained from SARS monthly with a one month lag, and BoP adjustments are applied where applicable.

Imports of ICT equipment excluding parts are used as the control total for capital spending on ICT equipment by all institutional units. Capital spending on ICT by private enterprises and public corporations is residually derived by subtracting capital spending on ICT equipment by the general government sector as well as ICT purchases by the household sector.

The commodity or product flow method is used to estimate capital expenditure on other machinery and equipment (excluding transport and ICT equipment). The manufacturing sales of machinery and equipment by specific manufacturing enterprises (monthly manufacturing survey) are used as indicators of domestic production (or output) of machinery and equipment. Also included are data on net imports; an SUT-based trade margin; an adjustment for the change in wholesale inventories; and a component that measures the consumption of machinery and equipment by households (from HFCE). This provides an estimate of capital expenditure on machinery and equipment by all institutional sectors, including general government.

Estimates of intellectual property products, which cover R&D, mineral exploration and evaluation, computer software and databases, and entertainment, literary or artistic originals, are made quarterly based on various sources.<sup>55</sup> The estimates of R&D are obtained by applying a straight-line technique to the annual data provided by the Human Sciences Research Council. The same approach is applied to the quarterly estimates of mineral exploration and evaluation. Computer software estimates are obtained similarly to the private estimates of construction works, treating the imports of computer equipment as an indicator, and then raising the quarters to the independent annual levels. The estimates of cultivated biological resources are based on data on animals yielding repeat resources and the development of orchards, provided by the DALRRD.

SNA 2008 requires that transfer costs, which represent the costs of transferring the ownership of fixed or non-financial assets, be capitalised. These costs include conveyance fees, real estate commissions, transfer duties, and deeds levies. The following are used to estimate transfer costs: published estimates of levies charged for property registrations from the Deeds Office; QFS turnover for SIC 842 (real estate activities on a fee or contract basis – used as a proxy to estimate estate agent commissions); conveyance fees (estimated using deeds levies); and transfer duty estimates from SARS. The Deeds Office data are published on a monthly basis with a one-month lag.

#### **5.3.4.2 Constant price estimates – deflators**

Price indices are used to derive real-value estimates (i.e. without the effect of inflation) of national accounts aggregates of the goods and services account (SNA 2008, 15.95). For GFCF, real-value estimates are produced using a combination of CPIs and PPIs (both domestic and foreign) and construction price information from Stats SA's monthly Construction Materials Price Indices.

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<sup>55</sup> Artistic originals are not currently measured in South Africa's national accounts.

The volume estimates of GFCF come from the deflation of the current-price GFCF totals, by applying applicable price indices to the GFCF totals according to the type of asset purchased and type of construction work (see section 5.3.2 for a list of asset types for which deflators are estimated).

Table 37 provides further details, as well as operational details for the deflators by asset type.



**Table 37 – Data sources for GFCF deflators by asset type**

Asset type	Deflator and unit of measurement <sup>56</sup>	Source
Residential buildings	<p><i>All institutional unit types</i></p> <p>Contract price adjustment provisions (CPAP) work group index 180 for lump sum contracts Index Dec 2016 = 100 for the CPAP work group indices</p> <p>QES wage price index (WPI) Index 2015 = 100</p>	<p>Stats SA: Construction Materials Price Indices (P0151.1) (which provides CPAP work group indices)</p> <p>Stats SA: Quarterly Employment Statistics (P0277)</p> <p>Stats SA: Producer Price Index (P0142.1)</p>
Non-residential buildings	<p><i>All institutional unit types</i></p> <p>CPAP work group index 181 for commercial &amp; industrial buildings</p> <p>QES WPI Index 2015 = 100</p>	
Construction works	<p><i>All institutional unit types</i></p> <p>SAFCEC input materials index (South African Federation of Civil Engineers and Contractors) Index 2015 = 100</p> <p>CPAP work group indices: Earthworks – 104 Concrete (excluding formwork) – 110 Formwork – 111 Reinforcement – 114 Roadwork – 154 Mechanical services – 170 Index Dec 2016 = 100 for the for the CPAP work group indices</p> <p>PPI specific industries <sup>57</sup> Index Dec 2020 = 100</p> <p>QES WPI Index 2015 = 100</p>	

<sup>56</sup> Price indices are converted to 2015 = 100 before being used to deflate the current-price estimates.

<sup>57</sup> Further details in terms of what these indices include are provided in the methodological section.

Asset type	Deflator and unit of measurement <sup>56</sup>	Source
Transport equipment	<p><i>All institutional unit types</i></p> <p>CPI for new motor vehicles Index Dec 2016 = 100</p> <p>Exchange-rate-adjusted PPIs for euro area and US for other transport equipment Index 2015 = 100</p>	<p>Stats SA: Consumer Price Index (P0141)</p> <p>US Bureau of Labor Statistics <a href="http://www.bls.gov">www.bls.gov</a></p> <p>Eurostat <a href="http://ec.europa.eu/eurostat">http://ec.europa.eu/eurostat</a> PPI</p>
ICT equipment	<p><i>All institutional unit types</i></p> <p>Exchange-rate-adjusted US CPI for computer and peripheral equipment</p> <p>Exchange-rate-adjusted US CPI for telephones and telefaxes</p> <p>Exchange-rate-adjusted US CPI for radios and televisions</p> <p>Index 2007 = 100</p>	<p>US Bureau of Labor Statistics <a href="http://www.bls.gov">www.bls.gov</a> CPI</p>
Machinery and equipment	<p><i>All institutional unit types</i></p> <p>PPI for electrical machinery and apparatus Index Dec 2020 = 100</p> <p>PPI for non-electrical machinery and equipment <sup>58</sup> Index Dec 2020 = 100</p> <p>Exchange-rate-adjusted PPIs for UK and euro area Index 2015 = 100</p>	<p>Stats SA: Producer Price Index (P0142.1)</p> <p>Eurostat <a href="http://ec.europa.eu/eurostat">http://ec.europa.eu/eurostat</a></p>

<sup>58</sup> The methods section provides more information on the composition of this item.

Asset type	Deflator and unit of measurement <sup>56</sup>	Source
Intellectual property rights	<p><i>All institutional unit types</i></p> <p>Research and development: WPI for SIC 8 (Financial intermediation, insurance, real estate and business services) Index 2015 = 100</p>	Statistics South Africa
	<p><i>Private enterprises only</i></p> <p>Mineral exploration and evaluation: Construction works deflator Index 2015 = 100</p>	
	<p><i>All institutional unit types</i></p> <p>Computer software: Exchange-rate-adjusted US CPI for computer software Index Dec 1997 = 100</p>	US Bureau of Labor Statistics <a href="http://www.bls.gov">www.bls.gov</a> CPI
Cultivated biological resources	<p><i>All institutional unit types</i></p> <p>PPI for live animals Index Dec 2020 = 100</p>	Stats SA: Producer Price Index (P0142.1)
Transfer costs	<p><i>Private enterprises only</i></p> <p>Volume index based on the count of transactions; the price for transfer costs is derived implicitly. Index 2015 = 100</p>	Deeds Office

### **5.3.5 Annual GFCF estimates**

#### **5.3.5.1 General government**

The annual estimates for general government by level of government and asset type are available from the CEPS. However, the CEPS provides estimates of the purchases of non-financial assets and not the sales of these assets. The estimates of the sales of non-financial assets are obtained from Stats SA's government finance statistics chief directorate for all levels of government.

#### **5.3.5.2 Private enterprises and public corporations**

##### **5.3.5.2.1 Non-financial private enterprises and public corporations**

The AFS and structural industry surveys provide annual and periodic estimates of capital spending on non-financial assets for private non-financial enterprises, while the CEPS provides annual estimates for public corporations. Financial-year estimates are converted to calendar-year estimates using a detailed calendarisation process which makes use of the QFS capital expenditure data by industry and financial-year end. Purchases and sales of non-financial assets can be found in the AFS, while the CEPS provides estimates of purchases of non-financial assets. Capital spending on R&D is obtained from the annual publication of the Human Sciences Research Council on research and experimental development, while estimates for total cultivated biological resources are obtained from the DALRRD. The AFS and CEPS also contain estimates of computer software.

##### **5.3.5.2.2 Private financial enterprises**

The annual estimates of purchases and sales of non-financial assets by private financial enterprises engaged in financial intermediation and insurance activities are provided by the SARB as the regulatory authority of such enterprises.

## **5.4 Changes in inventories**

### **5.4.1 Introduction (changes in inventories)**

Changes in inventories are measured by the value of the entries into inventories, less the value of withdrawals, and less the value of any recurrent losses of goods held in inventories during the accounting period (SNA 2008, 10.118). Inventories may be materials and supplies held as inputs by producers, output as yet unsold, or products held by wholesale and retail traders for resale (SNA 2008, 3.178).

### **5.4.2 Composition of changes in inventories**

Changes in inventories comprise the following categories:

- Raw materials – components for processing, packaging materials, fuel, consumables, and maintenance stock. These are products that an enterprise holds in inventory with the intention of using them as intermediate inputs into production (SNA 2008, 10.131).
- Work in progress – goods used in the process of manufacturing or work that has been partially done, but which has not yet been completed at the end of the quarter. Work in progress consists of output produced by an enterprise that is not yet sufficiently processed to be in a state in which it is normally supplied to other institutional units (SNA 2008, 10.134).

- Finished goods – manufacturers' completed goods and goods purchased for resale, not sold at the end of the quarter. Finished goods consist of goods produced as outputs that their producer does not intend to process further before supplying them to other institutional units (SNA 2008, 10.142).

Changes in inventories are classified according to the Standard Industrial Classification of All Economic Activities, 1993.

### 5.4.3 Overview of source data (changes in inventories)

Changes in inventories are estimated based on opening and closing book values (BVs) collected by sample surveys produced by Stats SA, and data produced by other government organisations. Changes in inventories are estimated by industry, and the industries covered include agriculture; mining; manufacturing; electricity; construction; trade; transport and communication; finance and business services; and government and personal services.

The QFS serves as the primary data source for most industries, except for agriculture, mining and part of manufacturing. Changes in inventories are estimated by industry using preliminary unweighted QFS data. Preliminary unweighted data are used instead of weighted QFS data due to the unavailability of weighted data in time for publication. Unweighted data are available seven weeks after the end of the reference period. Weighted data are available only 12 weeks after the end of the reference period. The use of weighted QFS data leads to significant volatility in the estimates of changes in inventories, due to the weights used for enterprise size groups 2, 3 and 4.<sup>59</sup> In addition, the reporting of smaller enterprises is often of poor quality, as smaller firms do not usually keep formal quarterly inventory registers. As a result, changes in inventories are estimated using only unweighted data of size group 1 enterprises. The QFS dataset comprises 5 000 enterprises in total, with size group 1 enterprises accounting for just over half of the total. A coverage adjustment factor based on AFS closing stock is applied to address the under-coverage.

#### *Agriculture:*

Agriculture estimates are obtained directly from the DALRRD at current and constant prices. These estimates cover livestock inventories only.

#### *Mining:*

Stats SA's monthly mining publication is based on information provided by the DMRE, and is the primary data source for the mining industry. The survey covers all mining establishments operating in the South African economy. The production and sales data are used to estimate changes in inventories for the mining industry using a commodity flow method. The estimates are grouped according to the type of mineral. There are nine groupings representing about 90% of total output. The groups are coal, chromite, iron ore, manganese, copper, diamonds, gold, platinum group metals, and processed minerals. In order to estimate the relevant data for the nine groups the commodity flow system is used, where total sales quantity is subtracted from the total production output for each commodity group.

#### *Manufacturing - finished stocks:*

Stats SA's monthly manufacturing survey is used to estimate GDP and also provides the source data for the finished goods part of changes in inventories for the manufacturing industry.

Table 38 shows data sources for changes in inventories, and Table 39 shows operational characteristics of source data.

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<sup>59</sup> Size groups are determined by the Department of Trade, Industry and Competition cut-off points based on turnover, where size group 1 represents the largest enterprises and size group 4 represents the smallest enterprises.

**Table 38 – Data sources for changes in inventories by industry (at current prices unless otherwise indicated)**

Industry	Indicator variable and unit of measurement	Quarterly	Annual	Benchmark
Agriculture	Changes in inventories at current and constant prices; <sup>60</sup> Rand values	Department of Agriculture, Land Reform and Rural Development	Sum of four quarters	Department of Agriculture, Land Reform and Rural Development
Mining and quarrying	Production and sales values; Rand values	Department of Mineral Resources and Energy	Sum of four quarters	Stats SA: Annual Financial Statistics (P0021)
Manufacturing – finished stock	Opening and closing book values; Rand values	Stats SA: Manufacturing: Production and Sales (P3041.2)	Sum of four quarters	Stats SA: Annual Financial Statistics (P0021)
Manufacturing – raw materials (including work-in-progress)	Opening and closing book values; Rand values	Stats SA: Quarterly Financial Statistics (P0044)	Sum of four quarters	Stats SA: Annual Financial Statistics (P0021)
Electricity, gas and water supply				
Construction				
Trade				
Transport, storage and communication				
Financial intermediation, insurance etc.				
Government and personal services				

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<sup>60</sup> Covers livestock only.

**Table 39 – Operational characteristics of source data for inventories by industry**

Industry	Frequency	Lag	Data provider
Agriculture	Opening and closing inventories Quarterly	12 weeks after reference period	Department of Agriculture, Land Reform and Rural Development
Mining and quarrying	Production and sales values Monthly	5 weeks after reference period	Department of Mineral Resources and Energy
Manufacturing – finished stock	Closing stock Monthly	5 weeks after reference period	Statistics South Africa
Manufacturing – raw materials (including work-in-progress)	Opening and closing book values Quarterly	12 weeks after reference period	Statistics South Africa
Electricity, gas and water supply			
Construction			
Trade			
Transport, storage and communication			
Financial intermediation, insurance etc.			
Government and personal services			

#### **5.4.4 Estimation methods (changes in inventories)**

##### **5.4.4.1 Current-price estimates**

Inventories are stores of goods for use in the production process to be processed, transformed or sold, but not used directly at the time of purchase or production. Changes in inventories are the differences between closing and opening inventories, while the stock of inventories at a point in time is referred to as the book value (BV) of inventories.

Current-price estimates of changes in inventories are derived from BVs through an inventory value adjustment process, whereby the average price prevailing in the current quarter is applied to the changes in BVs to arrive at current-price changes in inventory estimates. Because stocks of inventories can be held over a long period of time, the gains and losses that result from price changes while stocks are held in inventory are of interest. These holding gains and losses – which are implicit in the reported BV data – do not form part of the changes in inventory estimates on a national accounts basis, and are thus subtracted from the estimates.

##### **5.4.4.2 Constant-price estimates – deflators**

Each industry keeps different types of stock, leading to different average ages of stock. For instance, the average age of inventories kept by a food retailer will be much shorter than that of a furniture retailer. As a result an inventory turnover ratio, expressed as QFS closing BV divided by QFS turnover, is calculated in order to account for the time that the stock would have been kept as inventory. The quotient is multiplied by 3 in order to represent the average age of inventories in months. The inventory turnover ratio is then used to determine the number of months to be used in constructing a deflator. For example, if the inventory turnover ratio is two months then the deflator used will be an average of the last two months of the quarter. This assumes that businesses use a first-in-first-out inventory accounting method.

Depending on the industry or sub-industry under consideration, BVs are deflated by a price index appropriate to the stocks held by that industry or sub-industry. Annexure 9 lists the different industries / sub-industries with their corresponding deflators. Prices used for deflating and revaluing BVs are predominantly from Stats SA's CPI and PPI, as well as Construction Materials Price Indices for construction, and some instances of unit value indices for manufacturing. The deflator for the closing stocks of one period is in turn used as a deflator for the opening stocks in the subsequent period.

#### **5.5 Rest of the world – international trade**

##### **5.5.1 Introduction (international trade)**

Trade statistics record transactions between resident and non-resident institutional units. These transactions relate to goods, for which demand exists and over which ownership rights can be established, and whose ownership can be transferred between institutional units; and services, which are carried out by one institutional unit for the benefit of another (SNA 2008, 6.15 and 6.17). The Customs authority in South Africa is SARS, which is the source of data for merchandise trade, or trade in goods. The SARB is responsible for compiling the country's BoP, and is the source for trade in services as well as any BoP adjustments required for merchandise trade.

Merchandise trade is compiled in accordance with rules established by the United Nations' International Merchandise Trade Statistics (IMTS): Concepts and Definitions and the International Monetary Fund's Balance of Payments Manual (edition 6). The latter has been made fully compatible with the SNA's standards, in that it uses a change-of-ownership basis; whereas the former differs at the margin as it follows the timing of

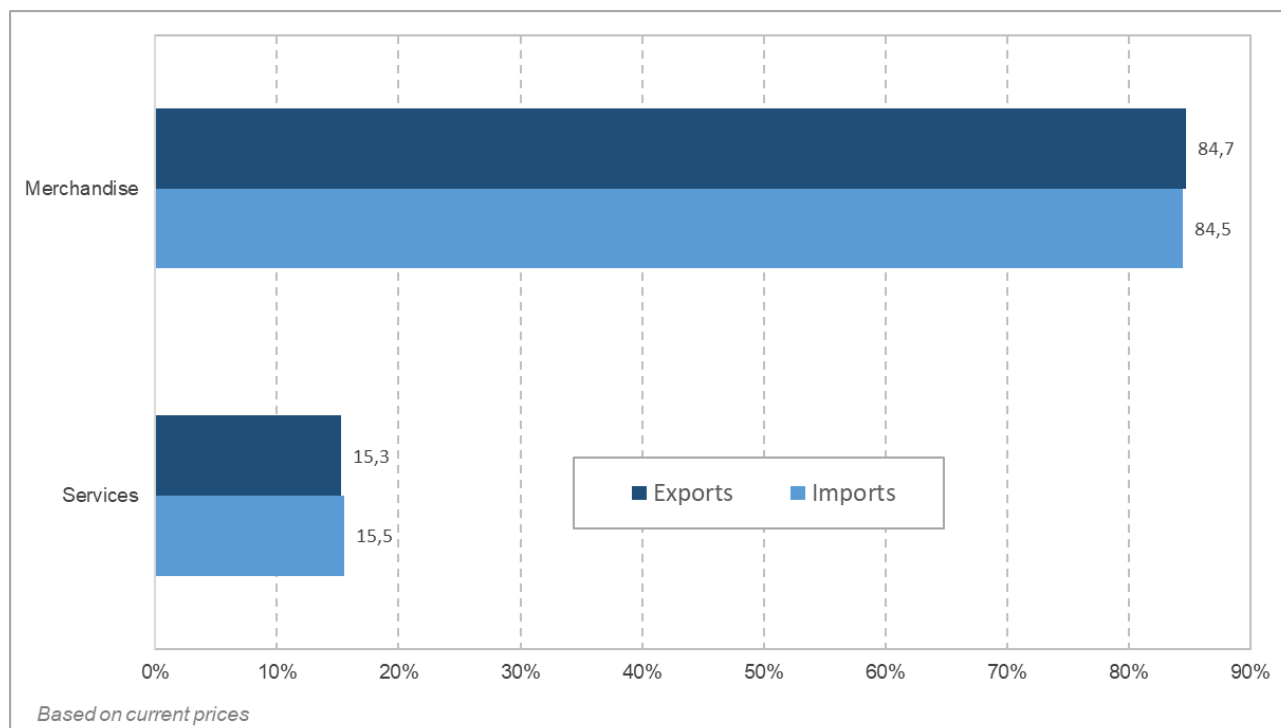


processing by Customs, largely to accommodate the traditional administrative and regulatory functions of Customs. The SARB has the authority and the sources of information required to adjust SARS’s data for BoP purposes. The Harmonised System (HS) is the international merchandise trade classification system developed and maintained by the World Customs Organization, and is used by SARS to classify goods.

**5.5.2 Composition of international trade**

International trade estimates are composed of exports and imports of goods, including BoP adjustments, as well as exports and imports of services. The split between goods and services is shown in Figure 8.

**Figure 8 – Composition of international trade, percentage of total exports / imports in 2018**



**5.5.3 Overview of source data (international trade)**

Table 40 shows data sources for international trade, and Table 41 shows operational characteristics of the source data.

**Table 40 – Data sources for international trade by trade type (at current prices)**

Trade type	Indicator variable (rand values)	Quarterly and annual
Merchandise	Exports of goods	South African Revenue Service
	Imports of goods	
Services	Exports of services	South African Reserve Bank
	Imports of services	
BoP adjustments	BoP adjustments (for merchandise trade only)	

**Table 41 – Operational characteristics of source data for international trade by trade type**

Trade type	Frequency	Lag	Data provider
Merchandise	Monthly	4 weeks after reference month	South African Revenue Service
Services	Quarterly	6 weeks after reference quarter	South African Reserve Bank
BoP adjustments	Monthly	6 weeks after reference quarter	South African Reserve Bank

## 5.5.4 Estimation methods (international trade)

### 5.5.4.1 Current-price estimates

#### 5.5.4.1.1 Trade in goods and balance of payments adjustments

A detailed merchandise trade dataset from SARS is uploaded onto a Stats SA SAS (Statistical Analysis System) library every month with a lag of four to five weeks.<sup>61</sup> For example, October trade data would be uploaded in the first week of December. The monthly dataset includes preliminary data for the latest month and revised data for the previous 23 months. The trade estimates are revised accordingly. This detailed HS dataset is available from January 2009. Since trade data are used in the compilation of GFCF estimates, specific groupings are used. Merchandise trade estimates are published on an HS section level by SARS, but only the total of goods and services is published by Stats SA.

Trade merchandise estimates are calculated based on the date of acceptance of the customs declaration by the Customs wing of SARS, which is considered to be a good approximation of the time of change of ownership.

The customs data are on an IMTS basis, i.e. border-crossing, rather than the desired SNA change-of-ownership convention. More specifically, 'the main conceptual difference is that international merchandise trade statistics are based on the general principle to record all goods that add to or subtract from the stock of material resources of a country by entering (imports) or leaving (exports) its economic territory, whereas the recording of transactions in the balance of payments is based on the principle of change of ownership between residents and non-residents.'<sup>62</sup> These differences are addressed to the extent possible in the BoP adjustments and are outlined in the IMTS and BoP manuals.

#### 5.5.4.1.2 Trade in services

Trade in services estimates are compiled by the SARB's BoP Division, and are estimates of the services exported by residents to non-residents and imported by residents from non-residents. There are 14 common services categories across exports and imports. The broad services categories are travel, transportation and other services. These data (or preliminary estimates thereof) are received from the SARB as soon as possible after the end of the reference quarter for inclusion in the estimation of quarterly GDP (expenditure).

<sup>61</sup> See section 6.3 for further details on South Africa's international trade and BoP.

<sup>62</sup> International Merchandise Trade Statistics: Concepts and Definitions 2010.

#### 5.5.4.2 Constant-price estimates – deflators

There are two kinds of deflators used to derive imports and exports of goods at constant prices: price indices and unit value indices (UVIs). The UVIs are used for homogeneous products, for both exports and imports. For more heterogeneous products, alternative deflators such as PPIs are used for exports. For imports, in the absence of import price indices, exchange-rate-adjusted foreign PPIs are used. Using two types of deflator is a consequence of the very broad product descriptions derived from the HS. Deflators derived from these product descriptions may be much too broad for use as price indicators. Whereas a UVI for coal or iron is a usable approximation to a price indicator, a UVI for imports of computers cannot be used for price purposes.

The mix of deflators varies for exports and imports. On the export side, domestic PPIs are used as proxy prices, since domestic producer price changes are expected irrespective of the residence of the buyer. On the import side, use is made of exchange-rate-adjusted foreign CPIs instead of UVIs for ICT equipment (on the grounds that quality change would be better captured in these prices).

The approach that governs the choice of UVIs is to compensate for the generality of the product descriptions by also considering attributes such as the identity of the importer and, most importantly, the country of origin. Examples of the use of strictly defined UVIs are the imports of petroleum products (crude oil, petrol and diesel) and the imports of motor vehicles. The limited use of UVIs for exports includes their application to the exports of certain mineral products (iron ore, coal, manganese, copper, platinum group metals).<sup>63</sup> In some instances different groupings use the same price, as that price is deemed to be the best currently available proxy.

For imports of services deflators, a similar calculation to the exchange-rate-adjusted price for merchandise imports is used, with the difference being in the use of foreign CPIs rather than PPIs. For imports of transport services deflation, the exchange-rate-adjusted foreign CPI is supplemented with the CPI for fuel. For imports of travel services, the deflator is compiled from the exchange-rate-adjusted CPIs of five countries: France, Germany, the Netherlands, the UK and the US.

For exports of services deflators, use is made of South African average wage earnings growth by industry. Similarly to the import side, for exports of transportation services the average wage growth is supplemented with the CPI for fuel. For the deflation of exports of travel services, a weighted CPI consisting of a basket of travel and tourism-related products is compiled. The travel and tourism-related products are included in Stats SA's Tourism Satellite Account.

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<sup>63</sup> Currently, UVIs for mining products such as platinum, manganese and diamonds are based on DMRE data, but other non-mining UVIs are developed from SARS data.

## 6. Supplementary notes

### 6.1 Back series

A major strength of the national accounts is long and consistent time series, which are a necessary ingredient for economic modelling and forecasting. QNA data should be comparable over time to provide accurate measurements of short and long-term economic changes. This is generally achieved through a process of 'back-casting'. The objective is to provide the user with long and consistent time series.

In the national accounts, a back-casting exercise is typically required following major revisions arising from methodological changes, new accounting standards, new classifications, new benchmark years or base years, or new data sources. These revisions may lead to breaks in time series when they cannot be applied for the entire length of the national accounts. These breaks can hamper the comparability between observations in the pre- and post-revision periods.

The most common 'back-casting' method is the proportional Denton method. It is a technique that implicitly constructs, from the revised *annual* ratios between estimates of value added and the underlying indicators, a *quarterly* series of ratios between value added and the underlying indicators. It operates under the constraint that the average of the quarterly ratios equals the corresponding annual ratio in each year that has a revised annual estimate of GDP.

With the change of the base year from 2010 to 2015, detailed SUTs were compiled for the period 2013 to 2018. The incorporation of new and improved methodologies and data sources led to a number of structural changes in the relative importance of various industries and components of the GDP. Consequently, to retain meaningful time series, the data were back-cast and linked back to 1993, starting in 2012 for most of the production-based estimates, and 2009 for most of the expenditure-based estimates.

### 6.2 Seasonal adjustment

Seasonal adjustment is a process designed to decompose a time series – typically an economic statistic such as monthly household expenditure or quarterly company profits or total exports of goods – into components classified by the frequency of their cyclical changes. These range from very low and low frequency cycles that combine three to five-year business cycles with much longer cycles, and are commonly referred to as the 'trend-cycle'. The calendar component, to which economic time series are also sensitive, is a complex composite contributing cycles of one, seven and more years created by the unequal length of the months. In addition the following effects are also considered: predictable but moveable holidays such as Easter; the cyclical changes in the year-to-year structure of the week; and the four-year cycle created by the appearance of an extra day (not necessarily the same day of the week) every four years. Lastly, the process of seasonal adjustment identifies a residual known as the 'irregular', which cannot be assigned to any identifiable and repetitive cause, but is typically of very high frequency, meaning that its changes tend to average to zero over short periods of time.

The process of seasonal adjustment targets seasonal and calendar contributions to the overall change, identifies them precisely, and removes them. The process of removal can be direct or indirect. Direct seasonal adjustment consists in identifying the seasonal contribution to the changes in a particular time series and removing it. Indirect seasonal adjustment consists in applying the principle that the sum of the seasonally adjusted components of a particular time series is also seasonally adjusted. In the national accounts the indirect approach is preferred, though both are used.

The actual process of seasonal adjustment, X-12 ARIMA, is a combination of an iterative process developed by the US Bureau of the Census and a technique developed in Statistics Canada – Autoregressive Integrated Moving Averages (ARIMA) – which provides more stable forecasts of future seasonal contributions to time series. The technique is well described in the technical literature, and users interested in its details are directed to the website of the Australian Bureau of Statistics: [www.abs.gov.au](http://www.abs.gov.au).

### **6.3 South Africa's system of trade and balance of payments adjustments**

Statistics on exports and imports of goods are compiled by the Customs wing of SARS and subjected to a number of additional adjustments carried out by the SARB in line with the guidelines set out in the International Monetary Fund's Balance of Payments Manual (edition 6).

#### **System of trade**

##### *International Merchandise Trade Statistics 2010 (United Nations)*

The statistics on trade in goods are compiled by the Customs wing of SARS mostly in accordance with the guidelines laid out in the United Nations' International Merchandise Trade Statistics: Concepts and Definitions 2010 (UN IMTS 2010). Currently SARS follows a hybrid special system (see UN IMTS 2010 for definition). The outstanding exception involves warehoused goods eventually destined for local consumption. Contrary to the special definition of territory, these goods are included the moment they are warehoused rather than when they cross the boundary for home use. However, goods imported and exported for processing are excluded from trade statistics, as they should be in accordance with the special system. The exception to compliance consists in waiving the right to change the valuation of goods declared in non-arm's-length transactions.

##### *Free on board*

SARS reports South Africa's trade statistics, both exports and imports, as free on board (FOB). While this is the practice followed in North America and in Australia, the practice adopted by EU members is to report imports CIF, that is with cost, insurance and freight included in the reported value.

#### **Balance of payments adjustments**

In addition, the SARB applies the following adjustments to the trade numbers.

##### *Specific BoP adjustments*

Specific BoP adjustments are made to gold, crude oil and aircraft.

The guiding principle for the inclusion or exclusion of transactions by Customs is whether physical movements occur across borders, whereas the key principle for inclusion in the balance of payments goods account is whether a transaction results in a change of ownership.

##### *Other BoP adjustments*

Other BoP adjustments include coverage for transactions that would not pass directly through Customs or where Customs waives the right to inspect each transaction individually, for example postal trade and transactions involving South African Airways abroad.

#### 6.4 Publication and revision cycle of GDP estimates

The quarterly estimates of GDP are published approximately 67 days after the reference quarter, which is typically the first or second Tuesday of March, June, September and December. The publication of the fourth quarter (in March) provides the first indication of the economic growth for the full calendar year, which is derived as the sum of the four quarters. These estimates typically rely on high-frequency indicators as data sources.

Stats SA also develops annual estimates of GDP through the SUT approach. This is a more comprehensive approach and makes use of more detailed but less frequent datasets, e.g. annual and quarterly surveys that become available after a longer period than the monthly statistics. The SUTs are published annually along with the fourth-quarter GDP estimate, but with a lag. As not all the required data are available, the SUTs will be revised the following year. The SUTs provide value added for 124 industries at publication level.

When a new annual estimate is derived from a preliminary or revised SUT, the quarters that form part of the calendar year need to be revised to ensure that there is consistency between the sum of the four quarters and the independent annual estimate. The normal publication sequence is shown in Table 42.

**Table 42 – Normal publication calendar for GDP**

Publication date	First quarterly publication	Supply and use tables
March 2022	Q4 of 2021	2018 revised 2019 preliminary
June 2022	Q1 of 2022	
Sept 2022	Q2 of 2022	
Dec 2022	Q3 of 2022	
March 2023	Q4 of 2022	2019 revised 2020 preliminary
June 2023	Q1 of 2023	
Sept 2023	Q2 of 2023	
Dec 2023	Q3 of 2023	

Note that the high-frequency data that underpin the quarterly estimates of GDP, e.g. monthly surveys, are subject to revision. This could be due to the late submission of questionnaires by respondents and corrections of previous responses, etc. Corresponding revisions in GDP and its components may be required. These revisions are included in the quarterly GDP series during the next cycle of publication if they are material enough to make a difference at the level of publication. Remaining revisions are implemented when the independent annual estimates are introduced.

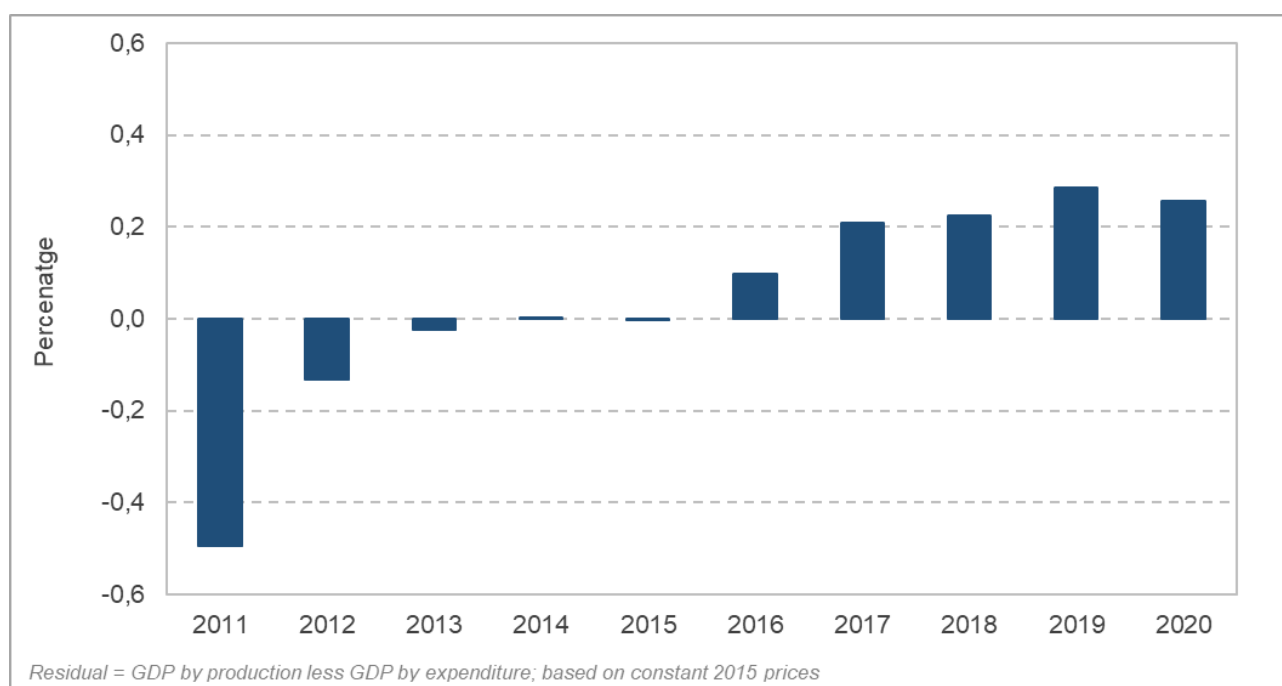
The schedule shown in Table 42 is maintained until the next comprehensive benchmark and rebasing exercise, which ideally should run in a cycle of five years or less. The timing of the next benchmarking and rebasing

exercise will be guided not only by the availability of the necessary source data, but also by forthcoming changes to the international frameworks and systems of classification. Significant updates to these are expected in 2023, and South Africa's ability to implement these changes will be carefully evaluated at that time. An additional consideration is that the base year should be a 'normal' year, so the impact of COVID-19 will also have to be taken into account.

### 6.5 Residual between GDP by production and GDP by expenditure

GDP is compiled by the production and expenditure approaches independently. Any differences between the two are investigated from both sides and adjustments are made if necessary, taking both current prices and constant prices into account. The residual is calculated as GDP measured by production less GDP measured by expenditure, and in Figure 9 it is shown as a percentage of GDP measured by production, based on constant 2015 prices. Measured at current prices, the residual is zero in the period 2013 to 2018, because the SUTs are fully balanced at current prices in those years.

**Figure 9 – Residual as a percentage of GDP measured by production**



### 6.6 Gross domestic product by province

Stats SA has published estimates of regional (provincial) GDP for a number of years. These have been withheld in recent years due to the resource-intensive nature of the GDP benchmarking and rebasing project. Given the significant changes at the national level, Stats SA must consider whether it is viable to produce regional estimates in 2022.

The importance of these estimates are well known, not only for the various spheres of government, but also for a range of different stakeholders in the private sector and academia. Stats SA needs to ensure that the estimates it publishes are of sufficient quality to still carry the seal of official statistics. A research paper will be prepared in 2022 that outlines the expected difficulties in this regard and potential solutions. Stakeholders will be consulted during this process.

## Abbreviations

AFS	Annual Financial Statistics
ANA	Annual national accounts
BoP	Balance of payments
BV	Book value
CEPS	Capital Expenditure by the Public Sector
CI	Changes in inventories
CIF	Cost, insurance and freight
CO <sub>2</sub>	Carbon dioxide
CoCA	Census of Commercial Agriculture
COE	Compensation of employees
COFC	Consumption of fixed capital
COICOP	Classification of Individual Consumption by Purpose
CPAP	Contract price adjustment provisions
CPC	Central Product Classification
CPI	Consumer price index
DALRRD	Department of Agriculture, Land Reform and Rural Development
DMRE	Department of Mineral Resources and Energy
eNaTIS	Electronic National Traffic Information System
FISIM	Financial intermediation services indirectly measured
FOB	Free on Board
FSCGG	Financial Statistics of Consolidated General Government
GDP	Gross domestic product
GFCE	Government final consumption expenditure
GFCF	Gross fixed capital formation
GFS	Government Finance Statistics
GFSM	Government Finance Statistics Manual
GVA	Gross value added
HEI	Higher Education Institutions
HFCE	Household final consumption expenditure
HS	Harmonised System (trade statistics)
ICT	Information, computer and telecommunications
IES	Income and Expenditure Survey
IMF QNAM	International Monetary Fund: Quarterly National Accounts Manual
IMTS	International Merchandise Trade Statistics
ISIC	International Standard Industrial Classification of All Economic Activities
LCS	Living Conditions Survey
MTS	Motor Trade Sales
NAAMSA	National Association of Automobile Manufacturers in South Africa
N.e.c.	Not elsewhere classified



NPI	Non-profit institution
PERSAL	Personnel and Salary System
PPI	Producer price index
PRASA	Passenger Rail Agency of South Africa
QES	Quarterly Employment Statistics
QFS	Quarterly Financial Statistics (of the formal business sector)
QFSM	Quarterly Financial Statistics of Municipalities
QFSSM	Quarterly Financial Statistics of Selected Municipalities (first published in 2021)
QLFS	Quarterly Labour Force Survey
QNA	Quarterly national accounts
R&D	Research and Development
RTS	Retail Trade Survey
SAPS	South African Police Service
SARB	South African Reserve Bank
SARS	South African Revenue Service
SIC	Standard Industrial Classification
SIS	Structural industry survey
SNA	System of National Accounts
Stats SA	Statistics South Africa
SUT	Supply and use table
UN	United Nations
UVI	Unit value index
VAT	Value-added tax
WPI	Wage price index

## Annexures

### Annexure A – Analysis of changes in value added (GDP by production) in the new base year (2015)

Major division	Total change (R billion)	Main reasons for change from previous benchmark
Agriculture (SIC 1)	+14	<p><b>Data sources:</b> Census of Commercial Agriculture (2017) and annual Agricultural Survey.</p> <p><b>Improved methodology:</b> Improved estimates of the non-observed economy, including subsistence farming.</p>
Mining (SIC 2)	-54	<p><b>Data sources:</b> SIS – Mining (2015) increased intermediate consumption by +R67bn and increased output by +R13bn.</p> <p><b>Improved methodology:</b> Implemented an establishment approach to closely represent mining commodities.</p>
Manufacturing (SIC 3)	+67	<p><b>Classification:</b> Improved reclassification where the main economic activity is manufacturing within the AFS, but partially offset by the reclassification of manufacturing trade services from manufacturing to trade.</p>
Electricity (SIC 4)	-22	<p><b>Improved methodology:</b> Improved estimates of input cost structure from the SIS – Electricity, Gas &amp; Water Supply (2013). Intermediate consumption increased by +R32bn and output increased by +R10bn in the 2015 base year.</p>
Construction (SIC 5)	+4	<p><b>Improved methodology:</b> Improved estimates of the non-observed economy.</p>

Major division	Total change (R billion)	Main reasons for change from previous benchmark
Trade (SIC 6)	+12	<p><b>Improved methodology:</b> Improved estimates of the non-observed economy.</p> <p><b>Classification:</b> Reclassification of manufacturing trade services from manufacturing to trade.</p>
Transport (SIC 7)	-11	<p><b>Data sources:</b> Improved estimates of intermediate consumption expenditure from the SIS – Transport and Storage, and the SIS – Post and Telecommunications (2013). Intermediate consumption increased by +R144bn and output increased by +R133bn in the 2015 base year.</p> <p><b>Improved methodology:</b> Improved estimates of the informal sector.</p> <p><b>Classification:</b> Reclassification of municipal transport trading entities from general government to the transport, storage and communication services industry as other scheduled passenger land transport.</p>
Finance and business services (SIC 8)	+191	<p><b>Data sources:</b> Improved coverage of other business services (+R120bn) and computer and related services (+R40bn).</p> <p><b>Improved methodology:</b> Improved estimates of owner-occupied housing (+R30bn).</p>
Government (SIC 91)	-283	<p><b>Improved methodology:</b> Improved estimates of public education and health from general government.</p> <p><b>Classification:</b> Reclassification of public education and health from general government to their respective industries based on data available from Vulindlela website and 2014 Government Finance Statistics.</p>

Major division	Total change (R billion)	Main reasons for change from previous benchmark
Personal services (SIC 92–96)	+439	<p><b>Data sources:</b> Sewage and refuse disposal and sanitation (+R20bn) now includes local trading entities (+R12bn) (waste water and sewage activities) and improved coverage of sewage and refuse disposal and sanitation (+R8bn). Recreational, cultural and sporting activities (+R25bn) now includes municipal sport, recreation and environmental protection activities (+R5bn), all derived from the QFSM, and improved coverage of recreational, cultural and sporting activities (+R20bn).</p> <p><b>Improved methodology:</b> Non-observed economy increased (+R16bn) as a result of improved methodology for estimates of the informal sector and illegal activities. Education industry includes new estimates for private education based on HFCE. Improved methodology to move public education and health from general government to the education and healthy industries respectively.</p> <p><b>Classification:</b> Reclassification of public education and health from general government to their respective industries based on data available from Vulindlela website and 2014 Government Finance Statistics. The new estimates for the public and private education industry are R244bn higher compared with the previous estimate of private education only. The new estimates for the public and private health industry are R128bn higher compared with the previous estimate of private health only.</p>
Total value added	+357	
Taxes less subsidies	+14	<p><b>Improved methodology:</b> Improvement of tax information to be closer to an accrual basis.</p>
Total gross domestic product (production approach)	+371	

**Annexure B – Analysis of changes in expenditure (GDP by expenditure) in the new base year (2015)**

Expenditure category	Total change (R billion)	Main reasons for change from previous benchmark
Household final consumption expenditure (HFCE)	+395	<p>Revised estimates for the components of HFCE in the base year are as follows: food and non-alcoholic beverages <b>(-R99bn)</b>, alcoholic beverages, tobacco and narcotics <b>(+R17bn)</b>, clothing and footwear <b>(+R21bn)</b>, housing, water, electricity, gas and other fuels <b>(+R64bn)</b>, furnishings, household equipment and maintenance <b>(+R4bn)</b>, health <b>(+R26bn)</b>, transport <b>(+R61bn)</b>, communication <b>(+R53bn)</b>, recreation and culture <b>(+R90bn)</b>, education <b>(+R3bn)</b>, restaurants and hotels <b>(+R79bn)</b>, and miscellaneous goods and services <b>(+R76bn)</b>. The revisions are the outcome of new data sources and improved methodology.</p> <p><b>Data sources:</b> The revisions were based on new data from SISs for Retail, Wholesale and Motor Trade (2015), Post and Telecommunications (2016), and Food and Beverages (2015); Living Conditions Survey (2015); Annual Financial Statistics; and surveys conducted by the Federation of Governing Bodies of South African Schools regarding tuition and boarding fees for primary and secondary school students. There were increases in actual and imputed dwelling rent based on Census data on dwelling numbers by type of dwelling, nature of occupancy, and average rents. A new component, not previously included, was added for net revenue from National Lottery ticket sales. There were significant upward revisions to the SARB estimates for life insurance, FISIM, financial services, and insurance service charges.</p> <p><b>Improved methodology:</b> The revised values for <i>food and non-alcoholic beverages</i> include sales by formal businesses derived from the structural industry surveys of retail, wholesale and motor trade, and are based on a more direct estimation method than in the past, including a thorough review of the source data. Estimates were also included for spaza shops, subsistence agriculture and backyard food production. For <i>alcoholic beverages, tobacco and narcotics</i>, estimates for expenditure on tobacco were increased significantly mainly due to including sales of illegal tobacco products. For <i>clothing and footwear</i>, estimates for informal sales were added. For <i>health</i> there was an increase in the estimates of medical and hospital services using data from the Council for Medical Schemes, including an allowance for out-of-pocket expenses; and pharmaceutical products increased. For <i>transport</i>, road transport fares were revised upwards using academic research on informal taxis. For <i>education</i>, estimates were added for tuition and boarding fees for private universities. For <i>restaurants and hotels</i> a significant addition for alcoholic beverages was made for sales of alcohol by shebeens and taverns, and an adjustment to include VAT was also made (this had not been done for the previous estimates). For <i>miscellaneous goods and services</i>, estimates for informal hairdressing and social protection were increased; increases were partially offset by a larger deduction for expenditure in South Africa by non-residents (expenditure by <u>business</u> travellers was also deducted whereas previously only non-resident <u>tourist</u> expenditure in SA was deducted).</p>

Government final consumption expenditure (GFCE)	+11	<p><b>Data sources:</b> Changes in current estimates are mainly from data sources. Consumption of fixed capital (COFC) was also revised.</p> <p><b>Improved methodology:</b> The local government series now includes local housing, and there were improvements to SARB COFC estimates from straight-line methodology to geometric methodology.</p> <p><b>Classification:</b> There has been an introduction of new entities, and reclassification of large entities such as the South African National Roads Agency, within the extra-budgetary accounts.</p>
Gross fixed capital formation (GFCF)	-26	<p><b>Data sources:</b> The downward revision to GFCF is mainly in construction works, machinery and equipment, and non-residential buildings. The levels have been compiled directly from the source data, mainly from Stats SA's Capital Expenditure by the Public Sector and AFS. The published data for the most recent years had been estimated using supply-side indicators but are now based on annual source data, which indicated lower GFCF spending.</p> <p><b>Improved methodology:</b> Residential building estimates were revised upwards, mainly as a result of the inclusion of estimates for low cost housing, allowing for alterations that are made without obtaining a building permit, using approvals data rather than completions data, and using an annual coverage adjustment to the monthly approvals data.</p>
Change in inventories	+3	<p><b>Improved methodology:</b> SUT estimates compiled from the AFS were used to refine the estimates.</p>
Exports	+4	<p><b>Data sources:</b> Revisions based on SARS merchandise trade and SARB balance of payments.</p>
less Imports	+8	<p><b>Data sources:</b> Revisions based on SARS merchandise trade and SARB balance of payments <i>(note that imports are deducted in the expenditure approach).</i></p>
Total gross domestic product (expenditure approach)	+378	

**Annexure 1 – Industry grouping description of the supply and use tables compilation**

Annexure 1 shows the 213 industry groupings of the benchmarked SUTs.

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I1	Agriculture, hunting, forestry and fishing	111-116	11
I2	Forestry, logging and related services	1210, 1220	12
I3	Forestry, logging and related services - Own	12 Own	12 Own
I4	Fishing, operations of fish hatcheries and fish farms	1310, 1320	13
I5	Non-observed economy - Agriculture	1 Non-observed	1 Non-observed
I6	Mining of coal and lignite	2100	2100
I7	Extraction of crude, petroleum and natural gas	2211, 2212	221
I8	Mining of gold and uranium ore	2300	2300
I9	Iron ore mining	2410	2410
I10	Chrome mining	2421	2421
I11	Copper mining	2422	2422
I12	Manganese mining	2423	2423
I13	Platinum mining	2424	2424
I14	Other metal ore mining	2429	2429
I15	Dimension stone	2511	2511
I16	Limestone and lime works	2512	2512
I17	Other stone quarrying	2519	2519
I18	Diamond mining	2520	2520
I19	Chemical and fertiliser minerals, phosphates and other	2531	2531
I20	Extraction and evaporation of salt	2532	2532
I21	Other mining and quarrying n.e.c. (stones, asbestos and other minerals and materials)	2539	2539
I22	Service activities incidental to mining of minerals	2900	2900
I23	Informal - Mining	2 Informal	2 Informal
I24	Non-observed economy - Mining	2 Non-observed	2 Non-observed
I25	Production, processing and preserving of meat and meat products	3011	3011

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I26	Processing and preserving of fish and fish products	3012	3012
I27	Processing and preserving of fruit and vegetables	3013	3013
I28	Manufacture of vegetable and animal oils and fats	3014	3014
I29	Dairy products (milk, butter, cheese, ice cream, milk powder and other milk products)	3020	3020
I30	Manufacture of grain mill products, breakfast foods, starches, starch products	3031, 3032	3031
I31	Manufacture of prepared animal feeds	3033	3033
I32	Bakery products	3041	3041
I33	Sugar including golden syrup and castor sugar	3042	3042
I34	Cocoa, chocolate and sugar confectionery	3043	3043
I35	Manufacture of other food products n.e.c. (e.g. coffee, nuts, spices, condiments)	3044, 3049	3049
I36	Spirits and wines	3051	3051
I37	Beer, sorghum and other malt	3052	3052
I38	Soft drinks and mineral waters	3053	3053
I39	Tobacco	3060	3060
I40	Spinning, weaving and finishing of textiles (animal fibres, vegetable fibres, wool)	3111, 3112	311
I41	Made-up textile articles (blankets, tents, automotive textile goods and other)	3121	3121
I42	Carpets, rugs and mats	3122	3122
I43	Manufacture of other textiles n.e.c.	3123, 3129	3129
I44	Knitted and crocheted fabrics	3130	3130
I45	Wearing apparel (clothing, tailoring, hats, etc.)	3140	3140
I46	Tanning, dressing of leather, manufacture of luggage, handbags, saddler and harness	3150, 3161, 3162	316
I47	Footwear	3170	3170
I48	Sawmilling, planing, preserving of wood and other mill products	3210	3210
I49	Products of wood, cork, straw and plaiting materials	3221-3, 3229	322
I50	Manufacture of paper and paper products	3231, 3232, 3239	323
I51	Publishing of books, newspapers and other recorded media	3241-3, 3249	324
I52	Printing and service activities related to printing	3251, 3252	325
I53	Reproduction of recorded media	326	326
I54	Coke oven products	3310	3310



<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I55	Petrol, fuel oils, lubricating oils and greases primarily from crude oil	3321	3321
I56	Other petroleum or synthesised products n.e.c.	3322-5, 3329	3329
I57	Nuclear fuel	3330	3330
I58	Basic chemicals	3341	3341
I59	Fertilisers and nitrogen compounds	3342	3342
I60	Plastics in primary form and synthetic rubber	3343	3343
I61	Pesticides, other agro-chemical products	3351	3351
I62	Paints, varnishes, printing ink, mastics	3352	3352
I63	Pharmaceuticals, medicinal chemicals and botanical products	3353	3353
I64	Soap, detergents, polishing, perfumes and toilet preparations	3354	3354
I65	Manufacture of other chemical products (e.g. edible salt, explosives, adhesives)	3359	3359
I66	Rubber tyres and tubes, rethreading of tyres	3371	3371
I67	Other rubber products	3379	3379
I68	Plastic products	3380	3380
I69	Glass and glass products	3411	3411
I70	Non-structural non-refractory ceramic ware	3421-3	3421
I71	Cement, lime and plaster	3424	3424
I72	Articles of concrete, cement and plaster	3425	3425
I73	Other non-metallic mineral products n.e.c.	3426, 3429	3429
I74	Basic iron and steel	3510	3510
I75	Basic precious and non-ferrous metals	3520	3520
I76	Casting of metals	3531, 3532	353
I77	Structural metal products, tanks, reservoirs and steam generators	3541-3	354
I78	Other fabricated metal products, metalwork service activities	3551-3, 3559	355
I79	Engines and turbines	3561-3	3561
I80	Other general purpose machinery	3564, 3565, 3569	3569
I81	Special purpose machinery	3571-7, 3579	357
I82	Household appliances n.e.c.	3580	3580
I83	Office, accounting, computing machinery	3590	3590

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I84	Electric motors, generators and transformers	3610-3650	361
I85	Other electrical equipment n.e.c.	366	366
I86	Electronic valves, tubes, components	3710	3710
I87	Television, radio transmitters and apparatus for line telephony and telegraphy	3720	3720
I88	Television, radio receivers, sound or video recording, reproducing apparatus	3730	3730
I89	Medical and surgical equipment and orthopaedic appliances	3741	3741
I90	Instruments for measuring, checking, testing, navigation and other purposes	3742, 3743	3742
I91	Optical instruments and photographic equipment	3750, 3760	3750
I92	Motor vehicles	3810	3810
I93	Bodies for motor vehicles, trailers and semi-trailers	3820	3820
I94	Parts, accessories for motor vehicles and their engines	3830	3830
I95	Building, repairing of ships and boats	3841, 3842	384
I96	Railway, tramway locomotives, rolling stock	3850	3850
I97	Aircraft and spacecraft	3860	3860
I98	Manufacture of transport equipment n.e.c.	3871, 3872, 3879	387
I99	Furniture	3910	3910
I100	Other manufacturing n.e.c. (brooms, pens, signs, engraving)	3921, 3922, 3923, 3924, 3929	3929
I101	Recycling of metal waste and scrap n.e.c.	3951	3951
I102	Recycling of non-metal waste and scrap n.e.c.	3952	3952
I103	Small scale - Manufacturing	3 Small scale	3 Small scale
I104	Informal - Manufacturing	3 Informal	3 Informal
I105	Non-observed economy - Manufacturing	3 Non-observed	3 Non-observed
I106	Electricity - Production, collection, distribution	4111 Generation	4111 Generation
I107	Electricity - Local authorities	4111 Local	4111 Local
I108	Gas, distribution of gaseous fuels through mains	4120, 4130	412
I109	Water - Collection, purification, distribution	4200 Collection	4200 Collection
I110	Water - Local authorities	4200 Local	4200 Local
I111	Water - Own collection	4200 Own	4200 Own
I112	Site preparation	501	501

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I113	Building of complete constructions or parts thereof, Civil engineering	5021-5024	502
I114	Building installation	5031-3, 5039	503
I115	Building completion	5041/9	504
I116	Renting of construction or demolition equipment with operators	505	505
I117	Informal - Construction	5 Informal	5 Informal
I118	Construction - Own	5 Own	5 Own
I119	Wholesale trade on fee or contract basis	6110	6110
I120	Wholesale trade in agricultural raw materials and livestock	6121	6121
I121	Wholesale trade in foodstuffs, beverages and tobacco products	6122	6122
I122	Wholesale trade in textiles, clothing and footwear	6131	6131
I123	Wholesale trade in other household goods	6139	6139
I124	Wholesale trade in solid, liquid and gaseous fuels and related products	6141	6141
I125	Wholesale trade in metal and metal ores	6142	6142
I126	Wholesale trade in construction materials, hardware, plumbing and heating equipment and supplies	6143	6143
I127	Wholesale trade in other intermediate products, waste and scrap	6149	6149
I128	Wholesale trade in machinery, equipment and supplies	6150	6150
I129	Other wholesale trade n.e.c.	6190	6190
I130	Retail trade in non-specialised stores with food, beverages and tobacco predominating	6211	6211
I131	Other retail trade in non-specialised stores	6219	6219
I132	Retail trade in food, beverages, tobacco in specialised stores	6220	6220
I133	Retail trade in pharmaceutical and medical goods, cosmetic and toilet articles	6231	6231
I134	Retail trade in textiles, clothing, footwear and leather goods	6232	6232
I135	Retail trade in household furniture appliances, articles and equipment	6233	6233
I136	Retail trade in hardware, paints and glass	6234	6234
I137	Other retail trade in specialised stores	6239	6239
I138	Retail trade in second-hand goods in stores	6240	6240
I139	Other retail trade not in stores	6251, 6252, 6259	6259
I140	Repair of personal and household goods	6260	6260
I141	Wholesale sale of motor vehicles	6311	6311

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I142	Retail sale of motor vehicles	6312	6312
I143	Maintenance and repair of motor vehicles	6320	6320
I144	Sale of new parts and accessories	6331	6331
I145	Sale of used parts and accessories	6332	6332
I146	Wholesale and retail sale of motor vehicles and motor cycles	6311-2; 6340	631/4
I147	Retail sale of automotive fuel	6350	6350
I148	Hotels, camping sites and other provision of short-stay accommodation	641	641
I149	Restaurants, bars, canteens, take-away counters, caterers	642	642
I150	Informal - Trade	6 Informal	6 Informal
I151	Non-observed economy - Trade	6 Non-observed	6 Non-observed
I152	Railway transport	7111	7111
I153	Other scheduled passenger land transport (buses, coaches)	7121	7121
I154	Other non-scheduled passenger land transport (taxis, safaris)	7122	7122
I155	Freight transport by road	7123, 7130	7123
I156	Sea and coastal water transport, coastal or ocean shipping	721, 722	72
I157	Air transport	73	73
I158	Cargo handling	7411, 7412	7411
I159	Other supporting transport activities (parking garages, salvaging vessels, toll roads, etc.)	7413	7413
I160	Travel agency and related activities	7414	7414
I161	Activities of other transport agencies	7419	7419
I162	National postal activities	7511	7511
I163	Courier activities	7512	7512
I164	Telecommunication	7520	7520
I165	Informal - Transport	7 Informal	7 Informal
I166	Monetary intermediation	811	811
I167	Other financial intermediation	812, 819	812
I168	Life insurance	8211	8211
I169	Pension funding	8212	8212
I170	Medical aid funding	8213	8213

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I171	Other insurance n.e.c.	8219	8219
I172	Activities auxiliary to financial intermediation	8311, 8312, 8319	831
I173	Activities auxiliary to insurance and pension funding	832	832
I174	Owner-occupied dwellings	84 Own	84 Own
I175	Real estate activities with own or leased property	8411-8413	841
I176	Real estate activities on a fee or contract basis	8421, 8422	842
I178	Renting of air transport equipment	8513	8513
I179	Renting of construction and civil engineering machinery and equipment	8521, 8522	8522
I180	Renting of office machinery and equipment	8523	8523
I181	Renting of other machinery and equipment n.e.c.	8529	8529
I182	Renting of personal and household goods	8530	8530
I183	Hardware consultancy	861	861
I184	Software consultancy and supply	862	862
I185	Data processing	863, 864	863
I186	Other computer-related activities	865, 869	869
I187	Research and experimental development on social sciences and humanities	8711-4, 8719, 8720	87
I188	Legal activities	8811	8811
I189	Accounting, bookkeeping and auditing, tax consultancy	8812	8812
I190	Marketing research	8813	8813
I191	Business and management consultancy	8814	8814
I192	Architectural, engineering and other technical activities	8821, 8822	882
I193	Advertising (agents, signwriting, window-dressing, etc.)	883	883
I194	Business activities n.e.c. (labour recruitment, security, photographic, packaging, etc.)	8891-8895	889
I195	Informal - Finance	8 Informal	8 Informal
I196	Public administration and defence - Central government activities	911	91 Central
I197	Regional services council activities	912	91 Provincial
I198	Local authority activities	913	91 Local
I199	Education	920	92
I200	Human health activities (hospitals, medical practices, clinics, chiropractors, etc.)	9311, 9312, 9319	931

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs compilation</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT compilation</b>
I201	Veterinary activities	932	932
I202	Social work activities	933	933
I203	Sewage and refuse disposal, sanitation and similar activities	940	940
I204	Activities of business, employers' and professional organisations	9511, 9512	951
I205	Activities of other membership organisations (religious, political)	9520, 9591, 9592, 9599	959
I206	Motion picture, radio, television and other entertainment (production and distribution, film and tape renting, etc.)	9611-4, 9619, 9620	961
I207	Library, archives, museums and other cultural activities	9631-3	963
I208	Sporting and other recreational activities	9641, 9649	964
I209	Other service activities (dry-cleaning, hairdressing, funerals, etc.)	9901-3, 9909	990
I210	Informal - Other services	9 Informal	9 Informal
I211	Non-observed economy - Other services	9 Non-observed	9 Non-observed
I212	Non-profit institutions	Non-profit	Non-profit
I213	Households with employed persons	01	01

**Annexure 2 – Industry grouping description of the supply and use tables for publication**

Annexure 2 shows the 124 industry groupings of the published SUTs.

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs for publication</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT publication</b>
I1	Agriculture, hunting, forestry and fishing	111-116	11
I2	Forestry, logging and related services	1210; 1220	12
I3	Fishing, operations of fish hatcheries and fish farms	1310-1320	13
I4	Mining of coal and lignite	2100	21
I5	Extraction of crude, petroleum and natural gas	2211-2	22
I6	Mining of gold and uranium ore	2300	23
I7	Iron ore mining; chrome mining; copper mining; manganese mining; platinum mining; other metal ore mining	2410; 2421-2424/9	24
I8	Dimension stone; Limestone and lime works; Other stone quarrying; Diamond mining; Chemical and fertiliser minerals, phosphates and other; Extraction and evaporation of salt; Other mining and quarrying n.e.c. (stones, asbestos and other minerals and materials)	2511-2512; 2519; 2520; 2531-2532; 2539	25
I9	Service activities incidental to mining of minerals	2900	29
I10	Production, processing and preserving of meat and meat products; Processing and preserving of fish and fish products; Processing and preserving of fruit and vegetables; Manufacture of vegetable and animal oils and fats	3011-3014	301
I11	Dairy products (milk, butter, cheese, ice cream, milk powder and other milk products)	3020	302
I12	Manufacture of grain mill products, breakfast foods, starches, starch products and prepared animal feeds	3031-3033	303
I13	Bakery products; sugar including golden syrup and castor sugar; cocoa, chocolate and sugar confectionery and the manufacture of other food products n.e.c. (e.g. coffee, nuts, spices, condiments)	3041-3044/9	304
I14	Spirits and wines; beer, sorghum and other malt and soft drinks and mineral waters	3051-3053	305
I15	Tobacco	3060	306
I16	Spinning, weaving and finishing of textiles (animal fibres, vegetable fibres, wool)	3111-3112	311
I17	Made-up textile articles (blankets, tents, automotive textile goods and other); carpets, rugs and mats; and manufacture of other textiles n.e.c.	3121-3123/9	312
I18	Knitted and crocheted fabrics	3130	313
I19	Wearing apparel (clothing, tailoring, hats, etc.)	3140	314
I20	Tanning, dressing of leather, manufacture of luggage, handbags, saddler and harness	3150/61-2	315
I21	Footwear	3170	317

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs for publication</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT publication</b>
I22	Sawmilling, planing, preserving of wood and other mill products	3210	321
I23	Products of wood, cork, straw and plaiting materials	3221-3/9	322
I24	Manufacture of paper and paper products	3231-3/9	323
I25	Publishing of books, newspapers and other recorded media	3241-3/9	324
I26	Printing and service activities related to printing; and reproduction of recorded media	3251-3252; 326	325-6
I27	Coke oven products	3310	331
I28	Petrol, fuel oils, lubricating oils and greases primarily from crude oil; other petroleum or synthesised products n.e.c. and nuclear fuel	3321-3325/9; 3330	332
I29	Basic chemicals; fertilisers and nitrogen compounds; and plastics in primary form and synthetic rubber	3341-3343	334
I30	Pesticides, other agro-chemical products; paints, varnishes, printing ink, mastics; pharmaceuticals, medicinal chemicals and botanical products; soap, detergents, polishing, perfumes and toilet preparations and manufacture of other chemical products (e.g. edible salt, explosives, adhesives)	3351-3354/9	335
I31	Rubber tyres and tubes, rethreading of tyres; other rubber products	3371/9	337
I32	Plastic products	3380	338
I33	Glass and glass products	3411	341
I34	Non-structural non-refractory ceramic ware; cement, lime and plaster; articles of concrete, cement and plaster; and other non-metallic mineral products n.e.c.	3421-6/9	342
I35	Basic iron and steel	3510	351
I36	Basic precious and non-ferrous metals	3520	352
I37	Casting of metals	3531-3532	353
I38	Structural metal products, tanks, reservoirs and steam generators	3541-3	354
I39	Other fabricated metal products, metalwork service activities	3551-3/9	355
I40	Engines and turbines and other general purpose machinery	3561-5/9	356
I41	Special purpose machinery	3571-7/9	357
I42	Household appliances n.e.c.	3580	358
I43	Office, accounting, computing machinery	3590	359
I44	Electric motors, generators and transformers	3610-3650	361
I45	Other electrical equipment n.e.c.	366	366
I46	Electronic valves, tubes, components, and television, radio transmitters and apparatus for line telephony and telegraphy	3710; 3720	371-2
I47	Television, radio receivers, sound or video recording, reproducing apparatus	3730	373



<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs for publication</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT publication</b>
I48	Medical and surgical equipment and orthopaedic appliances; instruments for measuring, checking, testing, navigation and other purposes; and optical instruments and photographic equipment	3741-3743; 3750-60	374-5
I49	Motor vehicles	3810	381
I50	Bodies for motor vehicles, trailers and semi-trailers	3820	382
I51	Parts, accessories for motor vehicles and their engines	3830	383
I52	Building, repairing of ships and boats	3841-2	384
I53	Railway, tramway locomotives, rolling stock	3850	385
I54	Aircraft and spacecraft	3860	386
I55	Manufacture of transport equipment n.e.c.	3871-2/9	387
I56	Furniture	3910	391
I57	Other manufacturing n.e.c. (brooms, pens, signs, engraving)	3921-4/9	392
I58	Recycling of metal waste and scrap n.e.c.; and recycling of non-metal waste and scrap n.e.c.	3951-2	395
I59	Electricity and gas - Production, collection, distribution	41 Generation/41 Local/4120-30	41
I60	Water - Collection, purification, distribution and own collection	4200 Collection/4200 Local/4200 Own	42
I61	Site preparation	501	501
I62	Building of complete constructions or parts thereof, Civil engineering	5021-4	502
I63	Building installation	5031-3; 5039	503
I64	Building completion	5041/9	504
I65	Renting of construction or demolition equipment with operators	505	505
I66	Wholesale trade on fee or contract basis	6110	611
I67	Wholesale trade in agricultural raw materials and livestock and foodstuffs, beverages and tobacco products	6121-2	612
I68	Wholesale trade in textiles, clothing and footwear and other household goods	6131/9	613
I69	Wholesale trade in solid, liquid and gaseous fuels and related products; metal and metal ores; construction materials, hardware, plumbing and heating equipment and supplies and in other intermediate products, waste and scrap	6141-3/9	614
I70	Wholesale trade in machinery, equipment and supplies	6150	615
I71	Other wholesale trade n.e.c.	6190	619
I72	Retail trade in non-specialised stores with food, beverages and tobacco predominating; and in non-specialised stores	6211/9	621

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs for publication</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT publication</b>
I73	Retail trade in food, beverages, tobacco in specialised stores	6220	622
I74	Retail trade in pharmaceutical and medical goods, cosmetic and toilet articles; textiles, clothing, footwear and leather goods; household furniture appliances, articles and equipment; hardware, paints and glass; other retail trade in specialised stores; and retail trade in second-hand goods in stores	6231-4/9; 6240	623/4
I75	Other retail trade not in stores	6251-2/9	625
I76	Repair of personal and household goods	6260	626
I77	Wholesale and retail sale of motor vehicles and motor cycles	6311-2; 6340	631/4
I78	Maintenance and repair of motor vehicles	6320	632
I79	Sale of new and used parts and accessories	6331-2	633
I80	Retail sale of automotive fuel	6350	635
I81	Hotels, camping sites and other provision of short-stay accommodation	641	641
I82	Restaurants, bars, canteens, take-away counters, caterers	642	642
I83	Railway transport	7111	711
I84	Other scheduled passenger land transport (buses, coaches); other non-scheduled passenger land transport (taxis, safaris) and freight transport by road	7121-3/30	712
I85	Sea and coastal water transport, coastal or ocean shipping	721; 722	72
I86	Air transport	73	73
I87	Cargo handling; other supporting transport activities (parking garages, salvaging vessels, toll roads, etc.); travel agency and related activities and activities of other transport agencies	7411-4/9	741
I88	National postal activities and courier activities	7511-2	751
I89	Telecommunication	7520	752
I90	Monetary intermediation	811	811
I91	Other financial intermediation	812, 819	812
I92	Life insurance; pension funding; medical aid funding; and other insurance n.e.c.	8211-3/9	821
I93	Activities auxiliary to financial intermediation	8311-2/9	831
I94	Activities auxiliary to insurance and pension funding	832	832
I95	Owner-occupied dwellings	84 Own	84 Own
I96	Real estate activities with own or leased property	841-3	841
I97	Real estate activities on a fee or contract basis	8421-2	842
I98	Renting of land and air transport equipment	8511-3/9	851
I99	Renting of construction and civil engineering machinery and equipment; and office machinery and equipment; and other machinery and equipment n.e.c.	8521-3/9	852

<b>Industry number in the SUT</b>	<b>Industry grouping description of the SUTs for publication</b>	<b>SIC detailed classifications</b>	<b>SIC classifications in the SUT publication</b>
I100	Renting of personal and household goods	8530	853
I101	Hardware consultancy	861	861
I102	Software consultancy and supply	862	862
I103	Data processing	8630-4	863
I104	Other computer-related activities	8650/9	865
I105	Research and experimental development on social sciences and humanities	8711-45/9; 8720	87
I106	Legal activities; accounting, bookkeeping and auditing, tax consultancy; marketing research; and business and management consultancy	8811-4	881
I107	Architectural, engineering and other technical activities	8821-2	882
I108	Advertising (agents, signwriting, window-dressing, etc.)	8830	883
I109	Business activities n.e.c. (labour recruitment, security, photographic, packaging, etc.)	8891-8895	889
I110	Public administration and defence - Central government activities	911	91 Central
I111	Regional services council activities	912	91 Provincial
I112	Local authority activities	913	91 Local
I113	Education	920	92
I114	Human health activities (hospitals, medical practices, clinics, chiropractors, etc.)	9311-2/9	931
I115	Veterinary activities	9320	932
I116	Social work activities	9330	933
I117	Sewage and refuse disposal, sanitation and similar activities	940	94
I118	Activities of business, employers' and professional organisations	9511-2	951
I119	Activities of other membership organisations (religious, political)	9520; 9591-2; 9599	952
I120	Motion picture, radio, television and other entertainment (production and distribution, film and tape renting, etc.)	9611-4; 9619; 9620	961
I121	Library, archives, museums and other cultural activities	9631-3	963
I122	Sporting and other recreational activities	9641; 9649	964
I123	Other service activities (dry-cleaning, hairdressing, funerals, etc.)	9901-3; 9909	990
I124	Non-observed including informal, illicit, non-profit institutions, and households	Informal; Non-observed; Non-profit; Households 12 Own; 42 Own; 5 Own	Non-observed

### Annexure 3 – Product grouping description of the supply and use tables compilation

Annexure 3 shows the 118 product groupings in the benchmarked SUTs.

Product number in the SUT	CPC product grouping description of the SUTs compilation	CPC classifications groupings	CPC classifications in the SUT compilation
P1	Cereals including maize, wheat, rice, barley, oats, millet, rye and sorghum, and oilseeds and oleaginous fruits including soya beans, groundnuts in shell, cottonseed, linseed, mustard seed, rape seed, sunflower seed, other oil seeds n.e.c., coconuts, olives	011, 014	011
P2	Vegetables, fruits and nuts, edible roots, potatoes, stimulant, spice and aromatic crops, pulses, including beans, sugar crops, forage products, fibres, and others n.e.c.	012-013, 015-019	012
P3	Live animals, raw milk, eggs, reproductive materials of animals, other	021-029	02
P4	Wood in rough, non-wood forest products	031-032	03
P5	Fishes, crustaceans, oysters, other molluscs and aquatic invertebrates, other aquatic plants and animals	041-042, 049	04
P6	Coal, briquettes, lignite, peat	110	11
P7	Crude petroleum and natural gas, petroleum oils and oils obtained from bituminous minerals and crude, natural gas, liquefied or in the gaseous state and bituminous or oil shale and tar sands	120	12
P8	Gold, uranium and thorium ores and concentrates	130	13
P9	Iron ores and concentrates, non-ferrous metal ores and concentrates	141-142	14
P10	Monumental or building stone, gypsum, limestone flux, limestone and other calcareous stone used for the manufacture of lime or cement, sands, pebbles, gravel, stone, natural bitumen and asphalt, clays	150, 151-154	15
P11	Other minerals, chemical and fertiliser minerals, salt, sea water, precious and semi-precious stones, pumice stone, emery, natural abrasives	161-163	16
P12	Electrical energy, gas, steam, hot water, ice, snow	171-174	17
P13	Natural water	180	18
P14	Meat and edible offal of mammals and poultry, fresh, chilled or frozen	211	211
P15	Prepared and preserved fish, frozen, dried, crustaceans, molluscs and other aquatic invertebrates	212	212
P16	Frozen and canned vegetables, pulses and potatoes, vegetable juices	213	213
P17	Dried and canned fruit, shelled nuts, fruit juices	214	214
P18	Animal and vegetables oils and fats, margarine, oil-cake, flours, meals, waxes	215-217	215
P19	Milk and cream in liquid and solid forms, yoghurt, butter, ice cream, eggs	221-223	22
P20	Wheat, meslin and other cereal flours, groats, meal, pellets of wheat, rice	231	231
P21	Glucose and glucose syrup, artificial syrup, caramel, starches, inulin, gluten	232	232

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs compilation</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT compilation</b>
P22	Preparations used in animal feeding n.e.c., lucerne meal and pellets	233	233
P23	Bread, rusks, sweet biscuits, waffles and wafers, pastry goods and cakes	234	234
P24	Raw and refined cane or beet sugar, maple sugar and syrup, molasses	235	235
P25	Cocoa paste, butter, fat, oil and powder, chocolate, sugar confectionery	236	236
P26	Pasta, cooked or uncooked, couscous, prepared dishes containing pasta	237	237
P27	Coffee, tea, spices and aromatics, soups, vinegar, sauces, yeasts, other n.e.c.	239	239
P28	Ethyl alcohol, spirits, liqueurs, wines, malt liquors and malt	241-243	241
P29	Soft drinks, bottled mineral waters	244	244
P30	Tobacco products	250	25
P31	Textile fibres and yarn, woven fabrics	261-268	26
P32	Blankets, travelling rugs, linen, curtains, sacks, bags, sails, parachutes, quilts	271	271
P33	Carpets and other textile floor coverings, knotted, woven, tufted, felt	272	272
P34	Twine, cordage, ropes, cables, tulle, lace, trimmings, embroidery, felt	273, 279	279
P35	Pile fabrics and terry fabrics, knitted or crocheted	281	281
P36	Wearing apparel, tanned or dressed fur skins and artificial fur	282-283	282
P37	Tanned or dressed leather, luggage, handbags, saddlery, harness, straps	291-292	291
P38	Footwear, waterproof, rubber, plastic, leather, textile materials, wood, sport	293-296	293
P39	Wood, sawn, rough, boards, panels, sheets, boxes, cork, straw, plaiting materials	311-317, 319	31
P40	Pulp, paper, paperboard, sacks, bags, envelopes, cards, toilet paper, towels	321	321
P41	Books, newspapers, maps, postcards, pictures, plans, stamps, brochures	322-328	322
P42	Coke oven products, coke and semi-coke of coal, tar distilled from coal, from lignite, from peat and other minerals, and nuclear fuel elements and radioactive elements	331-332, 336, 337	33
P43	Petroleum oils, oils from bituminous minerals, kerosene, gas oils, fuel oils n.e.c., petroleum gases and other gaseous hydrocarbons except natural gas, petroleum jelly, paraffin wax, petroleum bitumen and other residues of petroleum oils and of oils obtained from bituminous materials	333-335	333
P44	Basic chemicals, organic, inorganic, primary plastics, synthetic rubber	341-345, 347-348	341
P45	Fertilisers and pesticides	346	346
P46	Paints and varnishes and related products, artists' colours, ink	351	351
P47	Pharmaceutical products	352	352
P48	Soap, cleaning and polishing preparations, perfumes and toilet preparations	353	353

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs compilation</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT compilation</b>
P49	Chemical products n.e.c., man-made fibres	354-355	354
P50	Rubber tyres, new, retreated, inner tubes, tyre flaps	361	361
P51	Reclaimed rubber, tubes, pipes, hoses, conveyor or transmission belts	362	362
P52	Tubes, pipes, hoses, plates, sheets, foil, strips, sacks, bags, caps, floor covering	363-364, 369	363
P53	Glass, bottles, jars, glassware for kitchen and laboratories, lamps, signs	371	371
P54	Ceramic sinks, baths, pans, pots, tableware, kitchenware, toilet articles	372	372
P55	Bricks, blocks, tiles, refractory cements, mortars, concretes, compositions	373	373
P56	Plasters, quicklime, slaked lime, cement, calcinated or agglomerated dolomite	374	374
P57	Boards, blocks, tiles, flagstones, bricks, artificial stone	375	375
P58	Marble, travertine, alabaster, monumental or building stone, mill or grind stones	376, 379	379
P59	Furniture, mattress support, mattresses, parts of furniture	381	381
P60	Pearls, industrial diamonds, jewellery and other articles of precious metal, coin	382	382
P61	Musical instruments, sports goods, games and toys, swings, other manufactured articles n.e.c.	383-387, 389	389
P62	Wastes from food, tobacco, wastes or scraps from non-metal, waste or scraps from metal, other wastes and scraps	391-393, 399	39
P63	Basic iron and steel	411	411
P64	Products of iron and steel	412	412
P65	Basic precious metals, metals clad with precious metals, non-ferrous metals	413-416	413
P66	Bridges, towers, doors, windows, frames and parts of structures	421	421
P67	Tanks, reservoirs, vats and similar containers, steam generators	422-423	422
P68	Sinks, knives, razors, spoons, forks, hand tools, casks, drums, cans, cable, needles	429	429
P69	Motors and engines for aircraft, steam and other turbines	431	431
P70	Pumps, compressors, hydraulic and pneumatic power engines, valves	432	432
P71	Bearings, gears, gearing and driving elements, and parts thereof	433	433
P72	Pulley tackle and hoists, cranes, lifting frames, fork-lifts, escalators	435	435
P73	Other general-purpose machinery, parts thereof, ovens and furnace burners	434, 439	439
P74	Special-purpose machinery, machine tools, weapons, ammunition	441-447, 449	441
P75	Refrigerators, freezers, dish washing machines, electric blankets, fans, heaters	448	448
P76	Typewriters, calculators, cash registers, automatic data processing machines	451-452	45
P77	Electric motors, generators, transformers, distribution, control apparatus, wire	461-465, 469	46

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs compilation</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT compilation</b>
P78	Electronic valves, tubes, television, cameras, telephone sets, receivers	471-476, 478-479	47
P79	Medical appliances, precision, optical instruments, watches and clocks	481-484	48
P80	Motor vehicles, bodies for motors, trailers and semi-trailers, parts thereof	491	491
P81	Bodies (coachwork) for motor vehicles, trailers and semi-trailers, parts and accessories thereof	492	492
P82	Ships, sailboats, sporting boats such as rowing boats and canoes	493-494	493
P83	Railway and tramway locomotives and rolling stock	495	495
P84	Balloons, gliders, hang gliders, aeroplanes, helicopters, and parts thereof	496	496
P85	Motorcycles, bicycles, invalid carriages	499	499
P86	Buildings, highways, bridges, tunnels, harbours, pipelines, industrial plants	531-532	53
P87	Demolition, excavating, framing, roofing, installation, plastering, painting, fencing	541-547	54
P88	Wholesale services	611-612	61
P89	Retail trade services	621-625	62
P90	Room or unit accommodation, camp site services	631-632	631
P91	Meal serving, event catering, beverage serving services	633-634	633
P92	Local transport, sightseeing transportation	641	641
P93	Long-distance transport services of passengers	642	642
P94	Land transport, water transport, air and space transport services of freight	651-653	65
P95	Rental, cargo handling, storage, warehousing, other supporting services	660, 671-676, 679	66
P96	Postal services, courier services, local delivery services	681	681
P97	Electricity distribution services, gas distribution services	691	691
P98	Water distribution services	692	692
P99	Central banking, deposit, credit-granting, financial leasing, investment banking	711-712	711A
P100	Other financial services excluding FISIM	711-712	711B
P101	Insurance (life, accident, health, motor, freight, property, credit, travel insurance) and pensions	713-714	713
P102	Mergers, acquisitions, corporate finance services, brokerage, trust, custody	715-716	715
P103	Owner-occupied real estate services, involving own property	721-722	72A
P104	Real estate services involving leased property, real estate services on a fee or contract basis	721-722	72B
P105	Leasing or rental of transport equipment, machinery, television, radio, licensing services	731-733	73

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs compilation</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT compilation</b>
P106	Research and development services in natural and social sciences, engineering	811-814	81
P107	Legal, accounting, auditing, bookkeeping, tax consultancy, insolvency	821-824	82
P108	Management, architectural, engineering, scientific, veterinary, advertising	831-839	83
P109	Telephony, internet, on-line, news agency, library, broadcasting, programming	841-846	84
P110	Support services, maintenance, repair, installation services	851-855, 859, 861-863, 871-873, 881-889	85
P111	Publishing, printing and reproduction services, materials recovery services	891-894	89
P112	Public administration, compulsory social security, sewage, waste collection	911-913, 941-945, 949	91
P113	Pre-primary, primary, secondary, post-secondary, tertiary, other education	921-925, 929	92
P114	Human health and social care services	931-935	93
P115	Membership organisations, services by business, employers' and professional organisations, services furnished by trade unions, services by other membership organisations, services provided by extraterritorial organisations and bodies	951-952, 959, 990	95
P116	Audio-visual and related services, performing arts and other live entertainment, services of performing and other artists, museum and preservation services, sports and recreational sports services, other amusement and recreational services, services of athletes and related support services	961-966, 969	96
P117	Washing, cleaning and dyeing services, beauty and physical well-being services, funeral, cremation and undertaking services, other miscellaneous services	971-973, 979	97
P118	Domestic services	980	98



**Annexure 4 – Product grouping description of the supply and use tables for publication**

Annexure 4 shows the 108 product groupings of the published SUTs.

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs for publication</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT publication</b>
P1	Cereals including maize, wheat, rice, barley, oats, millet, rye and sorghum, and oilseeds and oleaginous fruits including soya beans, groundnuts in shell, cottonseed, linseed, mustard seed, rape seed, sunflower seed, other oil seeds n.e.c., coconuts, olives	011, 014	011/4
P2	Vegetables, fruits and nuts, edible roots, potatoes, stimulant, spice and aromatic crops, pulses, including beans, sugar crops, forage products, fibres, and others n.e.c.	012-013, 015-019	012-3/5-9
P3	Live animals, raw milk, eggs, reproductive materials of animals, other	021-029	021-9
P4	Wood in rough, non-wood forest products	031-032	031-2
P5	Fishes, crustaceans, oysters, other molluscs and aquatic invertebrates, other aquatic plants and animals	041-042, 049	041-2/9
P6	Coal, briquettes, lignite, peat	110	110
P7	Crude petroleum and natural gas, petroleum oils and oils obtained from bituminous minerals and crude, natural gas, liquefied or in the gaseous state and bituminous or oil shale and tar sands	120	120
P8	Iron ores and concentrates, non-ferrous metal ores and concentrates	141-142	141-2
P9	Monumental or building stone, gypsum, limestone flux, limestone and other calcareous stone used for the manufacture of lime or cement, sands, pebbles, gravel, stone, natural bitumen and asphalt, clays	150, 151-154	150-4
P10	Other minerals, chemical and fertiliser minerals, salt, sea water, precious and semi-precious stones, pumice stone, emery, natural abrasives	161-163	161-3
P11	Electrical energy, gas, steam, hot water, ice, snow	171-174	171-4
P12	Natural water	180	180
P13	Meat and edible offal of mammals and poultry, fresh, chilled or frozen	211	211
P14	Prepared and preserved fish, frozen, dried, crustaceans, molluscs and other aquatic invertebrates	212	212
P15	Frozen and canned vegetables, pulses and potatoes, vegetable juices	213	213
P16	Dried and canned fruit, shelled nuts, fruit juices	214	214
P17	Animal and vegetables oils and fats, margarine, oil-cake, flours, meals, waxes	215-217	215-7
P18	Milk and cream in liquid and solid forms, yoghurt, butter, ice cream, eggs	221-223	221-3
P19	Wheat, meslin and other cereal flours, groats, meal, pellets of wheat, rice; and glucose and glucose syrup, artificial syrup, caramel, starches, inulin, gluten	231, 232	231
P20	Preparations used in animal feeding n.e.c., lucerne meal and pellets	233	233
P21	Bread, rusks, sweet biscuits, waffles and wafers, pastry goods and cakes	234	234

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs for publication</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT publication</b>
P22	Raw and refined cane or beet sugar, maple sugar and syrup, molasses	235	235
P23	Cocoa paste, butter, fat, oil and powder, chocolate, sugar confectionery	236	236
P24	Food n.e.c. including pasta, cooked or uncooked, couscous, prepared dishes containing pasta and coffee, tea, spices and aromatics, soups, vinegar, sauces, yeasts, other n.e.c.	237, 239	239
P25	Ethyl alcohol, spirits, liqueurs, wines, malt liquors and malt	241-243	241-3
P26	Soft drinks, bottled mineral waters	244	244
P27	Tobacco products	250	250
P28	Textile fibres and yarn, woven fabrics	261-268	261-8
P29	Blankets, travelling rugs, linen, curtains, sacks, bags, sails, parachutes, quilts	271	271
P30	Carpets and other textile floor coverings, knotted, woven, tufted, felt	272	272
P31	Twine, cordage, ropes, cables, tules, lace, trimmings, embroidery, felt	273, 279	273/9
P32	Pile fabrics and terry fabrics, knitted or crocheted	281	281
P33	Wearing apparel, tanned or dressed fur skins and artificial fur	282-283	282-3
P34	Tanned or dressed leather, luggage, handbags, saddlery, harness, straps	291-292	291-2
P35	Footwear, waterproof, rubber, plastic, leather, textile materials, wood, sport	293-296	293-6
P36	Wood, sawn, rough, boards, panels, sheets, boxes, cork, straw, plaiting materials	311-317, 319	311-7/9
P37	Pulp, paper, paperboard, sacks, bags, envelopes, cards, toilet paper, towels	321	321
P38	Books, newspapers, maps, postcards, pictures, plans, stamps, brochures	322-328	322-8
P39	Coke oven products, coke and semi-coke of coal, tar distilled from coal, from lignite, from peat and other minerals, and nuclear fuel elements and radioactive elements	331-332, 336, 337	331-2/6-7
P40	Petroleum oils, oils from bituminous minerals, kerosene, gas oils, fuel oils n.e.c., petroleum gases and other gaseous hydrocarbons except natural gas, petroleum jelly, paraffin wax, petroleum bitumen and other residues of petroleum oils and of oils obtained from bituminous materials	333-335	333-5
P41	Basic chemicals, organic, inorganic, primary plastics, synthetic rubber and fertilisers and pesticides	341-345, 346, 347-348	341-8
P42	Paints and varnishes and related products, artists' colours, ink	351	351
P43	Pharmaceutical products	352	352
P44	Soap, cleaning and polishing preparations, perfumes and toilet preparations	353	353
P45	Chemical products n.e.c., man-made fibres	354-355	354-5
P46	Rubber tyres, new, retreated, inner tubes, tyre flaps; and Reclaimed rubber, tubes, pipes, hoses, conveyor or transmission belts	361, 362	361-2
P47	Tubes, pipes, hoses, plates, sheets, foil, strips, sacks, bags, caps, floor covering	363-364, 369	363-4/9

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs for publication</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT publication</b>
P48	Glass, bottles, jars, glassware for kitchen and laboratories, lamps, signs	371	371
P49	Ceramic sinks, baths, pans, pots, tableware, kitchenware, toilet articles	372	372
P50	Bricks, blocks, tiles, refractory cements, mortars, concretes, compositions	373	373
P51	Plasters, quicklime, slaked lime, cement, calcinated or agglomerated dolomite	374	374
P52	Boards, blocks, tiles, flagstones, bricks, artificial stone	375	375
P53	Marble, travertine, alabaster, monumental or building stone, mill or grind stones	376, 379	376/9
P54	Furniture, mattress support, mattresses, parts of furniture	381	381
P55	Pearls, industrial diamonds, jewellery and other articles of precious metal, coin	382	382
P56	Musical instruments, sports goods, games and toys, swings, other manufactured articles n.e.c.	383-387, 389	383-7/9
P57	Wastes from food, tobacco, wastes or scraps from non-metal, waste or scraps from metal, other wastes and scraps	391-393, 399	391-3/9
P58	Basic iron and steel	411	411
P59	Products of iron and steel	412	412
P60	Basic precious metals, metals clad with precious metals, non-ferrous metals	413-416	413-6
P61	Bridges, towers, doors, windows, frames and parts of structures and tanks, reservoirs, vats and similar containers, steam generators	421-3	421-3
P62	Sinks, knives, razors, spoons, forks, hand tools, casks, drums, cans, cable, needles	429	429
P63	Motors and engines for aircraft, steam and other turbines; pumps, compressors, hydraulic and pneumatic power engines, valves; and Bearings, gears, gearing and driving elements, and parts thereof	431-3	431-3
P64	Pulley tackle and hoists, cranes, lifting frames, fork-lifts, escalators	435	435
P65	Other general-purpose machinery, parts thereof, ovens and furnace burners	434, 439	434/9
P66	Special-purpose machinery, machine tools, weapons, ammunition	441-447, 449	441-7/9
P67	Refrigerators, freezers, dish washing machines, electric blankets, fans, heaters	448	448
P68	Typewriters, calculators, cash registers, automatic data processing machines	451-452	451-2
P69	Electric motors, generators, transformers, distribution, control apparatus, wire	461-465, 469	461-5/9
P70	Electronic valves, tubes, television, cameras, telephone sets, receivers	471-476, 478-479	471-6/8-9
P71	Medical appliances, precision, optical instruments, watches and clocks	481-484	481-4
P72	Motor vehicles, bodies for motors, trailers and semi-trailers, parts thereof	491	491
P73	Bodies (coachwork) for motor vehicles, trailers and semi-trailers, parts and accessories thereof	492	492
P74	Ships, sailboats, sporting boats such as rowing boats and canoes	493-494	493-4
P75	Railway and tramway locomotives and rolling stock	495	495

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs for publication</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT publication</b>
P76	Balloons, gliders, hang gliders, aeroplanes, helicopters, and parts thereof	496	496
P77	Motorcycles, bicycles, invalid carriages	499	499
P78	Construction services including: buildings, highways, bridges, tunnels, harbours, pipelines, industrial plants; and demolition, excavating, framing, roofing, installation, plastering, painting, fencing	531-532, 541-547	5
P79	Wholesale services	611-612	611-2
P80	Retail trade services	621-625	621-5
P81	Room or unit accommodation, camp site services	631-632	631-2
P82	Meal serving, event catering, beverage serving services	633-634	633-4
P83	Transportation services: local transport, sightseeing transportation and long-distance transport services of passengers	641, 642	641-2
P84	Land transport, water transport, air and space transport services of freight	651-653	651-3
P85	Rental, cargo handling, storage, warehousing, other supporting services	660, 671-676, 679	660/71-6/9
P86	Postal services, courier services, local delivery services	681	681
P87	Electricity distribution services, gas distribution services	691	691
P88	Water distribution services	692	692
P89	Central banking, deposit, credit-granting, financial leasing, investment banking (FISIM)	FISIM	FISIM
P90	Other financial services excluding FISIM	711-712	711-2
P91	Insurance (life, accident, health, motor, freight, property, credit, travel insurance) and pensions	713-714	713-4
P92	Mergers, acquisitions, corporate finance services, brokerage, trust, custody	715-716	715-6
P93	Owner-occupied real estate services, involving own property	Owner-occupied	Owner-occupied
P94	Real estate services involving leased property, real estate services on a fee or contract basis	721-722	721-2
P95	Leasing or rental of transport equipment, machinery, television, radio, licensing services	731-733	731-3
P96	Research and development services in natural and social sciences, engineering	811-814	811-4
P97	Legal, accounting, auditing, bookkeeping, tax consultancy, insolvency	821-824	821-4
P98	Management, architectural, engineering, scientific, veterinary, advertising	831-839	831-9
P99	Telephony, internet, on-line, news agency, library, broadcasting, programming	841-846	841-6
P100	Support services, maintenance, repair, installation services	851-855, 859, 861-863, 871-873, 881-889	85/6/7/8
P101	Publishing, printing and reproduction services, materials recovery services	891-894	891-4

<b>Product number in the SUT</b>	<b>CPC product grouping description of the SUTs for publication</b>	<b>CPC classifications groupings</b>	<b>CPC classifications in the SUT publication</b>
P102	Public administration, compulsory social security, sewage, waste collection	911-913, 941-945, 949	911-3/41-5/9
P103	Pre-primary, primary, secondary, post-secondary, tertiary, other education	921-925, 929	921-5/9
P104	Human health and social care services	931-935	931-5
P105	Membership organisations, services by business, employers' and professional organisations, services furnished by trade unions, services by other membership organisations, services provided by extraterritorial organisations and bodies	951-952, 959, 990	951-2/9/90
P106	Audio-visual and related services, performing arts and other live entertainment, services of performing and other artists, museum and preservation services, sports and recreational sports services, other amusement and recreational services, services of athletes and related support services	961-966, 969	961-6/9
P107	Washing, cleaning and dyeing services, beauty and physical well-being services, funeral, cremation and undertaking services, other miscellaneous services	971-973, 979	971-3/9
P108	Domestic services	980	980

**Annexure 5 – Price indices used for output product deflators**

Annexure 5 shows the price indices used for output deflators for the 118 product groupings of the benchmarked SUTs.

<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P1	Cereals including maize, wheat, rice, barley, oats, millet, rye and sorghum, and oilseeds and oleaginous fruits including soya beans, groundnuts in shell, cottonseed, linseed, mustard seed, rape seed, sunflower seed, other oil seeds n.e.c., coconuts, olives	PPI Wheat PPI Maize PPI Sunflower seed
P2	Vegetables, fruits and nuts, edible roots, potatoes, stimulant, spice and aromatic crops, pulses, including beans, sugar crops, forage products, fibres, and others n.e.c.	PPI Pears PPI Lemons PPI Tomatoes PPI Onions PPI Bananas PPI Oranges PPI Apples PPI Potatoes PPI Sugar cane PPI Grapes
P3	Live animals, raw milk, eggs, reproductive materials of animals, other	PPI Live animals
P4	Wood in rough, non-wood forest products	PPI Forestry
P5	Fishes, crustaceans, oysters, other molluscs and aquatic invertebrates, other aquatic plants and animals	PPI Hake PPI Small pelagic (e.g. anchovies and pilchards) PPI Rock lobster PPI Squid
P6	Coal, briquettes, lignite, peat	PPI Coal
P7	Crude petroleum and natural gas, petroleum oils and oils obtained from bituminous minerals and crude, natural gas, liquefied or in the gaseous state and bituminous or oil shale and tar sands	UVI Crude petroleum
P8	Gold, uranium and thorium ores and concentrates	PPI Gold
P9	Iron ores and concentrates, non-ferrous metal ores and concentrates	PPI Haematite PPI Chromite PPI Metallic copper PPI Metallurgical manganese PPI Platinum PPI Palladium PPI Rhodium

<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P10	Monumental or building stone, gypsum, limestone flux, limestone and other calcareous stone used for the manufacture of lime or cement, sands, pebbles, gravel, stone, natural bitumen and asphalt, clays	PPI Aggregate stones PPI Sand PPI Andalusite
P11	Other minerals, chemical and fertiliser minerals, salt, sea water, precious and semi-precious stones, pumice stone, emery, natural abrasives	PPI Stone quarrying, clay and diamonds
P12	Electrical energy, gas, steam, hot water, ice, snow	PPI Electricity
P13	Natural water	PPI Water CPI Water
P14	Meat and edible offal of mammals and poultry, fresh, chilled or frozen	PPI Beef carcasses PPI Pork carcasses PPI Lamb carcasses PPI Chicken - fresh or chilled PPI Frozen chicken PPI Polony PPI Meat burgers
P15	Prepared and preserved fish, frozen, dried, crustaceans, molluscs and other aquatic invertebrates	PPI Fish and fish products
P16	Frozen and canned vegetables, pulses and potatoes, vegetable juices	PPI Frozen potato fries PPI Chips PPI Canned baked beans
P17	Dried and canned fruit, shelled nuts, fruit juices	PPI Pears PPI Lemons PPI Bananas PPI Oranges PPI Apples PPI Grapes
P18	Animal and vegetables oils and fats, margarine, oil-cake, flours, meals, waxes	PPI Oils and fats
P19	Milk and cream in liquid and solid forms, yoghurt, butter, ice cream, eggs	PPI Dairy products PPI Raw milk PPI Eggs PPI Fresh full-cream milk PPI Long life full-cream milk PPI Yoghurt PPI Cheddar
P20	Wheat, meslin and other cereal flours, groats, meal, pellets of wheat, rice	PPI Grain mill products, starches and starch products, animal feeds
P21	Glucose and glucose syrup, artificial syrup, caramel, starches, inulin, gluten	PPI Dairy cattle feeds PPI Poultry feeds
P22	Preparations used in animal feeding n.e.c., lucerne meal and pellets	PPI Dairy cattle feeds PPI Poultry feeds

<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P23	Bread, rusks, sweet biscuits, waffles and wafers, pastry goods and cakes	PPI Bakery products
P24	Raw and refined cane or beet sugar, maple sugar and syrup, molasses	PPI Raw cane sugar PPI Refined sugar
P25	Cocoa paste, butter, fat, oil and powder, chocolate, sugar confectionery	PPI Chocolate slabs and bars PPI Sweets
P26	Pasta, cooked or uncooked, couscous, prepared dishes containing pasta	CPI Spaghetti CPI Macaroni CPI Pasta (excluding spaghetti, macaroni) CPI Instant noodles (e.g. 2-minute noodles)
P27	Coffee, tea, spices and aromatics, soups, vinegar, sauces, yeasts, other n.e.c.	PPI Sweet biscuits PPI White bread PPI Brown bread CPI Other food
P28	Ethyl alcohol, spirits, liqueurs, wines, malt liquors and malt	PPI Spirits PPI White wine PPI Red wine PPI Spirit coolers PPI Beer
P29	Soft drinks, bottled mineral waters	PPI Soft drinks
P30	Tobacco products	PPI Tobacco products
P31	Textile fibres and yarn, woven fabrics	PPI Textiles
P32	Blankets, travelling rugs, linen, curtains, sacks, bags, sails, parachutes, quilts	PPI Linen PPI Loose car seat covers
P33	Carpets and other textile floor coverings, knotted, woven, tufted, felt	PPI Carpets (excluding mats and rugs)
P34	Twine, cordage, ropes, cables, tulle, lace, trimmings, embroidery, felt	PPI Textiles
P35	Pile fabrics and terry fabrics, knitted or crocheted	PPI Clothing
P36	Wearing apparel, tanned or dressed fur skins and artificial fur	PPI Clothing
P37	Tanned or dressed leather, luggage, handbags, saddlery, harness, straps	PPI Bovine tanned or dressed leather
P38	Footwear, waterproof, rubber, plastic, leather, textile materials, wood, sport	PPI Footwear
P39	Wood, sawn, rough, boards, panels, sheets, boxes, cork, straw, plaiting materials	PPI Untreated logs and structural timber PPI Wood in chips or particles PPI Treated logs and structural timber PPI Boards of wood PPI Builders carpentry of wood



Product number on the SUT	CPC product grouping description	Source series description
P40	Pulp, paper, paperboard, sacks, bags, envelopes, cards, toilet paper, towels	PPI Paper for printing PPI Packing and wrapping paper in rolls or sheets PPI Cardboard boxes
P41	Books, newspapers, maps, postcards, pictures, plans, stamps, brochures	PPI Books PPI Newspapers PPI Magazines PPI Trade advertising material and other printed material PPI Printed stationery
P42	Coke oven products, coke and semi-coke of coal, tar distilled from coal, from lignite, from peat and other minerals, and nuclear fuel elements and radioactive elements	PPI Petrol PPI Jet fuel PPI Diesel PPI Engine oils
P43	Petroleum oils, oils from bituminous minerals, kerosene, gas oils, fuel oils n.e.c., petroleum gases and other gaseous hydrocarbons except natural gas, petroleum jelly, paraffin wax, petroleum bitumen and other residues of petroleum oils and of oils obtained from bituminous materials	PPI Petrol PPI Jet fuel PPI Diesel PPI Engine oils
P44	Basic chemicals, organic, inorganic, primary plastics, synthetic rubber	PPI Basic organic chemicals PPI Basic inorganic chemicals
P45	Fertilisers and pesticides	PPI Fertilisers PPI Insecticides
P46	Paints and varnishes and related products, artists' colours, ink	PPI Paints
P47	Pharmaceutical products	PPI Provitamins, vitamins, hormones and antibiotics PPI Cold and flu preparations PPI Anti-inflammatories PPI Non-narcotic analgesics PPI Expectorants PPI Antiviral and retroviral drugs
P48	Soap, cleaning and polishing preparations, perfumes and toilet preparations	PPI Toilet soap PPI Non-soap based detergents, laundry bars and tablets PPI Washing powder PPI Lotions and creams PPI Perfumes and deodorant
P49	Chemical products n.e.c., man-made fibres	PPI Adhesives and sealants PPI Lubricating preparations PPI Prepared explosives PPI Water and pool treatment chemicals

<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P50	Rubber tyres, new, retreated, inner tubes, tyre flaps	PPI Tyres
P51	Reclaimed rubber, tubes, pipes, hoses, conveyor or transmission belts	PPI Conveyor belts or belting
P52	Tubes, pipes, hoses, plates, sheets, foil, strips, sacks, bags, caps, floor covering	PPI Vinyl chloride polymers (PVC) and copolymers PPI Plastic pipes, tubes and fittings PPI Plastic films for packaging purposes PPI Plastic bags PPI Plastic containers PPI Vinyl sheeting or flooring PPI Industrial mouldings of plastic PPI Stationery goods of plastic
P53	Glass, bottles, jars, glassware for kitchen and laboratories, lamps, signs	PPI Safety glass PPI Fibre glass PPI Glass containers
P54	Ceramic sinks, baths, pans, pots, tableware, kitchenware, toilet articles	PPI Non-structural ceramic ware
P55	Bricks, blocks, tiles, refractory cements, mortars, concretes, compositions	PPI Refractory bricks and shapes PPI Clay bricks PPI Ceramic tiles
P56	Plasters, quicklime, slaked lime, cement, calcinated or agglomerated dolomite	PPI Cement
P57	Boards, blocks, tiles, flagstones, bricks, artificial stone	PPI Ceiling boards PPI Ready-mix concrete PPI Roof tiles PPI Cement or concrete bricks PPI Concrete pipes PPI Prefabricated cement and concrete components
P58	Marble, travertine, alabaster, monumental or building stone, mill or grind stones	PPI Pre-mixed asphalt PPI Bituminous mixtures
P59	Furniture, mattress support, mattresses, parts of furniture	PPI Furniture PPI Base sets and mattresses
P60	Pearls, industrial diamonds, jewellery and other articles of precious metal, coin	PPI Precious or semi-precious stones PPI Gold jewellery
P61	Musical instruments, sports goods, games and toys, swings, other manufactured articles n.e.c.	PPI Final manufactured goods
P62	Wastes from food, tobacco, wastes or scraps from non-metal, waste or scraps from metal, other wastes and scraps	PPI Metal waste and scrap
P63	Basic iron and steel	PPI Ferro-manganese PPI Ferro-chromium alloy PPI Semi-finished products and ingots of iron and steel

Product number on the SUT	CPC product grouping description	Source series description
P64	Products of iron and steel	PPI Flat rolled non-alloy steel products PPI Flat rolled stainless steel products PPI Bars and rods of iron or steel PPI Angles, shapes, sections and similar products of iron or steel PPI Wire of iron or non-alloy steel
P65	Basic precious metals, metals clad with precious metals, non-ferrous metals	PPI Gold Department of Mineral Resources and Energy: unit value used PPI Chromite PPI Palladium PPI Metallic copper PPI Nickel PPI Platinum PPI Rhodium PPI Metallurgical manganese
P66	Bridges, towers, doors, windows, frames and parts of structures	PPI Steel door and window frames PPI Roof sheeting PPI Reinforcing metal work PPI Equipment for scaffolding, shuttering and propping PPI Welded angles, shapes and sections for use in manufactured structures PPI Steel pipes
P67	Tanks, reservoirs, vats and similar containers, steam generators	PPI Structural and fabricated metal products
P68	Sinks, knives, razors, spoons, forks, hand tools, casks, drums, cans, cable, needles	PPI Hand tools and parts thereof PPI Cans PPI Stoppers, lids, caps, discs and other closures PPI Cloth, grill, netting and fencing, of iron or steel wire PPI Nails, screws and other metal fasteners PPI Wire for fencing of iron and steel PPI Locks and padlocks, clasps, keys and parts thereof of base metal
P69	Motors and engines for aircraft, steam and other turbines	PPI Engines for motor vehicles
P70	Pumps, compressors, hydraulic and pneumatic power engines, valves	PPI Pumps PPI Taps, cocks and valves
P71	Bearings, gears, gearing and driving elements, and parts thereof	PPI Ball or roller bearings PPI Gears and gearing

Product number on the SUT	CPC product grouping description	Source series description
P72	Pulley tackle and hoists, cranes, lifting frames, fork-lifts, escalators	PPI Lifting and handling equipment and parts thereof
P73	Other general-purpose machinery, parts thereof, ovens and furnace burners	PPI Industrial heating and cooling system PPI Commercial and industrial refrigerating and freezing equipment PPI Filtering or purifying machinery and apparatus (except for air or engines) PPI Industrial ventilating fans and blowers
P74	Special-purpose machinery, machine tools, weapons, ammunition	PPI Machine-tools and parts and accessories thereof PPI Continuous-action elevators, cutters, tunnelling, boring and sinking machinery PPI Graders and scrapers PPI Tamping machines and road rollers PPI Front-end shovel loaders, self-propelled PPI Mechanical shovels, excavators and shovel loaders PPI Dumpers designed for off-highway use PPI Machinery for sorting, screening, separating, washing, crushing, grinding, mixing PPI Parts of machinery for mining, quarrying and construction PPI Machinery for food, beverage and tobacco processing, and parts thereof PPI Munition, ammunitions and cartridges
P75	Refrigerators, freezers, dish washing machines, electric blankets, fans, heaters	PPI Fridge-freezer PPI Geysers PPI Stoves and ovens
P76	Typewriters, calculators, cash registers, automatic data processing machines	PPI Computers
P77	Electric motors, generators, transformers, distribution, control apparatus, wire	PPI Electric motors PPI Generators sets PPI Power transformers PPI Electricity distribution and control equipment PPI Automotive wire cables PPI Steel wire armoured cable PPI Batteries
P78	Electronic valves, tubes, television, cameras, telephone sets, receivers	PPI Electronic security systems PPI Television and decoders CPI Telecommunication equipment

Product number on the SUT	CPC product grouping description	Source series description
P79	Medical appliances, precision, optical instruments, watches and clocks	PPI Electricity and water supply meters
P80	Motor vehicles, bodies for motors, trailers and semi-trailers, parts thereof	PPI Passenger vehicles PPI Bakkies and vans not exceeding 3,5 tons PPI Lorries, trucks and vans exceeding 3,5 tons PPI Catalytic convertors and parts thereof PPI Silencers and exhaust pipes PPI Suspension, brakes, clutch, mountings and parts PPI Axles
P81	Bodies (coachwork) for motor vehicles, trailers and semi-trailers, parts and accessories thereof	PPI Bodies for motor vehicles and parts thereof PPI Draw bar trailers PPI Tipper, tanker and trailer parts
P82	Ships, sailboats, sporting boats such as rowing boats and canoes	PPI Transport equipment
P83	Railway and tramway locomotives and rolling stock	PPI Parts for transport equipment
P84	Balloons, gliders, hang gliders, aeroplanes, helicopters, and parts thereof	PPI Parts of aircraft
P85	Motorcycles, bicycles, invalid carriages	PPI Transport equipment
P86	Buildings, highways, bridges, tunnels, harbours, pipelines, industrial plants	Contract price adjustment provisions index
P87	Demolition, excavating, framing, roofing, installation, plastering, painting, fencing	Contract price adjustment provisions index
P88	Wholesale services	PPI Agriculture PPI Food products, beverages and tobacco products PPI Textiles, clothing and footwear PPI Household appliances and office machinery PPI Petrol PPI Diesel PPI Engine oils PPI LPG gases PPI Structural and fabricated metal products Contract price adjustment provisions index PPI General and special purpose machinery PPI Electrical machinery and apparatus, and subcomponents PPI Electrical machinery and communication and metering equipment PPI Motor vehicles

Product number on the SUT	CPC product grouping description	Source series description
P89	Retail trade services	CPI Analytical series – all urban areas CPI Food and non-alcoholic beverages CPI Alcoholic beverages and tobacco CPI Driller CPI Power driven garden tools CPI Household batteries CPI Light bulbs – non-energy savers CPI Garden hand tools CPI Garden sprinkler CPI Light bulbs – energy savers CPI Paint CPI Plaster CPI Bricks CPI Cement CPI Door or door frame CPI Wood products for home maintenance
P90	Room or unit accommodation, camp site services	CPI Hotels CPI Education
P91	Meal serving, event catering, beverage serving services	CPI Restaurants
P92	Local transport, sightseeing transportation	CPI Train fares CPI Local bus fares CPI Taxi fares
P93	Long-distance transport services of passengers	CPI Train fares CPI Long-distance bus fares CPI Air fares
P94	Land transport, water transport, air and space transport services of freight	Index based on earnings from transport, storage and communication
P95	Rental, cargo handling, storage, warehousing, other supporting services	Index based on earnings from transport, storage and communication
P96	Postal services, courier services, local delivery services	CPI Courier services
P97	Electricity distribution services, gas distribution services	CPI Electricity
P98	Water distribution services	CPI Water supply
P99	Central banking, deposit, credit-granting, financial leasing, investment banking	CPI Headline
P100	Other financial services excluding FISIM	CPI Headline
P101	Insurance (life, accident, health, motor, freight, property, credit, travel insurance) and pensions	CPI Headline CPI Building insurance CPI Household content insurance CPI Motor vehicle insurance CPI Funeral polices

<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P102	Mergers, acquisitions, corporate finance services, brokerage, trust, custody	Index based on earnings from financial intermediation, insurance, real estate and business services
P103	Owner-occupied real estate services, involving own property	CPI Actual rentals for housing
P104	Real estate services involving leased property, real estate services on a fee or contract basis	CPI Actual rentals for housing
P105	Leasing or rental of transport equipment, machinery, television, radio, licensing services	Index based on earnings from renting of machinery and equipment, without operator and of personal and household goods
P106	Research and development services in natural and social sciences, engineering	Index based on earnings from research and development industries
P107	Legal, accounting, auditing, bookkeeping, tax consultancy, insolvency	Index based on earnings from legal, accounting, bookkeeping and auditing activities
P108	Management, architectural, engineering, scientific, veterinary, advertising	Index based on earnings from business activities
P109	Telephony, internet, on-line, news agency, library, broadcasting, programming	CPI Postal services and telecommunication services
P110	Support services, maintenance, repair, installation services	Index based on earnings from supporting and auxiliary transport activities
P111	Publishing, printing and reproduction services, materials recovery services	PPI Paper for printing
P112	Public administration, compulsory social security, sewage, waste collection	Implicit price deflators compiled internally CPI Assessment rates
P113	Pre-primary, primary, secondary, post-secondary, tertiary, other education	CPI Education
P114	Human health and social care services	CPI Medical services
P115	Membership organisations, services by business, employers' and professional organisations, services furnished by trade unions, services by other membership organisations, services provided by extraterritorial organisations and bodies	CPI Gymnasium fees
P116	Audio-visual and related services, performing arts and other live entertainment, services of performing and other artists, museum and preservation services, sports and recreational sports services, other amusement and recreational services, services of athletes and related support services	CPI Recreational and cultural services
P117	Washing, cleaning and dyeing services, beauty and physical well-being services, funeral, cremation and undertaking services, other miscellaneous services	Index based on earnings from financial intermediation, insurance, real estate and business services
P118	Domestic services	CPI Domestic workers' wages

## Annexure 6 – Price indices used for intermediate consumption product deflators

Annexure 6 shows the price indices used for intermediate consumption deflators for the 118 product groupings of the benchmarked SUTs.

Product number on the SUT	CPC product grouping description	Source series description
P1	Cereals including maize, wheat, rice, barley, oats, millet, rye and sorghum, and oilseeds and oleaginous fruits including soya beans, groundnuts in shell, cottonseed, linseed, mustard seed, rape seed, sunflower seed, other oil seeds n.e.c., coconuts, olives	PPI Wheat PPI Maize PPI Sunflower seed
P2	Vegetables, fruits and nuts, edible roots, potatoes, stimulant, spice and aromatic crops, pulses, including beans, sugar crops, forage products, fibres, and others n.e.c.	PPI Pears PPI Lemons PPI Tomatoes PPI Onions PPI Bananas PPI Oranges PPI Apples PPI Potatoes PPI Sugar cane PPI Grapes
P3	Live animals, raw milk, eggs, reproductive materials of animals, other	PPI Live animals
P4	Wood in rough, non-wood forest products	PPI Forestry
P5	Fishes, crustaceans, oysters, other molluscs and aquatic invertebrates, other aquatic plants and animals	PPI Hake PPI Small pelagic (e.g. anchovies and pilchards) PPI Rock lobster PPI Squid
P6	Coal, briquettes, lignite, peat	PPI Coal
P7	Crude petroleum and natural gas, petroleum oils and oils obtained from bituminous minerals and crude, natural gas, liquefied or in the gaseous state and bituminous or oil shale and tar sands	UVI Crude petroleum
P8	Gold, uranium and thorium ores and concentrates	Not applicable
P9	Iron ores and concentrates, non-ferrous metal ores and concentrates	PPI Haematite PPI Chromite PPI Metallic copper PPI Metallurgical manganese PPI Platinum PPI Palladium PPI Rhodium



<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P10	Monumental or building stone, gypsum, limestone flux, limestone and other calcareous stone used for the manufacture of lime or cement, sands, pebbles, gravel, stone, natural bitumen and asphalt, clays	PPI Aggregate stones PPI Sand PPI Andalusite
P11	Other minerals, chemical and fertiliser minerals, salt, sea water, precious and semi-precious stones, pumice stone, emery, natural abrasives	PPI Stone quarrying, clay and diamonds
P12	Electrical energy, gas, steam, hot water, ice, snow	PPI Electricity
P13	Natural water	PPI Water CPI Water
P14	Meat and edible offal of mammals and poultry, fresh, chilled or frozen	PPI Beef carcasses PPI Pork carcasses PPI Lamb carcasses PPI Chicken - fresh or chilled PPI Frozen chicken PPI Polony PPI Meat burgers
P15	Prepared and preserved fish, frozen, dried, crustaceans, molluscs and other aquatic invertebrates	PPI Fish and fish products
P16	Frozen and canned vegetables, pulses and potatoes, vegetable juices	PPI Frozen potato fries PPI Chips PPI Canned baked beans
P17	Dried and canned fruit, shelled nuts, fruit juices	PPI Pears PPI Lemons PPI Bananas PPI Oranges PPI Apples PPI Grapes
P18	Animal and vegetables oils and fats, margarine, oil-cake, flours, meals, waxes	PPI Oils and fats Unit value index (UVI) animal and vegetable fats and oils
P19	Milk and cream in liquid and solid forms, yoghurt, butter, ice cream, eggs	PPI Dairy products PPI Raw milk PPI Eggs PPI Fresh full-cream milk PPI Long life full-cream milk PPI Yoghurt PPI Cheddar
P20	Wheat, meslin and other cereal flours, groats, meal, pellets of wheat, rice	PPI Grain mill products, starches and starch products, animal feeds
P21	Glucose and glucose syrup, artificial syrup, caramel, starches, inulin, gluten	PPI Dairy cattle feeds PPI Poultry feeds

<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P22	Preparations used in animal feeding n.e.c., lucerne meal and pellets	PPI Dairy cattle feeds PPI Poultry Feeds
P23	Bread, rusks, sweet biscuits, waffles and wafers, pastry goods and cakes	PPI Bakery products
P24	Raw and refined cane or beet sugar, maple sugar and syrup, molasses	PPI Raw cane sugar PPI Refined sugar
P25	Cocoa paste, butter, fat, oil and powder, chocolate, sugar confectionery	PPI Chocolate slabs and bars PPI Sweets
P26	Pasta, cooked or uncooked, couscous, prepared dishes containing pasta	CPI Spaghetti CPI Macaroni CPI Pasta (excluding spaghetti, macaroni) CPI Instant noodles (e.g. 2-minute noodles)
P27	Coffee, tea, spices and aromatics, soups, vinegar, sauces, yeasts, other n.e.c.	CPI Food
P28	Ethyl alcohol, spirits, liqueurs, wines, malt liquors and malt	PPI Spirits PPI White wine PPI Red wine PPI Spirit coolers PPI Beer
P29	Soft drinks, bottled mineral waters	PPI Soft drinks
P30	Tobacco products	PPI Tobacco products
P31	Textile fibres and yarn, woven fabrics	PPI Textiles Index based on imports of textiles
P32	Blankets, travelling rugs, linen, curtains, sacks, bags, sails, parachutes, quilts	PPI Linen PPI Loose car seat covers
P33	Carpets and other textile floor coverings, knotted, woven, tufted, felt	PPI Carpets (excluding mats and rugs)
P34	Twine, cordage, ropes, cables, tules, lace, trimmings, embroidery, felt	PPI Textiles
P35	Pile fabrics and terry fabrics, knitted or crocheted	PPI Clothing
P36	Wearing apparel, tanned or dressed fur skins and artificial fur	PPI Clothing Index based on imports of wearing apparel
P37	Tanned or dressed leather, luggage, handbags, saddlery, harness, straps	PPI Bovine tanned or dressed leather Index based on imports of leather
P38	Footwear, waterproof, rubber, plastic, leather, textile materials, wood, sport	PPI Footwear
P39	Wood, sawn, rough, boards, panels, sheets, boxes, cork, straw, plaiting materials	PPI Untreated logs and structural timber PPI Wood in chips or particles PPI Treated logs and structural timber PPI Boards of wood PPI Builders carpentry of wood UVI Wood products

Product number on the SUT	CPC product grouping description	Source series description
P40	Pulp, paper, paperboard, sacks, bags, envelopes, cards, toilet paper, towels	PPI Paper for printing PPI Packing and wrapping paper in rolls or sheets PPI Cardboard boxes
P41	Books, newspapers, maps, postcards, pictures, plans, stamps, brochures	PPI Books PPI Newspapers PPI Magazines PPI Trade advertising material and other printed material PPI Printed stationery
P42	Coke oven products, coke and semi-coke of coal, tar distilled from coal, from lignite, from peat and other minerals, and nuclear fuel elements and radioactive elements	PPI Petrol PPI Jet fuel PPI Diesel PPI Engine oils
P43	Petroleum oils, oils from bituminous minerals, kerosene, gas oils, fuel oils n.e.c., petroleum gases and other gaseous hydrocarbons except natural gas, petroleum jelly, paraffin wax, petroleum bitumen and other residues of petroleum oils and of oils obtained from bituminous materials	CPI Fuel
P44	Basic chemicals, organic, inorganic, primary plastics, synthetic rubber	PPI Basic organic chemicals PPI Basic inorganic chemicals UVI Basic chemicals
P45	Fertilisers and pesticides	PPI Fertilisers PPI Insecticides
P46	Paints and varnishes and related products, artists' colours, ink	PPI Paints
P47	Pharmaceutical products	PPI Provitamins, vitamins, hormones and antibiotics PPI Cold and flu preparations PPI Anti-inflammatories PPI Non-narcotic analgesics PPI Expectorants PPI Antiviral and retroviral drugs UVI Pharmaceutical products
P48	Soap, cleaning and polishing preparations, perfumes and toilet preparations	PPI Toilet soap PPI Non-soap based detergents, laundry bars and tablets PPI Washing powder PPI Lotions and creams PPI Perfumes and deodorant

Product number on the SUT	CPC product grouping description	Source series description
P49	Chemical products n.e.c., man-made fibres	PPI Adhesives and sealants PPI Lubricating preparations PPI Prepared explosives PPI Water and pool treatment chemicals UVI Chemicals products
P50	Rubber tyres, new, retreated, inner tubes, tyre flaps	PPI Tyres
P51	Reclaimed rubber, tubes, pipes, hoses, conveyor or transmission belts	PPI Conveyor belts or belting Index based on rubber products
P52	Tubes, pipes, hoses, plates, sheets, foil, strips, sacks, bags, caps, floor covering	PPI Vinyl chloride polymers (PVC) and copolymers PPI Plastic pipes, tubes and fittings PPI Plastic films for packaging purposes PPI Plastic bags PPI Plastic containers PPI Vinyl sheeting or flooring PPI Industrial mouldings of plastic PPI Stationery goods of plastic
P53	Glass, bottles, jars, glassware for kitchen and laboratories, lamps, signs	PPI Safety glass PPI Fibre glass PPI Glass containers Index based on imports of glass products
P54	Ceramic sinks, baths, pans, pots, tableware, kitchenware, toilet articles	PPI Non-structural ceramic ware Index based on imports of ceramic products
P55	Bricks, blocks, tiles, refractory cements, mortars, concretes, compositions	PPI Refractory bricks and shapes PPI Clay bricks PPI Ceramic tiles
P56	Plasters, quicklime, slaked lime, cement, calcinated or agglomerated dolomite	PPI Cement
P57	Boards, blocks, tiles, flagstones, bricks, artificial stone	PPI Ceiling boards PPI Ready-mix concrete PPI Roof tiles PPI Cement or concrete bricks PPI Concrete pipes PPI Prefabricated cement and concrete components
P58	Marble, travertine, alabaster, monumental or building stone, mill or grind stones	PPI Pre-mixed asphalt PPI Bituminous mixtures Index based on imports of other non-metallic
P59	Furniture, mattress support, mattresses, parts of furniture	PPI Furniture PPI Base sets and mattresses

Product number on the SUT	CPC product grouping description	Source series description
P60	Pearls, industrial diamonds, jewellery and other articles of precious metal, coin	PPI Precious or semi-precious stones PPI Gold jewellery
P61	Musical instruments, sports goods, games and toys, swings, other manufactured articles n.e.c.	PPI Final manufactured goods Index based on imports of final manufactured goods
P62	Wastes from food, tobacco, wastes or scraps from non-metal, waste or scraps from metal, other wastes and scraps	PPI Metal waste and scrap
P63	Basic iron and steel	PPI Ferro-manganese PPI Ferro-chromium alloy PPI Semi-finished products and ingots of iron and steel
P64	Products of iron and steel	PPI Flat rolled non-alloy steel products PPI Flat rolled stainless steel products PPI Bars and rods of iron or steel PPI Angles, shapes, sections and similar products of iron or steel PPI Wire of iron or non-alloy steel
P65	Basic precious metals, metals clad with precious metals, non-ferrous metals	PPI Gold Department of Mineral Resources and Energy: unit value used PPI Chromite PPI Palladium PPI Metallic copper PPI Nickel PPI Platinum PPI Rhodium PPI Metallurgical manganese
P66	Bridges, towers, doors, windows, frames and parts of structures	PPI Steel door and window frames PPI Roof sheeting PPI Reinforcing metal work PPI Equipment for scaffolding, shuttering and propping PPI Welded angles, shapes and sections for use in manufactured structures PPI Steel pipes
P67	Tanks, reservoirs, vats and similar containers, steam generators	PPI Structural and fabricated metal products

Product number on the SUT	CPC product grouping description	Source series description
P68	Sinks, knives, razors, spoons, forks, hand tools, casks, drums, cans, cable, needles	PPI Hand tools and parts thereof PPI Cans PPI Stoppers, lids, caps, discs and other closures PPI Cloth, grill, netting and fencing, of iron or steel wire PPI Nails, screws and other metal fasteners PPI Wire for fencing of iron and steel PPI Locks and padlocks, clasps, keys and parts thereof of base metal
P69	Motors and engines for aircraft, steam and other turbines	PPI Engines for motor vehicles Index based on imports of engines
P70	Pumps, compressors, hydraulic and pneumatic power engines, valves	PPI Pumps PPI Taps, cocks and valves
P71	Bearings, gears, gearing and driving elements, and parts thereof	PPI Ball or roller bearings PPI Gears and gearing
P72	Pulley tackle and hoists, cranes, lifting frames, fork-lifts, escalators	PPI Lifting and handling equipment and parts thereof
P73	Other general-purpose machinery, parts thereof, ovens and furnace burners	PPI Industrial heating and cooling system PPI Commercial and industrial refrigerating and freezing equipment PPI Filtering or purifying machinery and apparatus (except for air or engines) PPI Industrial ventilating fans and blowers

Product number on the SUT	CPC product grouping description	Source series description
P74	Special-purpose machinery, machine tools, weapons, ammunition	PPI Machine-tools and parts and accessories thereof PPI Continuous-action elevators, cutters, tunnelling, boring and sinking machinery PPI Graders and scrapers PPI Tamping machines and road rollers PPI Front-end shovel loaders, self-propelled PPI Mechanical shovels, excavators and shovel loaders PPI Dumpers designed for off-highway use PPI Machinery for sorting, screening, separating, washing, crushing, grinding, mixing PPI Parts of machinery for mining, quarrying and construction PPI Machinery for food, beverage and tobacco processing, and parts thereof PPI Munition, ammunitions and cartridges UVI Machinery products
P75	Refrigerators, freezers, dish washing machines, electric blankets, fans, heaters	PPI Fridge-freezer PPI Geysers PPI Stoves and ovens
P76	Typewriters, calculators, cash registers, automatic data processing machines	PPI Computers UVI Computers
P77	Electric motors, generators, transformers, distribution, control apparatus, wire	PPI Electric motors PPI Generators sets PPI Power transformers PPI Electricity distribution and control equipment PPI Automotive wire cables PPI Steel wire armoured cable PPI Batteries UVI Office machinery
P78	Electronic valves, tubes, television, cameras, telephone sets, receivers	PPI Electronic security systems PPI Television and decoders CPI Telecommunication equipment
P79	Medical appliances, precision, optical instruments, watches and clocks	PPI Electricity and water supply meters Index based on the imports of medical appliances

Product number on the SUT	CPC product grouping description	Source series description
P80	Motor vehicles, bodies for motors, trailers and semi-trailers, parts thereof	PPI Passenger vehicles PPI Bakkies and vans not exceeding 3,5 tons PPI Lorries, trucks and vans exceeding 3,5 tons PPI Catalytic convertors and parts thereof PPI Silencers and exhaust pipes PPI Suspension, brakes, clutch, mountings and parts PPI Axles UVI Motor vehicles
P81	Bodies (coachwork) for motor vehicles, trailers and semi-trailers, parts and accessories thereof	PPI Bodies for motor vehicles and parts thereof PPI Draw bar trailers PPI Tipper, tanker and trailer parts UVI Bodies
P82	Ships, sailboats, sporting boats such as rowing boats and canoes	PPI Transport equipment
P83	Railway and tramway locomotives and rolling stock	PPI Parts for transport equipment Index based on the imports railway and tramway locomotives
P84	Balloons, gliders, hang gliders, aeroplanes, helicopters, and parts thereof	PPI Parts of aircraft
P85	Motorcycles, bicycles, invalid carriages	PPI Transport equipment
P86	Buildings, highways, bridges, tunnels, harbours, pipelines, industrial plants	Contract price adjustment provisions index
P87	Demolition, excavating, framing, roofing, installation, plastering, painting, fencing	Contract price adjustment provisions index
P88	Wholesale services	PPI Agriculture PPI Food products, beverages and tobacco products PPI Textiles, clothing and footwear PPI Household appliances and office machinery PPI Petrol PPI Diesel PPI Engine oils PPI LPG gases PPI Structural and fabricated metal products Contract price adjustment provisions index PPI General and special purpose machinery PPI Electrical machinery and apparatus, and subcomponents PPI Electrical machinery and communication and metering equipment PPI Motor vehicles



Product number on the SUT	CPC product grouping description	Source series description
P89	Retail trade services	CPI Analytical series – all urban areas CPI Food and non-alcoholic beverages CPI Alcoholic beverages and tobacco CPI Driller CPI Power driven garden tools CPI Household batteries CPI Light bulbs – non-energy savers CPI Garden hand tools CPI Garden sprinkler CPI Light bulbs – energy savers CPI Paint CPI Plaster CPI Bricks CPI Cement CPI Door or door frame CPI Wood products for home maintenance
P90	Room or unit accommodation, camp site services	CPI Hotels CPI Education
P91	Meal serving, event catering, beverage serving services	CPI Restaurants
P92	Local transport, sightseeing transportation	CPI Train fares CPI Local bus fares CPI Taxi fares
P93	Long-distance transport services of passengers	CPI Train fares CPI Long-distance bus fares CPI Air fares
P94	Land transport, water transport, air and space transport services of freight	Index based on earnings from transport, storage and communication
P95	Rental, cargo handling, storage, warehousing, other supporting services	Index based on earnings from transport, storage and communication
P96	Postal services, courier services, local delivery services	CPI Courier services
P97	Electricity distribution services, gas distribution services	CPI Electricity
P98	Water distribution services	CPI Water supply
P99	Central banking, deposit, credit-granting, financial leasing, investment banking	CPI Headline
P100	Other financial services excluding FISIM	CPI Headline
P101	Insurance (life, accident, health, motor, freight, property, credit, travel insurance) and pensions	CPI Headline CPI Building insurance CPI Household content insurance CPI Motor vehicle insurance CPI Funeral polices

<b>Product number on the SUT</b>	<b>CPC product grouping description</b>	<b>Source series description</b>
P102	Mergers, acquisitions, corporate finance services, brokerage, trust, custody	Index based on earnings from financial intermediation, insurance, real estate and business services
P103	Owner-occupied real estate services, involving own property	CPI Actual rentals for housing
P104	Real estate services involving leased property, real estate services on a fee or contract basis	CPI Actual rentals for housing
P105	Leasing or rental of transport equipment, machinery, television, radio, licensing services	Index based on earnings from renting of machinery and equipment, without operator and of personal and household goods
P106	Research and development services in natural and social sciences, engineering	Index based on earnings from research and development industries
P107	Legal, accounting, auditing, bookkeeping, tax consultancy, insolvency	Index based on earnings from legal, accounting, bookkeeping and auditing activities
P108	Management, architectural, engineering, scientific, veterinary, advertising	Index based on earnings from business activities
P109	Telephony, internet, on-line, news agency, library, broadcasting, programming	CPI Postal services and telecommunication services
P110	Support services, maintenance, repair, installation services	Index based on earnings from supporting and auxiliary transport activities
P111	Publishing, printing and reproduction services, materials recovery services	PPI Paper for printing
P112	Public administration, compulsory social security, sewage, waste collection	Implicit price deflators compiled internally CPI Assessment rates
P113	Pre-primary, primary, secondary, post-secondary, tertiary, other education	CPI Education
P114	Human health and social care services	CPI Medical services
P115	Membership organisations, services by business, employers' and professional organisations, services furnished by trade unions, services by other membership organisations, services provided by extraterritorial organisations and bodies	CPI Gymnasium fees
P116	Audio-visual and related services, performing arts and other live entertainment, services of performing and other artists, museum and preservation services, sports and recreational sports services, other amusement and recreational services, services of athletes and related support services	CPI Recreational and cultural services
P117	Washing, cleaning and dyeing services, beauty and physical well-being services, funeral, cremation and undertaking services, other miscellaneous services	Index based on earnings from financial intermediation, insurance, real estate and business services
P118	Domestic services	CPI Domestic workers' wages

**Annexure 7 – Deflators for household final consumption expenditure**

<b>Expenditure category: 3-digit COICOP level</b>	<b>Deflator</b>
Food	CPI food
Non-alcoholic beverages	CPI non-alcoholic beverages
Alcoholic beverages	CPI alcoholic beverages
Tobacco	CPI tobacco
Narcotics	CPI tobacco
Clothing	CPI clothing
Cleaning, repair and hire of clothing	CPI miscellaneous goods and services
Shoes and other footwear	CPI footwear
Repair and hire of footwear	CPI miscellaneous goods and services
Actual rents paid by tenants	CPI actual rentals paid by tenants
Imputed rentals for housing	CPI imputed rentals
Materials for the maintenance and repair of the dwelling	CPI materials for the maintenance and repair of the dwelling
Services for maintenance and repair of the dwelling	CPI miscellaneous goods and services
Water supply	CPI water supply
Refuse collection	Combination of CPI water supply and CPI refuse collection
Sewage collection	Combination of CPI water supply and CPI refuse collection
Other services relating to the dwelling	CPI other services relating to the dwelling
Electricity	CPI electricity
Gas	CPI electricity
Liquid fuels	CPI liquid fuels
Solid fuels	CPI liquid fuels
Furniture and furnishings	Weighted PPI furniture and import UVI
Carpets and other floor coverings	Combination of CPI furniture and furnishings and CPI of carpets and other floor coverings
Repair of furniture, furnishings and floor coverings	CPI miscellaneous goods and services
Household textiles	CPI household textiles
Major household appliances whether electric or not	CPI major household appliances whether electric or not
Small electric household appliances	CPI small electric household appliances
Repair of household appliances	CPI miscellaneous goods and services
Glassware, tableware and household utensils	CPI glassware, tableware and household utensils
Major tools and equipment	CPI small tools and miscellaneous accessories
Small tools and miscellaneous accessories	CPI small tools and miscellaneous accessories
Non-durable household goods	CPI non-durable household goods
Domestic services and household services	CPI domestic services and household services
Pharmaceutical products	CPI pharmaceutical products
Therapeutic appliances and equipment	CPI pharmaceutical products
Medical services	CPI medical services
Dental services	CPI dental services
Paramedical services	CPI hospital services
Hospital services	CPI hospital services
Motor cars	CPI purchase of new vehicles
Motorcycles	CPI purchase of new vehicles
Bicycles	CPI equipment for sport, camping and open-air recreation
Used cars profit margin	CPI purchase of new vehicles
Spare parts and accessories for personal transport equipment	CPI spare parts and accessories for personal transport equipment
Fuels and lubricants for personal transport equipment	CPI fuels and lubricants for personal transport
Maintenance and repair of personal transport equipment	CPI maintenance and repair (transport equipment)
Other services in respect of personal transport equipment	CPI other services in respect of personal transport equipment
Passenger transport by railway	CPI passenger transport by railway
Passenger transport by road	CPI passenger transport by road
Passenger transport by air	CPI passenger transport by air
Passenger transport by sea and inland waterway	CPI transport
Other purchased transport services	CPI transport
Postal services	CPI postal services
Telephone and telefax equipment	CPI (USA) telephone and telefax equipment
Telephone and telefax services	CPI telephone and telefax services

<b>Expenditure category: 3-digit COICOP level</b>	<b>Deflator</b>
Equipment for the reception, recording and reproduction of sound and pictures	CPI equipment for the reception, recording and reproduction of sound and pictures
Photographic and cinematographic equipment and optical instruments	CPI equipment for the reception, recording and reproduction of sound and pictures
Information processing equipment	CPI (USA) information processing equipment
Recording media	CPI recording media
Repair of audio-visual, photographic and information processing equipment	CPI miscellaneous goods and services
Major durables for outdoor recreation	CPI equipment for sport, camping and open-air recreation
Musical instruments and major durables for indoor recreation	CPI games, toys and hobbies
Maintenance and repair of other major durables for recreation and culture	CPI miscellaneous goods and services
Games, toys and hobbies	CPI games, toys and hobbies
Equipment for sport, camping and open-air recreations	CPI equipment for sport, camping and open-air recreation
Pets and related products	CPI pets and related products
Veterinary and other services for pets	CPI pets and related products
Recreational and sporting services	CPI recreational and sporting services
Cultural services	CPI cultural services
Games of chance	Total CPI
Books	CPI newspapers and periodicals
Newspapers and periodicals	CPI newspapers and periodicals
Miscellaneous printed matter	CPI stationery and drawing materials
Stationery and drawing materials	CPI stationery and drawing materials
Pre-primary and primary education	CPI pre-primary and primary education
Secondary education	CPI secondary education
Tertiary education	CPI tertiary education
Education not definable by level	CPI education
Restaurants, cafés and the like	CPI restaurants, cafés and the like
Canteens	CPI restaurants, cafés and the like
Accommodation services	CPI accommodation services
Hairdressing salons and personal grooming establishments	CPI miscellaneous goods and services
Electric appliances for personal care	CPI other appliances, articles and products for personal care
Other appliances, articles and products for personal care	CPI other appliances, articles and products for personal care
Prostitution	CPI miscellaneous goods and services
Jewellery, clocks and watches	CPI jewellery, clocks and watches
Other personal effects	CPI other personal effects
Social protection	CPI social protection services
Life insurance	SARB relevant implicit deflator
Insurance connected with household content	SARB relevant implicit deflator
Insurance connected with health	SARB relevant implicit deflator
Insurance connected with transport	SARB relevant implicit deflator
FISIM	SARB relevant implicit deflator
Other financial services n.e.c.	SARB relevant implicit deflator
Other services n.e.c.	CPI other services
Receipts - abroad	Derived
Non-residents - domestic	Derived

**Annexure 8 – HFCE commodities with little or no adjustment needed**

HFCE subcomponent	Variables used	Adjustments	VAT
Commodities for the operation of vehicles	The following line items are used from the MTS:  Income from the sales of accessories for the series 'Spare parts and accessories for personal transport equipment'  Income from fuel sales for the series 'Fuels and lubricants for personal transport equipment'  Workshop income for the series 'Maintenance and repair of personal transport equipment'	No adjustments	MTS is VAT-exclusive, so a 15% mark-up for VAT is placed on these series in HFCE estimates <sup>64</sup>
Water supply, miscellaneous services relating to the dwelling, and electricity	Service charges for sales of water, sales of electricity, refuse removal charges, and sewage and sanitation charges from the QFSSM	No adjustments	No adjustments
Solid and liquid fuel	2015 annual levels for solid and liquid fuels  Growth rate from 'fuels and lubricants for personal transport equipment'	No adjustments	No adjustments
Actual and imputed rentals for housing	Constant stock of residential buildings	The constant-price stock is separated into actual and imputed rent using SUT 2015 (benchmark year) annual proportions; these are inflated by the CPI for actual and imputed rent to form the current-price series	No adjustments
Insurance, FISIM, financial services n.e.c., and travel receipts and payments	Insurance, FISIM, financial services n.e.c., and travel receipts and payments from SARB	No adjustments	No adjustments
Games of chance	Gross gambling revenue	No adjustments	No adjustments

<sup>64</sup> The VAT rate was raised from 14% to 15% on 1 April 2018.

HFCE subcomponent	Variables used	Adjustments	VAT
Medical services	Turnover from sales of services from the top four enterprises in QFS for SIC 931 (Human health activities) is used	No adjustments	Data from the survey are VAT-exclusive; as these services are VAT-exempt in South Africa, no VAT is placed on them for inclusion in HFCE
Recreational and cultural services	Turnover from sales of services from the top four enterprises in QFS for SIC 96 (Recreational, cultural and sporting activities) is used; the average coverage of selected enterprises, based on comparable AFS data, is 51% of the industry (2012Q4 – 2013Q3)	No adjustments	Data from QFS are VAT-exclusive, so a 15% mark-up for VAT is placed on these series in HFCE estimates
Package holidays	Turnover from sales of services from the top two enterprises in QFS for SIC 7414 (Travel agency and related activities) is used; the coverage of these is 42% of the industry (2012Q4 – 2013Q3)	No adjustments	Data from QFS are VAT-exclusive, so a 15% mark-up for VAT is placed on these series in HFCE estimates
Telephone and telefax services	Turnover of the top seven enterprises in QFS for SIC 7520 (Telecommunications) is used; the average turnover coverage of these enterprises is 79,8% (2012Q4 to 2013Q3)	No adjustments	Data from QFS are VAT-exclusive, so a 15% mark-up for VAT is placed on these series in HFCE estimates
Air transportation services	Turnover from the top five enterprises in QFS for SIC 7300 (Air transport) is used; the average turnover coverage of these five enterprises is 84,4% (2012Q4 – 2013Q3)	No adjustments	Data from QFS are VAT-exclusive, so a 15% mark-up for VAT is placed on these series in HFCE estimates
Passenger transport by railway and road	Incomes from rail and road passenger transportation from the monthly Land Transport survey	No adjustments	Data from the survey are VAT-exclusive; as these services are VAT-exempt in South Africa, no VAT is placed on them for inclusion in HFCE
Restaurants and hotels	Income from food and bar sales (Food and Beverages survey) is used for estimates of catering services Income from tourist accommodation (Tourist Accommodation survey) is used for HFCE estimates of tourist accommodation services	No adjustments	Data from the survey are VAT-exclusive, so a 15% mark-up for VAT is placed on these series in HFCE

**Annexure 9 – Deflators for changes in inventories**

Industry / sub-industry	Deflator
<b>Manufacturing – raw materials</b>	
Food, beverages and tobacco	PPI-(PPC31000) : Food products, beverages and tobacco products
Textiles, clothing, and leather goods	PPI-(PPD31000) : Textiles and leather goods
Paper and paper products	PPI-(PPD32000) : Sawmilling and wood
Sawmilling, planing of wood, wood products, publishing & printing	PPI-(PPC33100) : Paper and printed products
Petroleum refineries/synthesisers & processing of nuclear fuel	UVI: Crude petroleum (MG05_1)
Basic chemicals and other chemical products	PPI-(PPD31100) : Basic and other chemicals
Rubber, plastic and coke oven products	PPI-( PPD31300): Rubber products
Other non-metallic mineral products	PPI-(PPD31100) : Basic and other chemicals
Basic metals and fabricated metal products	PPI-( PPD35100; PPD35200): Basic iron and steel, Basic precious and non-ferrous metals
Special purpose machinery, office, accounting and computing machinery	PPI-(PPC36000) : Metals, machinery, equipment and computing equipment
Electrical machinery and apparatus n.e.c.	PPI-(PPC40000) : Electrical machinery and communication and metering equipment
Radio, television, communication equipment, medical and optical instruments, watches and clocks	PPI-(PPC40000) : Electrical machinery and communication and metering equipment
Transport equipment	PPI-(PPC38400) : Parts for transport equipment
Furniture, recycling and manufacture n.e.c.	PPI-(PPD32000) : Sawmilling and wood
<b>Manufacturing – work in progress, finished goods, goods purchased for resale</b>	
Food, beverages and tobacco	PPI-(PPC31000): Food products, beverages and tobacco products
Textiles, clothing, and leather goods	PPI-(PPC32000) : Textiles, clothing and footwear
Paper and paper products	PPI-(PPC33100) : Paper and printed products
Sawmilling, planing of wood, wood products, publishing & printing	PPI-(PPC33100) : Paper and printed products
Petroleum refineries/synthesisers & processing of nuclear fuel	PPI-(PPC34110; PPC34120) : Petrol, Diesel
Basic chemicals and other chemical products	PPI-(PPC34200) : Chemical products
Rubber, plastic and coke oven products	PPI-(PPC34300) : Rubber and plastic products
Other non-metallic mineral products	PPI-(PPC35000) : Non-metallic mineral products
Basic metals and fabricated metal products	PPI-(PPD35000) : Basic and fabricated metals
Special purpose machinery, office, accounting and computing machinery	PPI-(PPC36000) : Metals, machinery, equipment and computing equipment
Electrical machinery and apparatus n.e.c.	PPI-(PPC40000) : Electrical machinery and communication and metering equipment
Radio, television, communication equipment, medical and optical instruments, watches and clocks	PPI-(PPC36200) : General and special purpose machinery
Transport equipment	PPI-(PPC38000) : Transport equipment
Furniture, recycling and manufacture n.e.c.	PPI-(PPC39000) : Furniture and other manufacturing
Electricity, gas and water supply	PPI : Coal and gas
Construction	PPI : Building and construction
<b>Trade</b>	
<b>Wholesale trade</b>	
Agricultural raw materials, livestock, food, beverages and tobacco	PPI-(PPC31000;PPG11000) : Food products, beverages and tobacco products, Agriculture
Non-agricultural intermediate products, waste and scrap	PPI-(PPC34100;PPD30000) : Intermediate manufactured goods
Machinery, equipment and supplies	PPI-(PPC36000) : Metals, machinery, equipment and computing equipment
Wholesale trade on a fee or contract basis and household goods and other	PPI-(PPC32100; PPC36300; PPG11000) : Textiles, clothing and footwear , Household appliance and office machinery, Agriculture

Industry / sub-industry	Deflator
<b>Retail trade</b>	
Food, beverages and tobacco	CPI-(CPT01000; CPT02000) : Food and non-alcoholic beverages, Alcoholic beverages and tobacco
Pharmaceutical and medical goods, cosmetic and toilet articles	CPI-(CPT06100) : Medical products
Textiles, clothing, footwear and leather goods	CPI-(CPT03000) : Clothing and footwear
Household furniture, appliances, articles and equipment	CPI-(CPT05000) : Household contents and equipment
Other trade in specialised stores, second-hand goods, retail trade not in stores and repair of personal and household goods	CPI-(CPT01000; CPT02000; CPT06100; CPT03000; CPT05000) : Household contents and equipment; Clothing and footwear; Medical products; Food and non-alcoholic beverages; Alcoholic beverages and tobacco
<b>Motor trade</b>	
Motor parts	PPI-(PPC38400) : Parts for transport equipment
Automotive fuel	PPI-(PPC34110) : Petrol
Sale of motor vehicles and motor cycles	CPI-(CPT07100) : Purchase of vehicles
<b>Other industries</b>	
Hotels and restaurants	CPI-(CPT01000; CPT02000) : Food and non-alcoholic beverages; Alcoholic beverages and tobacco
Transport	PPI-(PPC38000) : Transport equipment
Financial	CPI-(CPT09500) : Books, newspapers and stationery
Community	CPI-(CPT09500) : Books, newspapers and stationery
Construction	CMPI-(JB000050) : Total Construction



## Glossary

Basic price	The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy receivable, by the producer as a consequence of its production or sale. It excludes any transport charges invoiced separately by the producer.
Benchmark years	Benchmark years refer to those years in respect of which authoritative and detailed data are available.
Benchmarking	Benchmarking is the process in which datasets with different characteristics are combined in a concerted attempt to benefit from the strengths of each series.
Benchmarking methods	Benchmarking methods in the national accounts are used to derive quarterly series that are consistent with their corresponding annual benchmarks; they preserve the short-term movements of quarterly economic indicators, and deal with the problem of combining series of high-frequency data (e.g. quarterly) with series of low-frequency data (e.g. annual).
Changes in inventories	Changes in inventories are measured by the value of the entries into inventories less the value of withdrawals and less the value of any recurrent losses of goods held in inventories during the accounting period.
Compensation of employees	Compensation of employees is defined as the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period.
Constant prices	Constant prices is a valuation concept expressed at the prices prevailing during a fixed reference period or base period. The base period for national accounts estimates at constant prices is 2015, which means that they have been restated at 2015 prices.
Consumer price index	An index that measures the prices of a fixed basket of consumer goods and services.
Current prices	A valuation at current prices is expressed at the prices prevailing during the period being referred to.
Cost, insurance and freight price	The cost, insurance and freight price is the price of a good delivered at the frontier of the importing country, or the price of a service delivered to a resident, before payment of any import duties or other taxes on imports or trade and transport margins within the country.
Economic production	Economic production may be defined as an activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services. There must be an institutional unit that assumes responsibility for the process of production, and owns any resulting goods or knowledge-capturing products, or is entitled to be paid or otherwise compensated for the change-effecting or margin services provided.
Establishment	An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added.

Expenditure measure of gross domestic product	The expenditure measure of gross domestic product is derived as the sum of expenditure on final consumption plus gross capital formation plus exports less imports.
Export taxes	These are taxes on goods or services that become payable to government when the goods leave the economic territory or when the services are delivered to non-residents.
Final demand	Different components of final demand are distinguished in the supply and use tables. The supply table shows imports and the use table shows final consumption expenditure by households and the general government, gross capital formation (gross fixed capital formation and changes in inventories), and exports.
Financial corporations	Financial corporations consist of all resident corporations that are principally engaged in providing financial services, including insurance and pension funding services, to other institutional units.
Financial intermediation services indirectly measured	The difference between the rate paid to banks by borrowers and the reference rate plus the difference between the reference rate and the rate actually paid to depositors represents charges for financial intermediation services indirectly measured.
Free on board price	The free on board price is the purchaser's price paid by an importer taking delivery of goods at the exporter's frontier after loading on to a carrier and after payment of any export taxes or the receipt of any tax rebates.
General government final consumption expenditure	General government final consumption expenditure consists of expenditure, including expenditure whose value must be estimated indirectly, incurred by general government on both individual consumption goods and services and collective consumption services.
Generation of income account	The generation of income account provides for the distribution of primary incomes to the various institutional sectors. Primary incomes are incomes that accrue to institutional sectors and industries as a consequence of their involvement in processes of production or ownership of assets that may be needed for purposes of production.
Goods	Goods are physical, produced objects for which a demand exists, over which ownership rights can be established, and whose ownership can be transferred from one institutional unit to another by engaging in transactions on markets.
Goods and services account	The goods and services account shows the total resources (output and imports) and uses of goods and services (intermediate consumption, final consumption, gross capital formation and exports). Taxes on products (less subsidies) are also included on the resource side of the accounts.
Gross domestic product	Gross domestic product is the sum of gross value added of all resident producer units plus that part (possibly the total) of taxes on products, less subsidies on products, that is not included in the valuation of output. Gross domestic product is also equal to the sum of the final uses of goods and services (all uses except intermediate consumption) measured at purchasers' prices, less the value of imports of goods and services. Gross domestic product is also equal to the sum of primary incomes distributed by resident producer units.

Gross domestic product at market prices	Gross domestic product at market prices equals total gross value added by all industries at basic prices plus taxes on products minus subsidies on products.
Gross domestic product for the economy	Gross domestic product for the entire economy is equal to GDP at market prices. It is essentially a production measure as it is obtained through the sum of the gross values added of all resident institutional units, in their capacity as producers, <i>plus</i> the values of any taxes, <i>less</i> subsidies on production or imports not already included in the values of the outputs and values added by resident producers.
Gross fixed capital formation	Gross fixed capital formation in a particular category of fixed asset consists of the value of producers' acquisitions of new and existing products of this type less the value of their disposals of fixed assets of the same type. Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditures on services that add to the value of non-produced assets.
Gross operating surplus / mixed income	Gross operating surplus / mixed income is the balancing item in the generation of income account, i.e. gross domestic product <i>minus</i> compensation of employees payable <i>minus</i> taxes on production and imports payable <i>plus</i> subsidies on production and imports receivable.
Gross value added	Gross value added is the difference between output and intermediate consumption.
Gross value added at basic prices	Gross value added at basic prices is defined as output valued at basic prices less intermediate consumption valued at purchasers' prices.
Gross value added at producers' prices	Gross value added at producers' prices is defined as output valued at producers' prices less intermediate consumption valued at purchasers' prices.
Household final consumption expenditure	Household final consumption expenditure consists of the expenditure, including expenditure whose value must be estimated indirectly, incurred by resident households on individual consumption goods and services, including those sold at prices that are not economically significant and including consumption goods and services acquired abroad.
Illegal economy	The illegal economy is the activities in the resale, distribution or ownership of goods and services forbidden by law, and legal activities carried out by unauthorised producers.
Income measure of gross domestic product	The income measure of gross domestic product is derived as compensation of employees plus gross operating surplus plus gross mixed incomes plus taxes less subsidies on both production and imports.
Industry	An industry consists of a group of establishments engaged in the same, or similar, kinds of activity. Industries are defined in the System of National Accounts in the same way as in the Standard Industrial Classification.
Informal economy	The informal economy is broadly characterised as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes for the persons concerned. These units typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale.

Intermediate consumption	Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets, whose consumption is recorded as consumption of fixed capital.
Inventories	Inventories are produced assets that consist of goods and services which came into existence in the current period or in an earlier period, and which are held for sale, use in production, or other use at a later date.
Mixed income	Mixed income refers to the balancing item in the generation of income account for the household sector. The reason for this is that the surplus generated by unincorporated household enterprises includes both remuneration for the labour of the owner as well as a return to entrepreneurship and capital employed.
Net other taxes on production	Other taxes on production minus other subsidies on production.
Non-observed economy	The non-observed economy is the extent of the economic activity missing from statistical data collections and from administrative sources.
Non-profit institutions	Non-profit institutions are legal or social entities created for the purpose of producing goods and services but whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them.
Other subsidies on production	Other subsidies on production consist of subsidies except subsidies on products that resident enterprises may receive as a consequence of engaging in production. Subsidies are transfers from the government to the business sector towards the current cost of production. These transfers represent additions to the income of producers from current production.
Other subsidies on products	Other subsidies on products consist of subsidies on goods or services produced as the outputs of resident enterprises, or on imports, that become payable as a result of the production, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own consumption or own capital formation.
Other taxes on production	Other taxes on production consist of all taxes except taxes on products that enterprises incur as a result of engaging in production. Other taxes on production consist of taxes on the ownership of land, buildings or other assets used in production or on labour employed, etc. Important examples of other taxes on production are taxes on payroll or workforce, stamp duties, and business or professional licences
Output	Output is defined as the goods and services produced by an establishment, excluding the value of any goods and services used in an activity for which the establishment does not assume the risk of using the products in production, and excluding the value of goods and services consumed by the same establishment except for goods and services used for capital formation (fixed capital or changes in inventories) or own final consumption.
Price indices	According to SNA 2008, different price indices are necessary for two reasons. The first is that the goods and services included in intermediate consumption for any industry are not the same as the output of that industry. The second reason is that intermediate inputs are always measured at purchasers' prices whereas output is measured at either basic prices or producers' prices.
Principal activity	The principal activity of an establishment is the activity whose gross value added exceeds that of any other activity carried out within the same unit.

Producer price index	The producer price index indicates changes in producer prices of locally produced commodities (including exports).
Producer's price	The producer's price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any VAT, or similar deductible tax, invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer.
Production boundary	The production boundary of the SNA includes the following activities: (a) The production of all goods or services that are supplied to units other than their producers, or intended to be so supplied, including the production of goods or services used up in the process of producing such goods or services. (b) The own-account production of all goods that are retained by their producers for their own final consumption or gross capital formation. (c) The own-account production of knowledge-capturing products that are retained by their producers for their own final consumption or gross capital formation but excluding (by convention) such products produced by households for their own use. (d) The own-account production of housing services by owner-occupiers. (e) The production of domestic and personal services by employing paid domestic staff.
Production account for the total economy	The production account is the first in the sequence of accounts compiled for institutional sectors, industries and the total economy. The production account contains three items apart from the balancing item, namely output, intermediate consumption, and taxes less subsidies on products. The output is recorded under resources on the right-hand side of the account. Intermediate consumption and taxes less subsidies on products are recorded under uses on the left-hand side of the account.
Production measure of gross domestic product	The production measure of gross domestic product is derived as the value of output less intermediate consumption plus any taxes less subsidies on products not already included in the value of output.
Products	Products are goods and services (including knowledge-capturing products) that result from a process of production.
Purchaser's price	The purchaser's price is the amount paid by the purchaser, excluding any VAT or similar tax deductible by the purchaser, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place.
Research and development	Research and development consists of the value of expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and use of this stock of knowledge to devise new applications. This does not extend to including human capital as assets within the System of National Accounts.
Rest of the world	The rest of the world consists of all non-resident institutional units that enter into transactions with resident units, or have other economic links with resident units.
Secondary activity	A secondary activity is an activity carried out within a single establishment in addition to the principal activity.
Services	Services are the result of a production activity that changes the conditions of the consuming units, or facilitates the exchange of products or financial assets.

Standard Industrial Classification	The Standard Industrial Classification is a classification of economic activities of industries. Industry compilation follows the Standard Industrial Classification, which is based on the International Standard Industrial Classification of All Economic Activities, with suitable adaptations for local conditions.
Subsidies	Subsidies are current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services that they produce, sell or import.
Subsidy on product	A subsidy on a product is a subsidy payable per unit of a good or service.
Supply and use tables	Matrices that record how supplies of different kinds of goods and services originate from domestic industries and imports and how those supplies are allocated between various intermediate or final uses, including exports.
Supply table	A supply table at purchasers' prices consists of a rectangular matrix: rows correspond to the same groups of products as the matching use tables; columns correspond to the supply from domestic production valued at basic prices; and there are columns for imports and the valuation adjustments necessary to have the total supply of each (group of) product(s) valued at purchasers' prices.
System of National Accounts	System of National Accounts refers to an internationally-agreed standard system for macroeconomic accounts. The latest version is described in the System of National Accounts 2008.
Taxes	Taxes are compulsory, unrequited payments, in cash or in kind, made by institutional units to government units.
Taxes and duties on imports	These are taxes on goods and services that become payable at the moment when those goods cross the national or customs frontiers of the economic territory or when those services are delivered by non-resident producers to resident institutional units.
Taxes less subsidies on production	Consist of taxes payable or subsidies receivable on goods or services produced as outputs and other taxes or subsidies on production, such as those payable on the labour, machinery, buildings or other assets used in production.
Taxes on imports, excluding VAT and duties	These are all taxes (except value-added tax and import duties) as defined in the GFSM/OECD classifications that become payable when goods enter the economic territory or services are delivered by non-residents to residents.
Taxes on products	A tax on a product is a tax that is payable per unit of some good or service. Taxes on products consist of taxes payable on goods and services when they are produced, delivered, sold or otherwise disposed of by their producers. Important examples of taxes on products are excise and import duties and value-added tax.
Taxes on products, excluding VAT, import and export taxes	These are taxes on goods and services that become payable as a result of the production, sale, transfer, leasing or delivery of those goods or services, or as a result of their use for own consumption or own capital formation.

Taxes on production and imports	Taxes on production and imports are taxes which add to the cost of production and which are likely to be reflected in market prices paid by the purchaser, such as sales and excise taxes, import duties and property taxes. Taxes on production and imports include taxes on products and other taxes on production.
Trade margin	A trade margin is defined as the difference between the actual or imputed price realised on a good purchased for resale and the price that would have to be paid by the distributor to replace the good at the time it is sold or otherwise disposed of.
Transport margins	Transport margins represent freight transportation services of products when invoiced separately by the seller. Transport margins are transport charges paid separately by the purchaser to take delivery at the required time and place.
Use table	A use table at purchasers' prices consists of a set of product balances covering all products available in an economy arranged in the form of a rectangular matrix, with the products, valued at purchasers' prices, appearing in the rows, and the columns indicating the disposition of the products to various types of use.
Value added components	The use table distinguishes between three different components of value added, i.e. compensation of employees, other taxes less subsidies on production, and gross operating surplus / mixed income.
Value added by industry	Value added measures the value created by production and may be calculated either before or after deducting the consumption of fixed capital from the fixed assets used. Gross value added is defined as the value of output less the value of intermediate consumption. Value added is the balancing item in the production account for an institutional unit or sector, or establishment or industry.
Value-added tax	A tax on goods or services collected in stages by enterprises but that is ultimately charged in full to the final purchasers.
Volume index	A volume index is an average of the proportionate changes in the quantities of a specified set of goods or services between two periods of time.

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