

Improving national accounts and GDP

The results of South Africa's rebasing and benchmarking exercise, 2021

Reference year: 2015



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DDG: Economic Statistics
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Improving lives through data ecosystems

Overhauling national accounts and GDP

Overhauling national accounts and GDP

Occurs periodically and involves three main activities

Rebasing

The replacement of an old base year used to compile GDP estimates in constant prices with a new, more recent base year

Benchmarking

The adoption of new or additional data sources into national accounts estimates. These datasets are typically highly detailed and periodic in nature

Methodological changes

The adoption of new methodologies and updating of existing practices so as to align to current international standards

Overhauling national accounts and GDP

This is done to ensure better estimates of GDP

Adopting new standards

It is best practice for a statistical agency to periodically revisit the way in which it measures the economy

Remaining relevant

Economies are dynamic by nature, shifting and changing over time. Rebasing and benchmarking exercises ensure that these changes are accounted for, providing a more accurate picture of the structure of the economy

Informing other indicators

GDP data feed into other national indicators. A much more accurate accounting of the economy provides better data for policy decisions

Overhauling national accounts and GDP

A history of rebasing and benchmarking exercises in South Africa, by base year

1995

Published in 1999

Improvements:

- Implemented the 1993 SNA
- New sectors included e.g. informal sector and telecommunications

2000

Published in 2004

Improvements:

- New taxation based business register
- Introduced supply and use tables to calculate annual estimates (95 industries, 28 products)

2005

Published in 2009

Improvements:

- Introduced the non-observed economy
- Increased the compilation level of supply and use tables (292 industries, 105 products)

Overhauling national accounts and GDP

A history of rebasing and benchmarking in South Africa, by base year

2010

Published in 2014

Improvements:

- Implemented the 2008 SNA
 - Capitalisation of research and development
 - Treatment of employment stock options as compensation of employees
 - Capitalisation of expenditure on weapon systems
 - Refined method for calculating FISIM
- New datasets included
 - Income and expenditure survey of households (2010/11)
 - Various industry large-sample surveys
 - Census 2011
 - More detailed producer and consumer prices

Overhauling national accounts and GDP

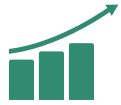
The size of the economy is typically revised as part of the exercise

The difference between previous and revised GDP levels for South African rebasing and benchmarking exercises

Previous exercises (base year)	1995	2000	2005	2010
Release year	1999	2004	2009	2014
Percentage change in level of GDP	+13,5%	+3,8%	+1,8%	+2,8%

Improvements made in the 2015 base year benchmarking and rebasing exercise

Improvements



Rebasing



Benchmarking:
new data sources



New methods



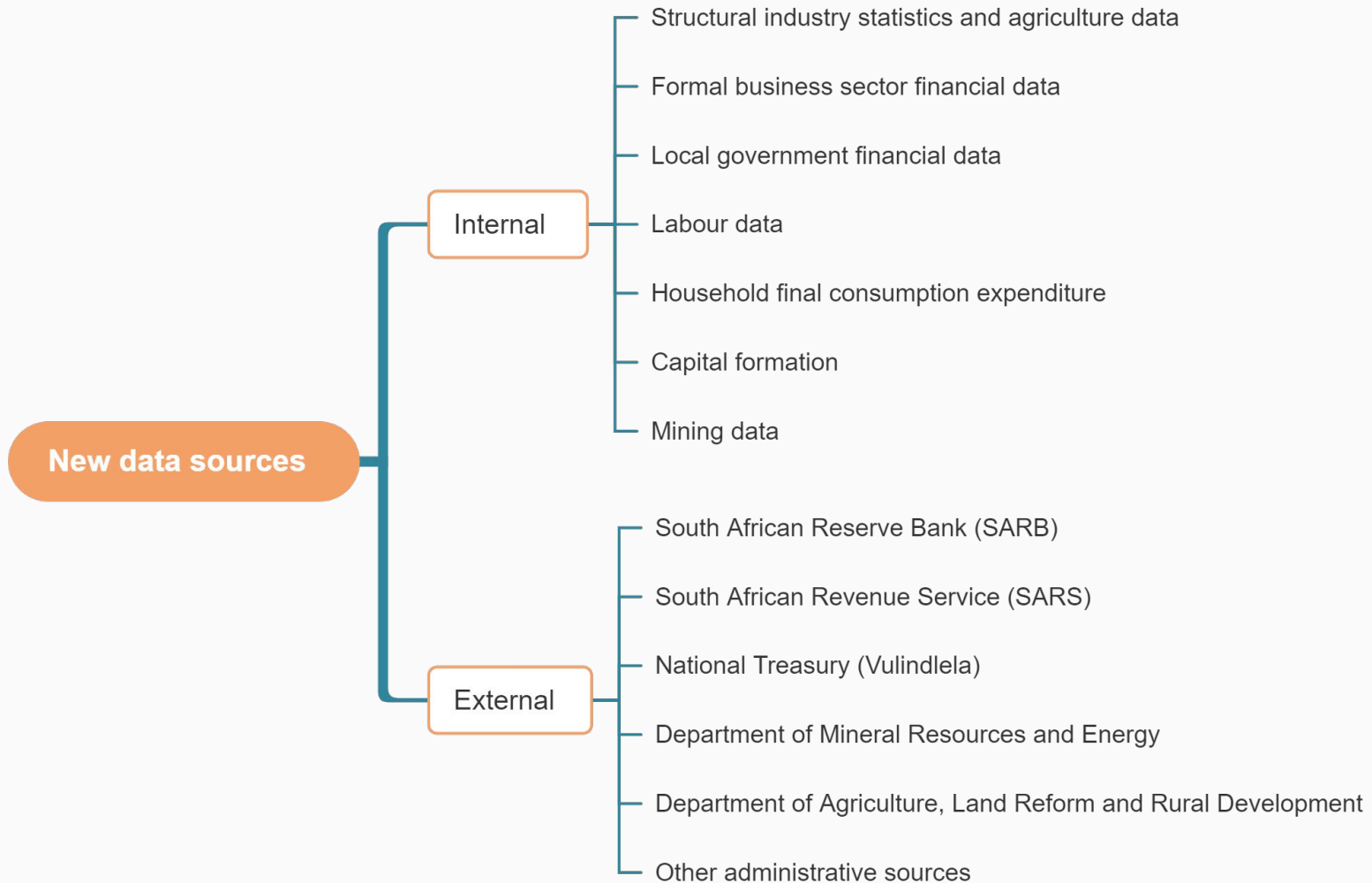
Removal of
annualisation

Rebasing

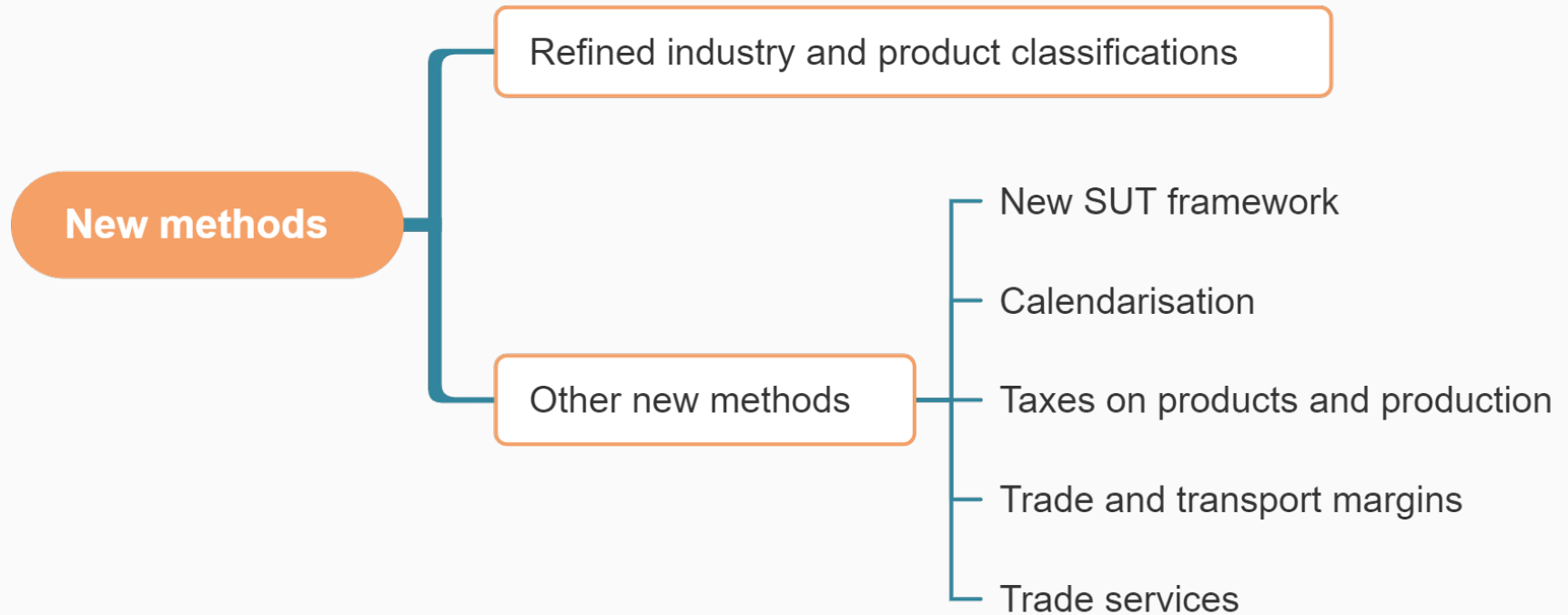
Base year

The base (reference) year has been changed from 2010 to 2015

Benchmarking: New data sources



New methods



Removal of annualisation

No annualisation

The headline rate for GDP will no longer be the annualised rate

Results of 2015 base year benchmarking

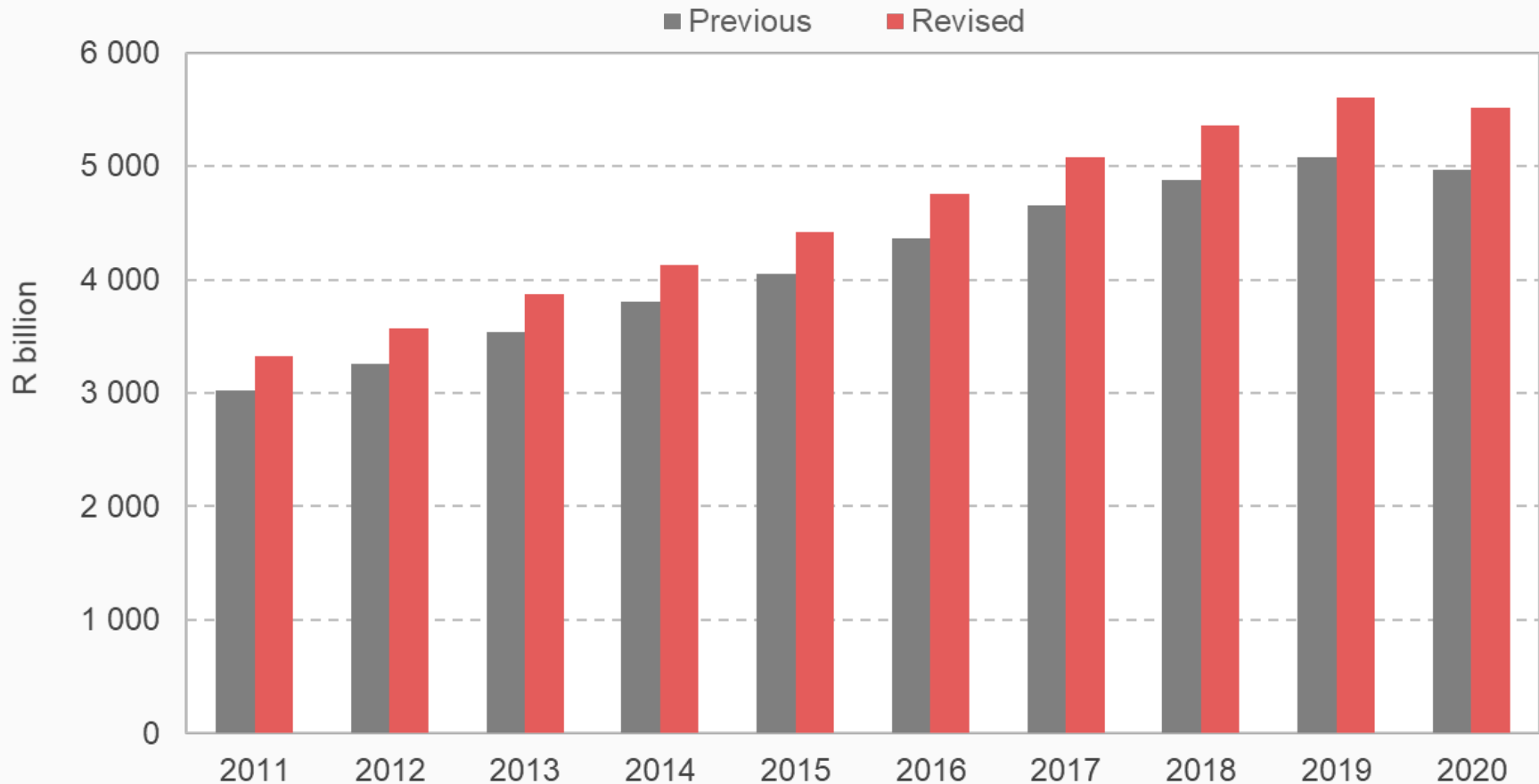


Results

Upward revision: The economy is 9,2% larger in the new base year of 2015

The percentage difference between previous and revised levels averaged 9,6%, and ranged between 8,6% in 2014 and 11,0% in 2020

Level of GDP in current prices

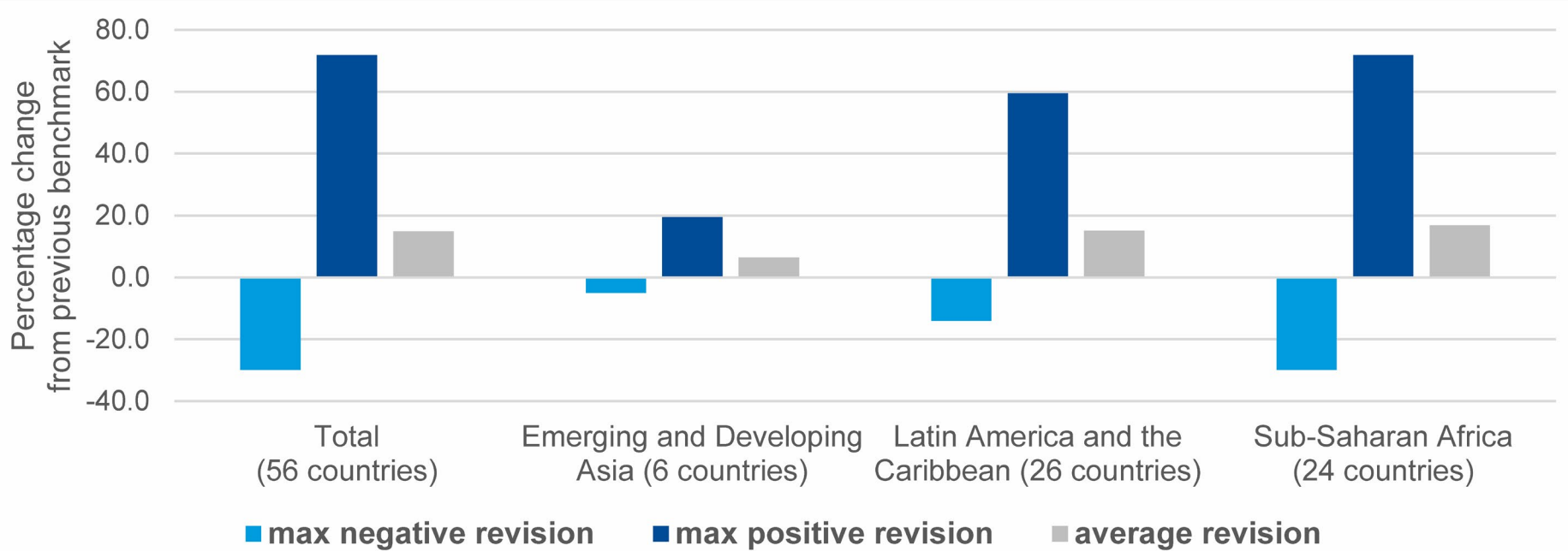


Based on GDP measured by production

Results

How does this compare with other regions of the world?

Recent GDP revisions from benchmarking exercises (selected countries). Preliminary data from IMF survey (2019)

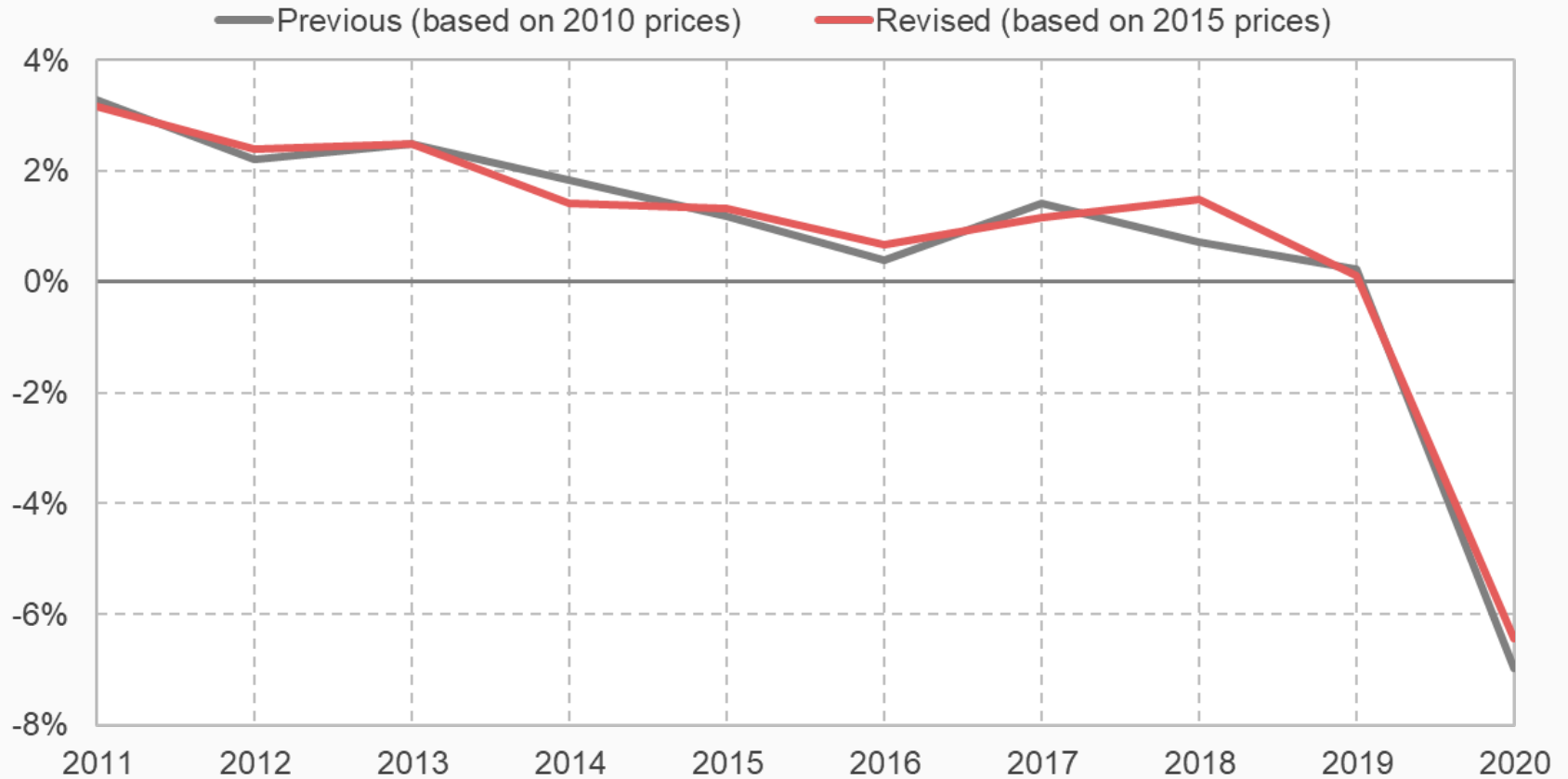


Source: International Monetary Fund, A common framework for communicating and presenting revisions and alignment to standards, 13th Meeting of the Advisory Expert Group on National Accounts, 1–3 October 2019 (Presentation)

Results

South African GDP growth rates are similar in magnitude and in pattern

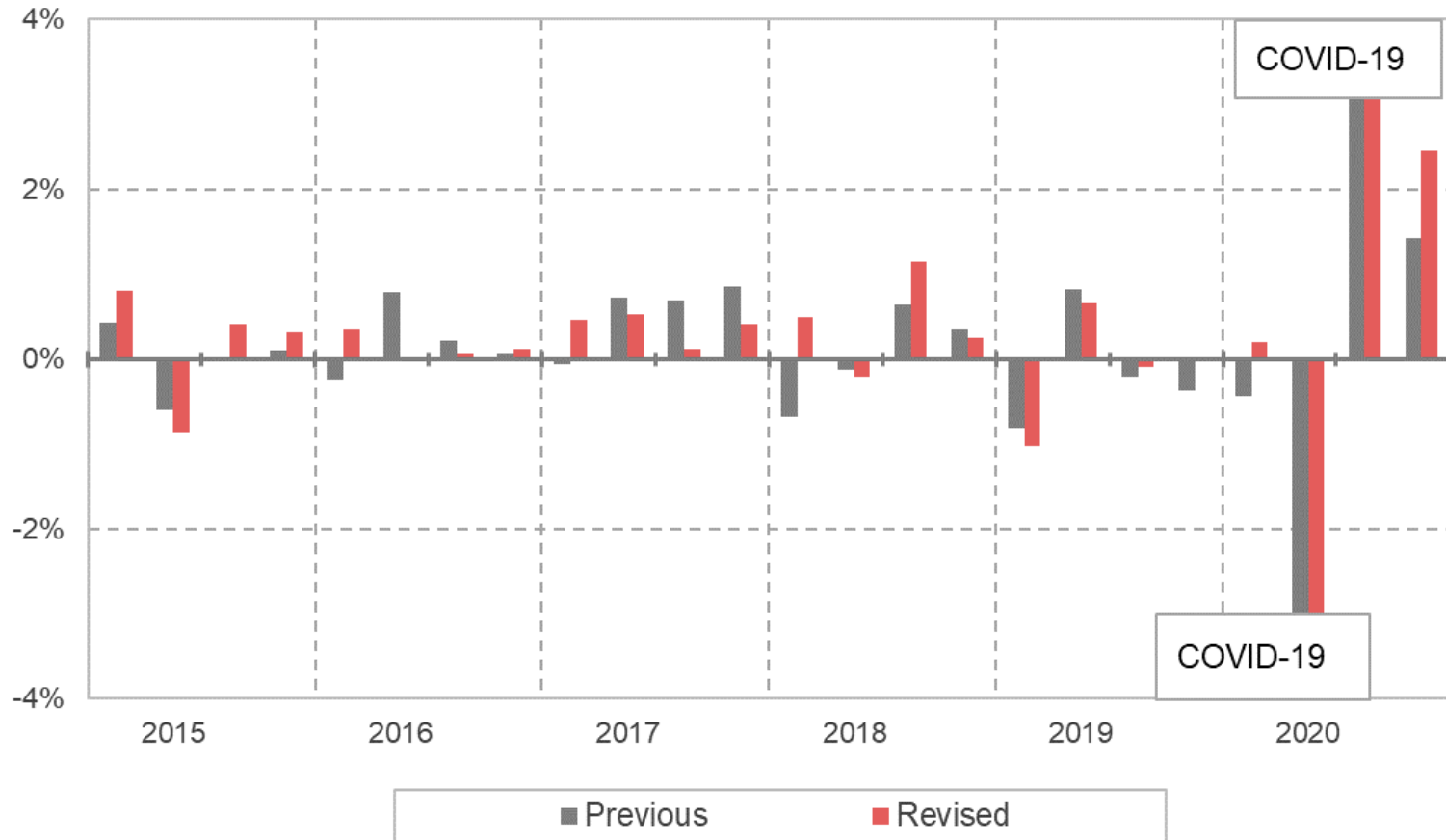
Previous and revised real GDP growth rates from 2011 to 2020



Based on GDP measured by production

The impact on quarter-on-quarter growth

Real GDP growth rate, quarter-on-quarter, seasonally adjusted (not annualised)

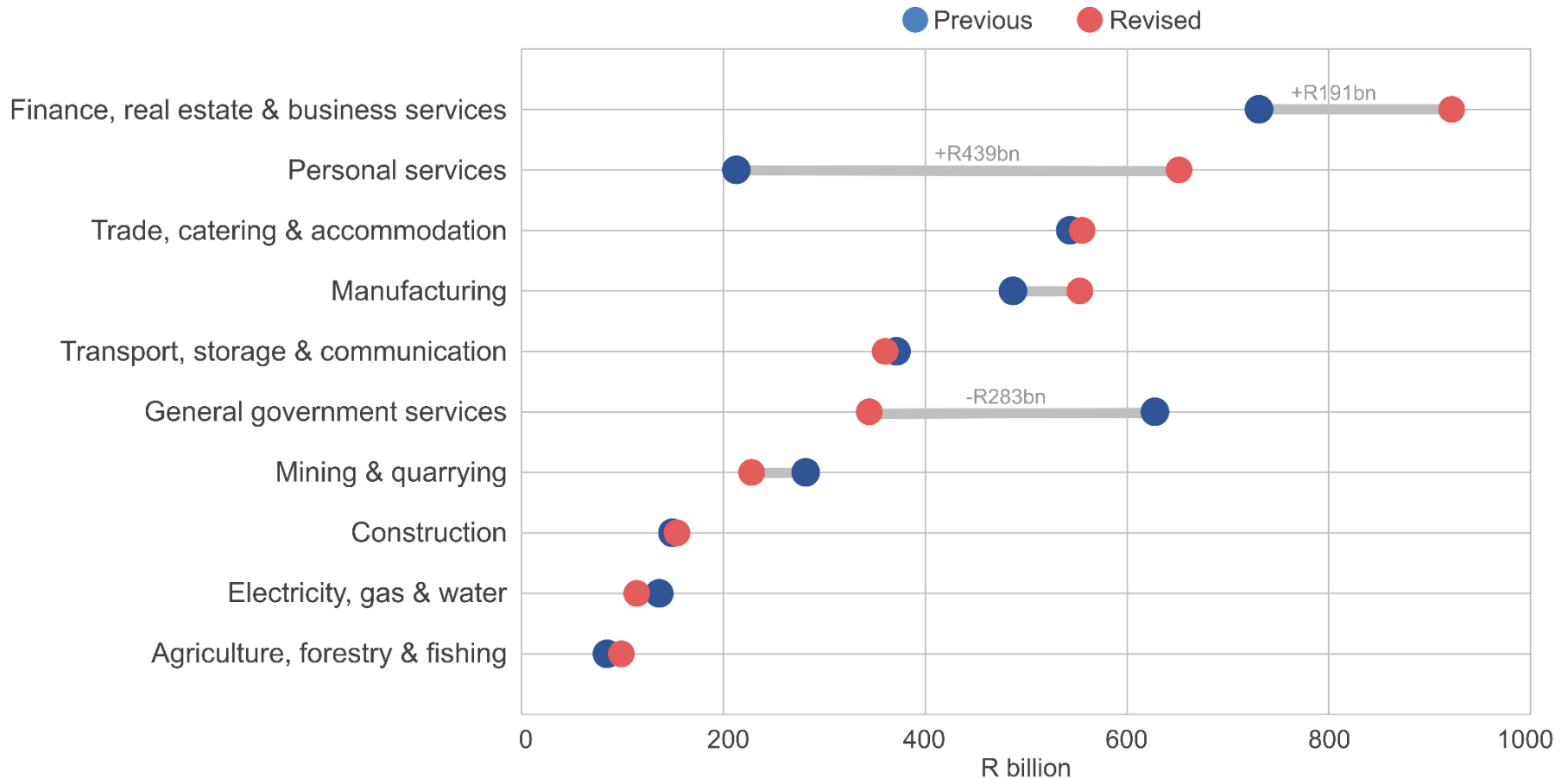


Based on GDP measured by production; vertical axis restricted because of large percentage changes

Results

Economic structure: Personal services, government and finance recorded the largest changes

Supply-side of the economy: Previous and revised estimates of industry size (value added in 2015 base year)

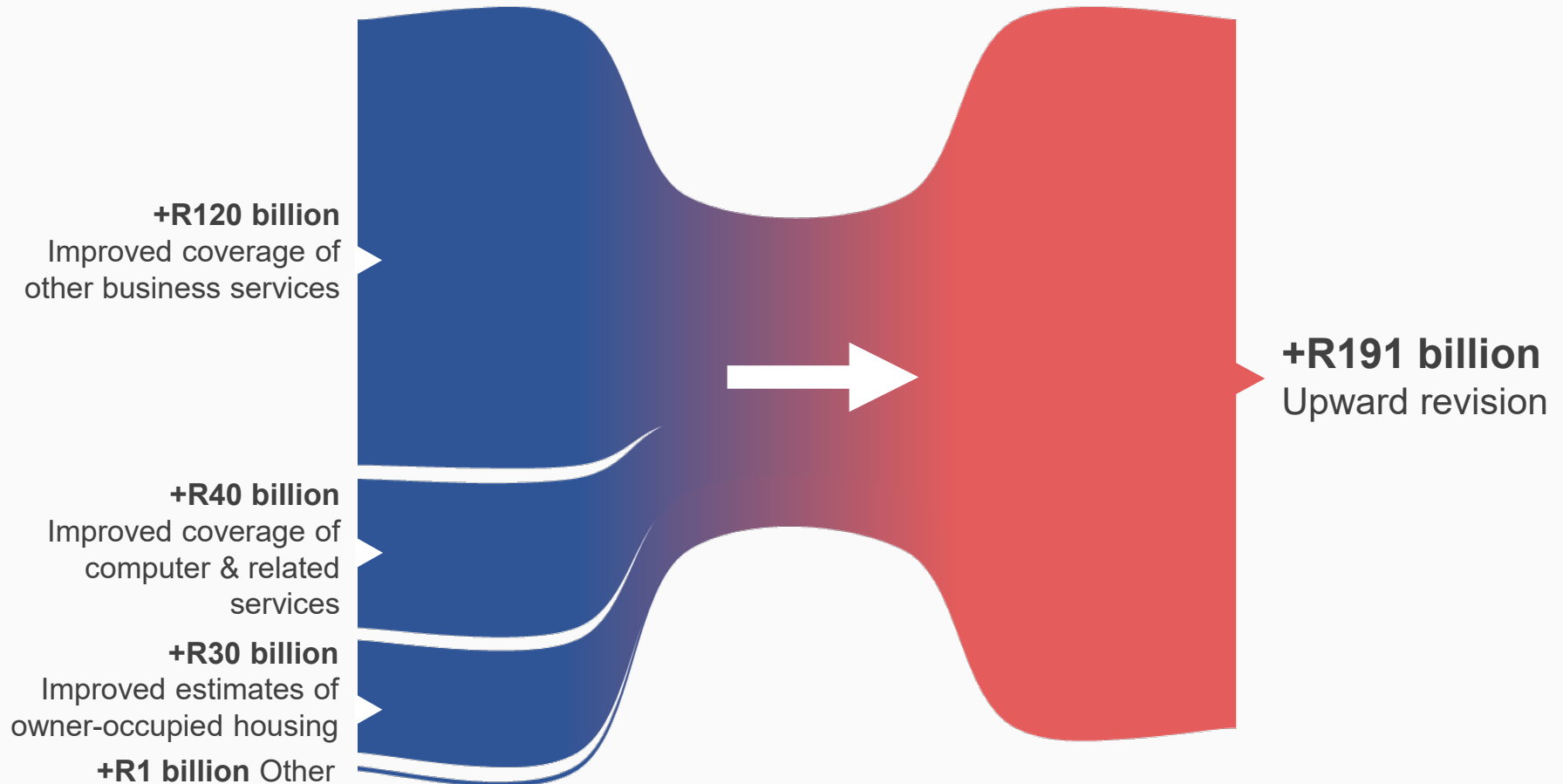


Based on GDP measured by production

Results

Finance: The upward revision was mainly due to expanded coverage and improved estimates

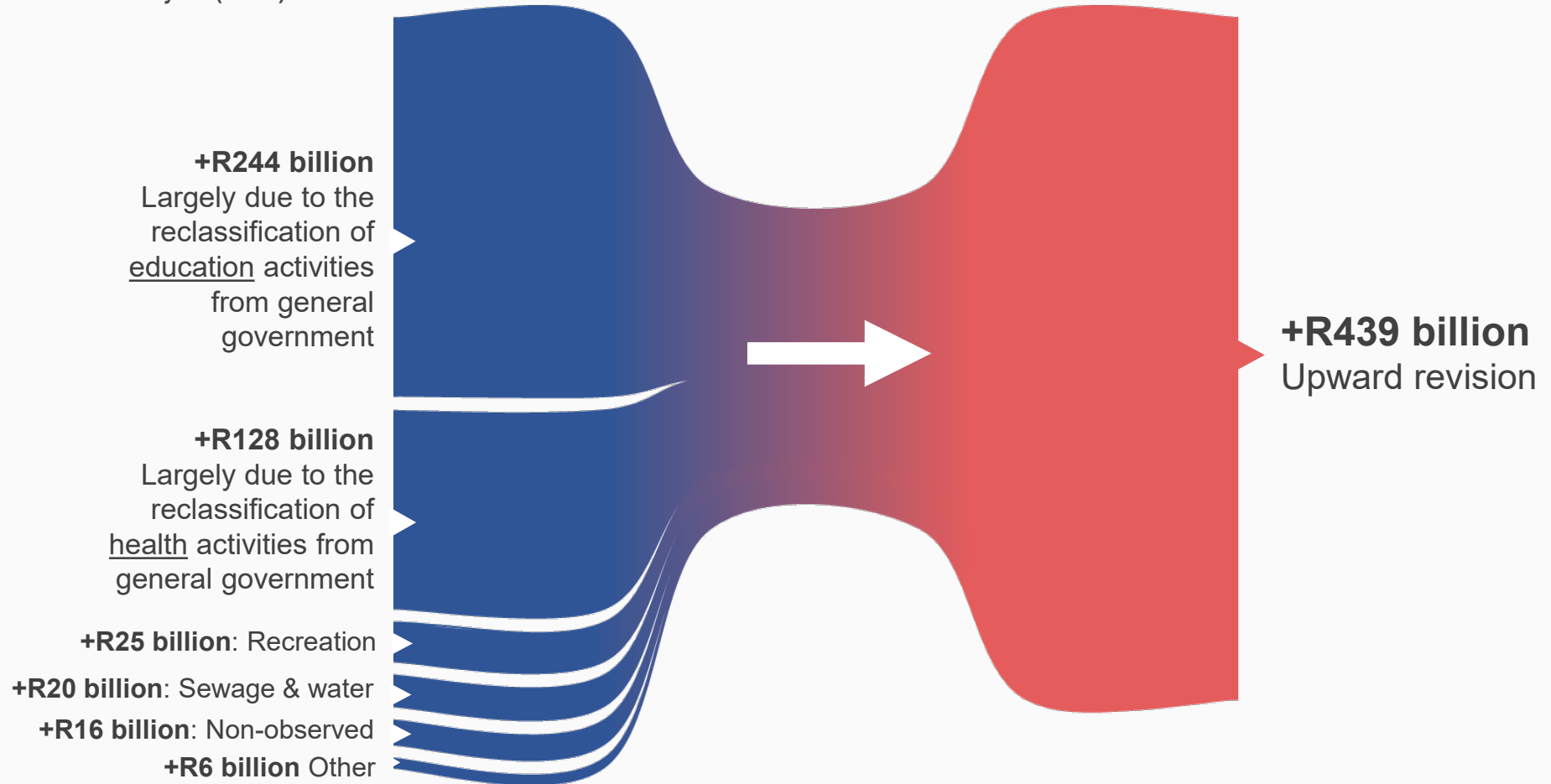
Reasons for the upward revision of the finance, real estate & business services industry, in the new base year (2015)



For more details of these changes, see Annexure A in 'National Accounts: Sources and Methods, Report No. 04-04-04 (2021)'

Results

Personal services: The upward revision was mainly due to the reclassification of public education and health
Also includes expanded coverage for recreational and sewage & water waste activities, as well as better estimates for the non-observed economy, in the new base year (2015)



For more details of these changes, see Annexure A in 'National Accounts: Sources and Methods, Report No. 04-04-04 (2021)'

Results

Government: The downward revision was mainly due to the reclassification of public education and health
In the new base year (2015)

-R283 billion

Includes revisions to government data and the reclassification of public education and health from general government to their respective industries



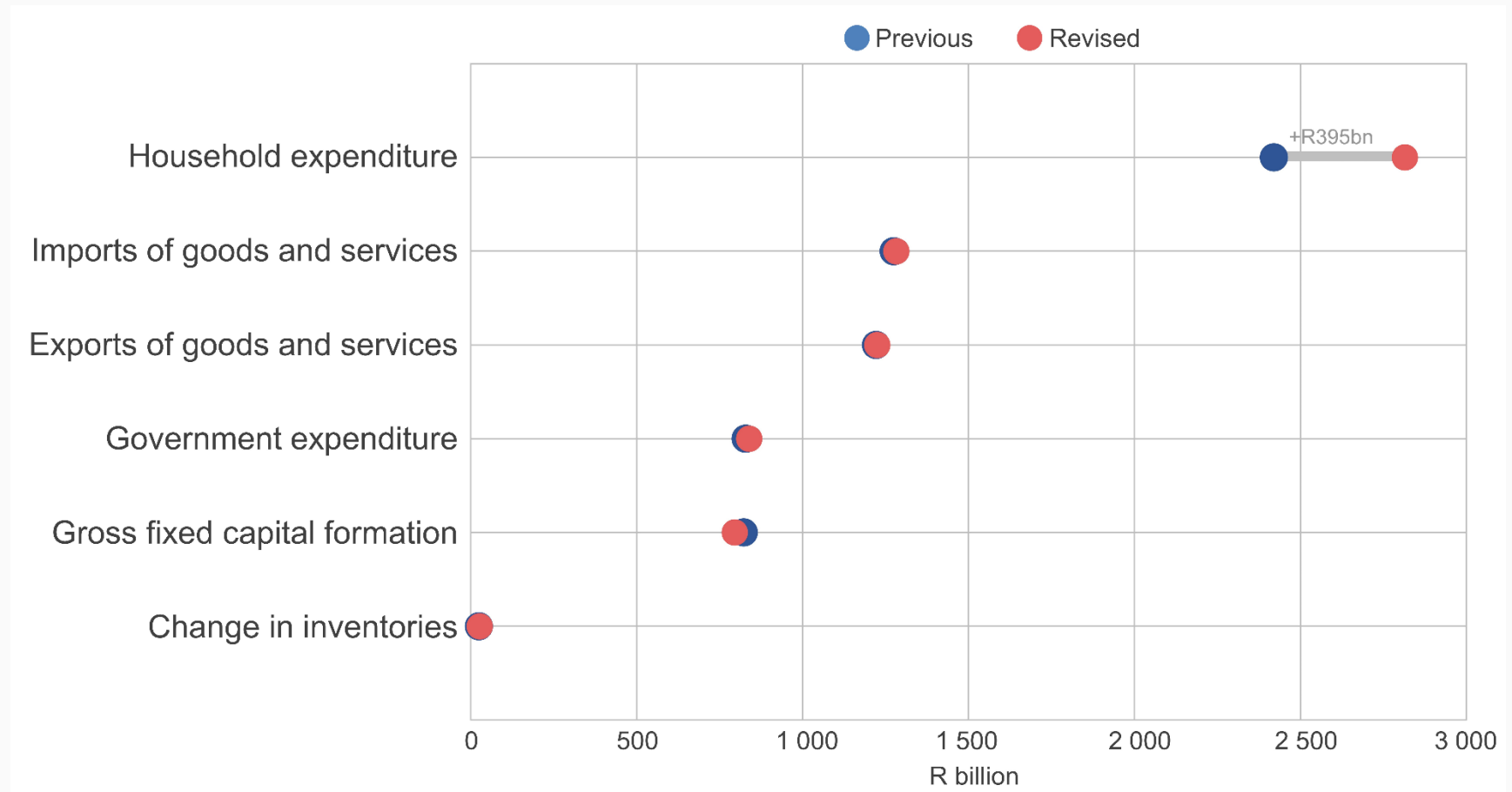
-R283 billion
Downward revision

For more details of these changes, see Annexure A in 'National Accounts: Sources and Methods, Report No. 04-04-04 (2021)'

Results

Economic structure: Household consumption expenditure recorded the largest change

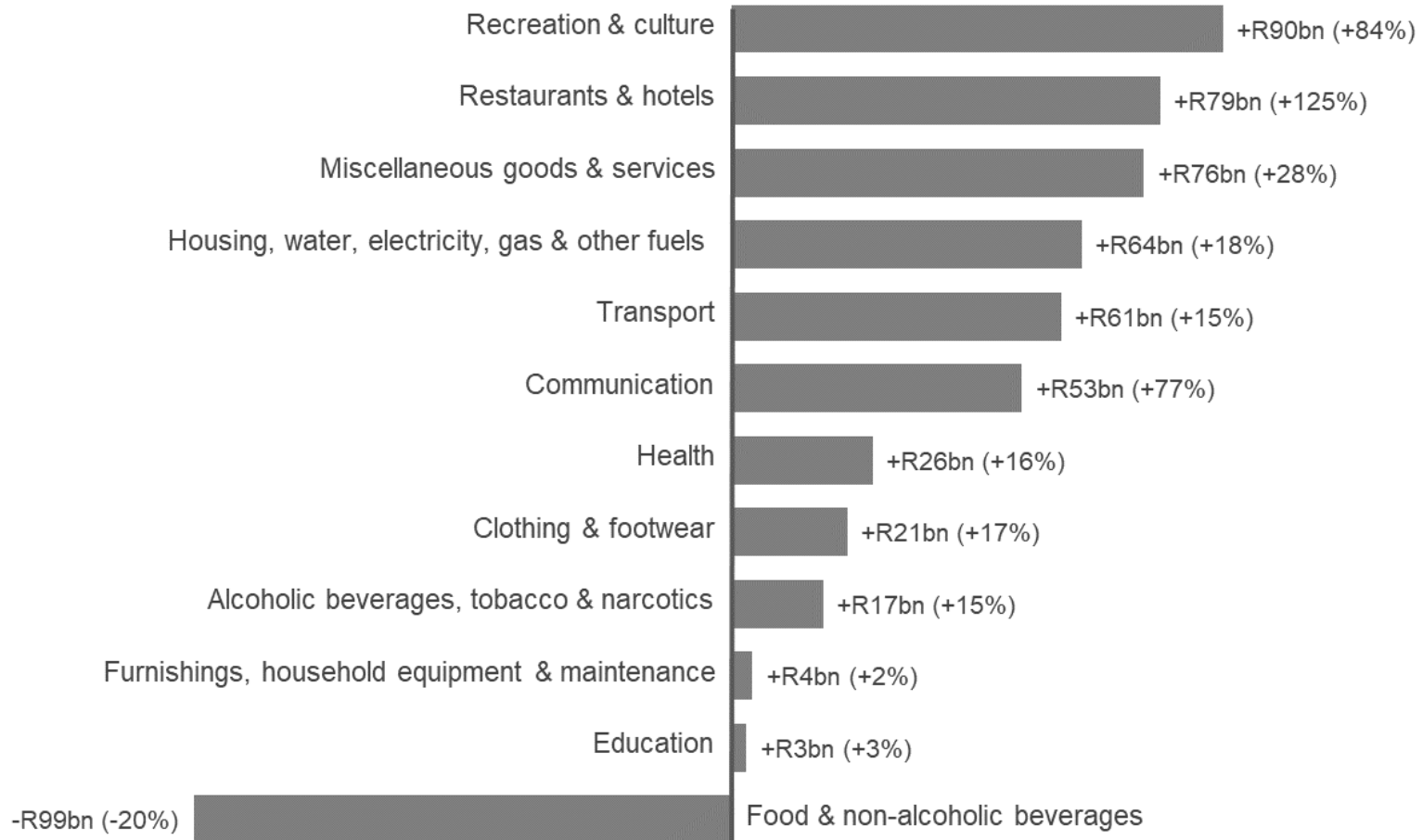
Demand-side of the economy: Previous and revised estimates of components (expenditure on GDP in 2015 base year)



Results

Household consumption expenditure: New data sources and improved methodology

Change between previous and revised estimates of components (for household consumption expenditure in 2015 base year)



For reasons behind these changes, see Annexure B in 'National Accounts: Sources and Methods, Report No. 04-04-04 (2021)'

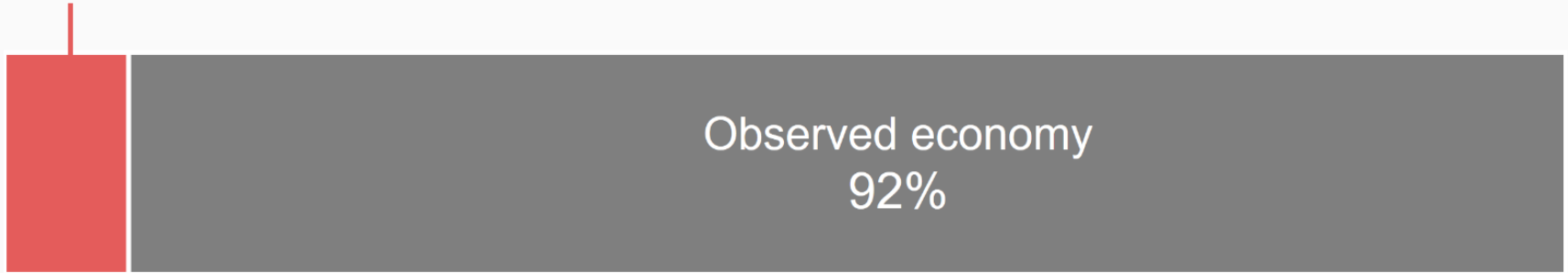
Results

The non-observed economy contributes 8% to total economic activity (2015)

Observed and non-observed economy as a percentage of value added

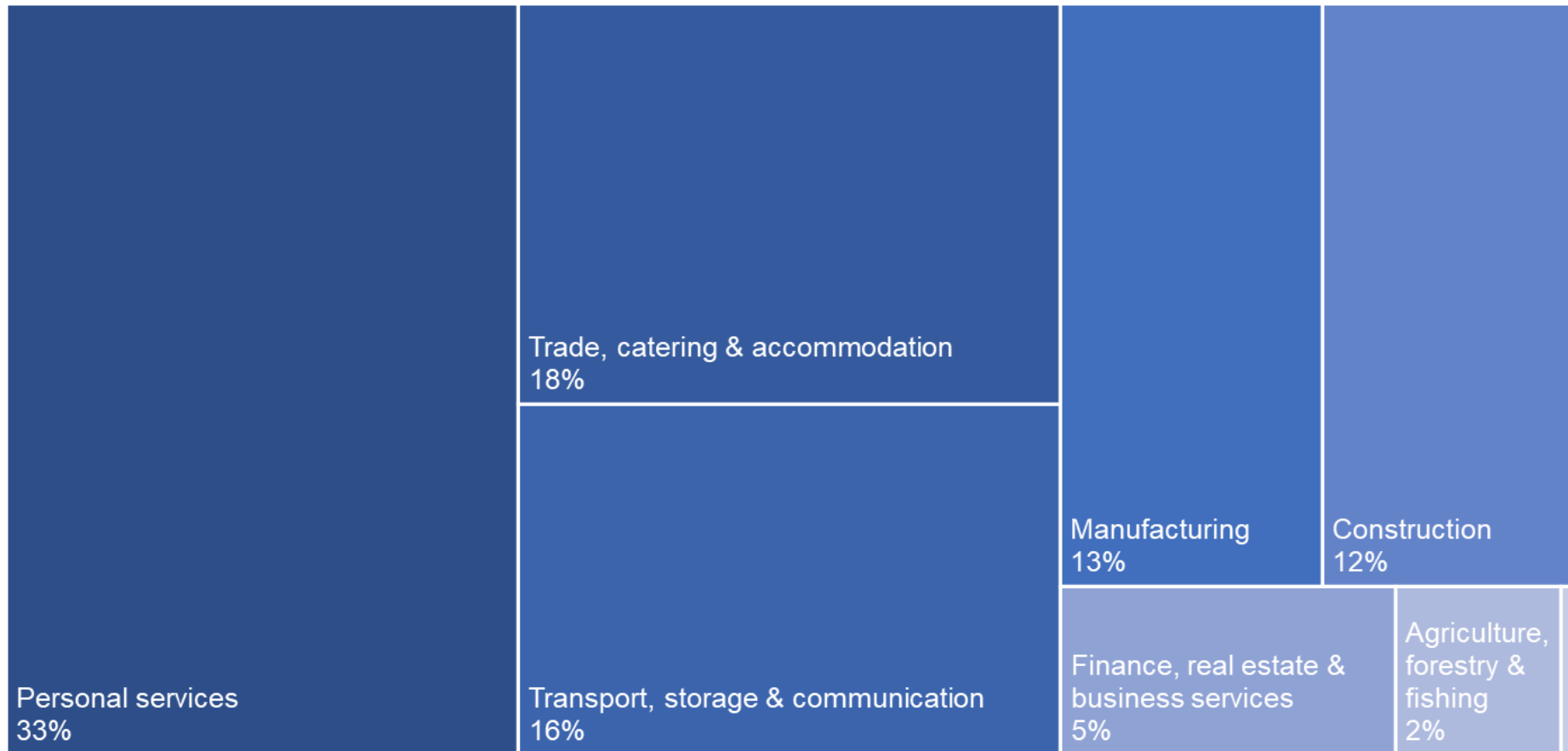
Non-observed
economy
8%

Observed economy
92%



Results

The highest level of activity in the non-observed economy took place in the personal services industry
Breakdown of the non-observed economy in base year 2015



The impact of a revised GDP series



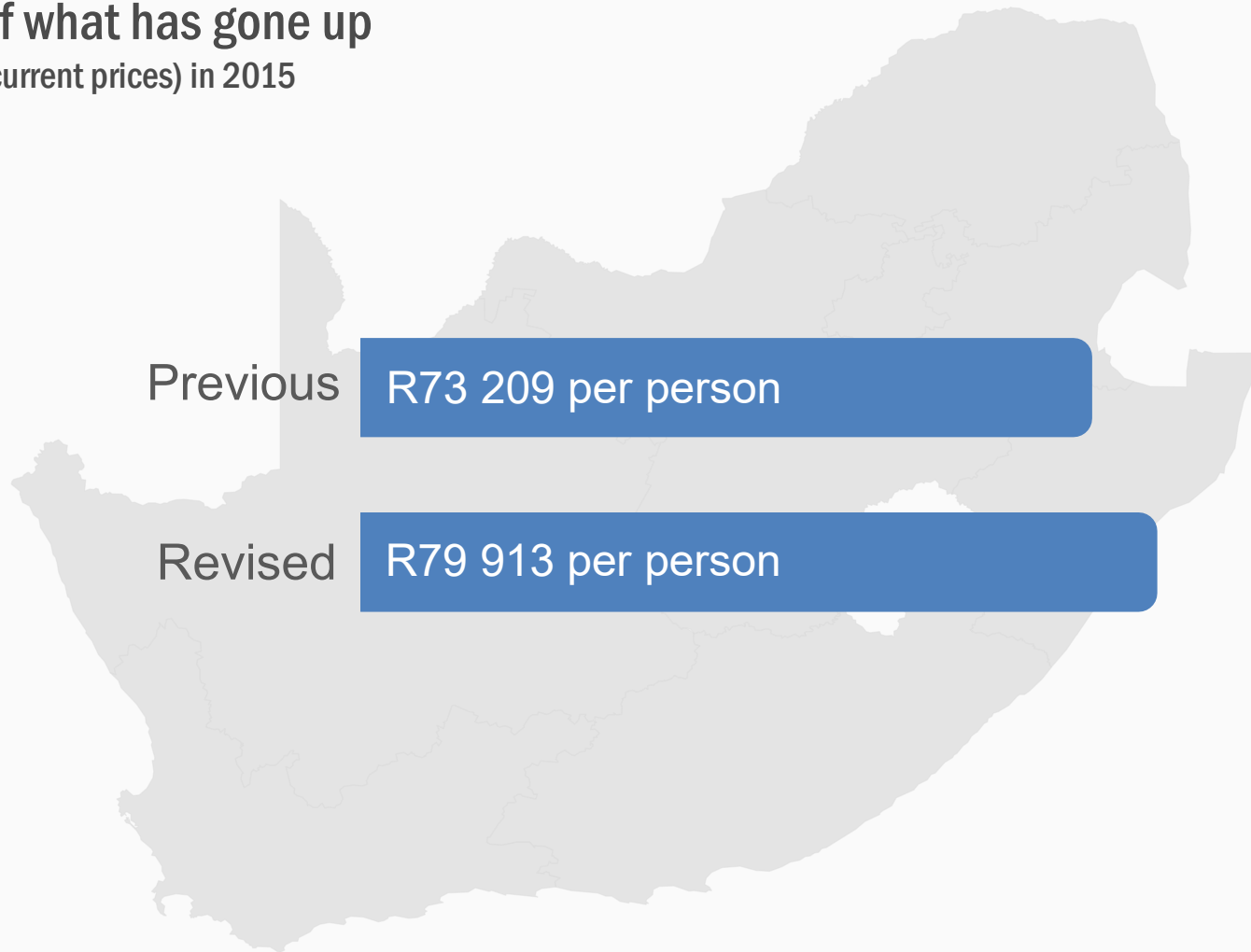
Socio-economic indicators

- GDP is a measure that is used widely by researchers, government, international organisations and the private sector
- A more accurate measure of GDP will improve indicators that use GDP as a source
- Examples
 - GDP per capita
 - Debt-to-GDP ratio
 - Government spending as a percentage of GDP
 - Household debt to GDP
- Although these ratios will change, the trends and patterns will remain largely unaffected

The impact

An example of what has gone up

GDP per capita (at current prices) in 2015

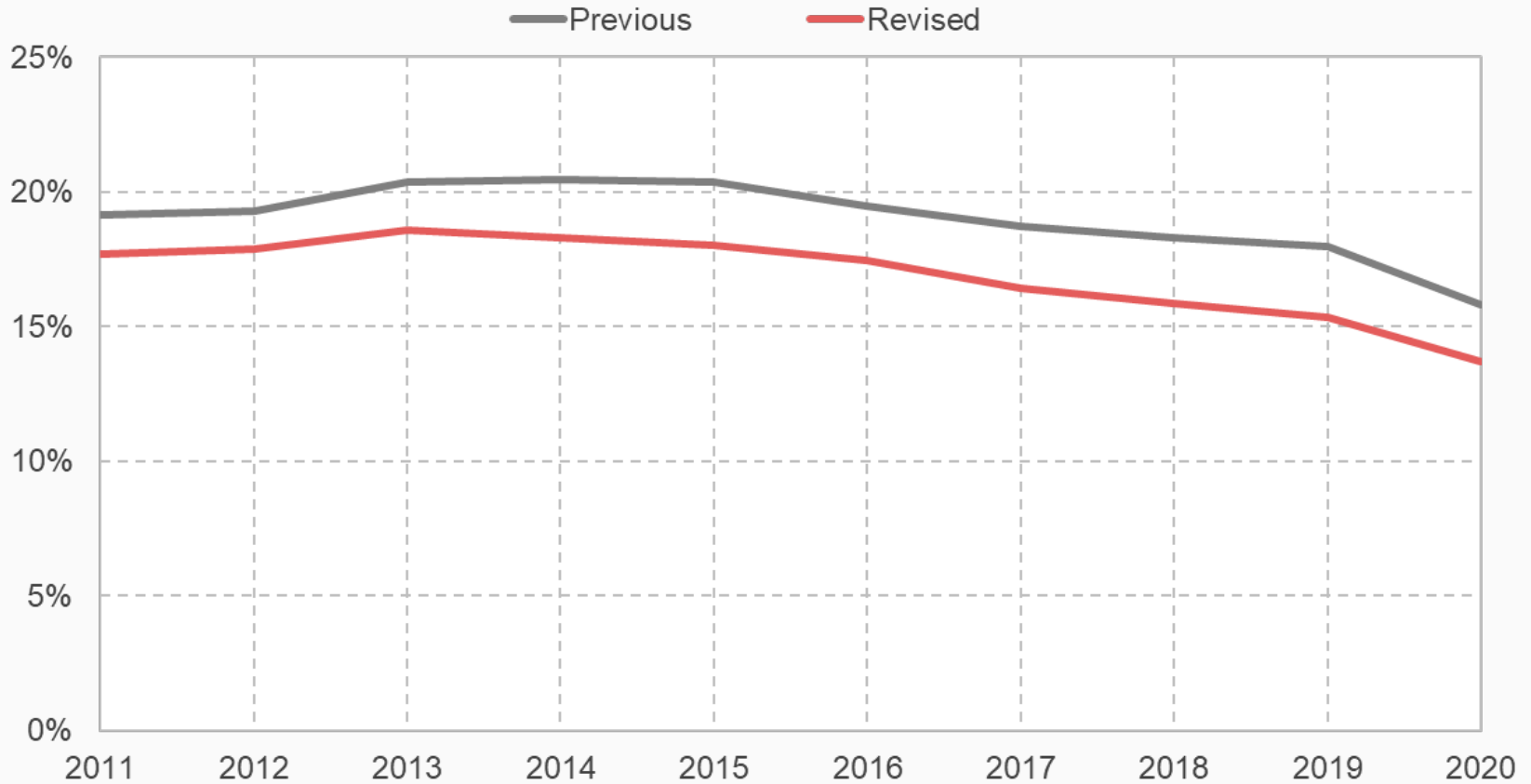


Source for population figures: Stats SA, Mid-year population estimates, 2021

The impact

An example of what has gone down

Gross fixed capital formation (spending on infrastructure and fixed assets) as a percentage of GDP (expenditure)



Digging deeper into production and consumption: The SUTs

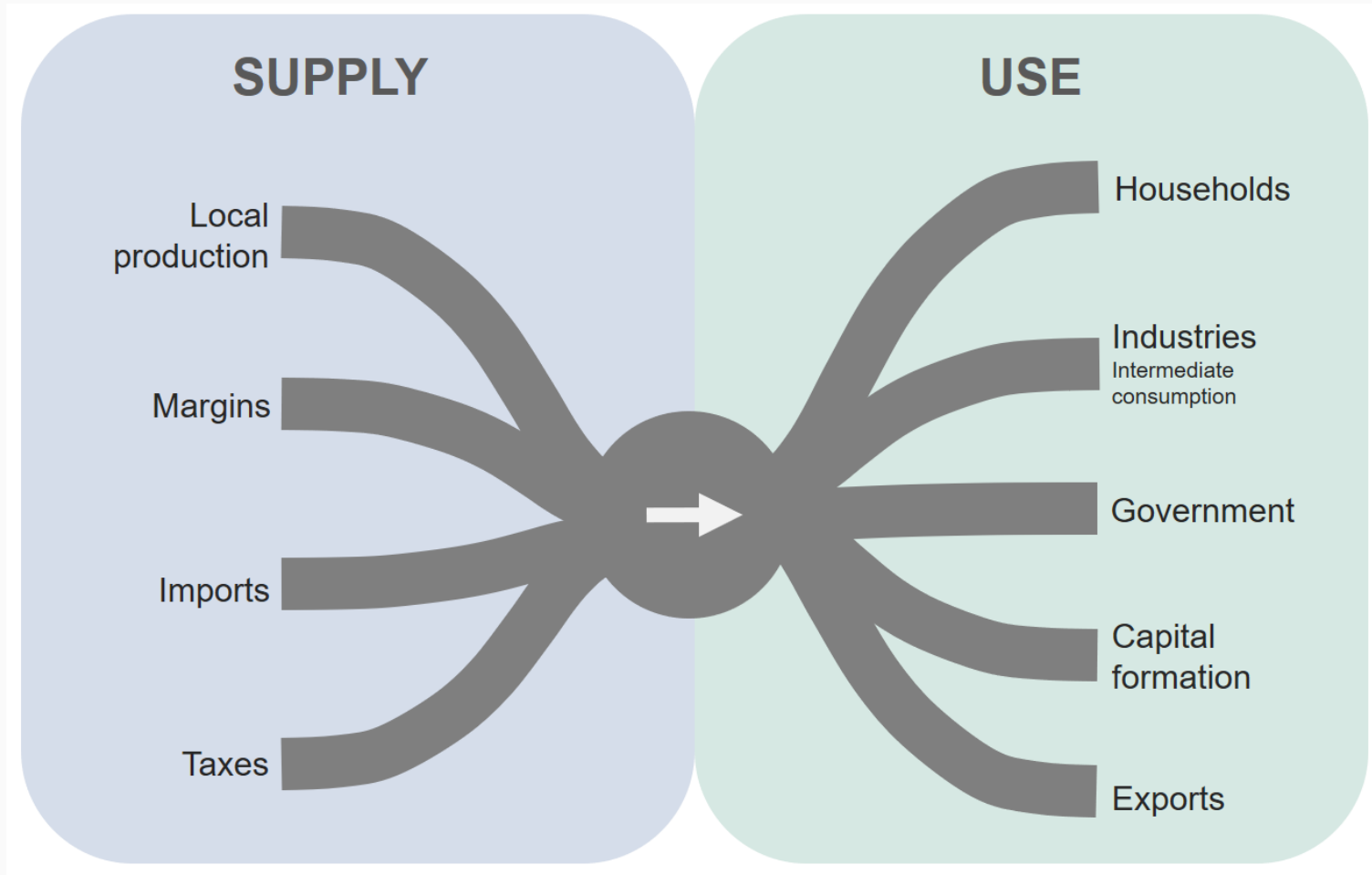
	Total supply at purchasers prices	Value added in production	Agriculture	Forestry	Mining	Coal	Manufacturing
2-3/5-9	10 217	10 217	10 211	0	0	0	0
1-9	148 992	148 992	7 632	0	0	0	0
1-2	170 769	170 769	36 950	0	2 780	0	0
1-2/9	260 489	260 489	0	0	0	4 082	0
0	27 554	27 554	0	0	0	0	0
0	47 531	47 531	0	0	0	0	0
1-2	271 423	271 423	0	0	0	0	0
0-4	62 282	62 282	0	0	0	0	17
1-3	141 435	141 435	0	0	0	0	2
-4	30 447	30 447	0	0	0	0	0
	23 539	23 539	0	0	0	0	0
	43 194	43 194	0	0	0	0	0
	56 207	56 207	0	0	0	0	0
	86 945	86 945	0	0	0	0	0
	71 472	71 472	0	0	0	0	0
	41 472	41 472	0	0	0	0	0
	48 094	48 094	0	0	0	0	0
	28 327	28 327	0	0	0	0	0
	26 174	26 174	0	0	0	0	0
	88 045	88 045	0	0	0	0	0
	170 971	170 971	0	0	0	0	0

What are the SUTs?

- The SUTs are a detailed breakdown of the **flow** of products and services within the economy
- The **supply (production)** table describes the supply of goods and services that are either produced by the local economy or imported
- The **use (consumption)** table describes where and how these goods and services are used, either within the local economy or exported
- The newly benchmarked SUTs cover 118 products and services across 213 industries for the years 2013 to 2018. Data for 108 products and services across 124 industries will be published

Supply and use tables (SUTs)

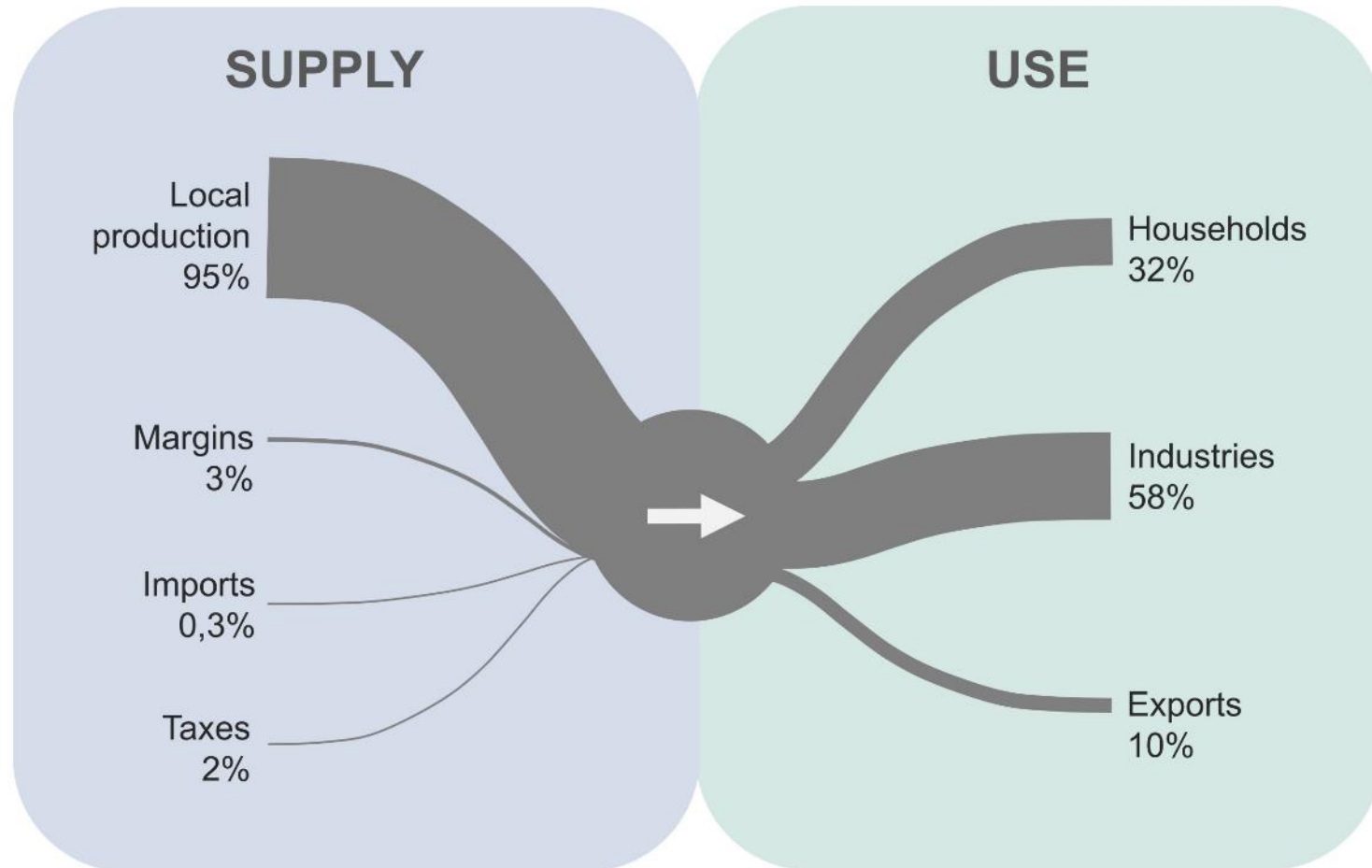
Supply and use data can be expressed in a form of a flow diagram



Supply and use tables (SUTs)

Fish products: These are mostly locally produced and consumed by industries

Supply and use of fish products in 2015. Supply: R8,4 billion. Use: R8,3 billion*

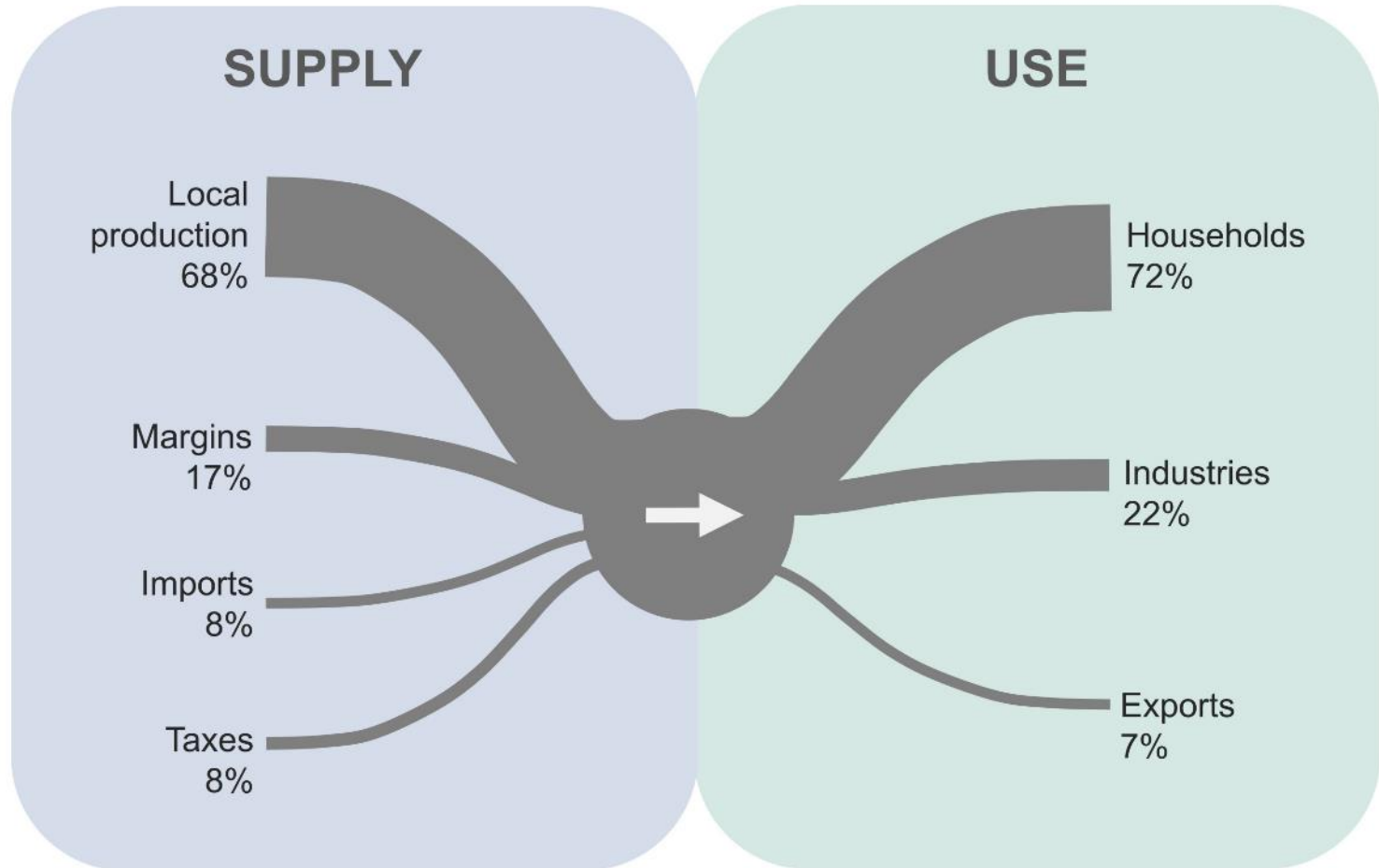


*Excludes changes in inventories Percentages have been rounded and may not sum to 100%

Supply and use tables (SUTs)

Meat products: These are mostly locally produced and consumed by households

Supply and use of meat products in 2015. Supply: R116,0 billion. Use: R116,0 billion*

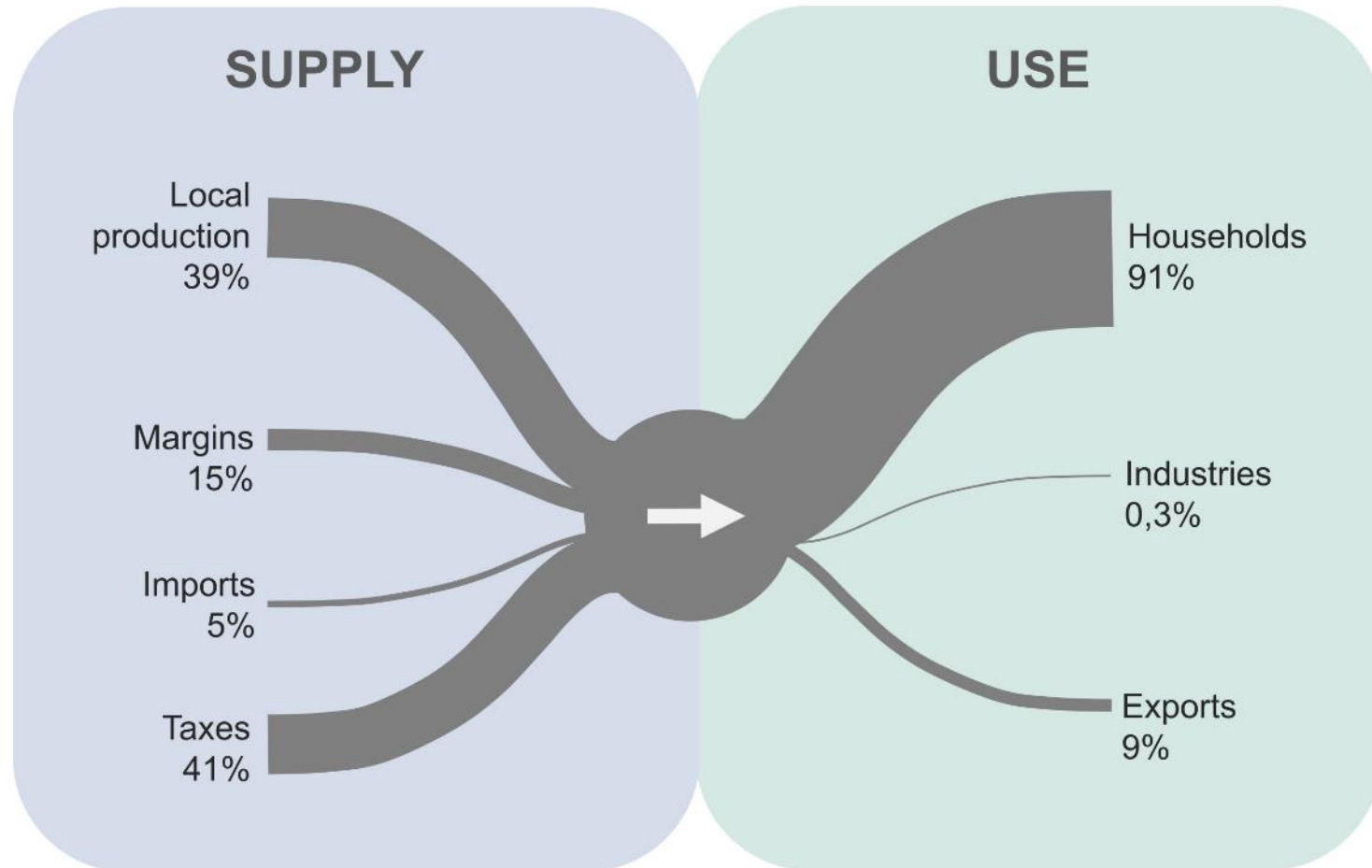


*Excludes changes in inventories Percentages have been rounded and may not sum to 100%

Supply and use tables (SUTs)

Tobacco: Taxes make a notable contribution and households dominate consumption

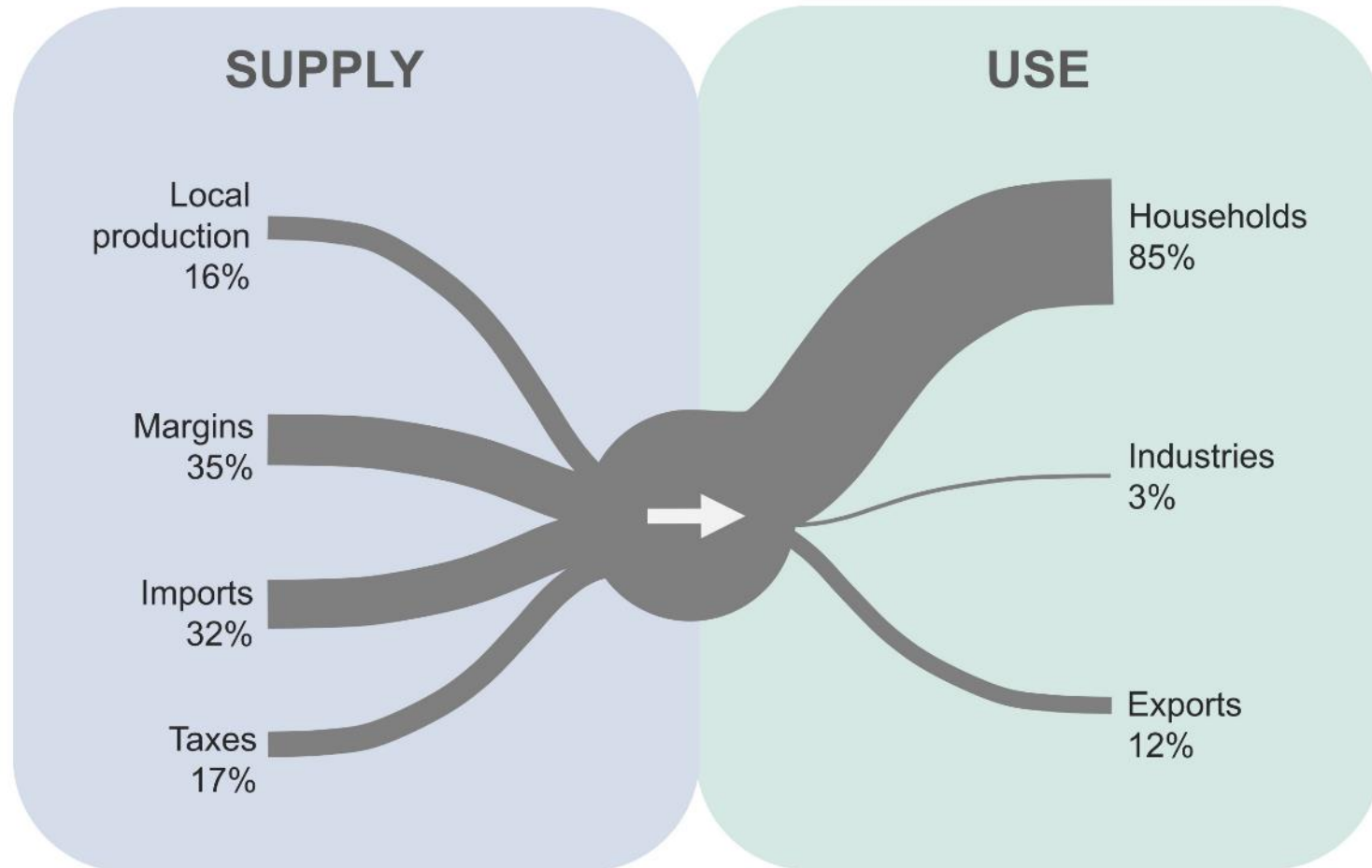
Supply and use of tobacco products in 2015. Supply: R54,0 billion. Use: R52,5 billion*



*Excludes changes in inventories Percentages have been rounded and may not sum to 100%

Footwear: Margins make a notable contribution

Supply and use of footwear products in 2015. Supply: R40,1 billion. Use: R40,2 billion*

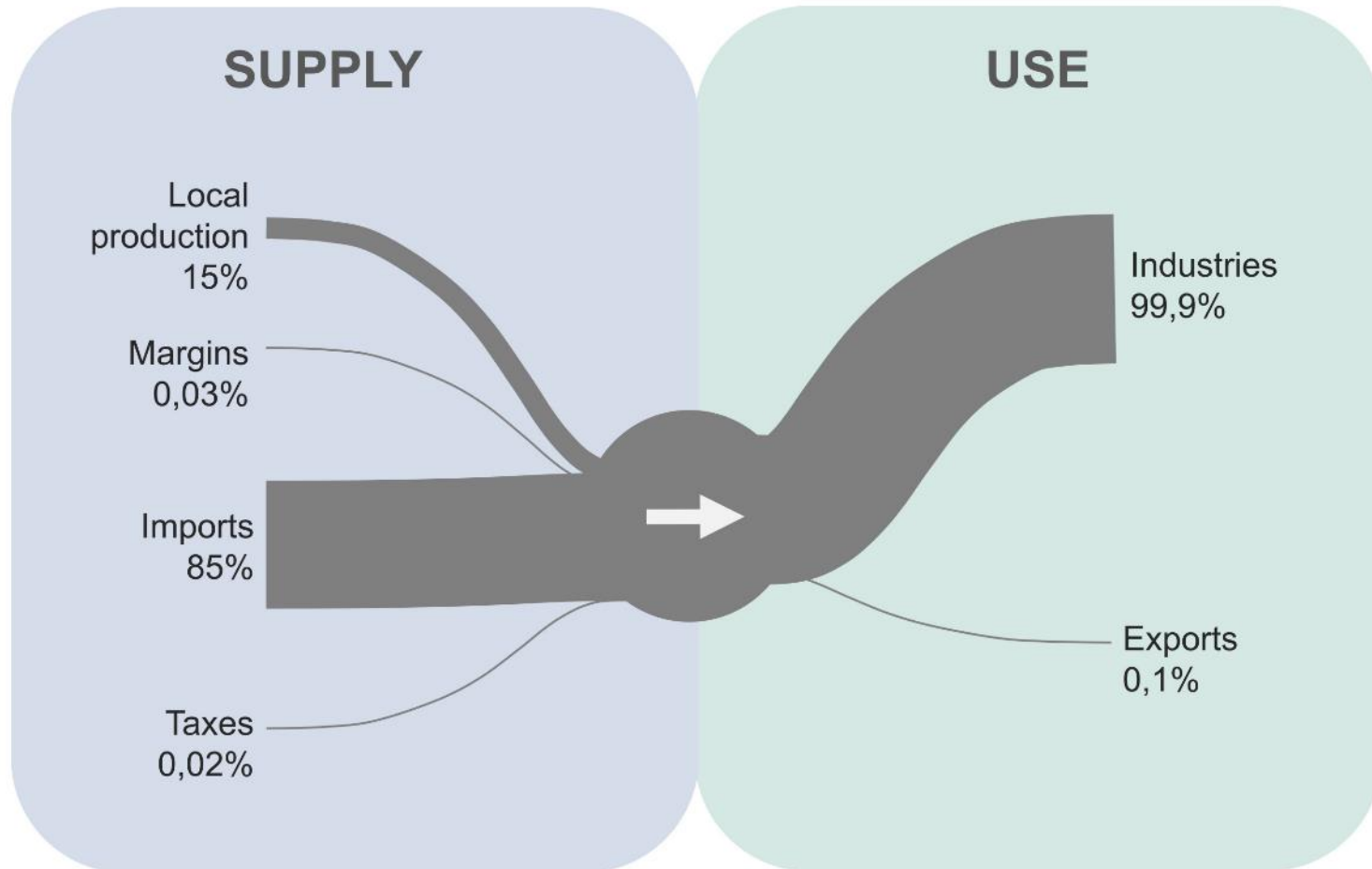


*Excludes changes in inventories Percentages have been rounded and may not sum to 100%

Supply and use tables (SUTs)

Crude petroleum & gas: South Africa relies mostly on imports and the bulk is consumed by industries

Supply and use of crude petroleum & gas products in 2015. Supply: R114,7 billion. Use: R114,9 billion*

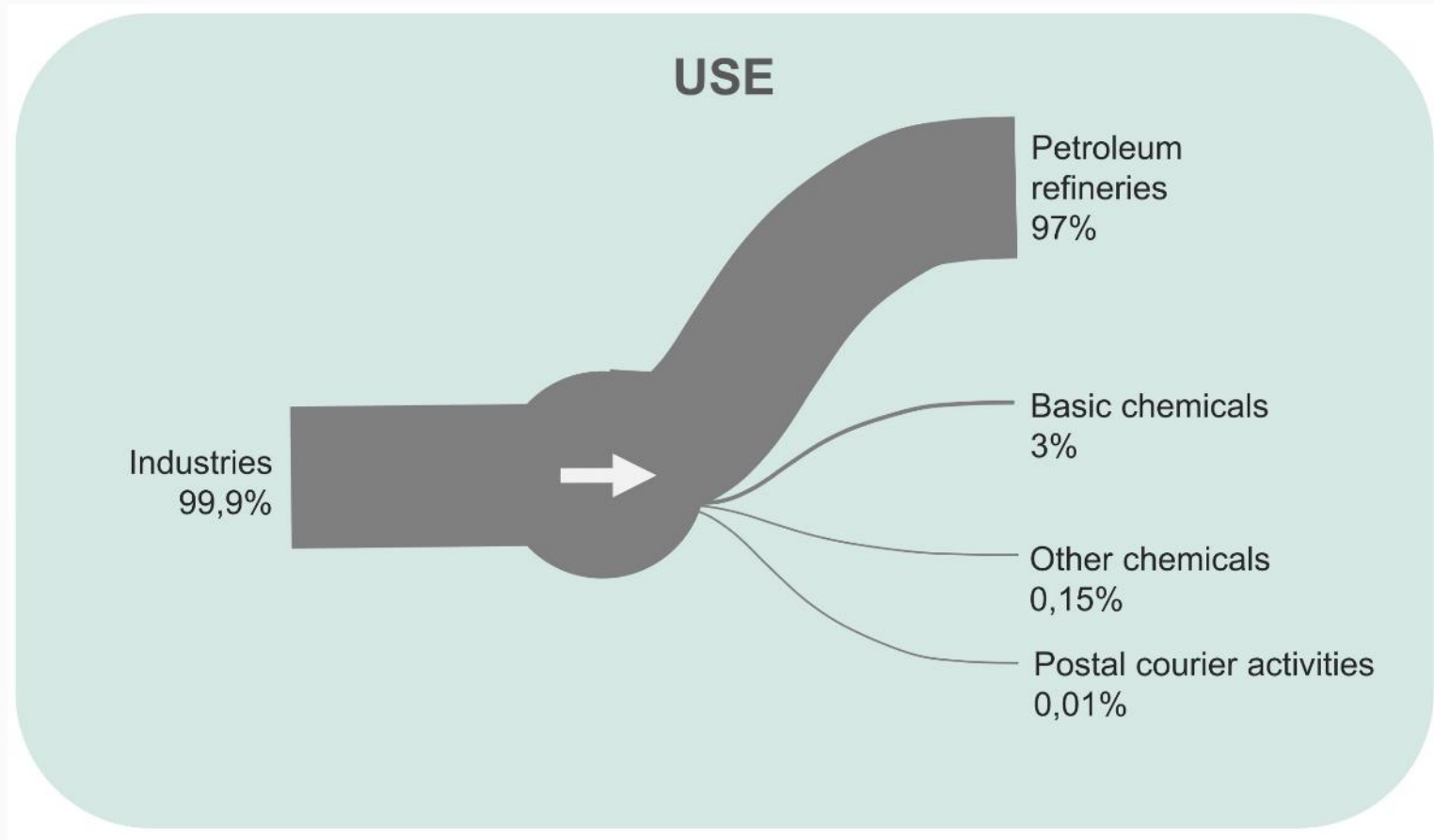


*Excludes changes in inventories Percentages have been rounded and may not sum to 100%

Supply and use tables (SUTs)

Crude petroleum & gas: Within local industries, refineries are the main consumer

Refineries convert the crude oil into petroleum. Supply and use of crude petroleum & gas products in 2015. Use: R114,9 billion*

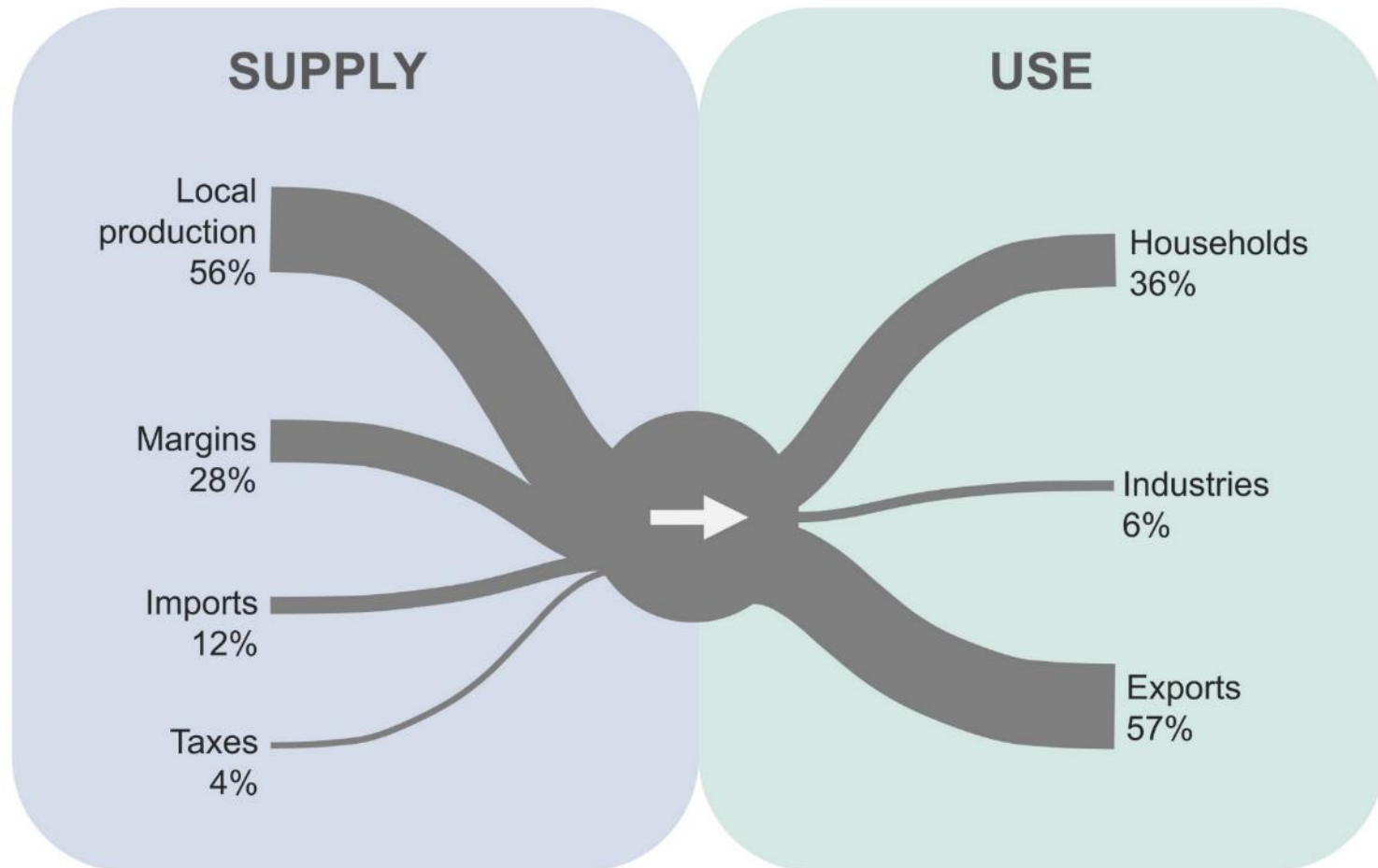


*Excludes changes in inventories Percentages have been rounded and may not sum to 100%

Supply and use tables (SUTs)

Jewellery products: These are mostly locally produced and exported

Supply and use of jewellery products in 2015. Supply: R26,4 billion. Use: R26,3 billion*








*Excludes changes in inventories Percentages have been rounded and may not sum to 100%






Supply and use tables (SUTs)

Top five products in each category, 2015

SUPPLY






Local production		
Public administration ¹	R597 bln	
Construction services	R448 bln	
Other business services	R439 bln	
Support services	R340 bln	
Education services	R330 bln	

¹ Includes government administration, social security, sewage and waste






Tax less subsidies		
Petroleum oils	R82 bln	
Alcohol beverages	R34 bln	
Motor vehicles, parts	R30 bln	
Construction services	R25 bln	
Tobacco products	R22 bln	

Imports		
Motor vehicles, parts	R165 bln	
Crude petroleum, gas	R98 bln	
Radio, television	R76 bln	
Petroleum oils	R65 bln	
Basic chemicals, fertilizers	R61 bln	

USE

Consumed by industries		
Other business services	R442 bln	
Petroleum oils	R321 bln	
Support services	R283 bln	
Rental, supporting transport	R182 bln	
Other Real estate services	R142 bln	

See next slide for a detailed outline

Consumed by households		
Owner Occupied ²	R230 bln	
Human health, social care	R148 bln	
Passenger transportation	R141 bln	
Insurance, pension services	R133 bln	
Motor vehicles, parts	R124 bln	

² Includes real estate activities involving own property

Exports		
Basic precious metals	R171 bln	
Motor vehicles, parts	R106 bln	
Metal ores	R99 bln	
Coal, lignite; peat	R50 bln	
Basic iron, steel	R46 bln	

Supply and use tables (SUTs)

Outlining the top 5 products consumed by industries in more detail

1. Other business services

Includes management, architectural, engineering, scientific, veterinary, and advertising activities

2. Petroleum oils

Includes crude petroleum, petroleum oils and natural gas

3. Support services

Includes support services, maintenance, repair, and installation services

4. Rental, supporting transport

Includes transport rental services, cargo handling, storage, and warehousing

5. Other real estate services

Includes services involving leased property, real estate services on a fee or contract basis

Compensation of employees (CoE) vs gross operating surplus (GOS)

- CoE refers to compensation of employees and includes the total remuneration payable to employees within an industry
- GOS refers to the gross surplus or deficit as a result of engaging in the production of services and goods
- We can analyse the relationship between CoE and GOS by calculating a ratio of the two variables: CoE/GOS
 - A ratio above 1 indicates that CoE is larger than GOS
 - A ratio below 1 indicates that CoE is smaller than GOS

Construction had the highest CoE/GOS ratio in 2015

For every R1,00 of gross operating surplus generated, the industry spent R2,34 on compensation of employees

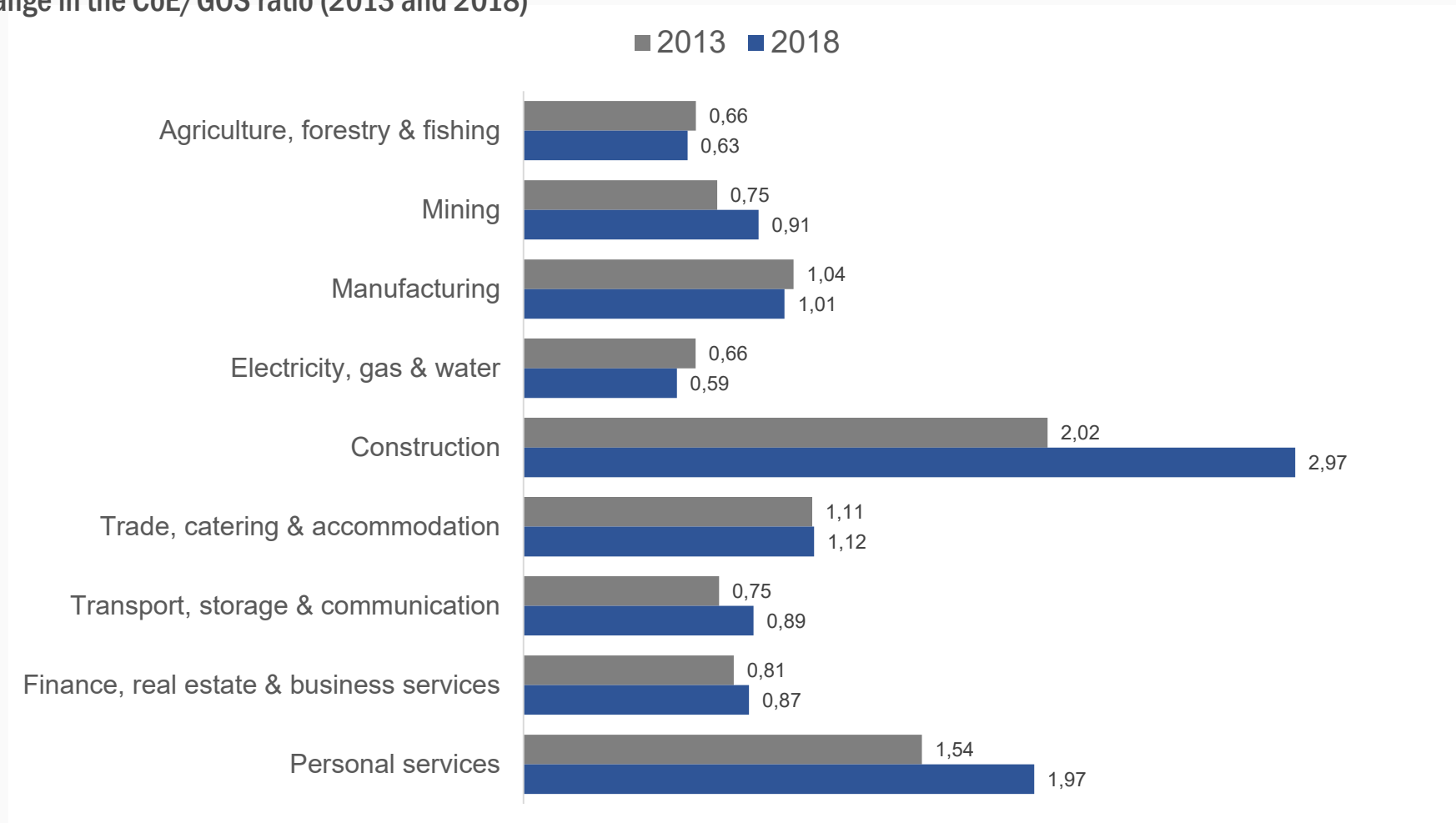
Industry	Ratio
Construction	2,34
Personal services	1,79
Trade, catering & accommodation	1,16
Mining & quarrying	1,03
Manufacturing	1,03
Finance, real estate & business services	0,89
Transport, storage & communication	0,82
Agriculture, forestry & fishing	0,65
Electricity, gas & water	0,62

Excludes activities related to general government, education and health

Supply and use tables (SUTs)

The ratio decreased for the electricity, agriculture and manufacturing industries

Change in the CoE/GOS ratio (2013 and 2018)



Excludes activities related to general government, education and health

I want to know more!

The rebasing and benchmarking exercise is covered in more detail in the following report:
National Accounts: Sources and Methods, Report No. 04-04-04 (2021)

Improving lives through data ecosystems

Thank you

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