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## **STATISTICAL RELEASE**

### **P0441**

# Gross domestic product

First quarter 2023

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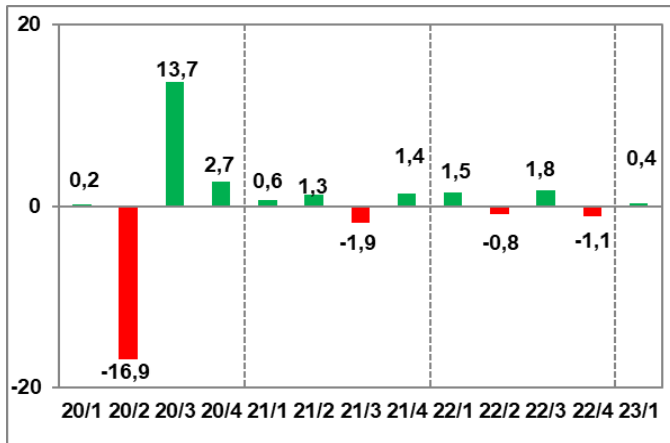
## Contents

<b>Key findings for the first quarter of 2023 .....</b>	<b>2</b>
<b>Gross domestic product at constant 2015 prices: First quarter of 2023 .....</b>	<b>3</b>
<b>Expenditure on gross domestic product at constant 2015 prices: First quarter of 2023 .....</b>	<b>5</b>
<b>Table 1 – Industry value added and GDP (constant 2015 prices, seasonally adjusted and annualised) .....</b>	<b>8</b>
<b>Table 2 – Growth rates in industry value added and GDP (constant 2015 prices and seasonally adjusted) .....</b>	<b>9</b>
<b>Table 3 – Contributions to growth in GDP (constant 2015 prices and seasonally adjusted) .....</b>	<b>9</b>
<b>Table 4 – Industry value added and GDP (constant 2015 prices) .....</b>	<b>10</b>
<b>Table 5 – Growth rates in industry value added and GDP (constant 2015 prices) .....</b>	<b>11</b>
<b>Table 6 – Expenditure on GDP (constant 2015 prices, seasonally adjusted and annualised) .....</b>	<b>12</b>
<b>Table 7 – Growth rates in expenditure on GDP (constant 2015 prices and seasonally adjusted) .....</b>	<b>14</b>
<b>Table 8 – Contributions to growth in expenditure on GDP (constant 2015 prices and seasonally adjusted) .....</b>	<b>15</b>
<b>Table 9 – Expenditure on GDP (constant 2015 prices) .....</b>	<b>16</b>
<b>Table 10 – Growth rates in expenditure on GDP (constant 2015 prices) .....</b>	<b>17</b>
<b>Analysis of revisions .....</b>	<b>18</b>
<b>Table 11 – GDP growth rates: preliminary and revised (quarter-on-quarter, seasonally adjusted) .....</b>	<b>19</b>
<b>Explanatory notes .....</b>	<b>22</b>
<b>Technical enquiries .....</b>	<b>22</b>
<b>General information .....</b>	<b>23</b>

**Key findings for the first quarter of 2023**

Real gross domestic product (measured by production) increased by 0,4%<sup>1</sup> in the first quarter of 2023, following a decrease of 1,1% in the fourth quarter of 2022.

**Figure 1 – Growth in GDP (%)**



Eight industries recorded positive growth between the fourth quarter of 2022 and the first quarter of 2023.

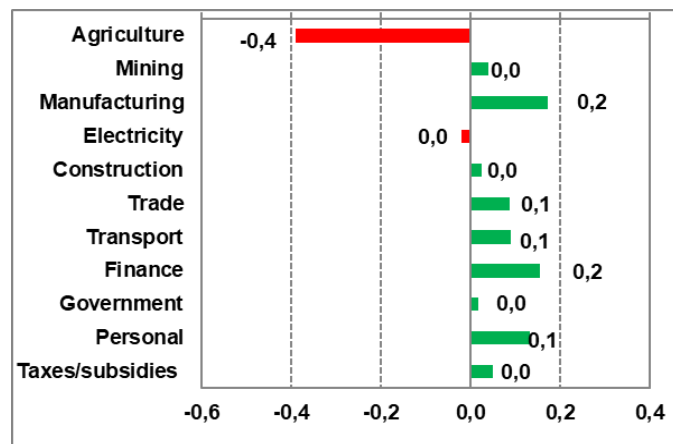
The manufacturing industry increased by 1,5% and contributed 0,2 of a percentage point to GDP growth.

The finance industry increased by 0,6% and contributed 0,2 of a percentage point to GDP growth.

The personal services industry increased by 0,8% and contributed 0,1 of a percentage point to GDP growth.

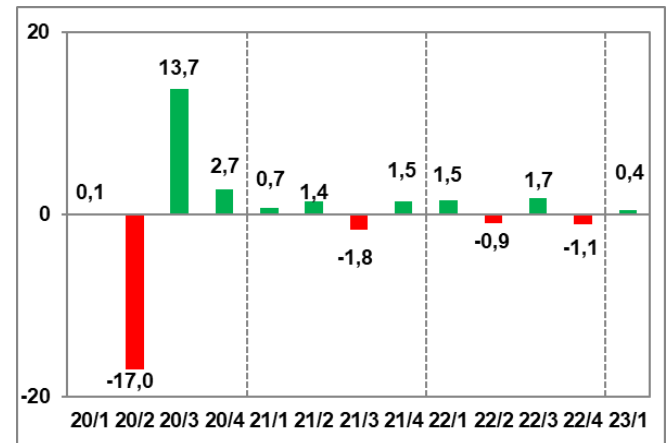
The transport industry increased by 1,1% and contributed 0,1 of a percentage point to GDP growth.

**Figure 2 – Contributions to growth in GDP, Q1 2023 (% points)**



Expenditure on real gross domestic product increased by 0,4% in the first quarter of 2023, following a decrease of 1,1% in the fourth quarter of 2022.

**Figure 3 – Growth in expenditure on GDP (%)**



Household final consumption expenditure increased by 0,4% in the first quarter of 2023, contributing 0,3 of a percentage point to total growth.

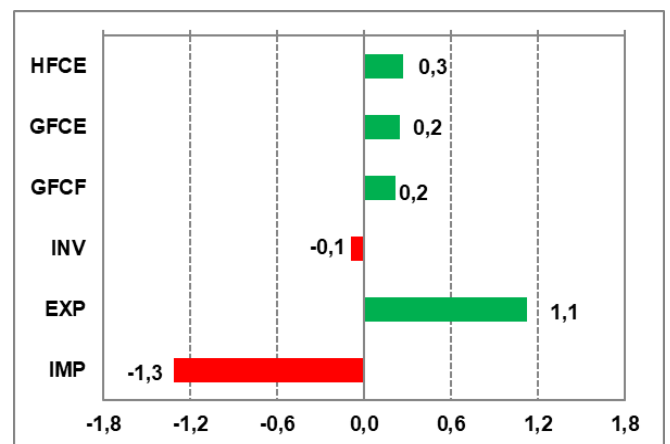
Government final consumption expenditure increased by 1,2%, contributing 0,2 of a percentage point.

Gross fixed capital formation increased by 1,4%.

Changes in inventories in the first quarter of 2023 contributed -0,1 of a percentage point to total growth.

Net exports contributed -0,2 of a percentage point to total growth, following increases of 4,1% and 4,4% in exports and imports respectively.

**Figure 4 – Contributions to growth in expenditure on GDP, Q1 2023 (% points)**



<sup>1</sup> Unless otherwise specified, growth rates are quarter-on-quarter, seasonally adjusted. All growth rates are calculated on the basis of series at constant prices.

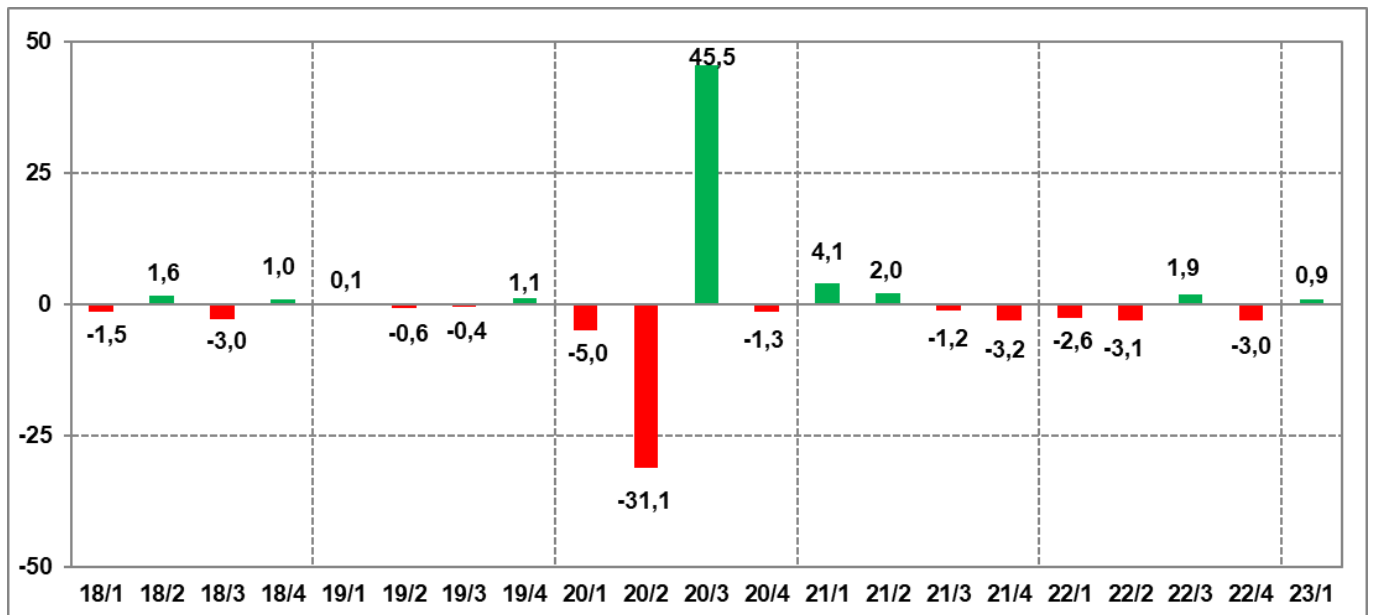
**Gross domestic product at constant 2015 prices: First quarter of 2023**

**Primary sector**

The agriculture, forestry and fishing industry decreased by 12,3% in the first quarter, contributing -0,4 of a percentage point to GDP growth. This was primarily due to decreased economic activities reported for field crops and animal products.

The mining and quarrying industry increased by 0,9% in the first quarter. Increased economic activities were reported for gold, platinum group metals (PGMs) and iron ore.

**Figure 5 – Mining and quarrying growth rate (%)**



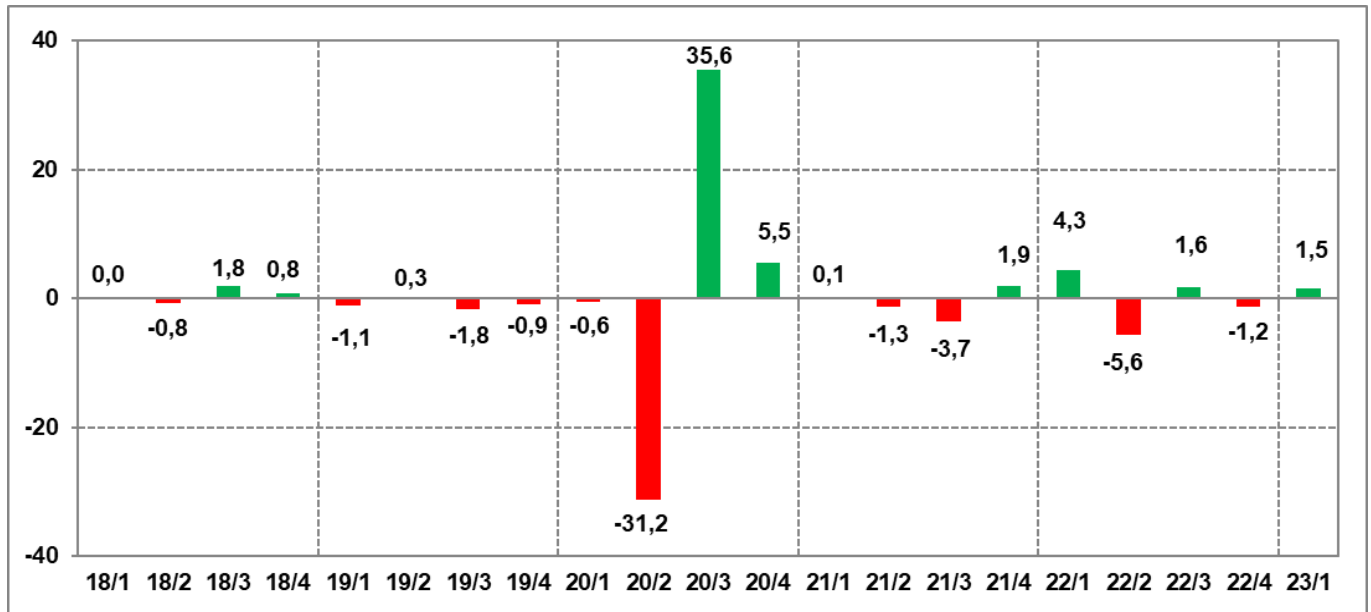
**Secondary sector**

The manufacturing industry increased by 1,5% in the first quarter, contributing 0,2 of a percentage point to GDP growth. Four of the ten manufacturing divisions reported positive growth rates in the first quarter. The food and beverages division made the largest contribution to the increase in the first quarter. The petroleum, chemical products, rubber and plastic products division also made a significant contribution to the growth in this industry.

The electricity, gas and water industry decreased by 1,0% in the first quarter, largely due to decreases in electricity and water consumption.

The construction industry increased by 1,1% in the first quarter. Increases were reported for residential, non-residential buildings and construction works.

**Figure 6 – Manufacturing growth rate (%)**

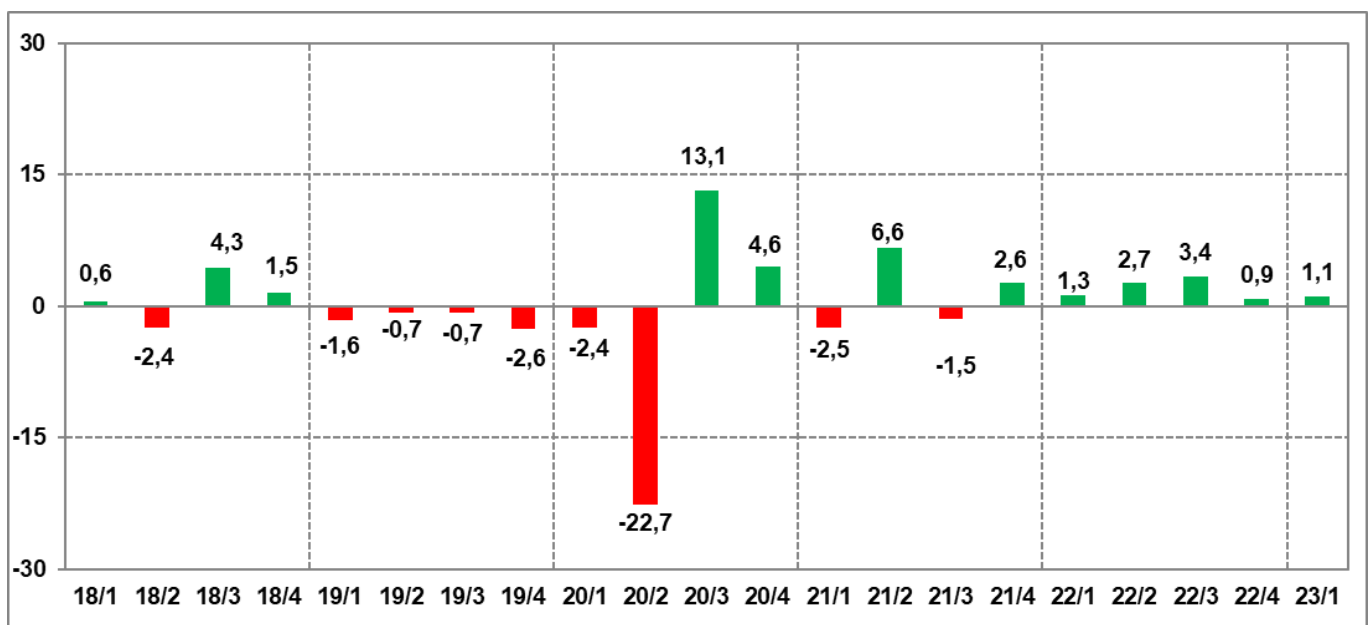


**Tertiary sector**

The trade, catering and accommodation industry increased by 0,7% in the first quarter, contributing 0,1 of a percentage point to GDP growth. Increased economic activities were reported for wholesale trade, retail trade and catering and accommodation.

The transport, storage and communication industry increased by 1,1%, contributing 0,1 of a percentage point to GDP growth. Increased economic activities were reported for land transport, air transport, transport support services and communication services.

**Figure 7 – Transport, storage and communication growth rate (%)**



The finance, real estate and business services industry increased by 0,6% in the first quarter, contributing 0,2 of a percentage point to GDP growth. Increased economic activities were reported for financial intermediation, insurance and pension funding, real estate and business services.

General government services increased by 0,2% in the first quarter, mainly due to increased employment in national, provincial and local government.

The personal services industry increased by 0,8% in the first quarter, contributing 0,1 of a percentage point to GDP growth. Increased economic activity was reported for community services.

**Expenditure on gross domestic product at constant 2015 prices: First quarter of 2023**

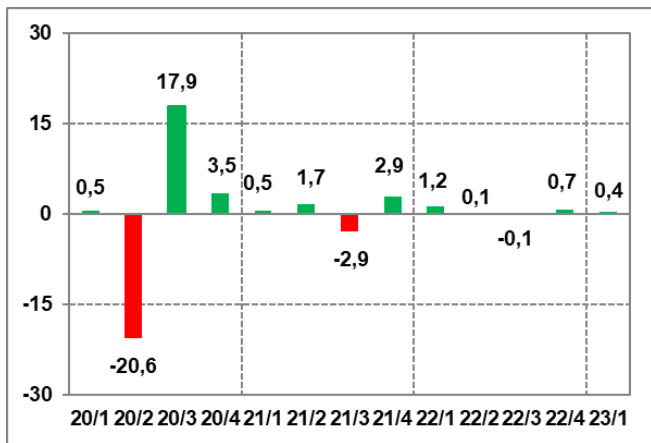
**Household final consumption expenditure (HFCE)**

Household final consumption expenditure increased by 0,4% in the first quarter, contributing 0,3 of a percentage point to total growth. Increases were reported for semi-durable and non-durable goods.

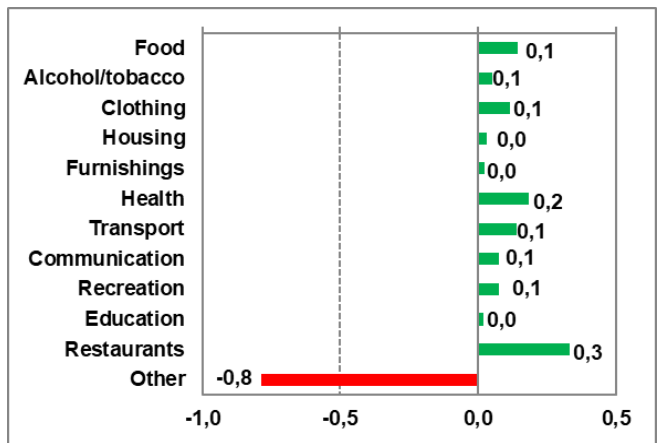
The main positive contributors to the increase in HFCE were expenditures on restaurants and hotels (6,9% and contributing 0,3 of a percentage point), health (2,6% and contributing 0,2 of a percentage point), food and non-alcoholic beverages (1,0% and contributing 0,1 of a percentage point), transport (0,9% and contributing 0,1 of a percentage point) and clothing and footwear (2,3% and contributing 0,1 of a percentage point).

Expenditure on the 'other' category<sup>2</sup> contributed negatively to growth in HFCE in the first quarter.

**Figure 8a – HFCE growth rate (%)**



**Figure 8b – HFCE contributions, Q1 2023 (% points)**



**Government final consumption expenditure (GFCE)**

Final consumption expenditure by general government increased by 1,2% in the first quarter, mainly driven by increases in goods and services and compensation of employees.

<sup>2</sup> Given the sources used to estimate HFCE, spending by non-residents in South Africa needs to be deducted from HFCE. Hence, an increase in non-residents' expenditure decreases the 'other' component of HFCE and makes a negative contribution to the HFCE growth rate.

### Gross fixed capital formation (GFCF)

Total gross fixed capital formation increased by 1,4% in the first quarter. The main positive contributors to the increase were other assets (10,3% and contributing 1,0 percentage point), machinery and other equipment (1,3% and contributing 0,5 of a percentage point), non-residential buildings (4,6% and contributing 0,2 of a percentage point) and residential buildings (1,5% and contributing 0,2 of a percentage point).

Figure 9a – GFCF growth rate (%)

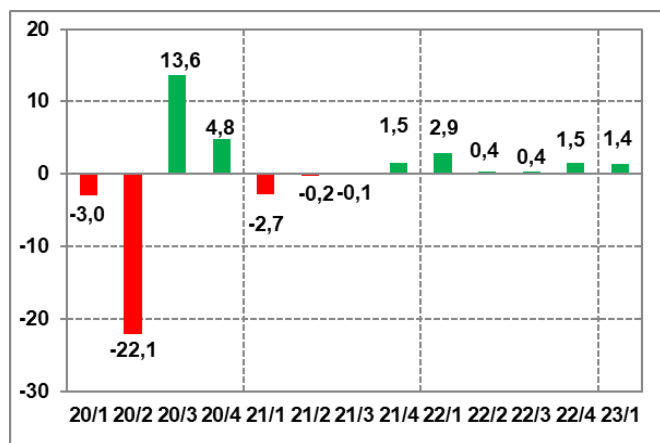
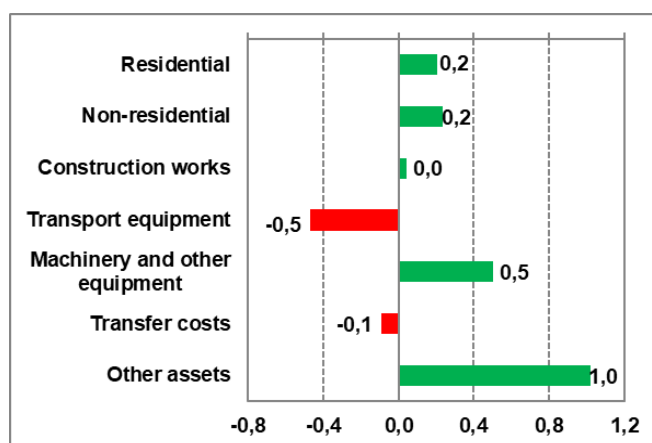


Figure 9b – GFCF contributions, Q1 2023 (% points)



### Changes in inventories

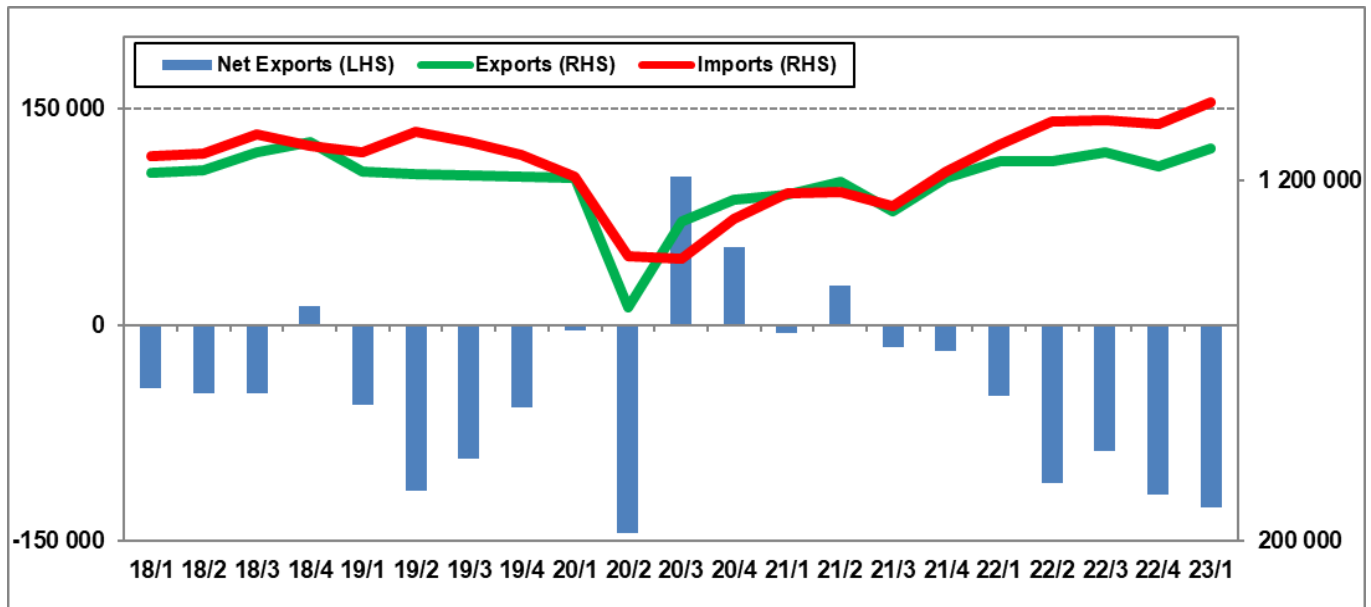
There was a R35 billion build-up of inventories in the first quarter of 2023 (seasonally adjusted and annualised value). Large increases in three industries, namely mining and quarrying, trade, catering and accommodation and personal services, contributed to the inventory build-up.

**Exports and imports of goods and services**

Net exports contributed negatively to growth in expenditure on GDP in the first quarter. Exports of goods and services increased by 4,1%, largely influenced by increased trade in base metals and articles of base metals; vegetable products; prepared foodstuffs, beverages and tobacco; and machinery and electrical equipment.

Imports of goods and services increased by 4,4%, largely influenced by increased trade in machinery and equipment; chemical products; vehicles and transport equipment; and prepared foodstuffs, beverages and tobacco.

**Figure 10 – Exports and imports of goods and services (R million, seasonally adjusted and annualised)**



**Important note:** The revised 2018, 2019 and preliminary 2020 supply and use tables (SUTs) are available in a Microsoft Excel workbook, downloadable from Stats SA’s website ([www.statssa.gov.za](http://www.statssa.gov.za)).

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



**Table 1 – Industry value added and GDP (constant 2015 prices, seasonally adjusted and annualised)**

	Agriculture, forestry and fishing	Mining	Manufacturing	Electricity, gas and water	Construction	Trade, catering and accommodation	Transport, storage and communication	Finance, real estate and business services	General government services	Personal services	Total value added at basic prices	Taxes less subsidies	GDP at market prices
<b>R million</b>													
<b>2016</b>	93 672	220 141	555 880	109 947	155 996	564 281	365 766	938 154	351 165	659 643	4 014 646	435 525	<b>4 450 171</b>
<b>2017</b>	111 545	225 420	554 833	110 275	147 076	556 707	369 580	961 364	356 086	668 356	4 061 243	440 458	<b>4 501 702</b>
<b>2018</b>	112 095	223 613	563 250	111 280	144 861	562 325	380 339	994 663	362 957	672 452	4 127 833	443 950	<b>4 571 783</b>
<b>2019</b>	104 785	222 100	559 322	107 571	139 986	559 935	378 211	1 016 210	367 515	681 249	4 136 884	446 783	<b>4 583 667</b>
<b>2020</b>	123 482	194 863	493 681	101 365	115 076	492 829	320 394	1 025 152	371 405	669 642	3 907 890	402 436	<b>4 310 327</b>
<b>2021</b>	132 672	218 196	526 711	103 295	112 718	523 439	336 408	1 050 933	371 538	705 466	4 081 378	431 666	<b>4 513 044</b>
<b>2022</b>	133 843	202 605	524 771	100 745	108 906	541 821	364 246	1 087 014	371 730	724 014	4 159 695	439 566	<b>4 599 261</b>
<b>R million (seasonally adjusted and annualised)</b>													
<b>2020 Q1</b>	122 707	211 860	547 839	104 984	134 549	547 795	359 709	1 072 928	371 041	686 851	4 160 263	440 559	<b>4 600 822</b>
<b>2020 Q2</b>	119 298	145 919	376 982	92 219	98 136	402 707	278 166	959 826	370 452	640 870	3 484 575	339 171	<b>3 823 746</b>
<b>2020 Q3</b>	121 063	212 264	510 992	103 884	112 680	507 228	314 662	1 019 222	371 709	670 618	3 944 321	404 427	<b>4 348 748</b>
<b>2020 Q4</b>	130 862	209 410	538 911	104 374	114 939	513 586	329 041	1 048 632	372 416	680 231	4 042 402	425 589	<b>4 467 991</b>
<b>2021 Q1</b>	137 442	217 925	539 278	103 510	115 264	517 485	320 884	1 055 338	372 609	686 975	4 066 710	429 931	<b>4 496 641</b>
<b>2021 Q2</b>	151 353	222 355	532 379	104 097	113 753	534 814	342 122	1 045 669	370 741	704 418	4 121 701	433 300	<b>4 555 001</b>
<b>2021 Q3</b>	112 377	219 782	512 789	104 407	112 451	510 430	336 929	1 054 064	371 864	705 972	4 041 067	428 516	<b>4 469 583</b>
<b>2021 Q4</b>	129 517	212 720	522 397	101 167	109 404	531 029	345 698	1 048 663	370 939	724 499	4 096 033	434 917	<b>4 530 950</b>
<b>2022 Q1</b>	128 333	207 111	545 039	103 654	108 779	546 402	350 170	1 068 628	375 670	725 884	4 159 671	440 696	<b>4 600 368</b>
<b>2022 Q2</b>	113 169	200 595	514 588	102 239	105 924	540 139	359 638	1 090 940	370 217	728 395	4 125 844	436 030	<b>4 561 874</b>
<b>2022 Q3</b>	148 696	204 439	522 970	99 533	110 236	546 409	372 004	1 102 791	371 757	721 417	4 200 252	442 547	<b>4 642 800</b>
<b>2022 Q4</b>	145 175	198 273	516 486	97 555	110 686	534 333	375 173	1 085 696	369 275	720 359	4 153 012	438 992	<b>4 592 004</b>
<b>2023 Q1</b>	127 319	200 110	524 415	96 570	111 870	538 326	379 300	1 092 751	370 103	726 421	4 167 184	441 286	<b>4 608 471</b>

**Table 2 – Growth rates in industry value added and GDP (constant 2015 prices and seasonally adjusted)**

	Agriculture, forestry and fishing	Mining	Manufacturing	Electricity, gas and water	Construction	Trade, catering and accommodation	Transport, storage and communication	Finance, real estate and business services	General government services	Personal services	Total value added at basic prices	Taxes less subsidies	GDP at market prices
	% change year-on-year												
<b>2016</b>	-5,2	-3,4	0,4	-3,6	1,4	1,6	1,5	1,8	1,9	1,2	0,8	-0,8	<b>0,7</b>
<b>2017</b>	19,1	2,4	-0,2	0,3	-5,7	-1,3	1,0	2,5	1,4	1,3	1,2	1,1	<b>1,2</b>
<b>2018</b>	0,5	-0,8	1,5	0,9	-1,5	1,0	2,9	3,5	1,9	0,6	1,6	0,8	<b>1,6</b>
<b>2019</b>	-6,5	-0,7	-0,7	-3,3	-3,4	-0,4	-0,6	2,2	1,3	1,3	0,2	0,6	<b>0,3</b>
<b>2020</b>	17,8	-12,3	-11,7	-5,8	-17,8	-12,0	-15,3	0,9	1,1	-1,7	-5,5	-9,9	<b>-6,0</b>
<b>2021</b>	7,4	12,0	6,7	1,9	-2,0	6,2	5,0	2,5	0,0	5,3	4,4	7,3	<b>4,7</b>
<b>2022</b>	0,9	-7,1	-0,4	-2,5	-3,4	3,5	8,3	3,4	0,1	2,6	1,9	1,8	<b>1,9</b>
	% change quarter-on-quarter (seasonally adjusted)												
<b>2020 Q1</b>	11,4	-5,0	-0,6	-0,5	-2,2	-1,2	-2,4	2,9	0,5	0,6	0,4	-1,0	<b>0,2</b>
<b>2020 Q2</b>	-2,8	-31,1	-31,2	-12,2	-27,1	-26,5	-22,7	-10,5	-0,2	-6,7	-16,2	-23,0	<b>-16,9</b>
<b>2020 Q3</b>	1,5	45,5	35,5	12,6	14,8	26,0	13,1	6,2	0,3	4,6	13,2	19,2	<b>13,7</b>
<b>2020 Q4</b>	8,1	-1,3	5,5	0,5	2,0	1,3	4,6	2,9	0,2	1,4	2,5	5,2	<b>2,7</b>
<b>2021 Q1</b>	5,0	4,1	0,1	-0,8	0,3	0,8	-2,5	0,6	0,1	1,0	0,6	1,0	<b>0,6</b>
<b>2021 Q2</b>	10,1	2,0	-1,3	0,6	-1,3	3,3	6,6	-0,9	-0,5	2,5	1,4	0,8	<b>1,3</b>
<b>2021 Q3</b>	-25,8	-1,2	-3,7	0,3	-1,1	-4,6	-1,5	0,8	0,3	0,2	-2,0	-1,1	<b>-1,9</b>
<b>2021 Q4</b>	15,3	-3,2	1,9	-3,1	-2,7	4,0	2,6	-0,5	-0,2	2,6	1,4	1,5	<b>1,4</b>
<b>2022 Q1</b>	-0,9	-2,6	4,3	2,5	-0,6	2,9	1,3	1,9	1,3	0,2	1,6	1,3	<b>1,5</b>
<b>2022 Q2</b>	-11,8	-3,1	-5,6	-1,4	-2,6	-1,1	2,7	2,1	-1,5	0,3	-0,8	-1,1	<b>-0,8</b>
<b>2022 Q3</b>	31,4	1,9	1,6	-2,6	4,1	1,2	3,4	1,1	0,4	-1,0	1,8	1,5	<b>1,8</b>
<b>2022 Q4</b>	-2,4	-3,0	-1,2	-2,0	0,4	-2,2	0,9	-1,6	-0,7	-0,1	-1,1	-0,8	<b>-1,1</b>
<b>2023 Q1</b>	-12,3	0,9	1,5	-1,0	1,1	0,7	1,1	0,6	0,2	0,8	0,3	0,5	<b>0,4</b>

**Table 3 – Contributions to growth in GDP (constant 2015 prices and seasonally adjusted)**

	Agriculture, forestry and fishing	Mining	Manufacturing	Electricity, gas and water	Construction	Trade, catering and accommodation	Transport, storage and communication	Finance, real estate and business services	General government services	Personal services	Total value added at basic prices	Taxes less subsidies	GDP at market prices
	<b>Percentage points</b>												
<b>2016</b>	-0,1	-0,2	0,1	-0,1	0,0	0,2	0,1	0,4	0,1	0,2	0,7	-0,1	<b>0,7</b>
<b>2017</b>	0,4	0,1	0,0	0,0	-0,2	-0,2	0,1	0,5	0,1	0,2	1,0	0,1	<b>1,2</b>
<b>2018</b>	0,0	0,0	0,2	0,0	0,0	0,1	0,2	0,7	0,2	0,1	1,5	0,1	<b>1,6</b>
<b>2019</b>	-0,2	0,0	-0,1	-0,1	-0,1	-0,1	0,0	0,5	0,1	0,2	0,2	0,1	<b>0,3</b>
<b>2020</b>	0,4	-0,6	-1,4	-0,1	-0,5	-1,5	-1,3	0,2	0,1	-0,3	-5,0	-1,0	<b>-6,0</b>
<b>2021</b>	0,2	0,5	0,8	0,0	-0,1	0,7	0,4	0,6	0,0	0,8	4,0	0,7	<b>4,7</b>
<b>2022</b>	0,0	-0,3	0,0	-0,1	-0,1	0,4	0,6	0,8	0,0	0,4	1,7	0,2	<b>1,9</b>
	<b>Percentage points</b>												
<b>2020 Q1</b>	0,3	-0,2	-0,1	0,0	-0,1	-0,1	-0,2	0,7	0,0	0,1	0,3	-0,1	<b>0,2</b>
<b>2020 Q2</b>	-0,1	-1,4	-3,7	-0,3	-0,8	-3,2	-1,8	-2,5	0,0	-1,0	-14,7	-2,2	<b>-16,9</b>
<b>2020 Q3</b>	0,0	1,7	3,5	0,3	0,4	2,7	1,0	1,6	0,0	0,8	12,0	1,7	<b>13,7</b>
<b>2020 Q4</b>	0,2	-0,1	0,6	0,0	0,1	0,1	0,3	0,7	0,0	0,2	2,3	0,5	<b>2,7</b>
<b>2021 Q1</b>	0,1	0,2	0,0	0,0	0,0	0,1	-0,2	0,2	0,0	0,2	0,5	0,1	<b>0,6</b>
<b>2021 Q2</b>	0,3	0,1	-0,2	0,0	0,0	0,4	0,5	-0,2	0,0	0,4	1,2	0,1	<b>1,3</b>
<b>2021 Q3</b>	-0,9	-0,1	-0,4	0,0	0,0	-0,5	-0,1	0,2	0,0	0,0	-1,8	-0,1	<b>-1,9</b>
<b>2021 Q4</b>	0,4	-0,2	0,2	-0,1	-0,1	0,5	0,2	-0,1	0,0	0,4	1,2	0,1	<b>1,4</b>
<b>2022 Q1</b>	0,0	-0,1	0,5	0,1	0,0	0,3	0,1	0,4	0,1	0,0	1,4	0,1	<b>1,5</b>
<b>2022 Q2</b>	-0,3	-0,1	-0,7	0,0	-0,1	-0,1	0,2	0,5	-0,1	0,1	-0,7	-0,1	<b>-0,8</b>
<b>2022 Q3</b>	0,8	0,1	0,2	-0,1	0,1	0,1	0,3	0,3	0,0	-0,2	1,6	0,1	<b>1,8</b>
<b>2022 Q4</b>	-0,1	-0,1	-0,1	0,0	0,0	-0,3	0,1	-0,4	-0,1	0,0	-1,0	-0,1	<b>-1,1</b>
<b>2023 Q1</b>	-0,4	0,0	0,2	0,0	0,0	0,1	0,1	0,2	0,0	0,1	0,3	0,0	<b>0,4</b>

**Table 4 – Industry value added and GDP (constant 2015 prices)**

	Agriculture, forestry and fishing	Mining	Manufacturing	Electricity, gas and water	Construction	Trade, catering and accommodation	Transport, storage and communication	Finance, real estate and business services	General government services	Personal services	Total value added at basic prices	Taxes less subsidies	GDP at market prices
	<b>R million</b>												
<b>2016</b>	93 672	220 141	555 880	109 947	155 996	564 281	365 766	938 154	351 165	659 643	4 014 646	435 525	<b>4 450 171</b>
<b>2017</b>	111 545	225 420	554 833	110 275	147 076	556 707	369 580	961 364	356 086	668 356	4 061 243	440 458	<b>4 501 702</b>
<b>2018</b>	112 095	223 613	563 250	111 280	144 861	562 325	380 339	994 663	362 957	672 452	4 127 833	443 950	<b>4 571 783</b>
<b>2019</b>	104 785	222 100	559 322	107 571	139 986	559 935	378 211	1 016 210	367 515	681 249	4 136 884	446 783	<b>4 583 667</b>
<b>2020</b>	123 482	194 863	493 681	101 365	115 076	492 829	320 394	1 025 152	371 405	669 642	3 907 890	402 436	<b>4 310 327</b>
<b>2021</b>	132 672	218 196	526 711	103 295	112 718	523 439	336 408	1 050 933	371 538	705 466	4 081 378	431 666	<b>4 513 044</b>
<b>2022</b>	133 843	202 605	524 771	100 745	108 906	541 821	364 246	1 087 014	371 730	724 014	4 159 695	439 566	<b>4 599 261</b>
	<b>R million</b>												
<b>2020 Q1</b>	30 713	47 947	128 045	24 733	34 149	129 166	87 955	268 232	92 655	171 910	1 015 506	106 857	<b>1 122 363</b>
<b>2020 Q2</b>	39 426	37 963	91 663	23 197	23 962	95 122	68 781	239 957	92 639	162 501	875 211	84 849	<b>960 060</b>
<b>2020 Q3</b>	33 528	54 782	132 594	26 543	27 898	122 876	78 933	254 805	92 841	168 675	993 475	102 119	<b>1 095 594</b>
<b>2020 Q4</b>	19 816	54 172	141 379	26 892	29 067	145 664	84 725	262 158	93 270	166 556	1 023 699	108 612	<b>1 132 310</b>
<b>2021 Q1</b>	32 263	49 236	127 031	24 381	29 683	122 171	78 597	263 834	93 017	172 520	992 733	102 909	<b>1 095 642</b>
<b>2021 Q2</b>	49 603	57 211	130 728	26 209	27 490	127 370	84 617	261 417	92 855	177 927	1 035 428	108 714	<b>1 144 142</b>
<b>2021 Q3</b>	30 981	56 604	132 069	26 697	27 667	123 682	84 284	263 516	93 055	178 744	1 017 297	107 809	<b>1 125 106</b>
<b>2021 Q4</b>	19 825	55 145	136 883	26 008	27 878	150 217	88 911	262 166	92 611	176 275	1 035 919	112 234	<b>1 148 153</b>
<b>2022 Q1</b>	31 795	47 113	128 050	24 361	27 628	129 298	85 546	267 157	94 071	182 488	1 017 506	105 829	<b>1 123 335</b>
<b>2022 Q2</b>	39 715	51 496	126 057	25 797	25 923	129 125	89 617	272 735	92 522	184 493	1 037 481	109 253	<b>1 146 733</b>
<b>2022 Q3</b>	40 754	52 855	135 897	25 553	27 194	133 475	93 466	275 698	92 859	182 198	1 059 948	111 726	<b>1 171 675</b>
<b>2022 Q4</b>	21 579	51 141	134 767	25 034	28 161	149 923	95 618	271 424	92 279	174 834	1 044 760	112 758	<b>1 157 518</b>
<b>2023 Q1</b>	30 064	45 267	123 420	22 827	28 783	127 310	92 187	273 188	93 019	183 092	1 019 156	106 175	<b>1 125 331</b>

**Table 5 – Growth rates in industry value added and GDP (constant 2015 prices)**

	Agriculture, forestry and fishing	Mining	Manufacturing	Electricity, gas and water	Construction	Trade, catering and accommodation	Transport, storage and communication	Finance, real estate and business services	General government services	Personal services	Total value added at basic prices	Taxes less subsidies	GDP at market prices
	<b>% change year-on-year</b>												
<b>2016</b>	-5,2	-3,4	0,4	-3,6	1,4	1,6	1,5	1,8	1,9	1,2	0,8	-0,8	<b>0,7</b>
<b>2017</b>	19,1	2,4	-0,2	0,3	-5,7	-1,3	1,0	2,5	1,4	1,3	1,2	1,1	<b>1,2</b>
<b>2018</b>	0,5	-0,8	1,5	0,9	-1,5	1,0	2,9	3,5	1,9	0,6	1,6	0,8	<b>1,6</b>
<b>2019</b>	-6,5	-0,7	-0,7	-3,3	-3,4	-0,4	-0,6	2,2	1,3	1,3	0,2	0,6	<b>0,3</b>
<b>2020</b>	17,8	-12,3	-11,7	-5,8	-17,8	-12,0	-15,3	0,9	1,1	-1,7	-5,5	-9,9	<b>-6,0</b>
<b>2021</b>	7,4	12,0	6,7	1,9	-2,0	6,2	5,0	2,5	0,0	5,3	4,4	7,3	<b>4,7</b>
<b>2022</b>	0,9	-7,1	-0,4	-2,5	-3,4	3,5	8,3	3,4	0,1	2,6	1,9	1,8	<b>1,9</b>
	<b>% change year-on-year</b>												
<b>2020 Q1</b>	32,7	-4,9	-3,3	-4,0	-2,8	-2,2	-6,2	7,7	1,8	1,0	1,3	-0,9	<b>1,1</b>
<b>2020 Q2</b>	14,5	-33,3	-33,7	-14,9	-31,3	-28,4	-27,0	-4,8	0,9	-5,5	-15,4	-24,0	<b>-16,2</b>
<b>2020 Q3</b>	10,6	-4,1	-7,8	-2,7	-20,1	-10,2	-17,1	0,0	0,7	-2,3	-4,9	-9,5	<b>-5,4</b>
<b>2020 Q4</b>	17,3	-5,9	-2,5	-1,4	-17,0	-8,0	-10,8	0,6	0,9	0,1	-2,9	-5,2	<b>-3,1</b>
<b>2021 Q1</b>	5,0	2,7	-0,8	-1,4	-13,1	-5,4	-10,6	-1,6	0,4	0,4	-2,2	-3,7	<b>-2,4</b>
<b>2021 Q2</b>	25,8	50,7	42,6	13,0	14,7	33,9	23,0	8,9	0,2	9,5	18,3	28,1	<b>19,2</b>
<b>2021 Q3</b>	-7,6	3,3	-0,4	0,6	-0,8	0,7	6,8	3,4	0,2	6,0	2,4	5,6	<b>2,7</b>
<b>2021 Q4</b>	0,0	1,8	-3,2	-3,3	-4,1	3,1	4,9	0,0	-0,7	5,8	1,2	3,3	<b>1,4</b>
<b>2022 Q1</b>	-1,4	-4,3	0,8	-0,1	-6,9	5,8	8,8	1,3	1,1	5,8	2,5	2,8	<b>2,5</b>
<b>2022 Q2</b>	-19,9	-10,0	-3,6	-1,6	-5,7	1,4	5,9	4,3	-0,4	3,7	0,2	0,5	<b>0,2</b>
<b>2022 Q3</b>	31,5	-6,6	2,9	-4,3	-1,7	7,9	10,9	4,6	-0,2	1,9	4,2	3,6	<b>4,1</b>
<b>2022 Q4</b>	8,8	-7,3	-1,5	-3,7	1,0	-0,2	7,5	3,5	-0,4	-0,8	0,9	0,5	<b>0,8</b>
<b>2023 Q1</b>	-5,4	-3,9	-3,6	-6,3	4,2	-1,5	7,8	2,3	-1,1	0,3	0,2	0,3	<b>0,2</b>

**Table 6 – Expenditure on GDP (constant 2015 prices, seasonally adjusted and annualised)**

	Final consumption expenditure			Gross capital formation			Gross domestic expenditure	Exports of goods and services	Imports of goods and services	Expenditure on GDP
	Households	General government	Total	Gross fixed capital formation	Change in inventories	Total				
	<b>R million</b>									
<b>2016</b>	2 834 426	856 222	3 690 648	780 757	-26 099	754 659	4 445 307	1 230 155	1 229 593	<b>4 445 869</b>
<b>2017</b>	2 883 014	853 842	3 736 856	764 883	12 237	777 120	4 513 976	1 226 794	1 248 436	<b>4 492 334</b>
<b>2018</b>	2 974 191	863 117	3 837 308	755 594	12 090	767 684	4 604 993	1 260 509	1 291 871	<b>4 573 631</b>
<b>2019</b>	3 012 316	879 004	3 891 321	742 420	23 740	766 160	4 657 481	1 218 750	1 299 017	<b>4 577 214</b>
<b>2020</b>	2 827 579	887 166	3 714 746	633 822	-55 838	577 985	4 292 730	1 072 892	1 070 690	<b>4 294 932</b>
<b>2021</b>	2 992 578	891 561	3 884 139	637 876	-16 466	621 410	4 505 549	1 170 413	1 173 260	<b>4 502 701</b>
<b>2022</b>	3 066 585	900 045	3 966 630	668 460	44 292	712 752	4 679 381	1 256 903	1 347 992	<b>4 588 292</b>
	<b>R million (seasonally adjusted and annualised)</b>									
<b>2020 Q1</b>	3 056 830	888 229	3 945 060	705 672	-57 998	647 674	4 592 734	1 208 491	1 212 308	<b>4 588 917</b>
<b>2020 Q2</b>	2 427 759	884 328	3 312 087	550 009	91 136	641 145	3 953 232	847 457	991 706	<b>3 808 983</b>
<b>2020 Q3</b>	2 862 911	886 068	3 748 980	624 932	-144 645	480 288	4 229 267	1 087 509	984 347	<b>4 332 429</b>
<b>2020 Q4</b>	2 962 817	890 040	3 852 857	654 676	-111 844	542 832	4 395 689	1 148 109	1 094 400	<b>4 449 398</b>
<b>2021 Q1</b>	2 977 685	884 835	3 862 520	636 859	-14 266	622 593	4 485 113	1 161 360	1 166 529	<b>4 479 944</b>
<b>2021 Q2</b>	3 027 946	889 515	3 917 461	635 636	-38 506	597 130	4 514 592	1 197 128	1 170 039	<b>4 541 681</b>
<b>2021 Q3</b>	2 939 865	894 942	3 834 806	634 742	7 719	642 461	4 477 267	1 115 181	1 130 297	<b>4 462 151</b>
<b>2021 Q4</b>	3 024 816	896 953	3 921 769	644 266	-20 812	623 454	4 545 222	1 207 983	1 226 177	<b>4 527 029</b>
<b>2022 Q1</b>	3 060 781	905 316	3 966 097	662 764	14 363	677 128	4 643 225	1 252 860	1 301 602	<b>4 594 483</b>
<b>2022 Q2</b>	3 062 878	897 410	3 960 287	665 244	35 683	700 927	4 661 215	1 255 486	1 365 530	<b>4 551 171</b>
<b>2022 Q3</b>	3 060 810	901 826	3 962 636	667 981	86 941	754 922	4 717 558	1 280 147	1 367 695	<b>4 630 011</b>
<b>2022 Q4</b>	3 081 872	895 626	3 977 499	677 849	40 180	718 029	4 695 528	1 239 117	1 357 140	<b>4 577 505</b>
<b>2023 Q1</b>	3 094 097	906 744	4 000 841	687 605	34 986	722 591	4 723 432	1 290 371	1 417 020	<b>4 596 782</b>

**Table 7 – Growth rates in expenditure on GDP (constant 2015 prices and seasonally adjusted)**

	Final consumption expenditure			Gross fixed capital formation	Gross capital formation	Gross domestic expenditure	Exports of goods and services	Imports of goods and services	Expenditure on GDP	
	Households	General government	Total							
	% change year-on-year									
<b>2016</b>	0,7	2,0	1,0	-1,9	-8,4	-0,7	0,4	-4,1	<b>0,6</b>	
<b>2017</b>	1,7	-0,3	1,3	-2,0	3,0	1,5	-0,3	1,5	<b>1,0</b>	
<b>2018</b>	3,2	1,1	2,7	-1,2	-1,2	2,0	2,7	3,5	<b>1,8</b>	
<b>2019</b>	1,3	1,8	1,4	-1,7	-0,2	1,1	-3,3	0,6	<b>0,1</b>	
<b>2020</b>	-6,1	0,9	-4,5	-14,6	-24,6	-7,8	-12,0	-17,6	<b>-6,2</b>	
<b>2021</b>	5,8	0,5	4,6	0,6	7,5	5,0	9,1	9,6	<b>4,8</b>	
<b>2022</b>	2,5	1,0	2,1	4,8	14,7	3,9	7,4	14,9	<b>1,9</b>	
	% change quarter-on-quarter (seasonally adjusted)									
<b>2020 Q1</b>	0,5	0,2	0,4	-3,0	-9,3	-1,1	-0,4	-4,6	<b>0,1</b>	
<b>2020 Q2</b>	-20,6	-0,4	-16,0	-22,1	-1,0	-13,9	-29,9	-18,2	<b>-17,0</b>	
<b>2020 Q3</b>	17,9	0,2	13,2	13,6	-25,1	7,0	28,3	-0,7	<b>13,7</b>	
<b>2020 Q4</b>	3,5	0,4	2,8	4,8	13,0	3,9	5,6	11,2	<b>2,7</b>	
<b>2021 Q1</b>	0,5	-0,6	0,3	-2,7	14,7	2,0	1,2	6,6	<b>0,7</b>	
<b>2021 Q2</b>	1,7	0,5	1,4	-0,2	-4,1	0,7	3,1	0,3	<b>1,4</b>	
<b>2021 Q3</b>	-2,9	0,6	-2,1	-0,1	7,6	-0,8	-6,8	-3,4	<b>-1,8</b>	
<b>2021 Q4</b>	2,9	0,2	2,3	1,5	-3,0	1,5	8,3	8,5	<b>1,5</b>	
<b>2022 Q1</b>	1,2	0,9	1,1	2,9	8,6	2,2	3,7	6,2	<b>1,5</b>	
<b>2022 Q2</b>	0,1	-0,9	-0,1	0,4	3,5	0,4	0,2	4,9	<b>-0,9</b>	
<b>2022 Q3</b>	-0,1	0,5	0,1	0,4	7,7	1,2	2,0	0,2	<b>1,7</b>	
<b>2022 Q4</b>	0,7	-0,7	0,4	1,5	-4,9	-0,5	-3,2	-0,8	<b>-1,1</b>	
<b>2023 Q1</b>	0,4	1,2	0,6	1,4	0,6	0,6	4,1	4,4	<b>0,4</b>	

**Table 8 – Contributions to growth in expenditure on GDP (constant 2015 prices and seasonally adjusted)**

	Final consumption expenditure			Gross capital formation			Gross domestic expenditure	Exports of goods and services	Imports of goods and services	Expenditure on GDP
	Households	General government	Total	Gross fixed capital formation	Change in inventories	Total				
	Percentage points									
<b>2016</b>	0,4	0,4	0,8	-0,3	-1,2	-1,6	-0,7	0,1	1,2	<b>0,6</b>
<b>2017</b>	1,1	-0,1	1,0	-0,4	0,9	0,5	1,5	-0,1	-0,4	<b>1,0</b>
<b>2018</b>	2,0	0,2	2,2	-0,2	0,0	-0,2	2,0	0,8	-1,0	<b>1,8</b>
<b>2019</b>	0,8	0,3	1,2	-0,3	0,3	0,0	1,1	-0,9	-0,2	<b>0,1</b>
<b>2020</b>	-4,0	0,2	-3,9	-2,4	-1,7	-4,1	-8,0	-3,2	5,0	<b>-6,2</b>
<b>2021</b>	3,8	0,1	3,9	0,1	0,9	1,0	5,0	2,3	-2,4	<b>4,8</b>
<b>2022</b>	1,6	0,2	1,8	0,7	1,3	2,0	3,9	1,9	-3,9	<b>1,9</b>
	Percentage points									
<b>2020 Q1</b>	0,3	0,0	0,3	-0,5	-1,0	-1,5	-1,1	-0,1	1,3	<b>0,1</b>
<b>2020 Q2</b>	-13,7	-0,1	-13,8	-3,4	3,2	-0,1	-13,9	-7,9	4,8	<b>-17,0</b>
<b>2020 Q3</b>	11,4	0,0	11,5	2,0	-6,2	-4,2	7,2	6,3	0,2	<b>13,7</b>
<b>2020 Q4</b>	2,3	0,1	2,4	0,7	0,8	1,4	3,8	1,4	-2,5	<b>2,7</b>
<b>2021 Q1</b>	0,3	-0,1	0,2	-0,4	2,2	1,8	2,0	0,3	-1,6	<b>0,7</b>
<b>2021 Q2</b>	1,1	0,1	1,2	0,0	-0,5	-0,6	0,7	0,8	-0,1	<b>1,4</b>
<b>2021 Q3</b>	-1,9	0,1	-1,8	0,0	1,0	1,0	-0,8	-1,8	0,9	<b>-1,8</b>
<b>2021 Q4</b>	1,9	0,0	1,9	0,2	-0,6	-0,4	1,5	2,1	-2,1	<b>1,5</b>
<b>2022 Q1</b>	0,8	0,2	1,0	0,4	0,8	1,2	2,2	1,0	-1,7	<b>1,5</b>
<b>2022 Q2</b>	0,0	-0,2	-0,1	0,1	0,5	0,5	0,4	0,1	-1,4	<b>-0,9</b>
<b>2022 Q3</b>	0,0	0,1	0,1	0,1	1,1	1,2	1,2	0,5	0,0	<b>1,7</b>
<b>2022 Q4</b>	0,5	-0,1	0,3	0,2	-1,0	-0,8	-0,5	-0,9	0,2	<b>-1,1</b>
<b>2023 Q1</b>	0,3	0,2	0,5	0,2	-0,1	0,1	0,6	1,1	-1,3	<b>0,4</b>



**Table 9 – Expenditure on GDP (constant 2015 prices)**

	Final consumption expenditure			Gross capital formation			Gross domestic expenditure	Exports of goods and services	Imports of goods and services	Expenditure on GDP
	Households	General government	Total	Gross fixed capital formation	Change in inventories	Total				
	R million									
<b>2016</b>	2 834 426	856 222	3 690 648	780 757	-26 099	754 659	4 445 307	1 230 155	1 229 593	<b>4 445 869</b>
<b>2017</b>	2 883 014	853 842	3 736 856	764 883	12 237	777 120	4 513 976	1 226 794	1 248 436	<b>4 492 334</b>
<b>2018</b>	2 974 191	863 117	3 837 308	755 594	12 090	767 684	4 604 993	1 260 509	1 291 871	<b>4 573 631</b>
<b>2019</b>	3 012 316	879 004	3 891 321	742 420	23 740	766 160	4 657 481	1 218 750	1 299 017	<b>4 577 214</b>
<b>2020</b>	2 827 579	887 166	3 714 746	633 822	-55 838	577 985	4 292 730	1 072 892	1 070 690	<b>4 294 932</b>
<b>2021</b>	2 992 578	891 561	3 884 139	637 876	-16 466	621 410	4 505 549	1 170 413	1 173 260	<b>4 502 701</b>
<b>2022</b>	3 066 585	900 045	3 966 630	668 460	44 292	712 752	4 679 381	1 256 903	1 347 992	<b>4 588 292</b>
	R million									
<b>2020 Q1</b>	741 565	223 902	965 467	175 265	-25 562	149 703	1 115 170	284 744	293 543	<b>1 106 372</b>
<b>2020 Q2</b>	597 709	216 559	814 267	133 327	30 646	163 973	978 241	212 388	241 562	<b>949 067</b>
<b>2020 Q3</b>	709 457	221 422	930 879	158 027	-21 989	136 038	1 066 917	284 091	256 411	<b>1 094 597</b>
<b>2020 Q4</b>	778 848	225 285	1 004 132	167 202	-38 932	128 270	1 132 403	291 669	279 175	<b>1 144 897</b>
<b>2021 Q1</b>	725 012	222 106	947 118	157 994	-14 838	143 156	1 090 274	272 222	282 910	<b>1 079 586</b>
<b>2021 Q2</b>	741 086	218 624	959 710	154 717	-1 892	152 826	1 112 536	301 479	285 497	<b>1 128 518</b>
<b>2021 Q3</b>	727 640	223 422	951 062	160 667	16 029	176 697	1 127 759	289 155	293 846	<b>1 123 067</b>
<b>2021 Q4</b>	798 840	227 409	1 026 249	164 497	-15 765	148 732	1 174 980	307 557	311 007	<b>1 171 531</b>
<b>2022 Q1</b>	745 618	227 544	973 162	164 856	-7 701	157 156	1 130 318	293 990	315 179	<b>1 109 128</b>
<b>2022 Q2</b>	751 032	220 334	971 365	161 414	16 442	177 855	1 149 221	314 951	334 003	<b>1 130 169</b>
<b>2022 Q3</b>	758 282	225 358	983 639	170 015	35 835	205 850	1 189 489	333 365	354 864	<b>1 167 990</b>
<b>2022 Q4</b>	811 654	226 809	1 038 463	172 174	-284	171 890	1 210 354	314 597	343 945	<b>1 181 005</b>
<b>2023 Q1</b>	751 085	228 378	979 463	170 663	-2 462	168 201	1 147 664	304 721	342 498	<b>1 109 886</b>

**Table 10 – Growth rates in expenditure on GDP (constant 2015 prices)**

	Final consumption expenditure			Gross fixed capital formation	Gross capital formation	Gross domestic expenditure	Exports of goods and services	Imports of goods and services	Expenditure on GDP
	Households	General government	Total						
	% change year-on-year								
<b>2016</b>	0,7	2,0	1,0	-1,9	-8,4	-0,7	0,4	-4,1	<b>0,6</b>
<b>2017</b>	1,7	-0,3	1,3	-2,0	3,0	1,5	-0,3	1,5	<b>1,0</b>
<b>2018</b>	3,2	1,1	2,7	-1,2	-1,2	2,0	2,7	3,5	<b>1,8</b>
<b>2019</b>	1,3	1,8	1,4	-1,7	-0,2	1,1	-3,3	0,6	<b>0,1</b>
<b>2020</b>	-6,1	0,9	-4,5	-14,6	-24,6	-7,8	-12,0	-17,6	<b>-6,2</b>
<b>2021</b>	5,8	0,5	4,6	0,6	7,5	5,0	9,1	9,6	<b>4,8</b>
<b>2022</b>	2,5	1,0	2,1	4,8	14,7	3,9	7,4	14,9	<b>1,9</b>
	% change year-on-year								
<b>2020 Q1</b>	2,6	2,2	2,5	-5,7	-17,1	-0,7	-2,3	-4,6	<b>0,0</b>
<b>2020 Q2</b>	-19,0	0,7	-14,6	-25,6	-19,1	-15,4	-29,5	-26,0	<b>-16,1</b>
<b>2020 Q3</b>	-5,0	0,5	-3,7	-17,6	-35,4	-9,4	-9,7	-24,8	<b>-4,9</b>
<b>2020 Q4</b>	-3,2	0,3	-2,4	-9,9	-25,5	-5,7	-6,3	-13,8	<b>-3,7</b>
<b>2021 Q1</b>	-2,2	-0,8	-1,9	-9,9	-4,4	-2,2	-4,4	-3,6	<b>-2,4</b>
<b>2021 Q2</b>	24,0	1,0	17,9	16,0	-6,8	13,7	41,9	18,2	<b>18,9</b>
<b>2021 Q3</b>	2,6	0,9	2,2	1,7	29,9	5,7	1,8	14,6	<b>2,6</b>
<b>2021 Q4</b>	2,6	0,9	2,2	-1,6	16,0	3,8	5,4	11,4	<b>2,3</b>
<b>2022 Q1</b>	2,8	2,4	2,7	4,3	9,8	3,7	8,0	11,4	<b>2,7</b>
<b>2022 Q2</b>	1,3	0,8	1,2	4,3	16,4	3,3	4,5	17,0	<b>0,1</b>
<b>2022 Q3</b>	4,2	0,9	3,4	5,8	16,5	5,5	15,3	20,8	<b>4,0</b>
<b>2022 Q4</b>	1,6	-0,3	1,2	4,7	15,6	3,0	2,3	10,6	<b>0,8</b>
<b>2023 Q1</b>	0,7	0,4	0,6	3,5	7,0	1,5	3,6	8,7	<b>0,1</b>

## Analysis of revisions

### Introduction

Preliminary GDP growth rates are published approximately nine weeks after the reference quarter, e.g. the preliminary GDP growth rate for the March quarter is published in the first (or sometimes second) week of June. The preliminary values are revised the following quarter using updated source data. The revisions schedule for GDP is shown below.

### Revisions schedule for GDP

Reason for revision	Schedule
Additional information from data sources	Quarterly (revision of previous quarter)
Independent annuals from detailed data sources i.e AFS, consolidated government statistics, capital expenditure by public sector, etc.	Annual (June publication)
Bechmarking and rebasing	Periodic, approximately every five years

### Analysis

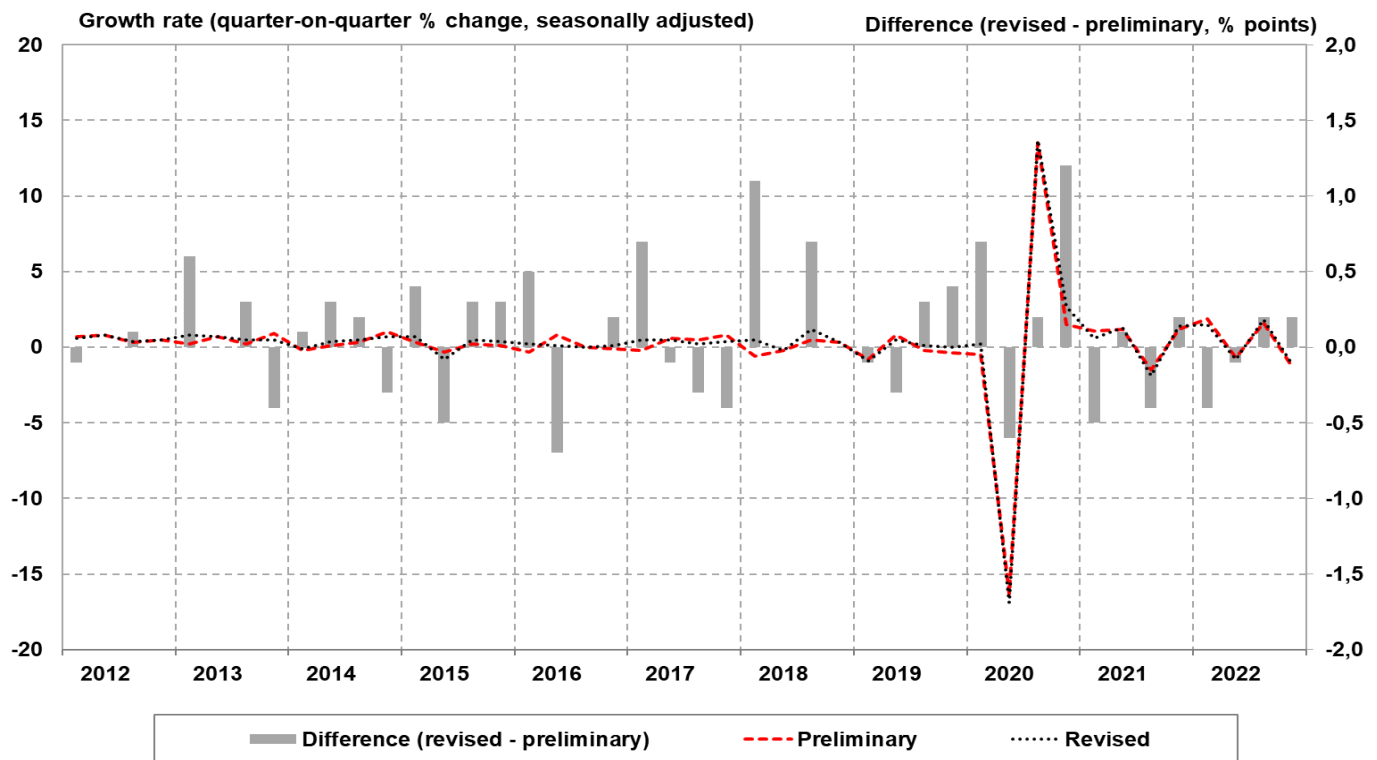
Revisions may be analysed in terms of several dimensions, namely rand values and/or growth rates (e.g. quarter-on-quarter percentage changes, year-on-year percentage changes); current prices and/or constant prices; seasonally adjusted and/or unadjusted data; totals and/or components; preliminary estimate compared with first revision and/or latest available revision; and various combinations of these options.

This analysis is confined to the following:

- Headline GDP growth rate, i.e. GDP measured by production, quarter-on-quarter growth rate, constant prices, seasonally adjusted.
- Preliminary growth rates are compared with the latest available revised growth rates, where the preliminary growth rate refers to the first growth rate published for the quarter in question.
- Time period: first quarter of 2012 to fourth quarter of 2022. Between 2012 Q1 and 2021 Q1, the headline growth rate was annualised. For the purposes of this analysis, the growth rates for this period have been converted to non-annualised (for direct comparison with the latest available revised growth rates).

Figure 11 shows the preliminary and revised growth rates (line chart, left vertical axis) and the difference between them (bar chart, right vertical axis, where difference = revised - preliminary).

Table 11 provides key results relating to revisions.

**Figure 11 – Real GDP growth rates: preliminary and revised****Table 11 – GDP growth rates: preliminary and revised (quarter-on-quarter, seasonally adjusted)**

Description	Value / outcome	Comment
Average growth rate over the whole period	Preliminary: 0,20% Revised: 0,30%	The average of revised growth rates is higher than the average of preliminary growth rates
Mean revision	0,09 of a percentage point	This is the average of the revisions
Mean absolute revision	0,33 of a percentage point	Average of the revisions, but based on the absolute value of each revision (positives and negatives do not cancel each other)
Largest upward revision	1,2 percentage points	Preliminary 1,5% was revised up to 2,7% (2020 Q4) (this quarter was severely affected by COVID-19)
Largest downward revision	-0,7 of a percentage point	Preliminary 0,8% was revised down to 0,1% (2016 Q2)
Range for all revisions	-0,7 to 1,2 percentage points	
Range within which 90% of the revisions lie	-0,57 to 1,00 percentage point	This may be regarded as the normal range for revisions, with revisions outside this range being outliers

Description	Value / outcome	Comment
Number of upward revisions	23 (or 52,3% of the total observations)	
Number of downward revisions	15 (or 34,1% of the total observations)	
Number of zero revisions	6 (or 13,6% of the total observations)	
Is the mean revision (0,09) significantly different from zero?	No	This indicates that there is no bias in the preliminary estimate – see Note 1 below
Standard deviation of the revisions	0,42 of a percentage point	Standard deviation is a measure of dispersion about the mean – see the row below
Percentage of revisions that lie within one standard deviation of the mean	68,2%	This is the percentage of revisions that lie between -0,33 and 0,52 of a percentage point; the higher the percentage, the lower is the dispersion about the mean – see Figure 12

**Note 1:** Is the mean revision significantly different from zero?

The formula for the test statistic is as follows:

$$\text{test statistic} = \frac{\bar{R}}{\sqrt{\left(\frac{1}{n(n-1)}\right) \left(\sum_{t=1}^n \hat{\varepsilon}_t^2 + \frac{3}{4} \sum_{t=2}^n \hat{\varepsilon}_t \hat{\varepsilon}_{t-1} + \frac{2}{3} \sum_{t=3}^n \hat{\varepsilon}_t \hat{\varepsilon}_{t-2}\right)}}$$

where

$n$  = number of observations

$\bar{R}$  = mean revision

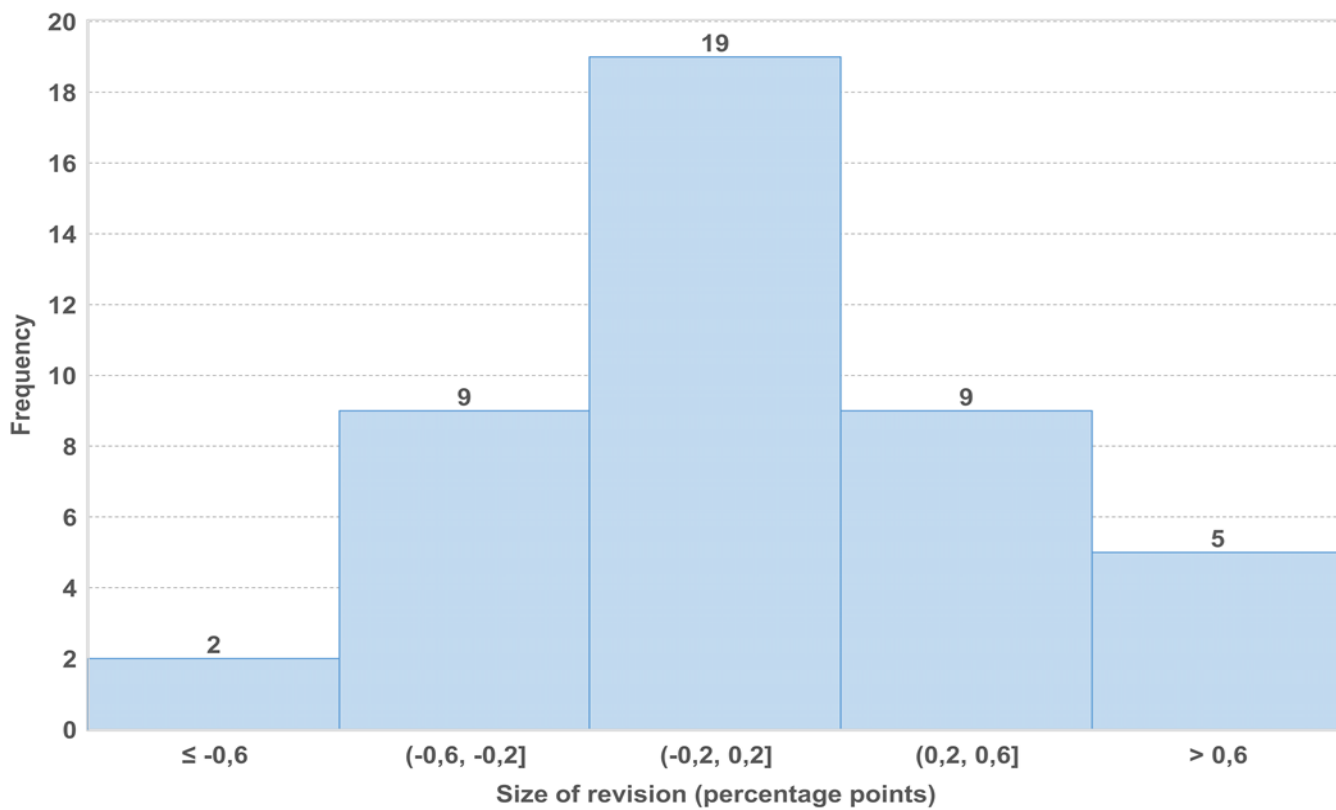
$\hat{\varepsilon}_t = R_t - \bar{R}$ , with  $R_t$  = revision in period  $t$

Note that if the test statistic shows that the mean revision (MR) is significantly different from zero, then there is bias in the preliminary estimates. Bias in a series suggests there is scope to enhance the compilation of that series in an attempt to remove or minimise the bias.  $MR > 0$  (statistically significant) implies under-estimation of the preliminary estimates.  $MR < 0$  (statistically significant) implies over-estimation of the preliminary estimates.

In this case the test statistic is 1,69, which lies below the critical value of 2,02, indicating that the MR is not significantly different from zero at a 5% significance level. Accordingly, no bias is detected in the preliminary estimates.

Figure 12 shows the revisions in terms of a histogram. There were 9 revisions between -0,6 and -0,2 (-0,6 < revision ≤ -0,2); 19 revisions between -0,2 and 0,2 (-0,2 < revision ≤ 0,2); and 9 revisions between 0,2 and 0,6 (0,2 < revision ≤ 0,6). 84,1% of revisions lay between -0,6 and 0,6 of a percentage point.

**Figure 12 – Real GDP quarter-on-quarter growth rates, seasonally adjusted: histogram of revisions**



## Explanatory notes

<b>Forthcoming issues</b>	Issue	Expected date of publication
	Second quarter 2023	5 September 2023
	Third quarter 2023	5 December 2023
	Fourth quarter 2023	5 March 2024
	First quarter 2024	4 June 2024

**Reference documents** Information related to the compilation of the GDP estimates is available in the National Accounts: Sources and Methods document on the Stats SA website:  
<http://www.statssa.gov.za/publications/Report%2004-04-04/Report%2004-04-042021.pdf>

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