STATISTICAL RELEASE
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Wholesale trade sales
(Preliminary)

January 2023

This release provides an analysis of revisions. If you have any questions or comments, please send these to Keshnee Naidoo, keshneen@statssa.gov.za.

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IMPROVING LIVES THROUGH DATA ECOSYSTEMS

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	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Year-on-year % change, unadjusted	0,4	6,3	-1,0	-0,7	-2,2	-3,6
Month-on-month % change, seasonally adjusted	0,3	2,1	-1,5	0,9	-3,6	0,4
3-month % change, seasonally adjusted 1/	-0,6	1,6	1,2	1,7	-0,6	-1,7

1/ Percentage change between the previous 3 months and the 3 months ending in the month indicated.

Measured in real terms (constant 2019 prices), wholesale trade sales decreased by 3,6% in January 2023 compared with January 2022.

Seasonally adjusted wholesale trade sales increased by 0,4% in January 2023 compared with December 2022. This followed month-on-month changes of -3,6% in December 2022 and 0,9% in November 2022.

In the three months ended January 2023, seasonally adjusted wholesale trade sales decreased by 1,7% compared with the previous three months.

Figure 1 – Wholesale trade sales at constant 2019 prices

Sales at current prices: results for January 2023

Table B – Key growth rates in wholesale trade sales at current prices

	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Year-on-year % change, unadjusted	21,6	28,2	19,6	17,0	14,1	10,5
Month-on-month % change, seasonally adjusted	-0,7	4,2	-1,7	1,0	-3,3	-0,4
3-month % change, seasonally adjusted 1/	5,8	7,3	4,3	4,2	0,3	-1,2

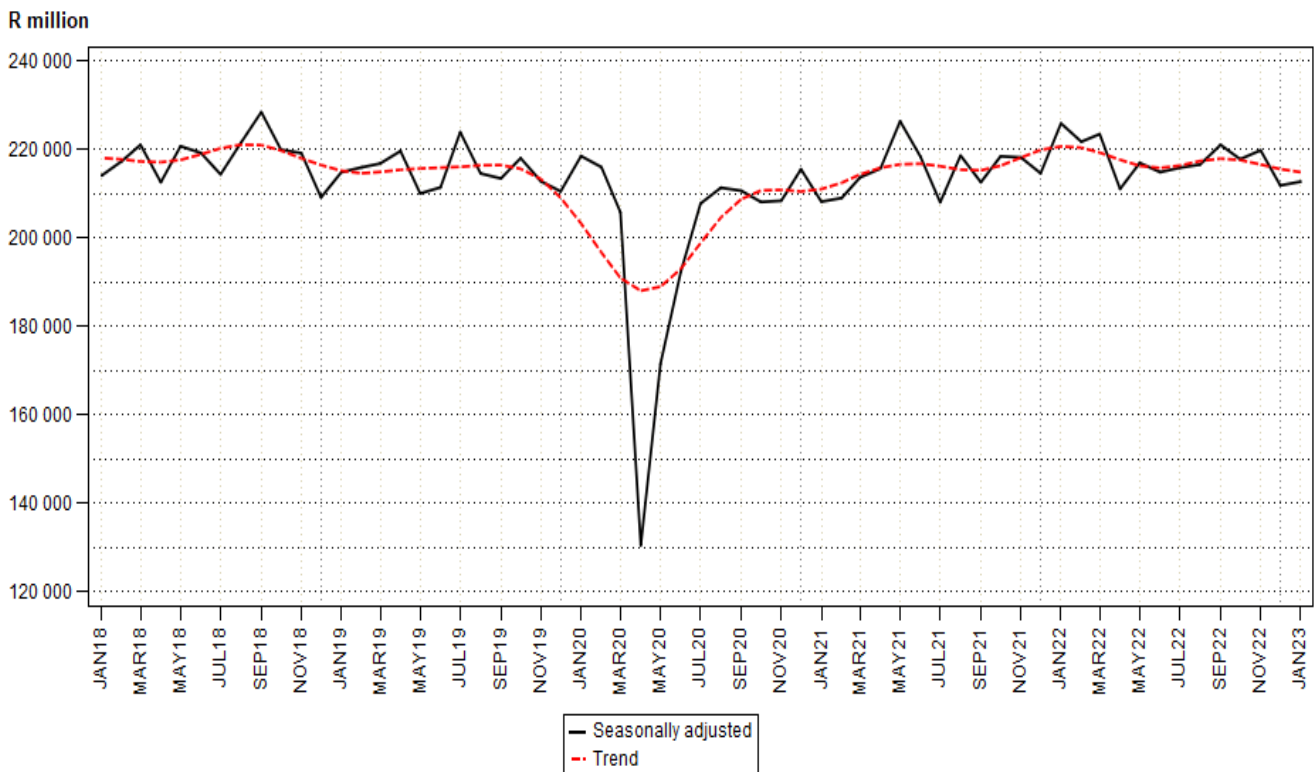1/ Percentage change between the previous 3 months and the 3 months ending in the month indicated.

Measured in nominal terms (current prices), wholesale trade sales increased by 10,5% in January 2023 compared with January 2022. The main positive contributors were dealers in:

- solid, liquid and gaseous fuels and related products (18,8% and contributing 5,0 percentage points);
- agricultural raw materials and livestock (42,4% and contributing 2,3 percentage points); and
- food, beverages and tobacco (7,5% and contributing 1,2 percentage points) – see Tables 8 and 9.

Table C – Wholesale trade sales at current prices for the latest three months by type of dealer

Type of dealer	Nov 2021 – Jan 2022 (R million)	Weight (%)	Nov 2022 – Jan 2023 (R million)	% change between Nov 2021 – Jan 2022 and Nov 2022 – Jan 2023	Contribution (% points) to the total % change
Fee or contract basis	23 436	3,1	23 436	0,0	0,0
Agricultural raw materials and livestock	52 133	6,9	65 891	26,4	1,8
Food, beverages and tobacco	125 351	16,6	136 843	9,2	1,5
Textiles, clothing and footwear	12 828	1,7	14 884	16,0	0,3
Other household goods except precious stones	82 406	10,9	84 289	2,3	0,3
Precious stones, jewellery and silverware	20 292	2,7	12 219	-39,8	-1,1
Solid, liquid and gaseous fuels and related products	169 580	22,5	224 709	32,5	7,3
Metals and metal ores	20 633	2,7	21 897	6,1	0,2
Construction and building materials	30 822	4,1	37 698	22,3	0,9
Other intermediate products, waste and scrap	54 206	7,2	51 960	-4,1	-0,3
Machinery, equipment and supplies	103 984	13,8	116 186	11,7	1,6
Other goods	57 939	7,7	69 768	20,4	1,6
Total	**753 610**	**100,0**	**859 781**	**14,1**	**14,1**

Wholesale trade sales increased by 14,1% in the three months ended January 2023 compared with the three months ended January 2022. The main contributors were dealers in:

- solid, liquid and gaseous fuels and related products (32,5% and contributing 7,3 percentage points);
- agricultural raw materials and livestock (26,4% and contributing 1,8 percentage points);
- machinery, equipment and supplies (11,7% and contributing 1,6 percentage points); and
- 'other' goods (20,4% and contributing 1,6 percentage points) – see Table C.

Risenga Maluleke
Statistician-General

Tables

Table 1 – Wholesale trade sales at constant 2019 prices (R million)

Month	2017	2018	2019	2020	2021	2022	2023 1/
Jan	196 359	191 784	190 022	194 937	179 861	194 441	187 446
Feb	204 200	206 190	204 536	207 027	197 647	209 024	
Mar	226 932	227 707	219 017	210 519	221 554	229 679	
Apr	200 998	194 667	204 372	117 669	197 773	190 186	
May	216 833	221 461	214 021	169 936	224 174	220 463	
Jun	224 709	220 959	206 634	198 698	222 296	217 774	
Jul	215 725	214 670	228 532	213 876	212 647	215 395	
Aug	222 964	227 202	218 154	208 070	220 053	220 999	
Sep	217 809	228 338	218 892	219 828	221 524	235 525	
Oct	234 477	241 801	239 168	229 512	236 243	233 921	
Nov	248 065	245 274	233 031	224 952	241 799	240 190	
Dec	214 175	199 957	205 051	208 940	209 793	205 171	
Total	**2 623 246**	**2 620 010**	**2 581 430**	**2 403 964**	**2 585 364**	**2 612 768**	

1/ Figures for the latest month are preliminary.

Table 2 – Year-on-year percentage change in wholesale trade sales at constant 2019 prices

Month	2018	2019	2020	2021	2022	2023	*2023 year-to-date*
Jan	-2,3	-0,9	2,6	-7,7	8,1	-3,6	*-3,6*
Feb	1,0	-0,8	1,2	-4,5	5,8		
Mar	0,3	-3,8	-3,9	5,2	3,7		
Apr	-3,1	5,0	-42,4	68,1	-3,8		
May	2,1	-3,4	-20,6	31,9	-1,7		
Jun	-1,7	-6,5	-3,8	11,9	-2,0		
Jul	-0,5	6,5	-6,4	-0,6	1,3		
Aug	1,9	-4,0	-4,6	5,8	0,4		
Sep	4,8	-4,1	0,4	0,8	6,3		
Oct	3,1	-1,1	-4,0	2,9	-1,0		
Nov	-1,1	-5,0	-3,5	7,5	-0,7		
Dec	-6,6	2,5	1,9	0,4	-2,2		
Total	**-0,1**	**-1,5**	**-6,9**	**7,5**	**1,1**		

Table 3 – Seasonally adjusted wholesale trade sales at constant 2019 prices

Month	R million				Month-on-month % change			
	2020	**2021**	**2022**	**2023**	**2020**	**2021**	**2022**	**2023**
Jan	218 531	208 218	225 917	212 747	3,8	-3,4	5,3	0,4
Feb	216 031	209 048	221 771		-1,1	0,4	-1,8	
Mar	205 819	213 703	223 498		-4,7	2,2	0,8	
Apr	130 512	215 697	211 088		-36,6	0,9	-5,6	
May	171 560	226 399	216 984		31,5	5,0	2,8	
Jun	192 402	218 385	214 891		12,1	-3,5	-1,0	
Jul	207 795	208 072	215 889		8,0	-4,7	0,5	
Aug	211 378	218 659	216 616		1,7	5,1	0,3	
Sep	210 691	212 613	221 065		-0,3	-2,8	2,1	
Oct	208 153	218 475	217 821		-1,2	2,8	-1,5	
Nov	208 429	218 221	219 834		0,1	-0,1	0,9	
Dec	215 558	214 633	211 887		3,4	-1,6	-3,6	

Table 4 – Wholesale trade sales at current prices (R million)

Month	2017	2018	2019	2020	2021	2022	2023 1/
Jan	171 527	178 058	183 631	197 732	185 748	228 997	253 087
Feb	180 829	190 533	197 880	210 007	207 142	249 449	
Mar	201 421	208 035	214 863	212 675	235 239	283 576	
Apr	177 582	180 571	204 583	116 718	212 428	239 766	
May	193 708	208 465	215 628	166 140	241 537	285 346	
Jun	200 003	211 230	209 144	195 987	241 178	287 778	
Jul	191 834	207 460	229 989	214 925	233 100	291 330	
Aug	198 955	220 454	219 608	211 461	243 331	295 960	
Sep	197 100	222 633	220 702	223 402	247 984	317 870	
Oct	214 093	241 135	242 269	234 583	266 917	319 131	
Nov	228 926	245 534	235 480	229 852	278 620	326 103	
Dec	199 775	196 828	207 653	213 581	245 993	280 591	
Total	**2 355 753**	**2 510 936**	**2 581 430**	**2 427 063**	**2 839 217**	**3 405 897**	

1/ Figures for the latest month are preliminary.

Table 5 – Year-on-year percentage change in wholesale trade sales at current prices

Month	2018	2019	2020	2021	2022	2023	*2023 year-to-date*
Jan	3,8	3,1	7,7	-6,1	23,3	10,5	*10,5*
Feb	5,4	3,9	6,1	-1,4	20,4		
Mar	3,3	3,3	-1,0	10,6	20,5		
Apr	1,7	13,3	-42,9	82,0	12,9		
May	7,6	3,4	-23,0	45,4	18,1		
Jun	5,6	-1,0	-6,3	23,1	19,3		
Jul	8,1	10,9	-6,5	8,5	25,0		
Aug	10,8	-0,4	-3,7	15,1	21,6		
Sep	13,0	-0,9	1,2	11,0	28,2		
Oct	12,6	0,5	-3,2	13,8	19,6		
Nov	7,3	-4,1	-2,4	21,2	17,0		
Dec	-1,5	5,5	2,9	15,2	14,1		
Total	**6,6**	**2,8**	**-6,0**	**17,0**	**20,0**		

Table 6 – Seasonally adjusted wholesale trade sales at current prices

Month	R million				Month-on-month % change			
	2020	2021	2022	2023	2020	2021	2022	2023
Jan	223 547	215 754	263 438	288 772	4,8	-1,8	4,3	-0,4
Feb	223 609	222 322	268 413		0,0	3,0	1,9	
Mar	206 368	227 263	272 571		-7,7	2,2	1,5	
Apr	128 591	229 305	263 236		-37,7	0,9	-3,4	
May	168 076	240 717	279 840		30,7	5,0	6,3	
Jun	190 582	236 276	280 779		13,4	-1,8	0,3	
Jul	210 724	229 508	291 882		10,6	-2,9	4,0	
Aug	211 163	240 332	289 929		0,2	4,7	-0,7	
Sep	213 475	236 535	302 041		1,1	-1,6	4,2	
Oct	213 951	248 243	296 797		0,2	4,9	-1,7	
Nov	211 442	253 116	299 800		-1,2	2,0	1,0	
Dec	219 776	252 641	289 866		3,9	-0,2	-3,3	

Table 7 – Wholesale trade sales at current prices by type of dealer (R million)

Type of dealer	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23 1/
Fee or contract basis	9 146	10 416	9 907	10 095	7 483	5 858
Agricultural raw materials and livestock	21 164	22 644	20 813	26 822	21 336	17 733
Food, beverages and tobacco	42 030	46 666	43 522	47 566	50 892	38 385
Textiles, clothing and footwear	7 392	8 422	7 673	7 001	3 779	4 104
Other household goods except precious stones	29 824	28 857	30 200	32 243	25 246	26 800
Precious stones, jewellery and silverware	4 664	6 011	5 579	4 988	4 768	2 463
Solid, liquid and gaseous fuels and related products	80 576	86 848	93 169	76 196	76 385	72 128
Metals and metal ores	10 546	9 464	9 528	9 915	5 161	6 821
Construction and building materials	14 348	15 028	14 306	16 033	10 442	11 223
Other intermediate products, waste and scrap	18 743	22 916	21 280	21 540	15 872	14 548
Machinery, equipment and supplies	35 468	36 190	37 958	45 891	36 271	34 024
Other goods	22 059	24 408	25 195	27 812	22 957	18 999
Total	**295 960**	**317 870**	**319 131**	**326 103**	**280 591**	**253 087**

1/ Figures are preliminary.

Table 8 – Year-on-year percentage change in wholesale trade sales at current prices by type of dealer

Type of dealer	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Fee or contract basis	-1,1	3,8	4,1	1,9	-13,9	21,0
Agricultural raw materials and livestock	58,1	53,3	30,4	40,5	3,6	42,4
Food, beverages and tobacco	14,2	16,2	8,0	10,8	9,0	7,5
Textiles, clothing and footwear	45,1	39,1	13,4	22,6	17,1	5,4
Other household goods except precious stones	4,4	3,6	7,9	4,9	-4,7	6,4
Precious stones, jewellery and silverware	-49,7	-25,1	-37,7	-25,2	-33,8	-61,6
Solid, liquid and gaseous fuels and related products	57,4	65,4	45,5	32,9	48,2	18,8
Metals and metal ores	31,7	28,9	43,0	8,6	-0,3	7,8
Construction and building materials	26,6	18,2	19,4	16,1	27,3	27,4
Other intermediate products, waste and scrap	26,1	39,0	6,7	-1,5	-0,1	-11,5
Machinery, equipment and supplies	-6,0	9,7	9,9	16,1	10,3	7,7
Other goods	23,7	28,1	24,2	27,0	18,2	14,4
Total	**21,6**	**28,2**	**19,6**	**17,0**	**14,1**	**10,5**

Table 9 – Contribution of type of dealer to the year-on-year percentage change in wholesale trade sales at current prices

Type of dealer	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Fee or contract basis	0,0	0,2	0,1	0,1	-0,5	0,4
Agricultural raw materials and livestock	3,2	3,2	1,8	2,8	0,3	2,3
Food, beverages and tobacco	2,1	2,6	1,2	1,7	1,7	1,2
Textiles, clothing and footwear	0,9	0,9	0,3	0,5	0,2	0,1
Other household goods except precious stones	0,5	0,4	0,8	0,5	-0,5	0,7
Precious stones, jewellery and silverware	-1,9	-0,8	-1,3	-0,6	-1,0	-1,7
Solid, liquid and gaseous fuels and related products	12,1	13,9	10,9	6,8	10,1	5,0
Metals and metal ores	1,0	0,9	1,1	0,3	0,0	0,2
Construction and building materials	1,3	0,9	0,9	0,8	0,9	1,0
Other intermediate products, waste and scrap	1,6	2,6	0,5	-0,1	0,0	-0,8
Machinery, equipment and supplies	-0,9	1,3	1,3	2,3	1,4	1,1
Other goods	1,7	2,2	1,8	2,1	1,4	1,1
Total	**21,6**	**28,2**	**19,6**	**17,0**	**14,1**	**10,5**

Analysis of revisions

Introduction

Preliminary monthly values for wholesale trade are published approximately seven weeks after the reference month, e.g. preliminary wholesale sales for December are published around mid-February. The preliminary values are revised the following month, using additional information received from respondents. This and other reasons for revising wholesale trade values from time to time are shown in the following revisions schedule.

Revisions schedule for wholesale trade

Reason for revision	Schedule
Additional information from respondents	Monthly (revision of previous month)
New sample	Annual (July reference month published in September)
New base year (year for constant prices)	Periodic, approximately four- to five-year intervals

Note that seasonally adjusted values are revised monthly.

Analysis

Revisions may be analysed in terms of several dimensions, namely rand values and/or growth rates (e.g. month-on-month 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:

- Total wholesale trade, year-on-year growth rate, constant prices, unadjusted.

- Preliminary growth rates are compared with the latest available revised growth rates, where the preliminary growth rate refers to the first year-on-year growth rate published for the month in question.

- Time period: January 2012 to December 2022.

Figure 2 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 10 provides key results relating to revisions.

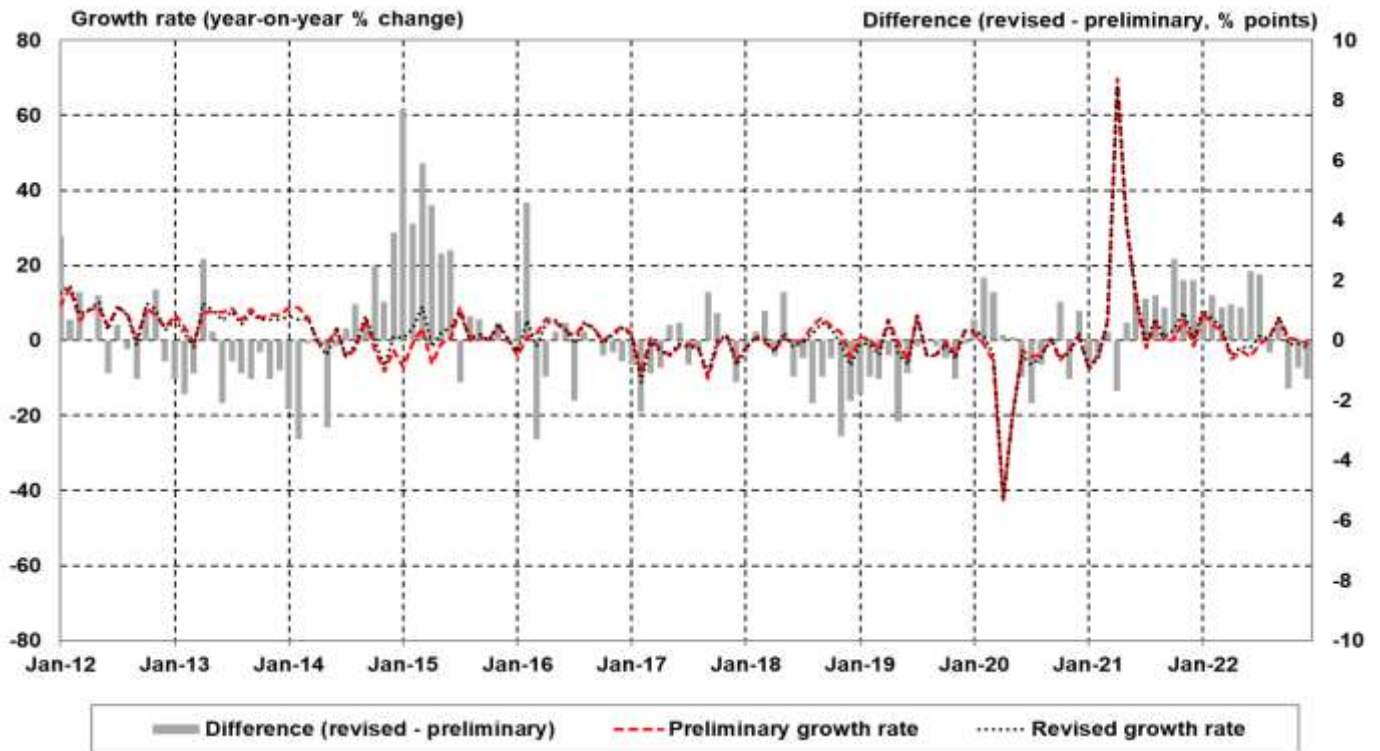**Figure 2 – Wholesale trade year-on-year growth rates: preliminary and revised**

Table 10 – Wholesale trade year-on-year growth rates: preliminary and revised

Description	Value / outcome	Comment
Average year-on-year growth rate over the whole period	Preliminary: 1,55% Revised: 1,70%	The average of revised growth rates is higher than the average of preliminary growth rates
Mean revision	0,15 of a percentage point	This is the average of the revisions
Mean absolute revision	1,32 percentage points	Average of the revisions, but based on the absolute value of each revision (positives and negatives do not cancel each other)
Largest upward revision	7,7 percentage points	Preliminary -7,0% was revised up to 0,7% (January 2015)
Largest downward revision	-3,3 percentage points	Preliminary 8,9% was revised down to 5,6% (February 2014) Preliminary 1,8% was revised down to -1,5% (March 2016)
Range for all revisions	-3,3 to 7,7 percentage points	
Range within which 90% of the revisions lie	-2,3 to 3,5 percentage points	This may be regarded as the normal range for revisions, with revisions outside this range being outliers
Number of upward revisions	61 (or 46,2% of the total observations)	
Number of downward revisions	66 (or 50,0% of the total observations)	

Wholesale trade sales, January 2023

Description	Value / outcome	Comment
Number of zero revisions	5 (or 3,8% of the total observations)	
Is the mean revision (0,15) 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	1,77 percentage points	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	75,8%	This is the percentage of revisions that lie between -1,62 and 1,92 percentage points; the higher the percentage, the lower is the dispersion about the mean – see Figure 3

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

The formula for the test statistic is as follows:

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

where

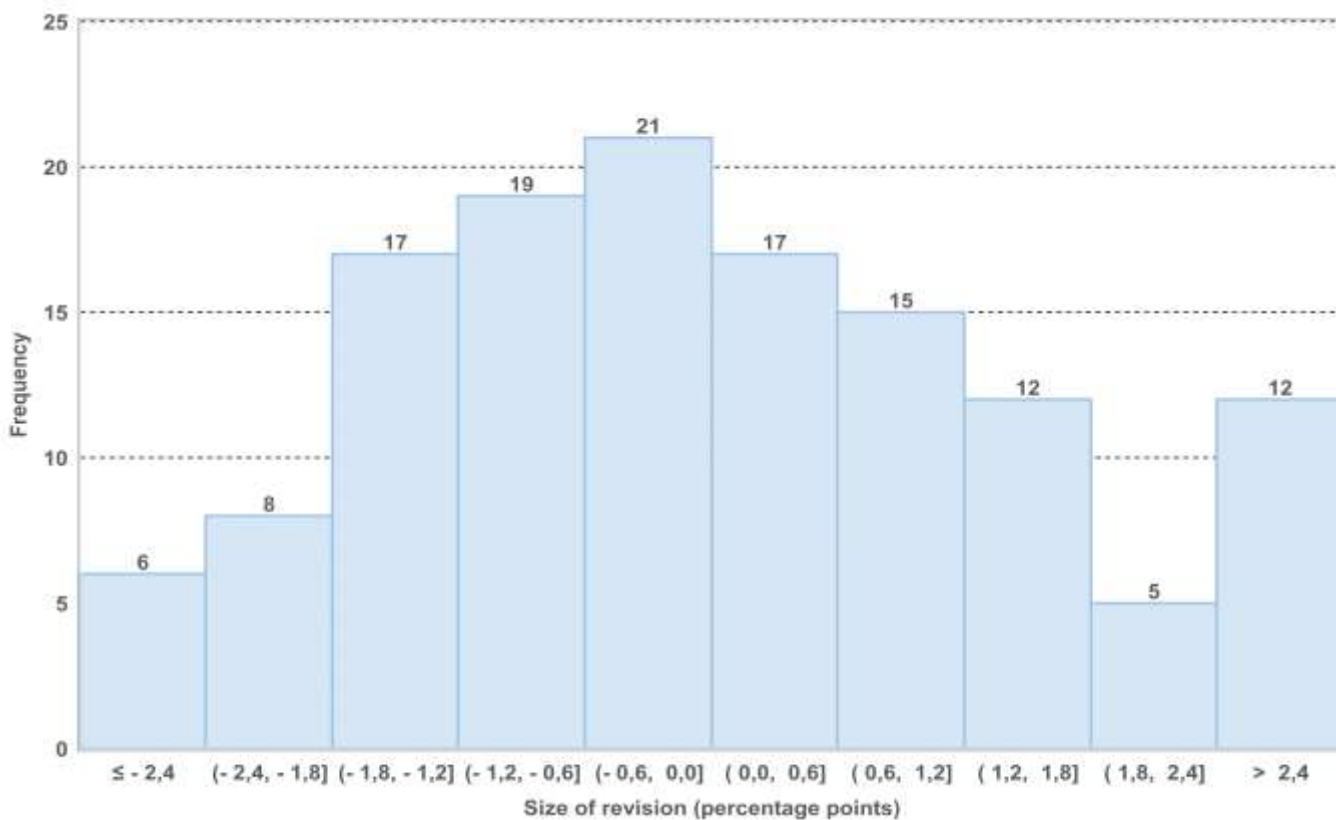$n = number\ of\ observations$

$\bar{R} = mean\ revision$

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

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 0,77, which lies below the critical value of 1,98, 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 3 shows the revisions in terms of a histogram. There were 21 revisions between -0,6 and 0,0 (-0,6 < revision ≤ 0,0) and 17 revisions between 0,0 and 0,6 (0,0 < revision ≤ 0,6). 76,5% of revisions lay between -1,8 and 1,8 percentage points.

Figure 3 – Wholesale trade year-on-year growth rates: histogram of revisions

Survey information

Introduction	**1**	Statistics South Africa (Stats SA) conducts a monthly survey covering enterprises in the wholesale trade industry (see point 4 below). This survey is based on a sample drawn from Stats SA's 2022 business sampling frame (BSF) that contains businesses registered at the South African Revenue Service (SARS) for value-added tax (VAT) and income tax (IT). Stats SA continuously updates its BSF, which is linked to the SARS administrative data.
	2	In order to improve timeliness, some information for the latest month had to be estimated due to late response. These estimates will be revised in future statistical releases as soon as information becomes available. Published wholesale trade sales estimates exclude VAT.
Purpose of the survey	**3**	The results of the monthly wholesale trade sales survey are used to compile estimates of the gross domestic product (GDP) and its components, which are used in monitoring the state of the economy and formulation of economic policy. These statistics are also used in the analysis of comparative business and industry performance.
Scope of the survey	**4**	This survey covers wholesale enterprises according to the following types of dealers:

- wholesale trade on a fee or contract basis – sales by commission agents, commodity brokers, auctioneers and 'other' wholesale trade on a fee or contract basis;
- wholesale trade in agricultural raw materials and livestock;
- wholesale trade in food, beverages and tobacco;
- wholesale trade in textiles, clothing and footwear;
- wholesale trade in 'other' household goods except precious stones. This group includes wholesale trade in household furniture, requisites and appliances, wholesale trade in books and stationery, wholesale trade in pharmaceuticals and toiletries and wholesale trade in 'other' household goods not elsewhere classified;
- wholesale trade in precious stones, jewellery and silverware;
- wholesale trade in solid, liquid and gaseous fuels and related products;
- wholesale trade in metals and metal ores;
- wholesale trade in construction materials, hardware, plumbing and heating equipment and supplies;
- wholesale trade in 'other' intermediate products, waste and scrap;
- wholesale trade in machinery, equipment and supplies; and
- wholesale trade in 'other' goods. This group covers general wholesale trade and 'other' wholesale trade not classified elsewhere.

Classification	**5**	The 1993 edition of the *Standard Industrial Classification of All Economic Activities* (SIC), Fifth Edition, Report No. 09-90-02, was used to classify the statistical units in the survey. The SIC is based on the 1990 *International Standard Industrial Classification of All Economic Activities* (ISIC) with suitable adaptations for local conditions. Each enterprise is classified to the industry which reflects its predominant activity. Statistics in this publication are presented at SIC four digit level.
Collection rate	**6**	The preliminary collection rate for the survey on wholesale trade sales for January 2023 was 66,1%. The improved collection rate for December 2022 was 76,0%.

Statistical unit	**7**	The statistical unit for which information is compiled and published is the enterprise, defined as a legal unit or a combination of legal units that includes and directly controls all functions necessary to carry out its sales activities. The statistical units are derived from and linked to the South African Revenue Service (SARS) administrative data.
Revised figures	**8**	Revised figures are mainly due to late submission of data to Stats SA, or respondents reporting revisions or corrections to their figures. Preliminary figures, as indicated in the relevant tables, are subject to change and when revised will not be indicated as such.
Related publications	**9**	Users may also refer to the following publication available from Stats SA: • *Stats in Brief* issued annually.
Rounding-off of figures	**10**	Where figures have been rounded off, discrepancies may occur between sums of the component items and the totals.
Historical data	**11**	Historical wholesale trade sales data are available on the Stats SA website. To access the data electronically, use the following link: Click to download historical data
Past publications	**12**	Past wholesale trade sales releases are available on the Stats SA website. To access the releases electronically, use the following link: Click to download past releases

Technical notes

Survey methodology and design

1   The survey is conducted monthly. Questionnaires are sent to a sample of 1 645 enterprises from a population of 19 390 enterprises. Completed questionnaires are required to be returned to Stats SA within 10 days after the end of the reference month. Email, fax and telephone reminders are used to follow up on non-respondents.

2   A stratified random sample was drawn at the SIC four-digit level in April 2022 from Stats SA's business sampling frame (BSF). Strata were formed using a combination of Standard Industrial Classification and the measure of size classes for enterprises (see point 3 below). The Neyman optimal allocation formula given below was used to allocate samples to each stratum:

$$nh = n * (Nh * Sh) / [\Sigma (Ni * Si)].$$

Neyman allocation formula not only allocates sample sizes to each stratum but also calculates the relative precision for each stratum as well as the relative precision for all strata. The relative precision for these strata was 5,8%.

Class limits

3   The wholesale sampling frame is divided into four size groups. All large enterprises (size group one) are completely enumerated. Simple random sampling is applied to the remaining size groups (medium, small and very small). The total value of sales of the large enterprises (size group one) is added to the weighted totals of size group two, three and four to reflect the total value of sales.

Measure of size classes (Rand)

Enterprise size	Size group	Lower limit	Upper limit
Very small	4	3 266 056	27 000 000
Small	3	27 000 001	144 000 000
Medium	2	144 000 001	288 000 000
Large	1	288 000 001	

Sample weighting

4   For those strata not completely enumerated, the weights to produce estimates are the inverse ratio of the sampling fraction, modified to take account of non-response in the survey. Stratum estimates are calculated and then aggregated with the completely enumerated stratum to form group estimates. These procedures are consistent with international best practice.

Seasonal adjustment

5   Seasonally adjusted estimates are generated each month using the X-12-ARIMA Seasonal Adjustment Program developed by the United States Census Bureau. Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences on the series can be more clearly recognised. Seasonal adjustment does not aim to remove irregular or non-seasonal influences which may be present in any particular month. Influences that are volatile or unsystematic can still make it difficult to interpret the movement of the series even after adjustment for seasonal variations. Therefore, the month-to-month movements of seasonally adjusted estimates may not be reliable indicators of trend behaviour. The X-12-ARIMA procedure for wholesale trade sales is described in more detail on the Stats SA website:
Click to download seasonal adjustment wholesale trade sales February 2022

| Trend cycle | 6 | The trend is the long-term pattern or movement of a time series. The X-12-ARIMA Seasonal Adjustment Program is used for smoothing seasonally adjusted estimates to estimates of the underlying trend cycle. |

| Constant prices | 7 | Stats SA compiles its monthly estimates of wholesale trade sales at current prices from a survey of wholesalers in the formal sector. For January 1998 to December 2011, wholesale trade sales at constant prices were calculated using the 'all groups' PPI for domestic output, but excluding electricity and other utilities. |

From January 2012, wholesale trade sales at constant prices are compiled as follows:
(1) Deflate sales of dealers in agricultural raw materials and livestock using the PPI for agriculture.
(2) Deflate sales of dealers in food, beverages and tobacco using the final manufacturing PPI for food products, beverages and tobacco.
(3) Deflate sales of dealers in textiles, clothing and footwear using the final manufacturing PPI for textiles, clothing and footwear.
(4) Deflate sales of dealers in solid, liquid and gaseous fuels and related products using the final manufacturing PPI for coal and petroleum products.
(5) Deflate sales of dealers in machinery, equipment and supplies using the final manufacturing PPIs for general and special purpose machinery; household appliances and office machinery; and electrical machinery and communication and metering equipment.
(6) Deflate the remaining wholesale trade sales using the headline PPI (final manufacturing) excluding the PPIs for food products, beverages and tobacco; textiles, clothing and footwear; coal and petroleum products; general and special purpose machinery; household appliances and office machinery; electrical machinery and communication and metering equipment; and transport equipment. The PPI for transport equipment is excluded because it measures producer prices of motor vehicles, which are not included in wholesale trade.

Total wholesale trade sales at constant prices is obtained by aggregating (1) to (6).

| Reliability of estimates | 8 | Data presented in this publication are based on information obtained from a sample and are, therefore, subject to sampling variability; that is, they may differ from the figures that would have been produced if the data had been obtained from all enterprises in the wholesale industry in South Africa. Estimates are subject to sampling and non-sampling errors. |

| | 9 | Inaccuracies may occur because of imperfections in reporting by enterprises and errors made in the collection and processing of the data. Inaccuracies of this kind are referred to as non-sampling errors. Every effort is made to minimise non-sampling errors by careful design of questionnaires, testing them in pilot studies, editing reported data and implementing efficient operating procedures. Fluctuations may occur in consecutive months as a result of seasonal and economic factors. |

| Relative standard error | 10 | One measure is the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of enterprises was used. The relative standard error (RSE) provides an immediate indication of the percentage errors likely to have occurred due to sampling, and thus avoids the need to refer to the size of the estimate. |

Estimates of total wholesale trade sales within 95% confidence limits – January 2023

	Lower limit (R million)	Sales (R million)	Upper limit (R million)	Relative standard error (RSE) %
Wholesale trade sales	243 601	253 087	262 573	1,9

Month-on-month percentage change	11	The month-on-month percentage change in a variable for any given month is the change between that month and the previous month, expressed as a percentage of the latter.
Year-on-year percentage change	12	The year-on-year percentage change in a variable for any given period is the change between that period and the corresponding period of the previous year, expressed as a percentage of the latter.
Contribution (percentage points)	13	The contribution (percentage points) to the year-on-year percentage change is calculated by multiplying the percentage change of each type of wholesaler by its corresponding weight, divided by 100. The weight is the percentage contribution of each type of wholesaler to total wholesale trade sales in the corresponding period of the previous year.

Glossary

Enterprise

An enterprise is a legal entity or a combination of legal units that includes and directly controls all functions necessary to carry out its sales activities.

Industry

An industry is made up of enterprises engaged in the same or similar kinds of economic activity. Industries are defined in the *System of National Accounts* (SNA) in the same way as in the *Standard Industrial Classification of All Economic Activities* (SIC)*,* Fifth Edition, Report No. 09-90-02 of January 1993.

Symbols and abbreviations

BSF	Business sampling frame
GDP	Gross domestic product
ISIC	International Standard Industrial Classification
SIC	Standard Industrial Classification of All Economic Activities
SARS	South African Revenue Service
Stats SA	Statistics South Africa
VAT	Value-added tax

Wholesale trade

Wholesale trade includes the resale (sale without transformation) of new and used goods and products to other wholesalers, retailers, agricultural, industrial, commercial, institutional and professional users either directly or through agents on a fee or contract basis.

Wholesaler

A wholesaler is an enterprise deriving 50% or more of its turnover from sales of goods to other businesses and institutions.

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