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Mining: Production and sales (Preliminary)

January 2023

This release provides an analysis of revisions. If you have any questions or comments, please send these to JP Terblanche, juan-pierret@statssa.gov.za.

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Production: results for January 2023

Table A – Key growth rates in the volume of mining production

	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Year-on-year % change, unadjusted	-6,1	-5,0	-11,0	-9,1	-3,6	-1,9
Month-on-month % change, seasonally adjusted	-0,6	0,0	-2,8	-1,0	1,3	4,4
3-month % change, seasonally adjusted ¹	-0,1	1,8	-0,3	-1,8	-3,2	-0,5

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

In January 2023, mining production experienced its twelfth consecutive month of year-on-year decline, recording a decrease of 1,9%. The largest negative contributors were:

- PGMs (-15,2% and contributing -3,5 percentage points); and
- diamonds (-15,5% and contributing -0,9 of a percentage point).

Iron ore (12,1% and contributing 1,4 percentage points) and coal (4,1% and contributing 1,1 percentage points) were significant positive contributors – see Tables 6 and 7.

Seasonally adjusted mining production increased by 4,4% in January 2023 compared with December 2022. This followed month-on-month changes of 1,3% in December 2022 and -1,0% in November 2022.

Table B – Seasonally adjusted index of the volume of mining production for the latest three months by mineral group and mineral (Base: 2019=100)

Mineral group and mineral	Weight	Aug – Oct 2022	Nov 2022 – Jan 2023	% change between Aug – Oct 2022 and Nov 2022 – Jan 2023	Contribution (% points) to the % change in total mining production
Gold	15,91	87,2	90,0	3,2	0,5
Iron ore	11,92	88,2	88,0	-0,2	0,0
Chromium ore	3,62	105,8	106,4	0,6	0,0
Copper ¹	0,76	98,1	92,6	-5,6	0,0
Manganese ore	6,18	109,3	115,7	5,9	0,4
PGMs	22,96	88,9	89,5	0,7	0,1
Nickel ¹	1,15	69,4	56,3	-18,9	-0,2
Other metallic minerals ¹	2,35	112,1	89,6	-20,1	-0,6
Diamonds ¹	3,20	140,3	112,7	-19,7	-1,0
Coal	27,85	88,4	89,2	0,9	0,2
Building materials	3,32	93,3	92,5	-0,9	0,0
Other non-metallic minerals	0,78	95,5	90,7	-5,0	0,0
Total	100,00	92,5	92,0	-0,5	-0,5

¹ Unadjusted. See notes 4, 5 and 6 on page 15.

Seasonally adjusted mining production decreased by 0,5% in the three months ended January 2023 compared with the previous three months. The largest negative contributors were:

- diamonds (-19,7% and contributing -1,0 percentage point); and
- 'other' metallic minerals (-20,1% and contributing -0,6 of a percentage point) – see Table B.

Figure 1 – Volume of mining production (Base: 2019=100)

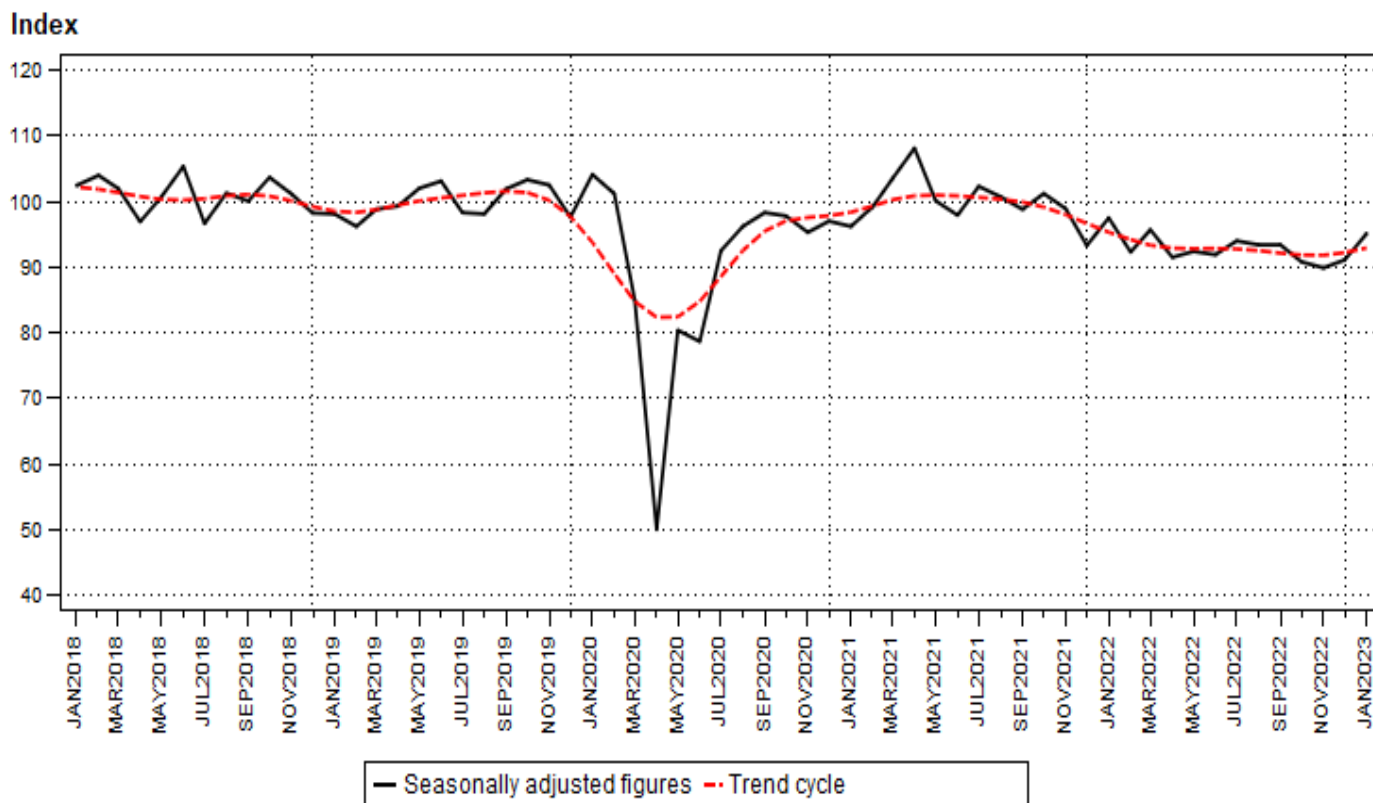
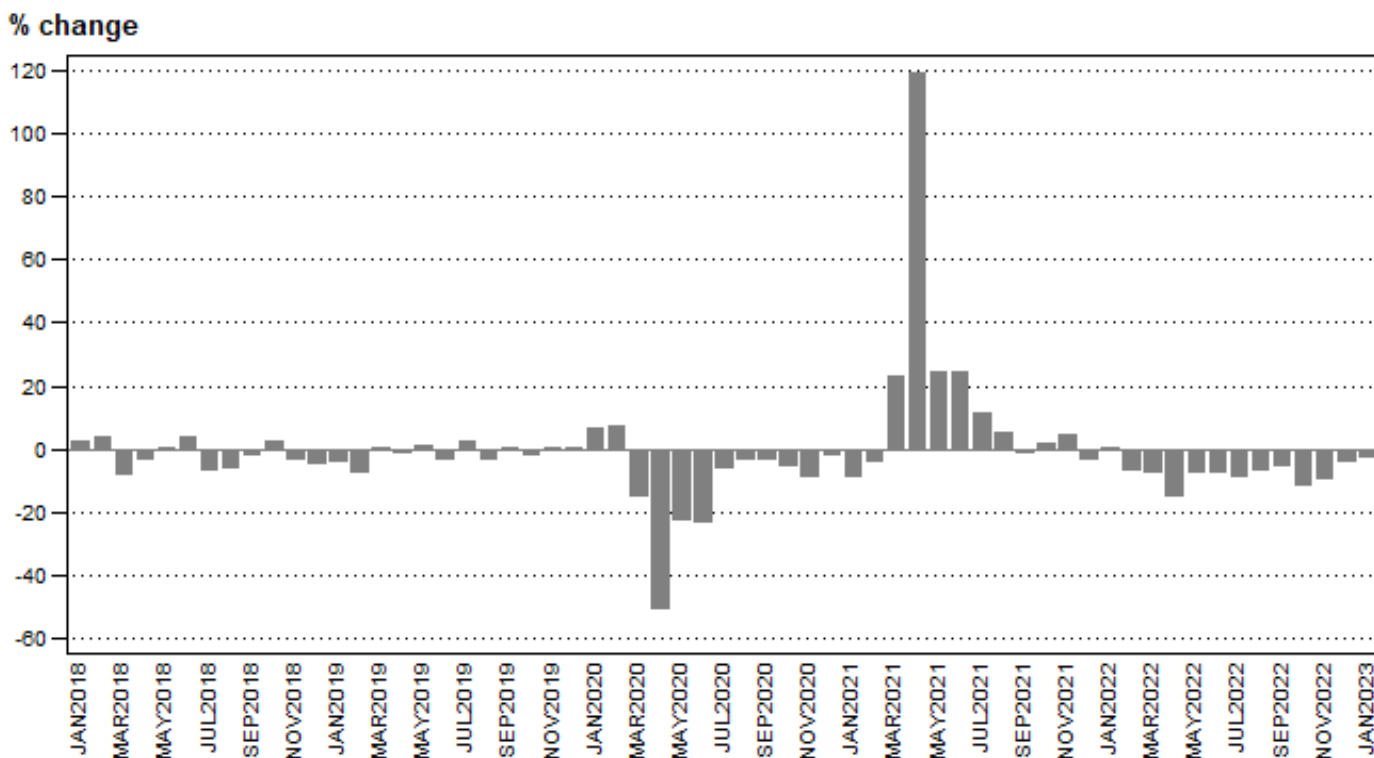


Figure 2 – Volume of mining production (Base: 2019=100): year-on-year percentage change



Sales: results for January 2023

Table C – Key growth rates in mineral sales at current prices

	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Year-on-year % change, unadjusted	4,1	20,7	1,5	-15,9	-0,2	6,8
Month-on-month % change, seasonally adjusted	-1,5	-2,9	-6,0	-7,9	9,5	-0,6
3-month % change, seasonally adjusted ¹	-6,9	-4,3	-7,4	-8,4	-10,5	-7,2

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

Mineral sales at current prices increased by 6,8% year-on-year in January 2023. The largest positive contributors were:

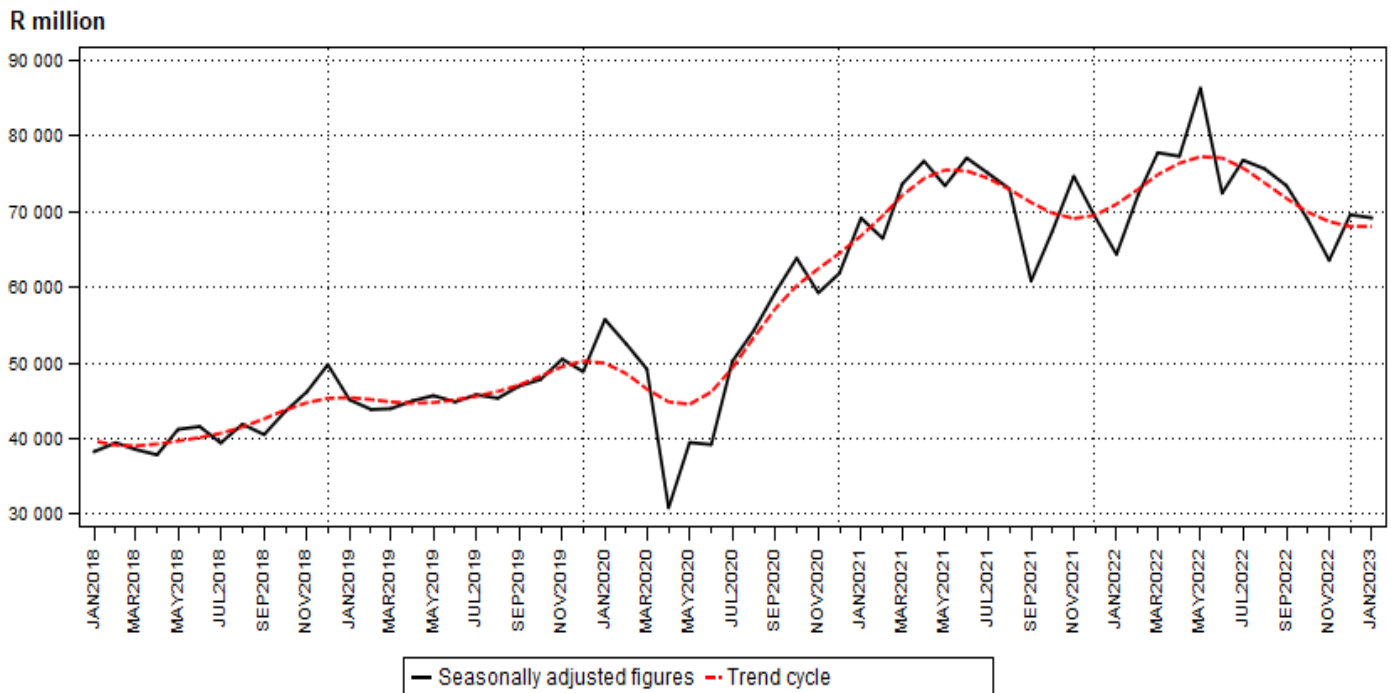
- coal (18,1% and contributing 4,3 percentage points);
- gold (28,2% and contributing 3,2 percentage points);
- chromium ore (68,0% and contributing 2,6 percentage points); and
- ‘other’ metallic minerals (57,3% and contributing 1,7 percentage points).

PGMs (-15,1% and contributing -4,8 percentage points) and manganese ore (-16,6% and contributing -1,1 percentage points) were significant negative contributors – see Tables 12 and 13.

Seasonally adjusted mineral sales at current prices decreased by 0,6% in January 2023 compared with December 2022. This followed month-on-month changes of 9,5% in December 2022 and -7,9% in November 2022.

In the three months ended January 2023 the seasonally adjusted value of mineral sales at current prices was 7,2% lower compared with the previous three months.

Figure 3 – Total value of mineral sales at current prices



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Tables

Table 1 – Index of the volume of mining production (Base: 2019=100)

Month	2017	2018	2019	2020	2021 ¹	2022 ¹	2023 ¹
Jan	87,1	89,2	86,3	92,1	84,5	85,1	83,5
Feb	86,7	90,1	83,5	89,7	86,5	81,2	
Mar	107,3	99,2	99,3	84,8	104,6	97,0	
Apr	96,4	93,4	93,1	46,2	101,2	86,2	
May	103,9	104,7	106,3	83,0	103,2	95,9	
Jun	108,6	113,2	110,3	85,0	105,9	98,6	
Jul	105,7	99,2	101,9	96,3	107,1	98,2	
Aug	114,9	108,4	105,6	102,5	108,1	101,5	
Sep	106,3	104,9	105,5	102,8	102,4	97,3	
Oct	106,4	109,2	107,5	102,2	103,9	92,5	
Nov	108,8	105,5	106,0	97,2	101,9	92,6	
Dec	98,3	94,1	94,5	93,0	90,5	87,2	
Year	102,5	100,9	100,0	89,6	100,0	92,8	

¹ Preliminary.

Table 2 – Year-on-year percentage change in the volume of mining production

Month	2018	2019	2020	2021	2022	2023	2023 year-to-date
Jan	2,4	-3,3	6,7	-8,3	0,7	-1,9	-1,9
Feb	3,9	-7,3	7,4	-3,6	-6,1		
Mar	-7,5	0,1	-14,6	23,3	-7,3		
Apr	-3,1	-0,3	-50,4	119,0	-14,8		
May	0,8	1,5	-21,9	24,3	-7,1		
Jun	4,2	-2,6	-22,9	24,6	-6,9		
Jul	-6,1	2,7	-5,5	11,2	-8,3		
Aug	-5,7	-2,6	-2,9	5,5	-6,1		
Sep	-1,3	0,6	-2,6	-0,4	-5,0		
Oct	2,6	-1,6	-4,9	1,7	-11,0		
Nov	-3,0	0,5	-8,3	4,8	-9,1		
Dec	-4,3	0,4	-1,6	-2,7	-3,6		
Year	-1,6	-0,9	-10,4	11,6	-7,2		

Table 3 – Seasonally adjusted volume of total mining production

Month	Index (Base: 2019=100)				Month-on-month % change			
	2020	2021	2022	2023	2020	2021	2022	2023
Jan	104,1	96,2	97,5	95,1	6,7	-0,8	4,5	4,4
Feb	101,2	99,2	92,3		-2,8	3,1	-5,3	
Mar	85,0	103,5	95,7		-16,0	4,3	3,7	
Apr	50,1	108,1	91,5		-41,1	4,4	-4,4	
May	80,4	100,1	92,4		60,5	-7,4	1,0	
Jun	78,7	97,9	91,9		-2,1	-2,2	-0,5	
Jul	92,5	102,3	94,0		17,5	4,5	2,3	
Aug	96,2	100,7	93,4		4,0	-1,6	-0,6	
Sep	98,3	98,8	93,4		2,2	-1,9	0,0	
Oct	97,8	101,2	90,8		-0,5	2,4	-2,8	
Nov	95,3	98,9	89,9		-2,6	-2,3	-1,0	
Dec	97,0	93,3	91,1		1,8	-5,7	1,3	

Table 4 – Index of the volume of mining production by mineral group and mineral (Base: 2019=100) ¹

Mineral group and mineral	Weight	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Gold	15,91	95,6	93,8	97,6	99,5	84,9	78,4
Iron ore	11,92	101,7	79,2	77,5	74,2	90,7	92,6
Chromium ore	3,62	118,5	107,3	105,2	113,8	86,7	92,4
Copper	0,76	82,9	107,4	103,9	98,4	109,5	69,9
Manganese ore	6,18	128,6	113,7	108,1	113,8	94,9	106,6
PGMs	22,96	97,5	96,4	84,7	91,9	102,6	73,2
Nickel	1,15	69,2	70,6	68,5	62,9	56,9	49,0
Other metallic minerals	2,35	116,3	104,6	115,5	89,4	93,1	86,2
Diamonds	3,20	158,0	168,1	94,9	121,5	92,1	124,4
Coal	27,85	93,4	93,9	94,6	86,7	74,4	83,4
Building materials	3,32	104,4	101,9	100,8	100,6	70,7	68,2
Other non-metallic minerals	0,78	103,7	107,9	97,6	88,6	84,2	82,4
Total	100,00	101,5	97,3	92,5	92,6	87,2	83,5

¹ All index values in this table are preliminary. Annual averages and annual percentage changes are available on the following link: [Annual data](#)

Table 5 – Seasonally adjusted index of the volume of mining production by mineral group and mineral (Base: 2019=100)

Mineral group and mineral	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Month-on-month % change
Gold	86,3	85,7	89,6	91,5	86,6	91,9	6,1
Iron ore	94,3	82,9	87,5	80,8	81,9	101,3	23,7
Chromium ore	110,4	102,8	104,3	107,0	104,9	107,3	2,3
Copper ¹	82,9	107,4	103,9	98,4	109,5	69,9	-36,2
Manganese ore	114,2	110,5	103,1	115,3	108,1	123,8	14,5
PGMs	89,6	91,7	85,3	86,2	93,7	88,7	-5,3
Nickel ¹	69,2	70,6	68,5	62,9	56,9	49,0	-13,9
Other metallic minerals ¹	116,3	104,6	115,5	89,4	93,1	86,2	-7,4
Diamonds ¹	158,0	168,1	94,9	121,5	92,1	124,4	35,1
Coal	85,3	89,5	90,3	85,4	90,0	92,2	2,4
Building materials	92,1	92,7	95,2	90,6	95,5	91,3	-4,4
Other non-metallic minerals	99,2	97,0	90,3	88,8	90,2	93,2	3,3
Total	93,4	93,4	90,8	89,9	91,1	95,1	4,4

¹ Unadjusted. See notes 4, 5 and 6 on page 15.

Table 6 – Year-on-year percentage change in the volume of mining production by mineral group and mineral

Mineral group and mineral	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Gold	-16,7	-12,3	-6,7	-4,6	-3,3	3,7
Iron ore	-14,5	-22,4	-2,5	-19,3	-15,4	12,1
Chromium ore	2,8	-3,2	-3,3	14,0	6,0	1,1
Copper	-26,2	36,6	15,7	2,7	19,7	-6,2
Manganese ore	23,5	-9,8	-10,0	10,8	2,8	-4,9
PGMs	-12,9	-3,1	-33,8	-22,1	-5,4	-15,2
Nickel	2,7	-2,1	-8,3	-14,5	-15,1	-30,0
Other metallic minerals	53,6	25,1	30,4	5,9	9,1	6,6
Diamonds	-3,6	2,1	-22,5	-21,7	-37,0	-15,5
Coal	-2,6	1,3	2,9	-2,1	8,3	4,1
Building materials	1,1	-1,7	5,9	-3,7	-0,3	-0,1
Other non-metallic minerals	36,4	28,9	8,6	3,5	14,2	10,6
Total	-6,1	-5,0	-11,0	-9,1	-3,6	-1,9

Table 7 – Contribution of each mineral group and mineral to the year-on-year percentage change in the volume of mining production (percentage points)

Mineral group and mineral	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Gold	-2,8	-2,1	-1,1	-0,7	-0,5	0,5
Iron ore	-1,9	-2,7	-0,2	-2,1	-2,2	1,4
Chromium ore	0,1	-0,1	-0,1	0,5	0,2	0,0
Copper	-0,2	0,2	0,1	0,0	0,2	0,0
Manganese ore	1,4	-0,7	-0,7	0,7	0,2	-0,4
PGMs	-3,1	-0,7	-9,6	-5,9	-1,5	-3,5
Nickel	0,0	0,0	-0,1	-0,1	-0,1	-0,3
Other metallic minerals	0,9	0,5	0,6	0,1	0,2	0,1
Diamonds	-0,2	0,1	-0,9	-1,1	-1,9	-0,9
Coal	-0,6	0,3	0,7	-0,5	1,8	1,1
Building materials	0,0	-0,1	0,2	-0,1	0,0	0,0
Other non-metallic minerals	0,2	0,2	0,1	0,0	0,1	0,1
Total	-6,1	-5,0	-11,0	-9,1	-3,6	-1,9

Table 8 – Mineral sales at current prices (R million)

Month	2017	2018	2019	2020	2021 ¹	2022 ¹	2023 ¹
Jan	37 903,7	34 420,4	41 070,7	51 128,5	63 479,1	58 966,9	62 978,7
Feb	33 691,7	34 892,7	38 202,9	45 135,2	56 883,8	61 607,8	
Mar	39 473,2	39 778,5	45 585,3	51 606,4	78 183,9	83 483,5	
Apr	34 917,1	37 039,5	44 538,7	31 064,5	78 566,0	80 193,1	
May	36 288,4	41 684,6	46 519,8	40 521,7	75 958,2	89 706,9	
Jun	40 672,0	45 024,3	48 295,2	41 962,5	82 014,6	76 850,2	
Jul	37 150,3	37 118,1	43 596,0	48 588,4	73 631,0	76 076,2	
Aug	40 890,3	43 022,2	47 069,2	56 868,0	77 069,1	80 259,4	
Sep	44 264,9	43 017,4	50 009,3	63 394,0	65 000,2	78 476,9	
Oct	43 966,4	45 802,3	50 051,2	66 165,3	69 017,3	70 023,4	
Nov	42 104,9	46 680,3	50 450,7	58 255,9	72 058,8	60 594,9	
Dec	42 562,3	50 020,5	47 491,9	58 501,2	64 558,5	64 421,5	
Total	473 885,2	498 500,8	552 880,9	613 191,6	856 420,5	880 660,7	

¹ Preliminary.**Table 9 – Year-on-year percentage change in mineral sales at current prices**

Month	2018	2019	2020	2021	2022	2023	2023 year-to-date
Jan	-9,2	19,3	24,5	24,2	-7,1	6,8	6,8
Feb	3,6	9,5	18,1	26,0	8,3		
Mar	0,8	14,6	13,2	51,5	6,8		
Apr	6,1	20,2	-30,3	152,9	2,1		
May	14,9	11,6	-12,9	87,5	18,1		
Jun	10,7	7,3	-13,1	95,4	-6,3		
Jul	-0,1	17,5	11,5	51,5	3,3		
Aug	5,2	9,4	20,8	35,5	4,1		
Sep	-2,8	16,3	26,8	2,5	20,7		
Oct	4,2	9,3	32,2	4,3	1,5		
Nov	10,9	8,1	15,5	23,7	-15,9		
Dec	17,5	-5,1	23,2	10,4	-0,2		
Total	5,2	10,9	10,9	39,7	2,8		

Table 10 – Seasonally adjusted total mineral sales at current prices

Month	R million				Month-on-month % change			
	2020	2021	2022	2023	2020	2021	2022	2023
Jan	55 755,4	69 161,4	64 356,3	69 186,9	14,1	11,8	-7,3	-0,6
Feb	52 469,3	66 476,2	72 233,6		-5,9	-3,9	12,2	
Mar	49 190,0	73 688,6	77 805,8		-6,2	10,8	7,7	
Apr	30 855,9	76 692,0	77 332,4		-37,3	4,1	-0,6	
May	39 490,8	73 434,0	86 356,4		28,0	-4,2	11,7	
Jun	39 214,9	77 103,9	72 452,2		-0,7	5,0	-16,1	
Jul	50 217,0	75 125,4	76 811,4		28,1	-2,6	6,0	
Aug	54 334,7	73 029,6	75 659,8		8,2	-2,8	-1,5	
Sep	59 412,0	60 831,1	73 443,9		9,3	-16,7	-2,9	
Oct	63 858,5	67 342,1	69 012,8		7,5	10,7	-6,0	
Nov	59 277,8	74 694,4	63 568,8		-7,2	10,9	-7,9	
Dec	61 855,4	69 390,0	69 604,2		4,3	-7,1	9,5	

Table 11 – Mineral sales at current prices by mineral group and mineral (R million) ¹

Mineral group and mineral	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Gold	9 700,6	11 761,5	9 643,2	4 949,7	5 702,3	8 619,0
Iron ore	6 474,1	7 634,9	4 747,2	4 379,7	6 855,2	7 797,5
Chromium ore	2 706,6	2 683,3	2 720,8	2 656,6	2 804,2	3 738,5
Copper	564,1	498,6	426,8	453,6	645,9	552,3
Manganese ore	4 589,9	4 464,8	2 994,5	3 671,4	3 838,6	3 336,9
PGMs	22 426,8	19 156,5	23 077,8	20 633,1	20 697,7	16 062,1
Nickel	1 020,5	1 404,1	517,8	1 332,3	1 022,0	831,4
Other metallic minerals	2 289,4	3 229,1	1 766,4	2 153,2	1 923,2	2 691,0
Coal	25 412,0	23 803,3	20 475,2	15 726,5	17 139,6	16 441,3
Building materials	1 177,1	1 160,1	1 171,3	1 117,5	984,1	980,0
Other non-metallic minerals	3 898,4	2 680,6	2 482,5	3 521,3	2 808,7	1 928,7
Total	80 259,4	78 476,9	70 023,4	60 594,9	64 421,5	62 978,7

¹ All values in this table are preliminary.

Table 12 – Year-on-year percentage change in mineral sales at current prices by mineral group and mineral

Mineral group and mineral	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Gold	-20,5	122,4	24,7	-54,9	-9,3	28,2
Iron ore	-34,2	-18,7	-36,5	-35,1	-8,4	1,5
Chromium ore	35,3	36,2	68,0	50,0	36,0	68,0
Copper	28,2	1,9	13,1	-3,7	64,9	25,2
Manganese ore	39,8	32,9	-15,7	34,1	5,5	-16,6
PGMs	-25,0	-22,9	-5,3	-23,7	-12,6	-15,1
Nickel	30,7	100,1	-39,6	27,6	4,2	-4,4
Other metallic minerals	86,3	163,6	15,8	34,1	21,0	57,3
Coal	83,3	63,3	15,5	1,7	17,6	18,1
Building materials	10,4	2,6	9,8	2,2	13,3	20,5
Other non-metallic minerals	57,1	33,4	-8,4	13,6	-6,2	15,4
Total	4,1	20,7	1,5	-15,9	-0,2	6,8

Table 13 – Contribution of each mineral group and mineral to the year-on-year percentage change in mineral sales at current prices (percentage points)

Mineral group and mineral	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Gold	-3,2	10,0	2,8	-8,4	-0,9	3,2
Iron ore	-4,4	-2,7	-4,0	-3,3	-1,0	0,2
Chromium ore	0,9	1,1	1,6	1,2	1,1	2,6
Copper	0,2	0,0	0,1	0,0	0,4	0,2
Manganese ore	1,7	1,7	-0,8	1,3	0,3	-1,1
PGMs	-9,7	-8,8	-1,9	-8,9	-4,6	-4,8
Nickel	0,3	1,1	-0,5	0,4	0,1	-0,1
Other metallic minerals	1,4	3,1	0,3	0,8	0,5	1,7
Coal	15,0	14,2	4,0	0,4	4,0	4,3
Building materials	0,1	0,0	0,2	0,0	0,2	0,3
Other non-metallic minerals	1,8	1,0	-0,3	0,6	-0,3	0,4
Total	4,1	20,7	1,5	-15,9	-0,2	6,8

Analysis of revisions

Introduction

Statistics South Africa collects administrative mining data on a monthly basis from the Department of Mineral Resources and Energy (DMRE). Preliminary monthly indices for mining production are published approximately six weeks after the reference month, e.g. preliminary mining production for June are published around mid-August. The preliminary indices are revised the following month, using additional information received from the DMRE. This and other reasons for revising mining production indices from time to time are shown in the following revisions schedule.

Revisions schedule for mining production

Reason for revision	Schedule
Additional information from the DMRE	Monthly (revision of the latest two years)
New weights for mining	Annually
New base year	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 production indices and/or growth rates (e.g. month-on-month percentage changes, year-on-year percentage changes); 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 mining production index, year-on-year growth rate, 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 4 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 14 provides key results relating to revisions.

Figure 4 – Mining production year-on-year growth rates: preliminary and revised

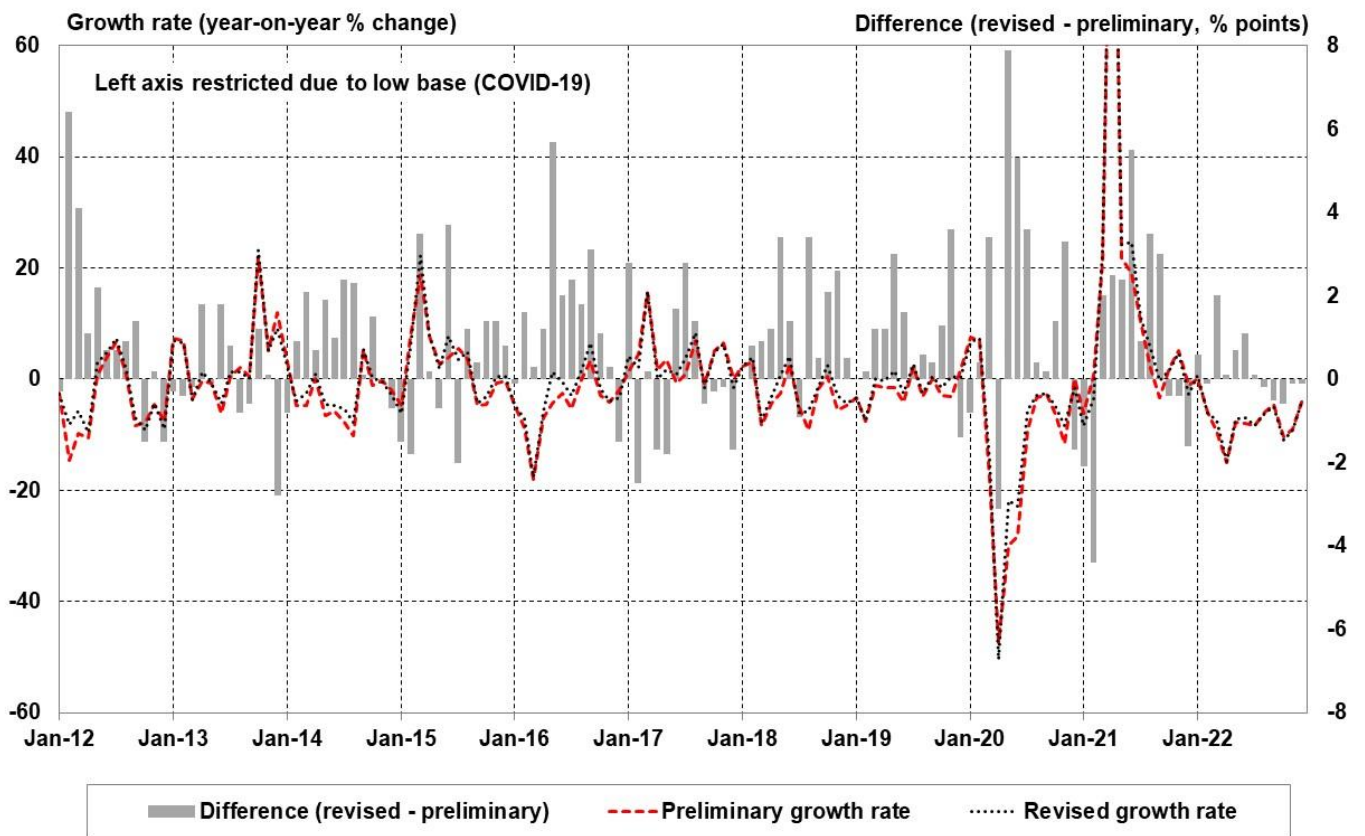


Table 14 – Mining production year-on-year growth rates: preliminary and revised

Description	Value / outcome	Comment
Average year-on-year growth rate over the whole period	Preliminary: -0,88% Revised: -0,02%	The average of revised growth rates is higher than the average of preliminary growth rates
Mean revision	0,86 of a percentage point	This is the average of the revisions
Mean absolute revision	1,54 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	7,9 percentage points	Preliminary -29,8% was revised up to -21,9% (May 2020)
Largest downward revision	-4,4 percentage points	Preliminary 0,8% was revised down to -3,6% (February 2021)
Range for all revisions	-4,4 to 7,9 percentage points	
Range within which 90% of the revisions lie	-1,9 to 3,8 percentage points	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	88 (or 66,7% of the total observations)	
Number of downward revisions	42 (or 31,8% of the total observations)	
Number of zero revisions	2 (or 1,5% of the total observations)	
Is the mean revision (0,86) significantly different from zero?	Yes	This indicates that there a bias in the preliminary estimate – see Note 1 below
Standard deviation of the revisions	1,90 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	72,0%	This is the percentage of revisions that lie between -1,05 and 2,76 percentage points; the higher the percentage, the lower is the dispersion about the mean – see Figure 5

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

The formula for the test statistic is as follows:

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

where

n = number of observations

\bar{R} = mean revision

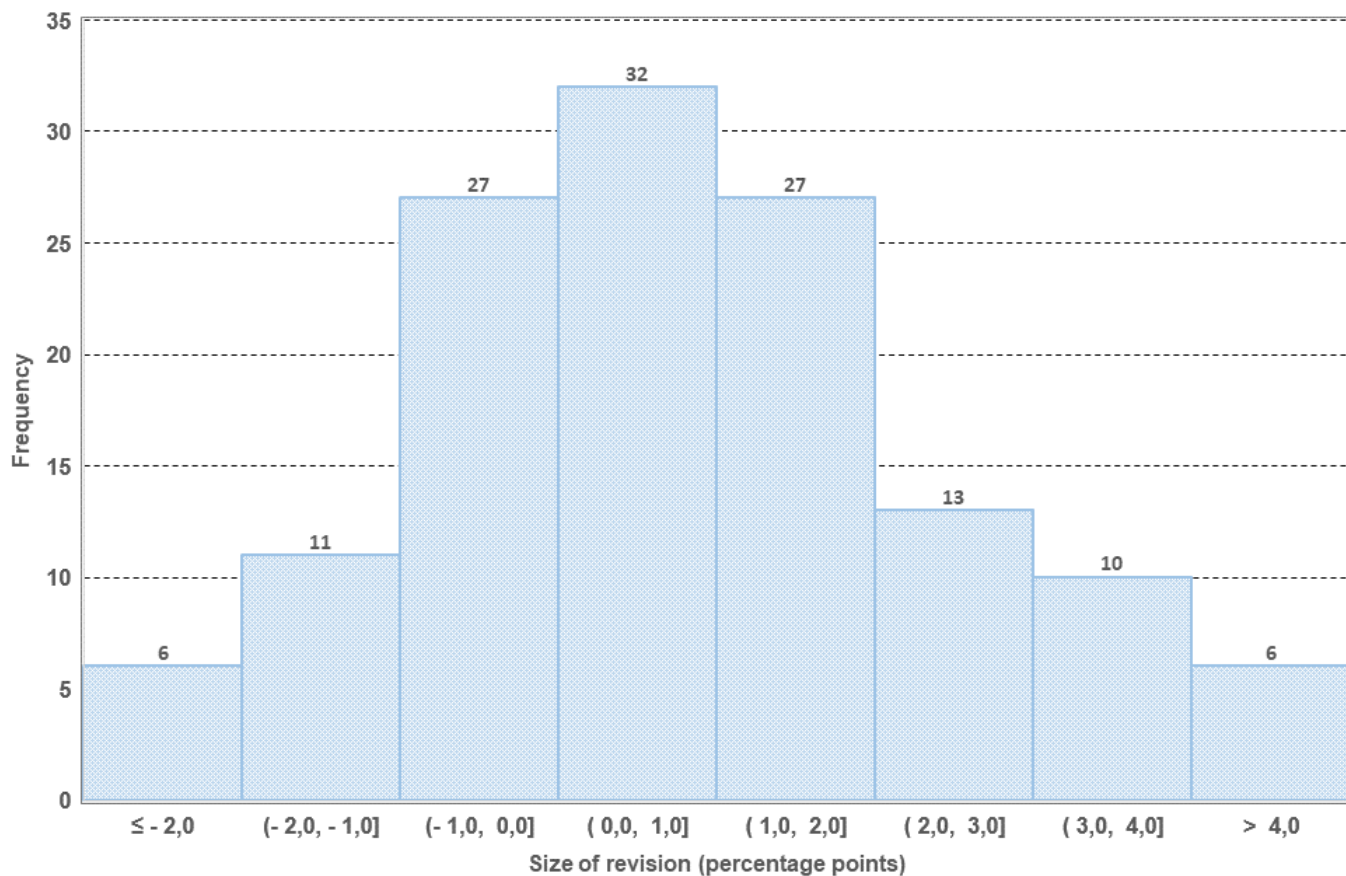
$\hat{\epsilon}_t = R_t - \bar{R}$, with R_t = revision in period t

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 4,71, which lies above the critical value of 1,98, indicating that the MR is significantly different from zero at a 5% significance level. Accordingly, there is under-estimation of the annual growth rates detected in the preliminary estimates. Stats SA is investigating whether the under-estimation can be reduced.

Figure 5 shows the revisions in terms of a histogram. There were 27 revisions between -1,0 and 0,0 ($-1,0 < \text{revision} \leq 0,0$); 32 revisions between 0,0 and 1,0 ($0,0 < \text{revision} \leq 1,0$); and 27 revisions between 1,0 and 2,0 ($1,0 < \text{revision} \leq 2,0$). 75,0% of revisions lay between -1,0 and 3,0 percentage points.

Figure 5 – Mining production year-on-year growth rates: histogram of revisions



Survey information

- Introduction**
- 1 Statistics South Africa (Stats SA) publishes monthly mining production indices and mineral sales based on the information furnished by the Department of Mineral Resources and Energy (DMRE). Data in this release are presented by mineral group and mineral.
 - 2 In accordance with international practice, the indices are usually re-based every five years to a new base year. The current base year of the index of the volume of mining production is 2019=100. Both actual and seasonally adjusted figures are presented.
 - 3 The value of mineral sales is calculated, in general, on a free-on-rail/free-on-board basis.
 - 4 In order to improve timeliness, some information for the current month had to be estimated due to late response. These estimates will be revised in future statistical release(s) as soon as more up-to-date information is available.
- Purpose of the survey**
- 5 The monthly mining production and sales survey is conducted by the DMRE, covering all mining establishments operating in the South African economy. The results of this survey are used to calculate the volume of mining production indices in order to estimate the gross domestic product (GDP) and its components, which in turn are used to develop and monitor government policy.
- Scope of the survey**
- 6 This survey covers mining establishments conducting activities regarding the extracting, dressing and beneficiating of minerals occurring naturally, for example solids such as coal and ores.
- Classification**
- 7 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 statistical unit is classified to an industry which reflects the predominant activity of the establishment. Statistics in this publication are presented by mineral group and mineral.
- Statistical unit**
- 8 The statistical unit for the collection of information is the mining establishment. An establishment is the smallest economic unit that functions as a separate entity.
- Rounding-off of figures**
- 9 The figures in the tables have, where necessary, been rounded off to the nearest digit shown. There may, therefore, be slight discrepancies between the sums of the constituent items and the totals shown.
- Historical data and past publications**
- 10 Historical mining data and past publications are available on the Stats SA website. Click on the following link ([Time series data](#)) or ([Past publications](#)) to access the data and releases electronically. Annual averages and annual percentage changes are available on the following link: [Annual data](#)

Technical notes

Index of the volume of mining production	1	The index of the volume of mining production, also known as the production index, is a statistical measure of the change in the volume of production. The production index of a mineral group is the ratio between the volume of production of a mineral group in a given period and the volume of production of the same mineral group in the base period. The current base period is 2019. The production in the base period is set at 100.
Index weighting	2	The weight of a mineral group is the ratio of its value added to the total value added of the mining industry. The weight of a mineral group reflects the importance of the mineral group in the total mining industry. The weights change over time due to quality improvements and changes in relative prices. New weights will be calculated annually.
	3	The weights, which are used to aggregate minerals to mineral groups and mineral groups to total mining, are derived from national accounts value added data. The latest weights (implemented in the May 2022 publication) are based on an average of value added data for the years 2017, 2018 and 2019. These weights are applicable from January 2019.
Seasonal adjustment	4	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 recognised more clearly. Seasonal adjustment does not aim to remove irregular or non-seasonal influences which may be present in any particular month.
	5	Influences that are volatile or unsystematic can still make it difficult to interpret the movement of the series even after adjustment for seasonal variations. This means the month-to-month movements of seasonally adjusted estimates may not be reliable indicators of trend behaviour. The X-12-ARIMA procedure for mining production and sales is described in more detail on the Stats SA website at: Click to download seasonal adjustment for mining production and sales February 2022
Calendar effects	6	These are effects due to calendar variations. Such calendar effects include the number of working/trading days in a week, moving holidays such as Easter and the length of month (some months have more days than others).
Trend cycle	7	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 estimate the underlying trend cycle.
Reliability of estimates	8	Figures for the latest 3 calendar years are preliminary.
Month-on-month percentage change	9	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	10	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.
Index contribution (percentage points)	11	The contribution (percentage points) of a mineral group or mineral to the percentage change in the total mining production for a given period is calculated by multiplying the difference in the index for each mineral group or mineral by the weight of the mineral group or mineral and then dividing by the previous period's total index.

Sales contribution (percentage points) 12 The contribution (percentage points) to the percentage change in total sales for a given period is calculated by multiplying the percentage change of each mineral group or mineral with its percentage contribution to total mineral sales of the previous period, divided by 100.

Glossary

Free-on-rail	Free-on-rail relates to goods sold on the local market where no railage or road transport costs are involved.																
Free-on-board	Free-on-board relates to goods destined for the export market. Railage, road transport and docking charges are involved but no charges are made for transport by sea.																
Industry	An industry consists of a group of establishments engaged in the same or similar kinds of economic activity. Industries are defined in the <i>System of National Accounts (SNA)</i> in the same way as in the <i>Standard Industrial Classification of All Economic Activities (SIC)</i> , Fifth Edition of January 1993.																
PGMs – Platinum group metals	Platinum group metals include platinum, iridium, osmiridium, palladium, rhodium, ruthenium and osmium.																
Sales	Sales are the total value of sales of primary minerals at the first point of saleability by the mining establishment.																
Symbols and abbreviations	<table> <tr> <td>DMRE</td> <td>Department of Mineral Resources and Energy</td> </tr> <tr> <td>GDP</td> <td>Gross domestic product</td> </tr> <tr> <td>ISIC</td> <td>International Standard Industrial Classification</td> </tr> <tr> <td>PGMs</td> <td>Platinum group metals</td> </tr> <tr> <td>SIC</td> <td>Standard Industrial Classification of All Economic Activities</td> </tr> <tr> <td>SNA</td> <td>System of National Accounts</td> </tr> <tr> <td>Stats SA</td> <td>Statistics South Africa</td> </tr> <tr> <td>*</td> <td>Revised</td> </tr> </table>	DMRE	Department of Mineral Resources and Energy	GDP	Gross domestic product	ISIC	International Standard Industrial Classification	PGMs	Platinum group metals	SIC	Standard Industrial Classification of All Economic Activities	SNA	System of National Accounts	Stats SA	Statistics South Africa	*	Revised
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*	Revised																

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Stats SA publishes approximately 300 different statistical releases each year. It is not economically viable to produce them in more than one of South Africa's eleven official languages. Since the releases are used extensively, not only locally but also by international economic and social-scientific communities, Stats SA releases are published in English only.

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