



INDEX OF THE PHYSICAL VOLUME OF MINING PRODUCTION SECOND QUARTER 2023 STATS BRIEF



STATISTICS BOTSWANA

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1.0 Preface

Statistics Botswana is mandated to compile data on industrial production in Botswana, hence the Index of Mining Production is confined to minerals extracted across the country. This is intended to monitor the performance of the mining sector in Botswana.

This statistical release presents quarterly Indices of Mining Production (IMP) for the period 2013 to the second quarter of 2023. Also included in the report are the annual IMP for the period 2013 to 2022, derived as the average of the four quarters of the year. The base year is 2013. Data used in this publication are sourced from the Department of Mines under the Ministry of Minerals and Energy.

The Index of Mining Production stood at 99.6 in the second quarter of 2023, showing a year-on-year increase of 9.9 percent from 90.6 recorded in the second quarter of 2022. Comparison on a quarter-on-quarter basis shows a decrease of 12.8 percent, from the index of 114.3 realised during the first quarter of 2023.

The release further shows the contribution of each mineral and mineral group to the Year-on-Year Percentage Change in the Volume of Mining Production, and provides the trend in the local mining sector.

For more information, contact the Directorate of Stakeholder Relations on (+267) 3671300. All Statistics Botswana outputs/publications are available on the website at www.statsbots.org.bw and at the Statistics Botswana Information Resource Centre.

I sincerely thank all stakeholders involved in the formulation of this brief, for their continued support, as we strive to better serve users of Statistics Botswana products and services.



Dr Burton S. Mguni
Statistician General
September 2023

2.0 Summary of Findings

All figures in this report are not seasonally adjusted.

Table 1 presents a summary of findings for the Index of Mining Production (**IMP**) from the first quarter of 2013 to the second quarter of 2023. This table forms the basis for the discussions under Sub-Section 2.1. Reference, however, is made to this table and other tables throughout the report.

2.1 Index of Mining Production

The Index of Mining Production stood at **99.6** during the second quarter of 2023, showing a year-on-year growth of **9.9** percent, from **90.6** registered in the second quarter of 2022. The main contributors to the increase in mining production were Diamond and Copper in Concentrates with 5.4 and 4.6 percentage points respectively, as shown in **Table 2**. Coal, Gold and Soda Ash contributed negatively but minimally to the index of mining production.

The quarter-on-quarter analysis shows a decrease of **12.8** percent from the index of 114.3 registered in the first quarter of 2023 to **99.6** observed during the period under review.

Table 1: Key Figures in the Volume of Mining Production

Base Period : 2013=100			
Period	Index of the physical volume of mining production	Year-on-year percentage change	Quarter-on-Quarter percentage change
Q1_2013	82.5	(8.7)	(9.7)
Q2_2013	111.6	25.2	35.3
Q3_2013	97.1	38.4	(12.9)
Q4_2013	108.8	19.1	12.0
Q1_2014	96.2	16.7	(11.5)
Q2_2014	106.6	(4.5)	10.8
Q3_2014	105.7	8.9	(0.8)
Q4_2014	104.5	(4.0)	(1.2)
Q1_2015	95.6	(0.7)	(8.6)
Q2_2015	98.7	(7.4)	3.3
Q3_2015	65.6	(37.9)	(33.5)
Q4_2015	77.9	(25.5)	18.7
Q1_2016	90.1	(5.7)	15.7
Q2_2016	86.0	(12.9)	(4.5)
Q3_2016	73.7	12.3	(14.3)
Q4_2016	82.4	5.8	11.8
Q1_2017	77.1	(14.4)	(6.4)
Q2_2017	87.9	2.1	13.9
Q3_2017	91.0	23.4	3.5
Q4_2017	82.8	0.5	(9.0)
Q1_2018	86.9	12.6	4.9
Q2_2018	94.0	7.0	8.3
Q3_2018	87.1	(4.2)	(7.4)
Q4_2018	95.3	15.1	9.4
Q1_2019	89.6	3.1	(6.0)
Q2_2019	85.9	(8.7)	(4.1)
Q3_2019	85.8	(1.5)	(0.1)
Q4_2019	87.8	(7.9)	2.3
Q1_2020	84.6	(5.5)	(3.6)
Q2_2020	30.0	(65.1)	(64.6)
Q3_2020	72.5	(15.5)	141.9
Q4_2020	64.0	(27.1)	(11.7)
Q1_2021	74.4	(12.1)	16.2
Q2_2021	85.6	185.6	15.0
Q3_2021	101.9	40.6	19.1
Q4_2021	82.0	28.1	(19.6)
Q1_2022	98.3	32.1	19.9
Q2_2022	90.6	5.9	(7.8)
Q3_2022	109.0	6.9	20.3
Q4_2022	97.3	18.7	(10.7)
Q1_2023	114.3	16.2	17.4
Q2_2023	99.6	9.9	(12.8)

Note: () denotes negative numbers

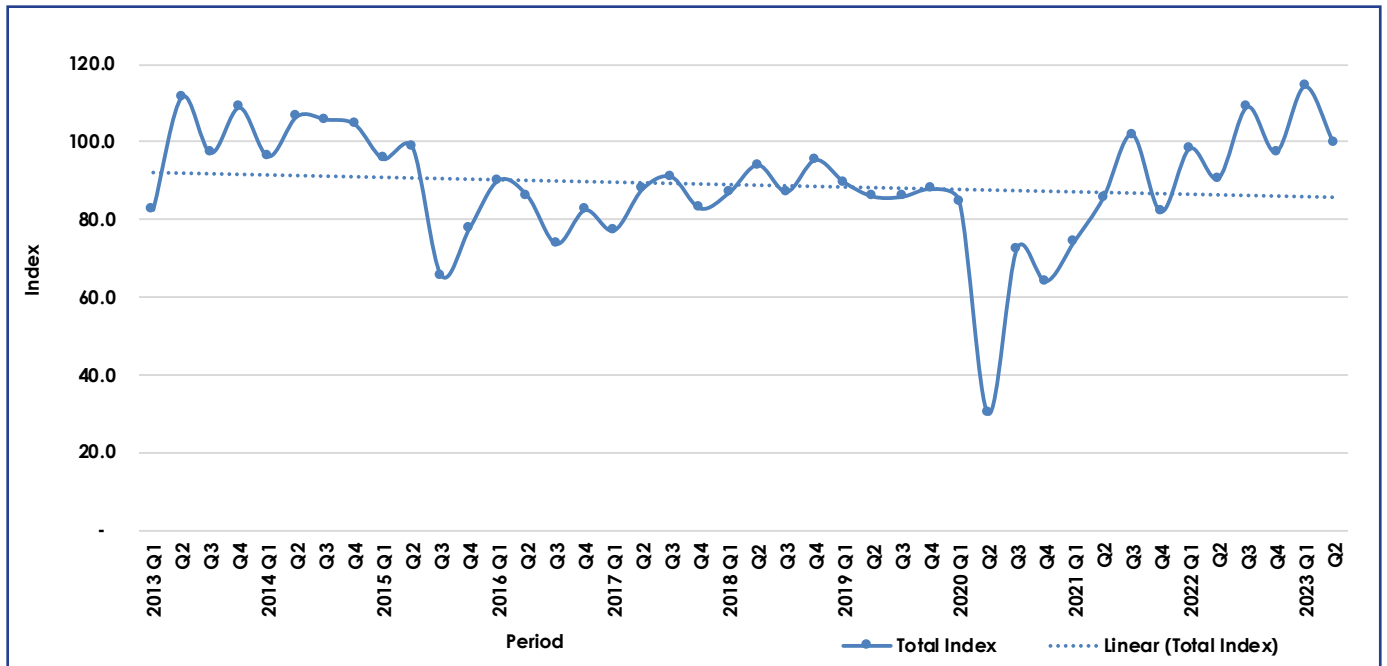
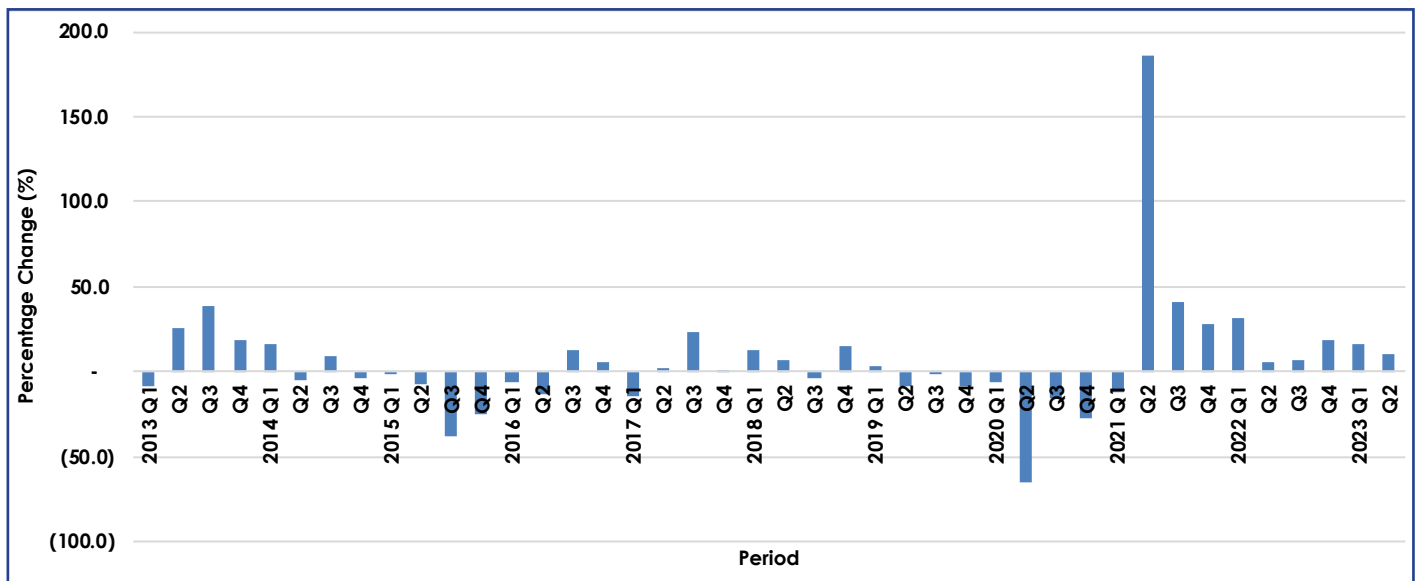
Figure 1: Total Index of Mining Production for the First Quarter of 2013 to the Second Quarter of 2023

Figure 1 shows the graphical presentation of the Total Index of Mining Production from the first quarter of 2013 to the second quarter of 2023. The linear graph shows that, on average, mining production has been declining gradually, between the years 2013 and 2023.

Figure 2: Year-on-Year Percentage Change in Mining Production- First Quarter of 2013 to Second Quarter of 2023

2.2 Mineral Production

The discussion on mineral production that compares production during the second quarter of 2023 to the same quarter of 2022, are based on Table 2, Table 3 and Table 6. Table 5 provides an analysis of the mineral production for the quarter under review, in comparison to the preceding quarter.

Diamond production increased by 6.2 percent (346 thousand carats) from 5,576 thousand carats during the second quarter of 2022 to 5,922 thousand carats during the period under review. On the other hand, quarter-on-quarter analysis shows that production decreased by 15.3 percent (1,067 thousand carats) during the second quarter of 2023 compared to 6,989 thousand carats recorded during the first quarter of 2023.

Copper in Concentrates increased by 50.9 percent (5,408 tonnes) from 10,619 tonnes registered during the second quarter of 2022 to 16,027 tonnes during the period under review. The quarter-on-quarter analysis also shows that production increased by 7.8 percent (1,155 tonnes) during the second quarter of 2023 compared to 14,872 tonnes produced during the first quarter of 2023.

Gold production decreased by 29.9 percent (45 kilograms), from 150 kilograms extracted during the second quarter of 2022 to 105 kilograms during the second quarter of 2023. On the other hand, the quarter-on-quarter analysis reflects an increase of 51.2 percent (36 kilograms) from 70 kilograms during the first quarter of 2023 to 105 kilograms registered during the quarter under review.

Soda Ash production decreased by 26.2 percent (16,145 tonnes) from 61,647 tonnes during the second quarter of 2022 to 45,502 tonnes produced during the period under review. Similarly, quarter-on-quarter analysis shows that production decreased by 22.9 percent (13,538 tonnes) during the second quarter of 2023, from 59,040 tonnes registered during the first quarter of 2023.

Salt production increased by 32.6 percent (17,657 tonnes), from 54,124 tonnes during the second quarter of 2022 to 71,781 tonnes during the quarter under review. On the other hand, quarter-on-quarter analysis shows that salt production decreased by 22.1 percent (20,326 tonnes) from 92,107 tonnes registered in the first quarter of 2023.

Silver production increased by 55.4 percent (4,178 kilograms) from 7,542 kilograms in the second quarter of 2022 to 11,720 kilograms in the period under review. The quarter-on-quarter analysis shows that production decreased by 6.9 percent (862 kilograms) during the second quarter of 2023 from 12,582 kilograms produced during the first quarter of 2023.

Coal production decreased by 21.5 percent (128,596 tonnes), from 599,474 tonnes during the second quarter of 2022, to 470,878 tonnes in the current quarter. Similarly, quarter-on-quarter comparison shows that coal production decreased by 27.0 percent (173,796 tonnes) compared to 644,674 tonnes during the first quarter of 2023.

Copper-Nickel-Cobalt Matte, recorded zero production during the period under review. The affected mines are still undergoing provisional liquidation

Table 2: Index of Mining Production for the Second Quarter of 2023 by Mineral Groups and Minerals

Base:2013=100					
Mineral	Weights (2013)	Apr-Jun 2022	Apr-Jun 2023	Year-on-Year Percentage Change	Contribution (% points) to the Percentage Change in the total Mining Production
Diamonds	82.5	96.4	102.4	6.2	5.4
Copper-Nickel-Cobalt Matte	8.6	n.a.	n.a.	n.a.	n.a.
Copper in Concentrates	5.5	150.9	227.8	50.9	4.6
Gold	1.4	49.9	35.0	(29.9)	(0.2)
Soda Ash	0.9	108.2	79.9	(26.2)	(0.3)
Salt	0.5	41.5	55.1	32.6	0.1
Silver	0.4	133.5	207.5	55.4	0.4
Coal	0.3	160.3	125.9	(21.5)	(0.1)
Total	100	90.6	99.6	9.9	9.9

Note: 1. The contribution (percentage points) of a mineral to the percentage change in the total mining production is calculated by multiplying the difference in the index for the mineral by the weight of the mineral and then dividing by the previous period's total index.

2. () denotes negative numbers

3. n.a. signifies data not available/no production during the specified period.

Table 3: Physical Volume of Mineral Production

Mineral		Diamonds	Copper-Nickel-Cobalt Matte				Copper in Concentrates	Gold	Soda Ash	Salt	Silver	Coal
			Matte	Copper	Nickel	Cobalt						
Unit of measure		('000 carats)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	Kg	(tonnes)	(tonnes)	Kg	(tonnes)
Year												
2013		23,134	44,396	21,300	22,848	248	28,146	1,207	227,913	521,306	22,597	1,495,653
2014		24,658	29,782	14,628	14,958	196	32,093	958	268,529	515,311	22,288	1,711,555
2015		20,823	30,993	13,888	16,789	316	8,396	753	243,369	404,295	2,801	2,065,778
2016		20,892	30,279	13,120	16,878	281	n.a.	832	280,457	399,837	n.a.	1,870,939
2017		22,941	n.a.	n.a.	n.a.	n.a.	n.a.	921	226,667	369,613	n.a.	2,215,782
2018		24,496	n.a.	n.a.	n.a.	n.a.	1 462	1,105	297,237	392,244	n.a.	2,482,313
2019		23,687	n.a.	n.a.	n.a.	n.a.	n.a.	943	264,119	383,779	n.a.	2,110,891
2020		16,868	n.a.	n.a.	n.a.	n.a.	n.a.	851	238,476	418,379	n.a.	1,923,992
2021		22,696	n.a.	n.a.	n.a.	n.a.	11,742	649	261,838	484,628	10, 383	2,021,218
2022		24,479	n.a.	n.a.	n.a.	n.a.	34, 201	427	285,215	323,303	31, 174	2,460,868
2013	Q1	4,658	9,766	4,501	5,203	62	6,612	231	70,049	126,420	5,777	401,939
	Q2	6,462	12,471	6,047	6,358	66	8,127	297	50,710	152,223	6,670	278,947
	Q3	5,541	11,961	5,894	6,000	67	6,555	309	64,311	154,529	6,099	425,630
	Q4	6,473	10,198	4,858	5,287	53	6,852	370	42,843	88,134	4,051	389,137
2014	Q1	5,870	5,193	2,447	2,715	31	6,819	291	62,090	89,417	4,136	355,096
	Q2	6,364	8,148	3,964	4,134	50	8,069	224	65,846	131,405	4,998	463,235
	Q3	6,321	5,732	2,880	2,810	42	9,573	255	66,818	151,481	7,648	488,335
	Q4	6,103	10,709	5,337	5,299	73	7,632	188	73,775	143,008	5,506	404,889
2015	Q1	5,734	9,724	4,423	5,169	132	5,230	156	41,836	80,244	2,801	474,619
	Q2	6,022	11,675	5,127	6,439	109	2,135	150	55,199	79,655	n.a.	505,016
	Q3	4,207	2,204	989	1,194	21	1,031	235	71,562	138,924	n.a.	578,979
	Q4	4,860	7,390	3,349	3,987	54	n.a.	212	74,772	105,472	n.a.	507,164
2016	Q1	5,429	13,208	5,777	7,303	128	n.a.	181	67,204	87,696	n.a.	427,894
	Q2	5,305	10,370	4,464	5,801	105	n.a.	244	47,850	73,695	n.a.	350,987
	Q3	4,601	6,701	2,879	3,774	48	n.a.	194	79,397	113,305	n.a.	549,352
	Q4	5,557	n.a.	n.a.	n.a.	n.a.	n.a.	213	86,006	125,141	n.a.	542,706
2017	Q1	5,280	n.a.	n.a.	n.a.	n.a.	n.a.	141	40,975	59,926	n.a.	490,650
	Q2	5,976	n.a.	n.a.	n.a.	n.a.	689	209	35,780	52,853	n.a.	575,250
	Q3	6,117	n.a.	n.a.	n.a.	n.a.	340	297	71,868	153,283	n.a.	583,719
	Q4	5,568	n.a.	n.a.	n.a.	n.a.	210	274	78,044	103,551	n.a.	566,163
2018	Q1	5,885	n.a.	n.a.	n.a.	n.a.	135	238	64,510	85,987	n.a.	597,298
	Q2	6,360	n.a.	n.a.	n.a.	n.a.	547	314	51,189	58,972	n.a.	664,448
	Q3	5,825	n.a.	n.a.	n.a.	n.a.	625	265	96,136	104,507	n.a.	667,782
	Q4	6,426	n.a.	n.a.	n.a.	n.a.	155	288	85,402	142,778	n.a.	552,785
2019	Q1	6,081	n.a.	n.a.	n.a.	n.a.	n.a.	198	73,940	111,468	n.a.	554,636
	Q2	5,828	n.a.	n.a.	n.a.	n.a.	n.a.	270	51,229	86,686	n.a.	622,620
	Q3	5,804	n.a.	n.a.	n.a.	n.a.	n.a.	262	76,432	86,539	n.a.	476,494
	Q4	5,973	n.a.	n.a.	n.a.	n.a.	n.a.	213	62,518	99,086	n.a.	457,141
2020	Q1	5,737	n.a.	n.a.	n.a.	n.a.	n.a.	212	64,460	114,245	n.a.	581,910
	Q2	1,925	n.a.	n.a.	n.a.	n.a.	n.a.	177	67,974	100,507	n.a.	368,907
	Q3	4,916	n.a.	n.a.	n.a.	n.a.	n.a.	241	35,883	91,261	n.a.	543,792
	Q4	4,290	n.a.	n.a.	n.a.	n.a.	n.a.	222	70,159	112,366	n.a.	429,382
2021	Q1	5,040	n.a.	n.a.	n.a.	n.a.	n.a.	174	71,638	69,275	n.a.	516,868
	Q2	5,827	n.a.	n.a.	n.a.	n.a.	n.a.	186	57,962	101,776	n.a.	485,642
	Q3	6,500	n.a.	n.a.	n.a.	n.a.	7,517	176	65,195	169,826	6,757	549,227
	Q4	5,329	n.a.	n.a.	n.a.	n.a.	4,225	113	67,043	143,751	3,626	469,481
2022	Q1	6,299	n.a.	n.a.	n.a.	n.a.	7,363	122	75,241	59,714	5,178	547,921
	Q2	5,576	n.a.	n.a.	n.a.	n.a.	10,619	150	61,647	54,124	7,542	599,474
	Q3	6,726	n.a.	n.a.	n.a.	n.a.	12,580	83	82,224	135,831	8,507	662,262
	Q4	5, 878	n.a.	n.a.	n.a.	n.a.	13, 707	71	66, 103	73, 634	9, 947	651,211
2023	Q1	6,989	n.a.	n.a.	n.a.	n.a.	14,872	70	59, 040	92,107	12,582	644,674
	Q2	5,922	n.a.	n.a.	n.a.	n.a.	16, 027	105	45,502	71,781	11,720	470,878

Note: 1. Source: Department of Mines

2. n.a. Signifies data not available/no production during the specified period

Table 4: Index of the Volume of Mining Production by Mineral Group and Mineral

Base 2013 = 100									
	Diamonds	Copper-Nickel-Cobalt Matte	Copper in concentrates	Gold	Soda Ash	Salt	Silver	Coal	Total Index
Weights	82.5	8.6	5.5	1.4	0.9	0.5	0.4	0.3	100.0
2013	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2014	106.6	67.1	114.0	79.4	117.8	98.9	98.6	114.4	103.3
2015	90.0	69.8	29.8	62.4	106.8	71.7	12.4	138.1	84.5
2016	90.3	68.2	n.a.	69.0	123.1	76.7	n.a.	125.1	83.1
2017	99.2	n.a.	4.4	76.3	99.5	70.9	n.a.	148.1	84.7
2018	105.9	n.a.	5.2	91.6	130.4	75.2	n.a.	166.0	90.8
2019	102.4	n.a.	n.a.	78.1	115.9	73.6	n.a.	141.1	87.3
2020	72.9	n.a.	n.a.	70.5	104.6	80.3	n.a.	128.6	62.8
2021	98.1	n.a.	41.7	53.8	114.9	93.0	45.9	135.1	86.0
2022	105.8	n.a.	157.3	35.3	125.1	62.0	138.0	164.5	98.8
2013 Q1	80.5	88.0	94.0	76.6	122.9	97	102.3	107.5	82.5
Q2	111.7	112.4	115.5	98.5	89.0	116.8	118.1	74.6	111.6
Q3	95.8	107.8	93.2	102.4	112.9	118.6	108	113.8	97.1
Q4	111.9	91.9	97.4	122.5	75.2	67.6	71.7	104.1	108.8
2014 Q1	101.5	46.8	96.9	96.4	109	68.6	73.2	95.0	96.2
Q2	110.0	73.4	114.7	74.3	115.6	100.8	88.5	123.9	106.6
Q3	109.3	51.6	136	84.5	117.3	116.2	135.4	130.6	105.7
Q4	105.5	96.5	108.5	62.3	129.5	109.7	97.5	108.3	104.5
2015 Q1	99.1	87.6	74.3	51.7	73.4	61.6	49.6	126.9	95.6
Q2	104.1	105.2	30.3	49.7	96.9	61.1	n.a.	135.1	98.7
Q3	72.7	19.9	14.7	77.9	125.6	106.6	n.a.	154.8	65.6
Q4	84.0	66.6	n.a.	70.3	131.2	80.9	n.a.	135.6	77.9
2016 Q1	93.9	119	n.a.	60	117.9	67.3	n.a.	114.4	90.1
Q2	91.7	93.4	n.a.	80.9	84	56.5	n.a.	93.9	86.0
Q3	79.6	60.4	n.a.	64.3	139.3	86.9	n.a.	146.9	73.7
Q4	96.1	n.a.	n.a.	70.6	150.9	96.0	n.a.	145.1	82.4
2017 Q1	91.3	n.a.	n.a.	46.7	71.9	46.0	n.a.	131.2	77.1
Q2	103.3	n.a.	9.8	69.2	62.8	40.6	n.a.	153.8	87.9
Q3	105.8	n.a.	4.8	98.5	126.1	117.6	n.a.	156.1	91.0
Q4	96.3	n.a.	3.0	90.8	137	79.5	n.a.	151.4	82.8
2018 Q1	101.8	n.a.	1.9	78.9	113.2	66.0	n.a.	159.7	86.9
Q2	110.0	n.a.	7.8	104.1	89.8	45.2	n.a.	177.7	94.0
Q3	100.7	n.a.	8.9	87.8	168.7	80.2	n.a.	178.6	87.1
Q4	111.1	n.a.	2.2	95.5	149.9	109.6	n.a.	147.8	95.3
2019 Q1	105.1	n.a.	n.a.	65.6	129.8	85.5	n.a.	148.3	89.6
Q2	100.8	n.a.	n.a.	89.5	89.9	66.5	n.a.	166.5	85.9
Q3	100.4	n.a.	n.a.	87.0	134.1	66.4	n.a.	127.4	85.8
Q4	103.3	n.a.	n.a.	70.5	109.7	76.0	n.a.	122.3	87.8
2020 Q1	99.2	n.a.	n.a.	70.3	113.1	87.7	n.a.	155.6	84.6
Q2	33.3	n.a.	n.a.	58.7	119.3	77.1	n.a.	98.7	30.0
Q3	85.0	n.a.	n.a.	79.8	63.0	70.0	n.a.	145.4	72.5
Q4	74.2	n.a.	n.a.	73.4	123.1	86.2	n.a.	114.8	64.0
2021 Q1	87.1	n.a.	n.a.	57.7	125.7	57.8	n.a.	138.2	74.4
Q2	100.8	n.a.	n.a.	61.8	101.7	78.1	n.a.	129.9	85.6
Q3	112.4	n.a.	106.8	58.3	114.4	130.3	119.6	146.9	101.9
Q4	92.1	n.a.	60.0	37.4	117.7	110.3	64.2	125.6	82.0
2022 Q1	108.9	n.a.	104.4	40.4	132.1	45.8	91.7	146.5	98.3
Q2	96.4	n.a.	150.9	49.9	108.2	41.5	133.5	160.3	90.6
Q3	116.3	n.a.	178.8	27.5	144.3	104.2	150.6	177.1	109.0
Q4	101.6	n.a.	194.8	23.6	116.0	56.5	176.1	174.2	97.3
2023 Q1	120.8	n.a.	211.4	23.1	103.6	70.7	222.7	172.4	114.3
Q2	102.4	n.a.	227.8	35.0	79.9	55.1	207.5	125.9	99.6

Note: 1. n.a. Signifies data not available/no production during the specified period.

Table 5: Quarter on Quarter Percentage Change in the Volume of Mining Production by Mineral Group and Mineral

BASE 2013 = 100									
Year/ Weights	Diamonds	Copper-Nickel- Cobalt Matte	Copper in Concentrates	Gold	Soda Ash	Salt	Silver	Coal	Total
	82.5	8.6	5.5	1.4	0.9	0.5	0.4	0.3	100.0
2013 Q1	(15.9)	1.3	156.6	(17.7)	20.5	21.4	...	(27.1)	(9.7)
Q2	38.7	27.7	22.9	28.6	(27.6)	20.4	15.5	(30.6)	35.3
Q3	(14.3)	(4.1)	(19.3)	4.0	26.8	1.5	(8.6)	52.6	(12.9)
Q4	16.8	(14.7)	4.5	19.6	(33.4)	(43.0)	(33.6)	(8.6)	12.0
2014 Q1	(9.3)	(49.1)	(0.5)	(21.4)	44.9	1.5	2.1	(8.7)	(11.5)
Q2	8.4	56.9	18.3	(22.9)	6.0	47.0	20.8	30.5	10.8
Q3	(0.7)	(29.7)	18.6	13.8	1.5	15.3	53.0	5.4	(0.8)
Q4	(3.4)	86.8	(20.3)	(26.3)	10.4	(5.6)	(28.0)	(17.1)	(1.2)
2015 Q1	(6.0)	(9.2)	(31.5)	(17.0)	(43.3)	(43.9)	(49.1)	17.2	(8.6)
Q2	5.0	20.1	(59.2)	(3.8)	31.9	(0.7)	(100.0)	6.4	3.3
Q3	(30.1)	(81.1)	(51.7)	56.7	29.6	74.4	n.a.	14.6	(33.5)
Q4	15.5	235.3	(100.0)	(9.7)	4.5	(24.1)	n.a.	(12.4)	18.7
2016 Q1	11.7	78.7	n.a.	(14.7)	(10.1)	(16.9)	n.a.	(15.6)	15.7
Q2	(2.3)	(21.5)	n.a.	34.8	(28.8)	(16.0)	n.a.	(18.0)	(4.5)
Q3	(13.3)	(35.4)	n.a.	(20.5)	65.9	53.7	n.a.	56.5	(14.3)
Q4	20.8	(100.0)	n.a.	9.8	8.3	10.4	n.a.	(1.2)	11.8
2017 Q1	(5.0)	n.a.	n.a.	(33.8)	(52.4)	(52.1)	n.a.	(9.6)	(6.4)
Q2	13.2	n.a.	n.a.	48.2	(12.7)	(11.8)	n.a.	17.2	13.9
Q3	2.4	n.a.	(50.7)	41.9	100.9	190.0	n.a.	1.5	3.5
Q4	(9.0)	n.a.	(38.2)	(7.6)	8.6	(32.4)	n.a.	(3.0)	(9.0)
2018 Q1	5.7	n.a.	(35.7)	(13.2)	(17.3)	(17.0)	n.a.	5.5	4.9
Q2	8.1	n.a.	305.2	32.0	(20.6)	(31.4)	n.a.	11.2	8.3
Q3	(8.4)	n.a.	14.3	(15.6)	87.8	77.2	n.a.	0.5	(7.4)
Q4	10.3	n.a.	(75.2)	8.7	(11.2)	36.6	n.a.	(17.2)	9.4
2019 Q1	(5.4)	n.a.	(100.0)	(31.3)	(13.4)	(21.9)	n.a.	0.3	(6.0)
Q2	(4.2)	n.a.	n.a.	36.6	(30.7)	(22.2)	n.a.	12.3	(4.1)
Q3	(0.4)	n.a.	n.a.	(2.9)	49.2	(0.2)	n.a.	(23.5)	(0.1)
Q4	2.9	n.a.	n.a.	(18.9)	(18.2)	14.5	n.a.	(4.1)	2.3
2020 Q1	(4.0)	n.a.	n.a.	(0.3)	3.1	15.3	n.a.	27.3	(3.6)
Q2	(66.4)	n.a.	n.a.	(16.5)	5.5	(12.0)	n.a.	(36.6)	(64.6)
Q3	155.4	n.a.	n.a.	36.0	(47.2)	(9.2)	n.a.	47.4	141.9
Q4	(12.7)	n.a.	n.a.	(8.0)	95.5	23.1	n.a.	(21.0)	(11.7)
2021 Q1	17.5	n.a.	n.a.	(21.4)	2.1	(38.3)	n.a.	20.4	16.2
Q2	15.6	n.a.	n.a.	7.0	(19.1)	46.9	n.a.	(6.0)	15.0
Q3	11.6	n.a.	...	(5.5)	12.5	66.9	...	13.1	19.1
Q4	(18.0)	n.a.	(43.8)	(35.9)	2.8	(15.4)	(46.3)	(14.5)	(19.6)
2022 Q1	18.2	n.a.	74.3	8.1	12.2	(58.5)	42.8	16.7	19.9
Q2	(11.5)	n.a.	44.2	23.4	(18.1)	(9.4)	45.6	9.4	(7.8)
Q3	20.6	n.a.	18.5	(44.9)	33.4	151.0	12.8	10.5	20.3
Q4	(12.6)	n.a.	9.0	(14.1)	(19.6)	(45.8)	16.9	(1.7)	(10.7)
2023 Q1	18.9	n.a.	8.5	(2.0)	(10.7)	25.1	26.5	(1.0)	17.4
Q2	(15.3)	n.a.	7.8	51.2	(22.9)	(22.1)	(6.9)	(27.0)	(12.8)

Note: 1. () Denote negative numbers

2. n.a. Signifies data not available/no production during the specified period

Table 6: Year-on-Year Percentage Change in the Volume of Mining Production by Mineral Group and Mineral

Base 2013 = 100									
	Diamonds	Copper Nickel-Cobalt Matte	Copper in Concentrates	Gold	Soda Ash	Salt	Silver	Coal	Total
Weights	82.5	8.6	5.5	1.4	0.9	0.5	0.4	0.3	100.0
2013	12.2	24.2	221.9	(12.4)	(8.3)	41.8	...	2.8	17.3
2014	6.6	(32.9)	14.0	(20.6)	17.8	(1.1)	(1.4)	14.4	3.3
2015	(15.6)	4.1	(71.5)	(21.4)	(9.4)	(21.5)	(87.4)	20.7	(18.2)
2016	0.3	(2.3)	(100.0)	10.5	15.2	(1.1)	(100.0)	(9.4)	(1.6)
2017	9.8	(100.0)	...	10.7	(19.2)	(7.6)	n.a.	18.4	2.0
2018	6.8	n.a.	18.0	20.0	31.1	6.1	n.a.	12.0	7.3
2019	(3.3)	n.a.	(100.0)	(14.7)	(11.1)	(2.2)	n.a.	(15.0)	(3.9)
2020	(28.8)	n.a.	n.a.	(9.7)	(9.7)	9.0	n.a.	(8.9)	(28.1)
2021	34.6	n.a.	...	(23.7)	9.8	15.8	...	5.1	37.0
2022	7.9	n.a.	191.3	(34.3)	8.9	(33.3)	200.3	21.8	12.7
2013 Q1	(13.0)	(20.1)	294.5	(43.1)	16.1	47.4	...	71.6	(8.7)
Q2	20.9	12.8	405.1	(17.8)	(10.3)	49.3	...	24.1	25.2
Q3	26.4	320.7	127.4	(5.9)	(12.6)	103.7	...	(4.2)	38.4
Q4	16.9	5.7	165.9	31.6	(26.3)	(15.4)	...	(29.4)	19.1
2014 Q1	26.0	(46.8)	3.1	25.8	(11.4)	(29.3)	(28.4)	(11.7)	16.7
Q2	(1.5)	(34.7)	(0.7)	(24.6)	29.8	(13.7)	(25.1)	66.1	(4.5)
Q3	14.1	(52.1)	46.0	(17.5)	3.9	(2.0)	25.4	14.7	8.9
Q4	(5.7)	5.0	11.4	(49.1)	72.2	62.3	35.9	4.0	(4.0)
2015 Q1	(2.3)	87.3	(23.3)	(46.3)	(32.6)	(10.3)	(32.3)	33.7	(0.7)
Q2	(5.4)	43.3	(73.5)	(33.0)	(16.2)	(39.4)	(100.0)	9.0	(7.4)
Q3	(33.4)	(61.5)	(89.2)	(7.8)	7.1	(8.3)	(100.0)	18.6	(37.9)
Q4	(20.4)	(31.0)	(100.0)	12.9	1.4	(26.2)	(100.0)	25.3	(25.5)
2016 Q1	(5.3)	35.8	(100.0)	16.0	60.6	9.3	(100.0)	(9.8)	(5.7)
Q2	(11.9)	(11.2)	(100.0)	62.7	(13.3)	(7.5)	n.a.	(30.5)	(12.9)
Q3	9.4	204.0	(100.0)	(17.4)	10.9	(18.4)	n.a.	(5.1)	12.3
Q4	14.3	(100.0)	n.a.	0.4	15.0	18.6	n.a.	7.0	5.8
2017 Q1	(2.7)	(100.0)	n.a.	(22.1)	(39.0)	(31.7)	n.a.	14.7	(14.4)
Q2	12.6	(100.0)	n.a.	(14.3)	(25.2)	(28.3)	n.a.	63.9	2.1
Q3	32.9	(100.0)	n.a.	52.9	(9.5)	35.3	n.a.	6.3	23.4
Q4	0.2	n.a.	...	28.7	(9.3)	(17.3)	n.a.	4.3	0.5
2018 Q1	11.5	n.a.	...	68.7	57.4	43.5	n.a.	21.7	12.6
Q2	6.4	n.a.	(20.6)	50.2	43.1	11.6	n.a.	15.5	7.0
Q3	(4.8)	n.a.	83.8	(10.6)	33.8	(31.8)	n.a.	14.4	(4.2)
Q4	15.4	n.a.	(26.2)	5.1	9.4	37.9	n.a.	(2.4)	15.1
2019 Q1	3.3	n.a.	(100.0)	(16.9)	14.6	29.6	n.a.	(7.1)	3.1
Q2	(8.4)	n.a.	(100.0)	(14.0)	0.1	47.0	n.a.	(6.3)	(8.7)
Q3	(0.4)	n.a.	(100.0)	(1.0)	(20.5)	(17.2)	n.a.	(28.6)	(1.5)
Q4	(7.1)	n.a.	(100.0)	(26.1)	(26.8)	(30.6)	n.a.	(17.3)	(7.9)
2020 Q1	(5.7)	n.a.	n.a.	7.2	(12.8)	2.5	n.a.	4.9	(5.5)
Q2	(67.0)	n.a.	n.a.	(34.5)	32.7	15.9	n.a.	(40.7)	(65.1)
Q3	(15.3)	n.a.	n.a.	(8.3)	(53.1)	5.5	n.a.	14.1	(15.5)
Q4	(28.2)	n.a.	n.a.	4.1	12.2	13.4	n.a.	(6.1)	(27.1)
2021 Q1	(12.1)	n.a.	n.a.	(17.9)	11.1	(39.4)	n.a.	(11.2)	(12.1)
Q2	202.7	n.a.	n.a.	5.2	(14.7)	1.3	n.a.	31.6	185.6
Q3	32.2	n.a.	...	(26.9)	81.7	86.1	...	1.0	40.6
Q4	24.2	n.a.	...	(49.1)	(4.4)	27.9	...	9.3	28.1
2022 Q1	25.0	n.a.	...	(30.0)	5.0	(13.8)	...	6.0	32.1
Q2	(4.3)	n.a.	...	(19.2)	6.4	(46.8)	...	23.4	5.9
Q3	3.5	n.a.	67.4	(52.9)	26.1	(20.0)	25.9	20.6	6.9
Q4	10.3	n.a.	224.4	(36.8)	(1.4)	(48.8)	174.3	38.7	18.7
2023 Q1	10.9	n.a.	102.0	(42.8)	(11.3)	54.2	143.0	17.7	16.4
Q2	6.2	n.a.	50.9	(29.9)	(26.2)	32.6	55.4	(21.5)	9.9

Note: 1. () Denote negative numbers

2. ... Data is not zero, but the figure is not significant enough to be measured

3. "n.a." Signifies data not available/no production during the specified period

Table 7: Contribution of Each Mineral Group and Mineral to the Year-on-Year Percentage Change in the Volume of Mining Production

Base 2013 = 100									
	Diamonds	Copper-Nickel-Cobalt Matte	Copper in Concentrates	Gold	Soda Ash	Salt	Silver	Coal	Total
Weights	82.5	8.6	5.5	1.4	0.9	0.5	0.4	0.3	100.0
2013	10.5	2.0	4.4	(0.2)	(0.1)	0.2	0.5	0.0	17.3
2014	5.4	(2.8)	0.8	(0.3)	0.2	(0.0)	(0.0)	0.0	3.3
2015	(13.2)	0.2	(4.5)	(0.2)	(0.1)	(0.1)	(0.4)	0.1	(18.2)
2016	0.3	(0.2)	(1.9)	0.1	0.2	(0.0)	(0.1)	(0.0)	(1.6)
2017	8.8	(7.0)	0.3	0.1	(0.3)	(0.0)	0.0	0.1	2.0
2018	6.5	0.0	0.1	0.3	0.3	0.0	0.0	0.1	7.3
2019	(3.2)	0.0	(0.3)	(0.2)	(0.1)	(0.0)	0.0	(0.1)	(3.9)
2020	(27.8)	0.0	0.0	(0.1)	(0.1)	0.0	0.0	(0.0)	(28.1)
2021	33.1	0.0	3.6	(0.4)	0.1	0.1	0.3	0.0	37.0
2022	7.4	0.0	5.1	(0.3)	0.1	(0.2)	0.5	0.1	12.7
2013 Q1	(11.0)	(2.1)	4.3	(0.9)	0.2	0.2	0.5	0.1	(8.7)
Q2	17.9	1.2	5.7	(0.3)	(0.1)	0.2	0.6	0.0	25.2
Q3	23.5	10.0	4.1	(0.1)	(0.2)	0.4	0.8	(0.0)	38.4
Q4	14.6	0.5	3.6	0.5	(0.3)	(0.1)	0.4	(0.1)	19.1
2014 Q1	21.0	(4.3)	0.2	0.3	(0.2)	(0.2)	(0.2)	(0.0)	16.7
Q2	(1.3)	(3.0)	0.0	(0.3)	0.2	(0.1)	(0.1)	0.1	(4.5)
Q3	11.4	(5.0)	2.4	(0.3)	0.0	(0.0)	0.1	0.0	8.9
Q4	(4.8)	0.4	0.6	(0.8)	0.4	0.2	0.1	0.0	(4.0)
2015 Q1	(2.0)	3.6	(1.3)	(0.6)	(0.3)	(0.0)	(0.1)	0.1	(0.7)
Q2	(4.6)	2.6	(4.3)	(0.3)	(0.2)	(0.2)	(0.4)	0.0	(7.4)
Q3	(28.5)	(2.6)	(6.3)	(0.1)	0.1	(0.0)	(0.6)	0.1	(37.9)
Q4	(17.0)	(2.5)	(5.7)	0.1	0.0	(0.1)	(0.4)	0.1	(25.5)
2016 Q1	(4.6)	2.8	(4.3)	0.1	0.4	0.0	(0.2)	(0.0)	(5.7)
Q2	(10.4)	(1.0)	(1.7)	0.4	(0.1)	(0.0)	0.0	(0.1)	(12.9)
Q3	8.6	5.3	(1.2)	(0.3)	0.2	(0.2)	0.0	(0.0)	12.3
Q4	12.8	(7.3)	0.0	0.0	0.2	0.1	0.0	0.0	5.8
2017 Q1	(2.4)	(11.3)	0.0	(0.2)	(0.5)	(0.1)	0.0	0.0	(14.4)
Q2	11.1	(9.3)	0.6	(0.2)	(0.2)	(0.1)	0.0	0.2	2.1
Q3	29.3	(7.0)	0.4	0.6	(0.2)	0.2	0.0	0.0	23.4
Q4	0.2	0.0	0.2	0.3	(0.2)	(0.1)	0.0	0.0	0.5
2018 Q1	11.2	0.0	0.1	0.6	0.5	0.1	0.0	0.1	12.6
Q2	6.2	0.0	(0.1)	0.6	0.3	0.0	0.0	0.1	7.0
Q3	(4.6)	0.0	0.2	(0.2)	0.4	(0.2)	0.0	0.1	(4.2)
Q4	14.8	0.0	(0.1)	0.1	0.1	0.2	0.0	(0.0)	15.1
2019 Q1	3.2	0.0	(0.1)	(0.2)	0.2	0.1	0.0	(0.0)	3.1
Q2	(8.1)	0.0	(0.5)	(0.2)	0.0	0.1	0.0	(0.0)	(8.7)
Q3	(0.3)	0.0	(0.6)	(0.0)	(0.4)	(0.1)	0.0	(0.1)	(1.5)
Q4	(6.8)	0.0	(0.1)	(0.4)	(0.4)	(0.2)	0.0	(0.1)	(7.9)
2020 Q1	(5.5)	0.0	0.0	0.1	(0.2)	0.0	0.0	0.0	(5.5)
Q2	(64.8)	0.0	0.0	(0.5)	0.3	0.1	0.0	(0.2)	(65.1)
Q3	(14.8)	0.0	0.0	(0.1)	(0.7)	0.0	0.0	0.1	(15.5)
Q4	(27.3)	0.0	0.0	0.0	0.1	0.1	0.0	(0.0)	(27.1)
2021 Q1	(11.7)	0.0	0.0	(0.2)	0.1	(0.2)	0.0	(0.1)	(12.0)
Q2	185.7	0.0	0.0	0.1	(0.5)	0.0	0.0	0.3	185.6
Q3	31.2	0.0	8.1	(0.4)	0.6	0.4	0.7	0.0	40.6
Q4	23.1	0.0	5.1	(0.8)	(0.1)	0.2	0.4	0.0	28.1
2022 Q1	24.1	0.0	7.7	(0.3)	0.1	(0.0)	0.6	0.0	32.1
Q2	(4.2)	0.0	9.7	(0.2)	0.1	(0.2)	0.7	0.1	5.9
Q3	3.2	0.0	3.9	(0.4)	0.3	(0.1)	0.1	0.1	6.9
Q4	9.5	0.0	9.0	(0.2)	(0.0)	(0.3)	0.6	0.1	18.7
2023 Q1	10.0	0.0	5.9	(0.2)	(0.1)	0.1	0.6	0.1	16.4
Q2	5.4	0.0	4.6	(0.2)	(0.3)	0.1	0.4	(0.1)	9.9

Note: 1. () Denote negative numbers.

3.0 Technical Notes

3.1 Background

Mining activity in Botswana started in the 19th century with the production of Gold by Europeans from the Tati Reefs, which is now the modern Francistown area. However, much of this activity could not be accounted for, despite its significant contribution to the economy at that time. Modern mining in Botswana started with the mining of Diamonds at Orapa in 1971 followed by Copper-Nickel production in 1973 at Selebi Phikwe. Since the early 1980s, the mining industry has been the largest contributor to real Gross Domestic Product (GDP), contributing between 20 and 50 percent.

These mineral contributions enabled the Government to undertake investments in both human and physical infrastructure development over time. Even though the mining sector's contribution to GDP has been below 25 percent since the 2009 recession, available data indicates that the sector still leads in terms of value added contribution to GDP, according to the quarterly GDP reports produced by Statistics Botswana. Despite its great contribution to Botswana's GDP, the mining industry is capital intensive and accounts for less than 5 percent of employment in the private sector.

With such a significant contribution to the GDP, and the national economy, the need for a measure of the change in the production of minerals in Botswana cannot be over emphasised. The index of the physical volume of mining production is such a measure that provides a relative change over time in mining production. The IMP can also be used as a deflator to calculate the GDP at constant prices.

3.2 Data collection

A mining production survey is carried out by the Department of Mines at the Ministry of Minerals, Energy and Water Resources, covering all mining establishments operating in the country. After the completion of data collection, the Department of Mines provides the data to Statistics Botswana. Following international standards and guidelines, Statistics Botswana cleans the data, produces statistical tables and produces reports which are then packaged and disseminated to users. The results of the survey are used to calculate the volume of mining production indices on a quarterly basis and subsequently to estimate GDP, also on a quarterly basis.

3.3 Scope of the survey

The survey covers all mining establishments conducting activities relating to the extraction of minerals such as Diamonds, Copper-Nickel-Cobalt Matte, Copper in Concentrates, Gold, Soda Ash, Salt, Silver, Coal, Semi-precious stones and the quarrying of building materials. The activities are classified according to the International Standard of Industrial Classification of all Economic Activities, ISIC Rev 4, and the Central Product Classification (CPC) Version 2.

4.0 Concepts, definitions and methods

4.1 Index of the volume of mining productions

The index of the volume of mining production is a ratio that indicates the increase or decrease of a magnitude. The index form is used not only for intertemporal comparisons, but for comparisons between countries.

The IMP is an important macro-economic indicator which monitors progress and fluctuation of the mineral sector production in the economy. The Index is also known to be an effective tool that measures current production, which indicates relative changes over time in the physical volume of mining production.

4.2 Base Period

The base period, usually a year, is the period against which other periods are compared and whose values provide the weights for an index. The base period used in this brief, is 2013 and it is set at 100.

4.3 Index weighting

The weight of the mineral group is the ratio of the estimated value of production of a mineral group to the total estimated value of production of the mining industry. The weight of a mineral group reflects the importance of the mineral group in the total mining industry. The relative importance of various mineral groups is different and these differentials need to be reflected while measuring the performance of the entire mining sector.

4.4 Seasonal Adjustment

Seasonal adjustment is a means of removing the estimated effects of normal seasonal fluctuations and typical calendar effects 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 period.

The data produced are not seasonally adjusted. However, there is a further scope of producing and disseminating an additional seasonally adjusted series only when there is a clear statistical evidence and economic interpretation of the seasonal/calendar effects.

4.5 Year-on-Year Percentage Change

Year-on-Year percentage change in a variable for any given period is the rate of change expressed over the same period.

4.6 Quarter-on-Quarter percentage change

Quarter-on-Quarter percentage change in a variable for any given period is the rate of change expressed over the previous quarter.

4.7 Index Contribution (percentage points)

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. It indicates the extent to which each mineral group affects the overall growth of mining production.

4.8 Rounding-off of figures

The figures in the tables have, where necessary, been rounded off to the nearest number shown. There may, be slight discrepancies between the sums of the constituent items and the totals shown.

4.9 Calculation of the Index of Mining Production

To calculate the evolution of physical volume of mining production on a quarterly basis, a Laspeyres indicator, base year 2013=100, was used. The index is calculated as the weighted arithmetic mean of the production relatives in respect of selected items. The weighted average is done to measure the importance of various mineral groups in the mining sector when calculating the comprehensive growth rate of the sector.

$$I = \frac{\sum R_i \cdot W_i}{\sum W_i}$$

Where; I is the index, R_i is the production relative of item i and W_i is the weight allocated to item i

The production relative (R_i) of the i^{th} item for the quarter has been calculated by using the formula:

$$R_i = \frac{P_{ic}}{P_{i0}} * 100$$

Where P_{ic} is the production of the i^{th} item in the current quarter and P_{i0} is the production of the i^{th} item in the base year.



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