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INDICES OF THE PHYSICAL VOLUME OF MINING PRODUCTION

THIRD QUARTER 2015 [STATS BRIEF]

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1.0 Preface

This statistical release presents quarterly Indices of Mining Production (IMP) for the period 2003 to the third quarter of 2015. Also carried in the report is the annual IMP for the period 2003 to 2014, derived as the average of the four quarters of the year. This report uses 2013 as a reference/base year. Data used in this publication is sourced from the Department of Mines; Ministry of Minerals, Energy and Water Resources.

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

Dr. Burton Mguni
Acting Statistician General
December 2015

2.0 Summary of Findings

Data used in this Statistics Brief are not seasonally adjusted.

Table 1 presents key figures on the summary of findings for Indices of Mining Production **(IMP)**. This table forms the basis of the discussion under sub-section 2.1. Reference however, will be made to this table and other tables throughout the report.

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, seasonal unadjusted	Quarter-on-Quarter percentage change, seasonal unadjusted
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	95.4	(0.9)	(8.6)
Q2_2015	98.5	(7.6)	3.1
Q3_2015	66.0	(37.6)	(33.0)

Note: () denotes negative numbers

2.1 Indices of Mining Production

The Index of Mining production stood at 66.0 during third quarter of 2015, showing a negative year-on-year growth of 37.6 percent. This decline was largely influenced by the year-on-year percentage change of diamonds (33.4 percent) as the mineral constitutes 82.5 percent of the total weight of the index **(Table 2)**.

Silver, Copper in Concentrates, Copper-Nickel-Cobalt Mate also had large year-on-year percentage decreases in production, having decreased by 100.0 percent, 84.0 percent and 61.6 percent respectively. Even though these three minerals had huge decreases when compared to that of diamond production, their impact on the year-on-year percentage change of the overall index is minimal as a result of their weight contribution to the overall index weight.

Even though Soda Ash and Coal production increased by 7.1 percent and 18.6 percent respectively, during the third quarter of 2015, this did not have much impact on the overall year-on-year percentage change as these two minerals have a small combined weight of 1.2 as compared to 98.8 for the other minerals that had decreases in production.

The last column of **Table 2**, which gives contribution in percentage points to the percentage change in the total mining production, shows how much in percentage points, each mineral contributed to the year-on-year percentage change for the index. This takes into account the weight that each mineral contributes to the overall weight of the index.

As can be seen from this column, diamonds had the most impact on the year-on-year percentage change in the index, having contributed 28.5 percentage points to the 37.6 percent. Even though Soda Ash and Coal had increases of 7.1 percent and 18.6 percent respectively in production, they each contributed 0.1 of a percentage point to the overall percentage change in the index as a result of their minimal weight.

2.2 Mineral Production

Discussions on mineral production compare production during the third quarter of 2015 to the same quarter of 2014 and are based on **Table 4.**

Diamond production declined for the fourth consecutive quarter reflecting a decrease of 33.4 percent in the third quarter of 2015 as compared to the third quarter of 2014. The continued decline is as a result of the weakening demand for diamonds in the global market.

Copper-Nickle-Cobalt Matte production decreased by 61.6 percent in the third quarter of 2015. The decrease was largely attributable to the smelter shutdown which took more than the anticipated time.

Copper in Concentrates production decreased by 84.0 percent in the third quarter of 2015. This is attributable to the liquidation of one of the copper mines which is currently not producing owing to re-organization following take over by new management. This decrease followed a 69.7 percent decline recorded during the second quarter of 2015.

Gold production registered a sixth consecutive decline during the third quarter of 2015, having recorded a decline of 7.8 percent. However, the decline is of lower magnitude when compared with the decline of 33.0 percent recorded in the previous quarter. This decline was as a result of stagnant gold prices, which were experienced during the course of 2015 and the preceding years.

Soda Ash production growth increased by 7.1 percent in the third quarter of 2015 as compared to the third quarter of 2014. This was primarily due to the effectiveness of the plant after maintenance.

Salt production declined by 8.3 percent in the third quarter of 2015 as compared to the corresponding quarter of 2014.

Silver recorded zero production in the third quarter of 2015. This is due to the shutdown of the mining operations following the liquidation of the company.

Coal production increased by 18.6 percent in the third quarter of 2015 as compared to the corresponding quarter of 2014.

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

	Base:2013=100				
	Weights (2013)	Apr-Jun, 2014	Apr-Jun, 2015	Year-on-Year Percentage Change	contribution (% points) to the percentage change in the total mining production
Diamonds	82.5	109.3	72.7	(33.4)	(28.5)
Copper-Nickel-Cobalt Matte	8.6	51.6	19.8	(61.6)	(2.6)
Copper in Concentrates	5.5	136.0	21.7	(84.0)	(5.9)
Gold	1.4	84.5	77.9	(7.8)	(0.1)
Soda Ash	0.9	117.3	125.6	7.1	0.1
Salt	0.5	116.2	106.6	(8.3)	(0.0)
Silver	0.4	135.4	0.0	(100.0)	(0.6)
Coal	0.3	130.6	154.8	18.6	0.1
Total	100.0	105.7	66.0	(37.6)	(37.6)

NB: 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

Table 3: Index of the Volume of Mining Production by Mineral Group and Mineral

Base 2013 = 100									
	Diamonds	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**
2003	131.3	117.1	n.a.	n.a.	102.8	44.0	n.a.	55.0	**119.6**
2004	134.2	99.4	n.a.	n.a.	116.1	41.6	n.a.	60.9	**120.6**
2005	137.6	133.7	n.a.	268.1	123.7	37.7	n.a.	65.8	**130.1**
2006	148.2	126.6	n.a.	250.4	104.8	40.0	n.a.	64.3	**137.9**
2007	145.4	111.4	n.a.	220.0	122.7	50.4	n.a.	55.4	**134.0**
2008	140.9	118.1	n.a.	263.2	115.6	32.8	n.a.	60.8	**131.3**
2009	76.7	121.1	n.a.	134.7	93.0	45.5	n.a.	49.3	**76.7**
2010	95.2	110.7	12.5	147.0	105.7	70.0	n.a.	66.1	**92.2**
2011	99.0	71.9	22.1	129.4	113.1	85.7	n.a.	52.7	**92.4**
2012	89.1	80.5	31.1	114.1	109.1	70.5	n.a.	97.2	**85.3**
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**
2003 Q1	102.3	67.7	n.a.	n.a.	98.4	40.3	n.a.	51.6	**91.3**
Q2	134.6	143.4	n.a.	n.a.	111.0	50.4	n.a.	61.6	**124.7**
Q3	149.6	137.2	n.a.	n.a.	103.7	50.3	n.a.	59.8	**136.5**
Q4	138.7	120.0	n.a.	n.a.	97.9	35.1	n.a.	47.0	**125.8**
2004 Q1	99.9	133.3	n.a.	n.a.	90.3	39.2	n.a.	55.2	**95.0**
Q2	108.5	78.6	n.a.	n.a.	102.7	49.4	n.a.	60.7	**97.5**
Q3	166.1	43.8	n.a.	n.a.	128.8	37.9	n.a.	61.7	**142.3**
Q4	162.1	142.0	n.a.	n.a.	142.8	39.9	n.a.	66.0	**147.5**
2005 Q1	123.0	142.5	n.a.	304.3	132.7	43.2	n.a.	64.6	**119.5**
Q2	141.2	133.1	n.a.	352.6	108.7	33.2	n.a.	60.8	**134.0**
Q3	141.0	135.5	n.a.	215.4	130.7	36.9	n.a.	66.1	**132.4**
Q4	145.3	123.8	n.a.	200.1	122.8	37.5	n.a.	71.9	**134.7**
2006 Q1	143.8	115.5	n.a.	230.7	74.9	29.7	n.a.	66.9	**132.7**
Q2	136.8	131.1	n.a.	261.9	113.7	41.9	n.a.	67.4	**129.1**
Q3	154.1	136.1	n.a.	260.2	138.6	56.4	n.a.	59.9	**144.0**
Q4	158.3	123.8	n.a.	248.6	92.2	31.9	n.a.	63.2	**145.8**

Table 3 continued … Index of the Volume of Mining Production by Mineral Group and Mineral

Base 2013 = 100									
	Diamonds	Matte	Copper 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**
2007 Q1	141.9	123.6	n.a.	174.0	100.4	14.8	n.a.	59.4	**131.2**
Q2	141.8	128.2	n.a.	249.6	122.4	56.4	n.a.	56.0	**133.0**
Q3	157.8	44.9	n.a.	228.4	147.3	70.3	n.a.	57.5	**139.0**
Q4	140.1	149.1	n.a.	228.1	120.6	60.1	n.a.	48.7	**133,0**
2008 Q1	140.7	130.0	n.a.	217.0	113.8	31.3	n.a.	61.3	**131.6**
Q2	138.9	111.2	n.a.	257.6	100.7	21.1	n.a.	59.3	**128.8**
Q3	158.0	124.3	n.a.	266.4	123.5	44.3	n.a.	62.0	**146.2**
Q4	126.0	106.8	n.a.	311.7	124.5	34.5	n.a.	60.7	**118.8**
2009 Q1	n.a	92.5	n.a.	140.2	86.7	43.4	n.a.	58.7	**11.0**
Q2	67.7	131.0	n.a.	155.5	67.4	32.6	n.a.	50.2	**70.1**
Q3	101.3	136.9	n.a.	133.8	116.8	43.5	n.a.	45.6	**98.5**
Q4	137.7	123.9	n.a.	109.4	101.2	62.7	n.a.	42.8	**127.0**
2010 Q1	79.4	127.4	6.1	134.7	103.7	58.5	n.a.	63.4	**80.0**
Q2	98.1	81.8	10.5	135.0	91.2	56.7	n.a.	63.8	**91.6**
Q3	103.5	134.1	16.8	160.9	109.8	95.8	n.a.	71.9	**101.7**
Q4	99.7	99.7	18.6	157.6	118.0	68.9	n.a.	65.2	**95.5**
2011 Q1	93.3	95.2	15.7	111.1	98.7	71.8	n.a.	55.6	**88.9**
Q2	102.5	85.9	23.8	111.8	101.6	69.5	n.a.	72.4	**96.2**
Q3	119.8	7.2	25.8	134.3	130.9	106.5	n.a.	56.9	**104.6**
Q4	80.3	99.3	23.1	160.4	121.4	94.7	n.a.	25.8	**79.9**
2012 Q1	92.5	110.1	23.8	134.6	105.9	65.8	n.a.	62.6	**90.3**
Q2	92.4	99.6	22.9	119.8	99.2	78.3	n.a.	60.1	**89.1**
Q3	75.8	25.6	41.0	108.9	129.1	58.2	n.a.	118.8	**70.2**
Q4	95.7	86.9	36.6	93.1	102.1	79.9	n.a.	147.4	**91.4**
2013 Q1	80.5	88.0	94.0	76.6	122.9	97.0		107.5	**82.5**
Q2	111.7	112.4	115.5	98.5	89.0	116.8		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	109.0	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	136.0	84.5	117.3	119.5		130.6	**105.8**
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	34.8	49.7	52.9	37.8	n.a	135.1	**98.5**
Q3	72.7	19.8	21.7	77.9	125.6	106.6	n.a.	154.8	**66.0**

NB:
1. 2015 Figures are provisional
2. n.a signifies data not available/no production at the specified period,
3. …data is not zero but the figure is not significant enough to be measured

Table 4: Year-on-Year Percentage Change in the Volume of Mining Production by Mineral Group and Mineral (Base 2013 = 100)

	Diamonds	Matte	Copper 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**
2004	2.2	**(15.1)**	n.a.	n.a.	13.0	**(5.5)**	n.a.	10.7	0.8
2005	2.6	34.5	n.a.	...	6.5	**(9.4)**	n.a.	8.1	7.9
2006	7.7	**(5.3)**	n.a.	**(6.6)**	**(15.3)**	6.1	n.a.	**(2.3)**	6.0
2007	**(1.9)**	**(12.0)**	n.a.	**(12.1)**	17.0	26.1	n.a.	**(14.0)**	**(2.8)**
2008	**(3.1)**	6.0	n.a.	19.6	**(5.7)**	**(34.9)**	n.a.	9.8	**(2.0)**
2009	**(45.6)**	2.5	n.a.	**(48.8)**	**(19.6)**	38.8	n.a.	**(18.9)**	**(41.6)**
2010	24.2	**(8.5)**	n.a.	9.1	13.6	53.6	n.a.	33.9	20.3
2011	4.0	**(35.1)**	76.5	**(12.0)**	7.0	22.4	n.a.	**(20.3)**	0.2
2012	**(10.0)**	12.0	40.6	**(11.8)**	**(3.6)**	**(17.6)**	n.a.	84.7	**(7.7)**
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
2004 Q1	**(2.3)**	96.8	n.a.	...	**(8.3)**	**(2.8)**	n.a.	6.8	4.0
Q2	**(19.4)**	**(45.2)**	n.a.	...	**(7.5)**	**(2.1)**	n.a.	**(1.4)**	**(21.8)**
Q3	11.0	**(68.1)**	n.a.	...	24.2	**(24.6)**	n.a.	**(3.2)**	4.2
Q4	16.9	18.3	n.a.	...	45.8	13.8	n.a.	40.5	17.2
2005 Q1	23.1	7.0	n.a.	...	46.9	10.3	n.a.	17.1	25.8
Q2	30.1	69.3	n.a.	...	5.9	**(32.8)**	n.a.	0.2	37.4
Q3	**(15.1)**	209.2	n.a.	...	1.5	**(2.7)**	n.a.	7.1	**(6.9)**
Q4	**(10.4)**	**(12.9)**	n.a.	...	**(14.0)**	**(6.1)**	n.a.	8.9	**(8.7)**
2006 Q1	16.9	**(19.0)**	n.a.	**(24.2)**	**(43.6)**	**(31.4)**	n.a.	3.7	11.1
Q2	**(3.1)**	**(1.5)**	n.a.	**(25.7)**	4.6	26.4	n.a.	10.7	**(3.7)**
Q3	9.3	0.5	n.a.	20.8	6.0	53.0	n.a.	**(9.3)**	8.8
Q4	9.0	0.0	n.a.	24.2	**(24.9)**	**(14.8)**	n.a.	**(12.1)**	8.2
2007 Q1	(1.3)	7.0	n.a.	**(24.6)**	34.1	**(50.2)**	n.a.	**(11.3)**	**(1.2)**
Q2	3.7	**(2.2)**	n.a.	**(4.7)**	7.7	34.6	n.a.	**(16.9)**	3.0
Q3	2.4	**(67.0)**	n.a.	**(12.2)**	6.3	24.8	n.a.	**(4.1)**	**(3.5)**
Q4	**(11.5)**	20.4	n.a.	**(8.3)**	30.8	88.3	n.a.	**(22.9)**	**(8.8)**

Table 4 continued… Year-on-Year Percentage Change in the Volume of Mining Production by Mineral Group and Mineral (Base 2013 = 100)

	Diamonds	Matte	Copper 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**
2008 Q1	**(0.8)**	5.2	n.a.	24.7	13.4	111.8	n.a.	3.2	**0.3**
Q2	**(2.1)**	**(13.2)**	n.a.	3.2	**(17.7)**	**(62.6)**	n.a.	6.0	**(3.1)**
Q3	0.1	176.9	n.a.	16.6	**(16.2)**	**(37.0)**	n.a.	7.9	**5.1**
Q4	**(10.0)**	**(28.3)**	n.a.	36.7	3.2	**(42.6)**	n.a.	24.6	**(10.6)**
2009 Q1	**(100.0)**	**(28.9)**	n.a.	**(35.4)**	**(23.8)**	38.7	n.a.	**(4.1)**	**(91.6)**
Q2	**(51.3)**	17.7	n.a.	**(39.6)**	**(33.1)**	54.6	n.a.	**(15.4)**	**(45.6)**
Q3	**(35.9)**	10.2	n.a.	**(49.8)**	**(5.5)**	**(1.8)**	n.a.	**(26.4)**	**(32.6)**
Q4	9.3	16.0	n.a.	**(64.9)**	**(18.7)**	81.6	n.a.	**(29.5)**	**6.9**
2010 Q1	…	37.8	…	**(3.9)**	19.6	34.8	n.a.	7.9	**626.4**
Q2	44.9	**(37.5)**	…	**(13.2)**	35.4	73.9	n.a.	27.2	**30.6**
Q3	2.2	**(2.1)**	…	20.2	**(5.9)**	120.3	n.a.	57.6	**3.2**
Q4	**(27.6)**	**(21.8)**	…	44.0	16.6	9.9	n.a.	52.4	**(24.8)**
2011 Q1	17.5	(25.3)	158.6	**(17.5)**	**(4.8)**	22.8	n.a.	**(12.3)**	**11.1**
Q2	4.5	5.0	126.7	**(17.2)**	11.3	22.5	n.a.	13.4	**5.0**
Q3	15.8	**(94.6)**	53.2	**(16.5)**	19.1	11.3	n.a.	**(20.9)**	**2.9**
Q4	**(19.4)**	**(0.4)**	24.6	1.7	2.8	37.5	n.a.	**(60.4)**	**(16.4)**
2012 Q1	**(0.8)**	15.6	51.4	21.1	7.3	**(8.4)**	n.a.	12.7	**1.6**
Q2	**(9.8)**	15.9	**(3.9)**	7.2	**(2.3)**	12.6	n.a.	**(17.0)**	**(7.3)**
Q3	**(36.7)**	255.4	59.1	**(18.9)**	**(1.3)**	**(45.4)**	n.a.	109.0	**(32.9)**
Q4	19.2	**(12.5)**	58.4	**(42.0)**	**(15.9)**	**(15.6)**	n.a.	471.1	**14.4**
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	**(2.5)**	87.3	**(23.3)**	**(46.3)**	**(32.6)**	**(10.3)**	**(32.3)**	33.7	**(0.9)**
Q2	**(5.4)**	43.3	**(69.7)**	**(33.0)**	**(54.2)**	**(62.5)**	**(100.0)**	9.0	**(7.6)**
Q3	**(33.4)**	(61.6)	**(84.0)**	**(7.8)**	**7.1**	**(8.3)**	**(100.0)**	18.6	**(37.6)**

Note: 1. 2015 Figures are provisional
2. () denote negative numbers
3. …data is not zero but the figure is not significant enough to be measured

Table 5: 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 Index
Weights	**82.5**	**8.6**	**5.5**	**1.4**	**0.9**	**0.5**	**0.4**	**0.3**	**100.0**
2004	2.0	**(1.3)**	n.a.	...	0.1	**(0.0)**	n.a.	0.0	**0.8**
2005	2.4	2.4	n.a.	...	0.1	**(0.0)**	n.a.	0.0	**7.9**
2006	6.7	**(0.5)**	n.a.	**(0.2)**	**(0.1)**	0.0	n.a.	**(0.0)**	**6.0**
2007	**(1.7)**	**(0.9)**	n.a.	**(0.3)**	0.1	0.0	n.a.	**(0.0)**	**(2.8)**
2008	**(2.8)**	0.4	n.a.	0.4	**(0.0)**	**(0.1)**	n.a.	0.0	**(2.0)**
2009	**(40.3)**	0.2	n.a.	**(1.4)**	**(0.2)**	0.0	n.a.	**(0.0)**	**(41.6)**
2010	19.9	**(1.2)**	n.a.	0.2	0.1	0.2	n.a.	0.1	**20.3**
2011	3.4	**(3.6)**	n.a.	**(0.3)**	0.1	0.1	n.a.	**(0.0)**	**0.2**
2012	**(8.8)**	0.8	n.a.	**(0.2)**	**(0.0)**	**(0.1)**	n.a.	0.1	**(7.7)**
2013	10.5	2.0	...	**(0.2)**	**(0.1)**	0.2	...	0.0	**17.3**
2014	5.4	**(2.8)**	0.8	**(0.3)**	0.2	**(0.0)**	...	0.0	**3.3**
2004 Q1	**(2.1)**	6.1	n.a	...	**(0.1)**	**(0.0)**	n.a	0.0	**4.0**
Q2	**(17.3)**	**(4.5)**	n.a	...	**(0.1)**	**(0.0)**	n.a	**(0.0)**	**(21.8)**
Q3	10.0	**(5.9)**	n.a	...	0.2	**(0.0)**	n.a	0.0	**4.2**
Q4	15.3	1.5	n.a	...	0.3	0.0	n.a	0.0	**17.2**
2005 Q1	20.0	0.8	n.a.	...	0.4	0.0	n.a.	0.0	**25.8**
Q2	27.6	4.8	n.a.	...	0.1	**(0.1)**	n.a.	0.0	**37.4**
Q3	**(14.6)**	5.5	n.a.	...	0.0	**(0.0)**	n.a.	0.0	**(6.9)**
Q4	**(9.4)**	**(1.1)**	n.a.	...	**(0.1)**	**(0.0)**	n.a.	0.0	**(8.7)**
2006 Q1	14.4	**(1.9)**	n.a.	**(0.9)**	**(0.4)**	**(0.1)**	n.a.	0.0	**11.1**
Q2	**(2.7)**	**(0.1)**	n.a.	**(0.9)**	0.0	0.0	n.a.	0.0	**(3.7)**
Q3	8.2	0.0	n.a.	0.5	0.1	0.1	n.a.	**(0.0)**	**8.8**
Q4	8.0	0.0	n.a.	0.5	**(0.2)**	**(0.0)**	n.a.	**(0.0)**	**8.2**
2007 Q1	**(1.2)**	0.5	n.a.	**(0.6)**	0.2	**(0.1)**	n.a.	**(0.0)**	**(1.2)**
Q2	3.2	**(0.2)**	n.a.	**(0.1)**	0.1	0.1	n.a.	**(0.0)**	**3.0**
Q3	2.2	**(5.4)**	n.a.	**(0.3)**	0.1	0.0	n.a.	**(0.0)**	**(3.5)**
Q4	**(10.3)**	1.5	n.a.	**(0.2)**	0.2	0.1	n.a.	**(0.0)**	**(8.8)**

Table 5 continued… 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 Index
Weights	**82.5**	**8.6**	**5.5**	**1.4**	**0.9**	**0.5**	**0.4**	**0.3**	**100.0**
2008 Q1	**(0.7)**	0.4	n.a	0.5	0.1	0.1	n.a	0.0	0.3
Q2	**(1.8)**	**(1.1)**	n.a	0.1	**(0.1)**	**(0.1)**	n.a	0.0	**(3.1)**
Q3	0.1	4.9	n.a	0.4	**(0.2)**	**(0.1)**	n.a	0.0	5.1
Q4	**(8.7)**	**(2.7)**	n.a	0.9	0.0	**(0.1)**	n.a	0.0	**(10.6)**
2009 Q1	**(88.2)**	**(2.4)**	n.a.	**(0.8)**	**(0.2)**	0.0	n.a.	**(0.0)**	**(91.6)**
Q2	**(45.6)**	1.3	n.a.	**(1.1)**	**(0.2)**	0.0	n.a.	**(0.0)**	**(45.6)**
Q3	**(32.0)**	0.7	n.a.	**(1.3)**	**(0.0)**	**(0.0)**	n.a.	**(0.0)**	**(32.6)**
Q4	8.1	1.2	n.a.	**(2.4)**	**(0.2)**	0.1	n.a.	**(0.0)**	6.9
2010 Q1	594.7	27.2	…	**(0.7)**	1.4	0.7	n.a.	0.1	626.4
Q2	35.7	**(6.0)**	…	**(0.4)**	0.3	0.2	n.a.	0.0	30.6
Q3	1.9	**(0.2)**	…	0.4	**(0.1)**	0.3	n.a.	0.1	3.2
Q4	**(24.7)**	**(1.6)**	…	0.5	0.1	0.0	n.a.	0.0	**(24.8)**
2011 Q1	14.3	**(3.4)**	0.7	**(0.4)**	**(0.1)**	0.1	n.a.	**(0.0)**	11.1
Q2	4.0	0.4	0.8	**(0.4)**	0.1	0.1	n.a.	0.0	5.0
Q3	13.2	**(10.7)**	0.5	**(0.4)**	0.2	0.1	n.a.	**(0.0)**	2.9
Q4	**(16.7)**	**(0.0)**	0.3	0.0	0.0	0.1	n.a.	**(0.1)**	**(16.4)**
2012 Q1	**(0.7)**	1.4	0.5	0.4	0.1	**(0.0)**	n.a.	0.0	1.6
Q2	**(8.6)**	1.2	(0.1)	0.1	**(0.0)**	0.0	n.a.	**(0.0)**	**(7.3)**
Q3	**(34.7)**	1.5	0.8	**(0.3)**	**(0.0)**	**(0.2)**	n.a.	0.1	**(32.9)**
Q4	15.9	**(1.3)**	0.9	**(1.2)**	**(0.2)**	**(0.1)**	n.a.	0.4	14.4
2013 Q1	**(11.0)**	**(2.1)**	4.3	**(0.9)**	0.2	0.2	…	0.1	**(8.7)**
Q2	17.9	1.2	5.7	**(0.3)**	**(0.1)**	0.2	…	0.0	25.2
Q3	23.5	10.0	4.1	**(0.1)**	**(0.2)**	0.4	…	**(0.0)**	38.4
Q4	14.6	0.5	3.6	0.5	**(0.3)**	**(0.1)**	…	**(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	**(2.2)**	3.6	**(1.3)**	**(0.6)**	**(0.3)**	**(0.0)**	**(0.1)**	**0.1**	**(0.9)**
Q2	**(4.6)**	2.6	**(4.1)**	**(0.3)**	**(0.5)**	**(0.3)**	**(0.4)**	**0.0**	**(7.6)**
Q3	**(28.5)**	(2.6)	**(5.9)**	**(0.1)**	**0.1**	**(0.0)**	**(0.6)**	**0.1**	**(37.6)**

Note: 1. 2015 Figures are provisional
2. () denote negative numbers
3. …data is not zero but the figure is not significant enough to be measured

3.0 Technical Notes

3.1 Background Information

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 Selibe- Phikwe. Since the early 1980s, the mining industry has been the largest contributor to real gross domestic product (GDP), contributing between 30 and 50 percent. Its value has been increasing at an annual rate of nearly 20 percent.

These mineral contributions enabled the Government to undertake investments in both human and physical infrastructure development over time. In 2013, mining accounted for 22.4 percent of Botswana's GDP, and more than 50 percent of Government revenues. 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. 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 or the national economy, the need for a measure of change in the production of minerals in Botswana cannot be over emphasized. The index of physical volume of mining production is such a measure that provides a relative change over time in mining production. IMP can also be used as a deflator to calculate the gross domestic product (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 through its data sharing agreement with Statistics Botswana provides the data to Statistics Botswana. Following international standards and guidelines, Statistics Botswana cleans and tabulates the data, then produces reports for publishing and dissemination to users.

3.3 Scope of the survey

The survey covers all mining establishments conducting activities relating to the extraction of minerals occurring naturally as solids such as Diamonds, Matte (Copper-Nickel-Cobalt), Copper in Concentrates, Gold, Soda Ash, Salt, 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 Central Product Classification (CPC) Version 2.

The results of the survey are used to calculate the indices of the physical volume of mining production on quarterly basis and subsequently to estimate GDP, also on a quarterly basis.

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 (Allen, 1975). The index form is used not only for intertemporal comparisons but for comparisons between countries (Bal, 2008).

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 to and whose values provide the weights for an index (UNSD, 2010). The base period, also referred to as reference 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 (SA)

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 month.

The data contained in this report is not seasonally adjusted. However, there is a further scope of producing and disseminating an additional seasonally adjusted series.

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 (OECD, 2007).

4.6 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.

4.7 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.

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

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 ^{ith} item in the base year.