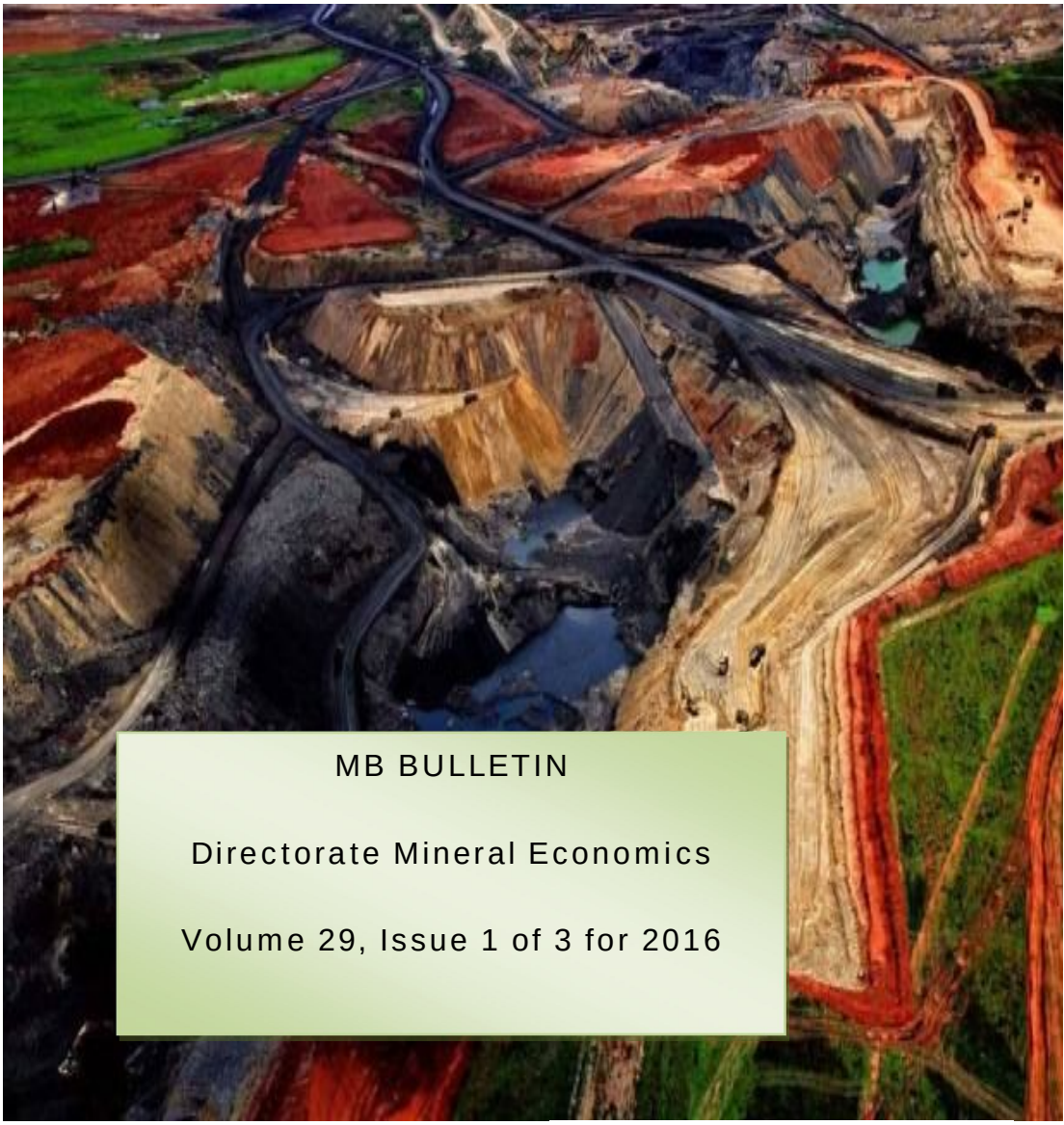


MB BULLETIN

Directorate Mineral Economics

Volume 29, Issue 1 of 3 for 2016

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

31 MAY 2016
VOLUME 29 Issue 1 of 3 for 2016

MB BULLETIN

DIRECTORATE: MINERAL ECONOMICS

MB BULLETIN

DIRECTORATE: MINERAL ECONOMICS

Private Bag X59
Arcadia
0007

70 Meintjies Street
Pretoria
0002

TEL: +27 (0) 12 444 3531
FAX: +27 (0) 12 444 3134

Issued (free of charge) by, and obtainable from, the Director, Directorate: Mineral Economics (www.dmr.gov.za)

Please email any comments to Director Mineral Economics:
Ray Masetlana
Email Address: Ray.Masetlana@dmr.gov.za

ISBN: **978-0-621-44652-4**

TABLE OF CONTENTS

ABBREVIATIONS AND SYMBOLS

A$	Australian dollar
B-billion	thousand million
CIF	cost, insurance, freight
e	estimate
FOB	free on board
FOR	free on rail
g/t	gram per ton
kg	kilogram
kt	thousand tons
lb	pounds avoirdupois
LME	London Metal Exchange
m	metre
Mt	million tons
Mt/a	million tons per annum
na	not available
ozt	troy ounce
t	metric ton
t/a	tons per annum
t/m	tons per month
µ	micro-
$	US dollar, unless stated otherwise
¥	yen
€	Euro
PGM	Platinum Group Metals
SARB	South African Reserve Bank
ETL	Exchange Traded Fund
SACCI	South African Chamber of Commerce and Industry
PICC	Presidential Infrastructure Co-ordination Committee
KPCS	Kimberley Process Certification Scheme

LIST OF TABLES

LIST OF FIGURES

1. THE PERFORMANCE OF SOUTH AFRICA'S PRECIOUS METALS AND MINERALS SECTOR DURING THE FIRST QUARTER OF 2016.

South Africa's (SA) precious metals production decreased by 27.5 percent in the first quarter of 2016 (Q1 2016) when compared with Q4 2015(Table 1). This is largely attributed to stock-taking and safety stoppage at Amplats' Precious Metal Refinery (PMR) which was evident in the February month, as well as lower recovered gold grades. Production fell by 6.9 percent year-on-year (y-o-y) after a 7.0 percent increase in gold production was offset by a 14.5 percent decline in PGMs production. There was a significant increase in local sales mass and revenue, which concurred with the global trend of higher local uptake during bearish prices in anticipation of higher future prices. Total sales mass and revenue decreased quarter on quarter (q-o-q) by 18.5 percent and 12.3 percent respectively, due to lower production and demand for the metals, while a 12.2 percent increase in revenue y-o-y was largely attributed to a higher R/$ exchange rate.

Diamond production decreased by 24.3 percent q-o-q and by 7.7 percent y-o-y (Table 2) as producers reduced output in line with lower demand experienced during late 2015. Total diamond sales mass increased by 79.8 percent q--q due to improved global demand, with the corresponding revenue rising by 92.7 percent. This was despite a 58.8 percent q-o-q decrease in local sales mass, which was attributed to lower production. However, local sales revenue increased by a modest 2.2 percent q-o-q, most probably indicating a better quality of stones sold. Similarly, local sales mass fell by 44.4 percent y-o-y, while the revenue improved by 7.6 percent. Despite a decrease in production, export sales mass increased more than four-fold q-o-q as producers tapped into their stocks to meet the somewhat unexpected higher demand. As a result, the corresponding revenue increased more than five-fold.

TABLE 1: SOUTH AFRICA'S QUARTERLY PRODUCTION AND SALES OF PRECIOUS METALS.

	Production (t)	Local sales		Export sales		Total sales	
		Mass (t)	value (R' mil)	Mass (t)	value (R' mil)	Mass (t)	value (R' mil)
Q1 2016*	83.6	13.4	5 848.4	76.5	31 148.1	89.9	36 996.5
Q4 2015	115.3	12.9	5 084.4	97.3	37 121.8	110.2	42 206.2
Q1 2015	89.8	9.2	3 645.7	79.3	29 346.9	88.5	32 992.5
% Change(QQ)	-27.5	3.3	15.0	-21.4	-16.1	-18.5	-12.3
% Change(YY))	-6.9	45.9	60.4	-3.6	6.1	1.6	12.1

TABLE 2: SOUTH AFRICA'S QUARTERLY PRODUCTION AND SALES OF DIAMONDS.

	Production (ct)	Local sales		Export sales		Total sales	
		Mass (ct)	value (R' mil)	Mass (ct)	value (R' mil)	Mass (ct)	value (R' mil)
Q1 2016*	1 755 222.0	489 018.0	2 585.8	2 699 009.0	3 391.1	3 188 027.0	5 976.9
Q4 2015	2 318 281.0	1 186 610.0	2 529.5	586 739.0	572.0	1 773 349.0	3 101.5
Q1 2015	1 902 269.0	878 977.0	2 403.1	1 492 731.0	2 056.3	2 371 708.0	4 459.4
% Change(QQ)	-24.3	-58.8	2.2	360.0	492.8	79.8	92.7
% Change(YY))	-7.7	-44.4	7.6	80.8	64.9	34.4	34.0

PGMs prices with the exception of platinum declined q-o-q, which remains flat, but fell by 23.7 percent y--oy as a result of oversupply perceptions, as well as lower jewellery and autocatalysts demand (Table 3). Palladium and rhodium prices were down 33.7 percent and 43.4 percent respectively y-o-y, also as a result of lower automotive demand stemming from lower Chinese automotive sales. Polished diamond prices remained relatively flat q-o-q but decreased by -1.5 percent y-o-y, despite improved rough diamond demand. The gold price increased by 6.8 percent q-o-q, largely spurred on by a slow growth in the Chinese economy, which resulted in a weaker Yuan and pushed the price upwards. However, the metal's price declined by 3.2 percent y-o-y due to a stronger dollar currency and the lowering of the US Federal Bank inflationary expectations.

TABLE 3: AVERAGE PRICES ($/oz).

Period	**Gold**	**Platinum**	**Palladium**	**Rhodium**	**PPI***	**R/$**
Q1 2016*	1 180.1	917.0	526.1	670.0	124.0	15.8634
Q4 2015	1 104.5	914.1	611.5	732.3	124.4	14.1887
Q1 2015	1 219.6	1 202.3	793.4	1 183.2	125.9	11.7351
%change (q/q)	**6.8**	**0.3**	**-14.0**	**-8.5**	-0.3	11.8
% change (y/y)	**-3.2**	**-23.7**	**-33.7**	**-43.4**	-1.5	35.2

**PPI: Polished Diamond Price Index. This is a percentage number that shows the extent to which a price has changed over a period as compared with the price in a certain year, in this case April 2004-March 2005, taken as a standard year.*

The rand diminished by 11.8 percent against the dollar ($) q-o-q, however, strong local retail sales particularly in gold and PGMs, offset the loss to some extent. Similarly but to a greater extent, the rand weakened by 35.2 percent, y-o-y driven by a widening trade deficit, falling commodity prices and labour unrest in the mining sector.

Production of precious metals is expected to increase during Q2 2016 as normal production resumes. Sales mass, and therefore prices, are not expected to change much, with no end in sight for the relatively lower demand for PGMs. Similarly, rough diamond production is expected to increase in Q2 2016 due to significantly stronger rough diamond demand in 2016, which is expected to put an upward pressure on prices.

Sources:

1. *Directorate Mineral Economics.*
2. *GFMS GOLD SURVEY QUARTER 4, 2015 UPDATE AND OUTLOOK*
3. *http://www.fin24.com/Markets/Currencies/rand-stays-firmer-after-lower-us-inflation-20160415*
4. *http://www.idexonline.com/FullArticle?id=41840*
5. *http://www.idexonline.com/FullArticle?id=41856*

DO Moumakwa and P Perold

2. QUARTER 1 2016: EMPLOYMENT AND REMUNERATION IN THE PRECIOUS SECTOR

Average employment in the precious metals (gold and PGMs) sector continued to decline, falling by 2.3 percent in the first quarter of 2016 (Q1 2016) when compared to Q4 2015 (Table 4), as a result of restructuring and the associated retrenchments, particularly in the PGMs sector. This was despite a 0.6 percent increase in the number of contractors in the gold sector. Likewise, average employment fell by 5.8 percent year on year. However, total earnings fell by 4.7 percent quarter on quarter in line with a decline in employment figures, but increased by 6.3 percent year on year, due to improved wages, particularly in the gold sector.

TABLE 4: QUARTERLY EMPLOYMENT AND EARNINGS IN THE PRECIOUS METALS SECTOR.

Gold	*Period*	*Males*	*Females*	*Contractors*	*Total*	*Earnings (Rmil)*
	Q1 2016	88 459	12,132	14 887	115 477	6 698
	Q4 2015	88 370	12,080	14 798	115 248	6 683
	Q1 2015	89 636	11 527	13 978	115 141	5 664
	% change (q-o-q)	*0.1*	*0.4*	*0.6*	*0.2*	*0.2*
	% change (y-o-y)	-1.3	5.2	6.5	0.3	18.3
PGMs						
	Q1 2016	113 471	15 093	44 554	173 118	10 567
	Q4 2015	115 868	15 374	48 770	180 012	11 435
	Q1 2015	121 371	15 513	54 466	191 350	10 584
	% change (q-o-q)	-2.1	-1.8	-8.6	-3.8	-7.6
	% change (y-o-y)	-6.5	-2.7	-18.2	-9.5	-0.2
Total						
	Q1 2016	201 930	27 225	59 441	288 595	17 265
	Q4 2015	204 238	27 454	63 568	295 260	18 118
	Q1 2015	211 006	27 041	68 444	306 491	16 248
	% change (q-o-q)	-1.1	-0.8	-6.5	-2.3	-4.7
	% change (y-o-y)	-4.3	0.7	-13.2	-5.8	6.3

Source: Statistics Directorate

In the diamond sector, average employment increased by a modest 1.4 percent despite retrenchments at Transhex. Year on year, total employment increased by just under 5 percent due to ongoing expansion projects, which were mainly responsible for an 8.7 percent increase in the average number of contractors. Total earnings increased by 1.5 percent quarter on quarter and by 10.9 percent year on year, in line with a rise in employment.

TABLE 5: QUARTERLY EMPLOYMENT AND EARNINGS IN THE DIAMOND SECTOR.

Diamonds	*Period*	*Males*	*Females*	*Contractors*	*Total*	*Earnings (Rmil)*
	Q1 2016	9 037	1 674	7 118	17 828	1 157
	Q4 2015	8 893	1 662	7 026	17 582	1 140
	Q1 2015	8 832	1 609	6 548	16 989	1 043
	% change (q-o-q)	*1.6*	*0.7*	*1.3*	*1.4*	1.5
	% change (y-o-y)	2.3	4.0	8.7	4.9	10.9

Source: Statistics Directorate

Sources:

1. *Department of Mineral Resources*

DO Moumakwa and P Perold

3. THE SOUTH AFRICAN DIAMOND INDUSTRY IS NOT AFFECTED BY CURRENT MARKET CONDITIONS

South Africa's (SA) diamond sector was severely affected by the global economic crisis, which saw a drop in the diamond production by over 100 percent in 2009 year on year. Despite production picking up in 2010, diamond production still remains below pre-crisis levels due to a slow global economic recovery. Diamond prices have also declined due to reduced demand and, in an attempt to increase long-term prices amidst poor market conditions the largest producers have increasingly cut their production volumes.

The country's kimberlite diamond production for over a century was monopolised, up until recently when a diamond major producer sold off the majority of its marginal mines. This brought about structural changes in the diamond sector, resulting in the country's kimberlite production being dominated by two major producers. The largest producers in SA have long-established different diamond mining methods in order to satisfy their business models applicable to their business models, which are recovery of high volume diamonds and high value diamonds. High volume diamond operations recover high quantities of rough diamonds from high Run Off Mine (ROM) tonnages to satisfy sight holder's demand, while high value diamond recovery operations focus on producing quality stones at reduced mining costs. However, irrespective of mining methods, an excess supply of rough diamonds can negatively influence the average diamond prices.

The second largest producer of kimberlite diamonds in SA is using a business model of focusing largely on the recovery of high value diamonds as opposed to high volume diamonds. The optimisation of the diamond process for the recovery of high value diamonds is beneficial to producers as they are able to set their own price depending on the size, cut and clarity of the stones. Cullinan Mine has in the past recovered quality stones at their plant and continues to do so due to the change in strategy of recovering high quality stones.

South Africa's kimberlite production could potentially increase by 15.2 percent to 6.8 million carats (Mct) at the end of 2016, from the current 5.9 Mct in 2015. An estimated $2 billion ramp-up of a local major kimberlite production unit is expected to boost long term diamond supply of both high value diamonds and high volume diamonds. This is an indication that producers are expecting a long-term recovery of diamond price. As such, despite these negative market conditions, South Africa's (SA) diamond production is not expected to decrease in the medium term.

Sources:

1. *Paulzimnisky.com*
2. *IDEX, 2016/2015*
3. *https://www.debeersgroup.com/en/index.html*
4. *https://www.petradiamonds.com/*
5. *http://www.diamonds.net/Magazine/Article.aspx?ArticleID=32434&RDRIssueID=53*
6. *http://www.sajs.co.za/C03BD343-39BB-449D-ADC4-CAFC3112437E/FinalDownload/DownloadId-66465ED28D7FEAFFD8F4DC529EF3647B/C03BD343-39BB-449D-ADC4-CAFC3112437E/sites/default/files/publications/pdf/712-5387-3-PB.pdf*

P Perold

4. DIAMOND MARKETS SET TO SPARKLE AGAIN

The recovery could encourage local value-addition and ease unemployment.

The global diamond industry has been battered by a drop in rough and polished diamond prices due to the continued but slowing growth in the macro-economy, in addition to the slow-down in the Chinese economic growth and the weaker than expected growth in customer demand. Subsequent to a generally solid performance in the first half of 2014, a degree of uncertainty engulfed the industry in the second half, continuing well into 2015. However, recent developments indicate that a brighter future in 2016 and beyond may not be off the cards, which could boost South Africa's (SA's) processing and manufacturing of rough diamonds.

The jewellery consumption spike in the Chinese market in 2013 led to inflated expectations of further growth in demand for diamond jewellery. However, these were not realized, mainly because producers generally sell rough stones to cutters and polishers, who became starved for cash after the closure of the Antwerp Diamond Bank in late 2014. Belgium is one of the world's largest trading hubs and the bank was a major lender to the industry. As a result of stock accumulation across the diamond pipeline, rough diamond prices fell by 23 percent between May 2014 and December 2015, while polished prices declined by 12 percent during the same period.

As a response to low prices and in a bid to support the market, some of the world's largest producers cut back on supply. This led to shortage of supply of some stone types, boosting demand in 2016, which resulted in price increases for the first time in more than a year, an indication that the industry may be recovering from the biggest slump since the 2008 economic meltdown. Such an improvement in sentiment in the diamond trade appears to be supported by sales data from key diamond producers. However, due to the oversupplied market, it is expected that diamond price recovery could take at least another year to reach a sustainable level.

Despite a slump in diamond prices, SA's production has remained relatively flat since 2013, while export sales mass and value have both increased by 21 percent, with the latter buoyed by the relatively stronger rand against the dollar. Employment in the sector also improved by 28.3 percent, largely due to expansion projects at some of the country's main operations. However, it is the downstream sector of the industry that continued to suffer, despite an increase of 16.2 percent in local sales value. A recovery in diamond markets is therefore expected to revitalize industrial capacity by encouraging value-addition to rough diamonds prior to export, which would further help offset mining costs and ease unemployment in the country.

Sources:

1. *Directorate Mineral Economics, DMR.*
2. *www.moneyweb.co.za, 14 April 2016.*
3. *www.bdlive.co.za, 11 April 2016.*
4. *www.bdlive.co.za, 07 April 2016.*
5. *www.bloomberg.com, 23 March 2016.*
6. *luxurysociety.com, 26 Jan 2016.*
7. *www.bdlive.co.za, 27 October 2015.*
8. *www.ft.com, 22 October 2015.*
9. *money.cnn.com, 28 January 2015.*
10. *www.rough-polished.com, 09 February 2013.*

DO Moumakwa

5. SOUTH AFRICA'S FERROUS SECTOR PERFORMANCE DURING THE FIRST QUARTER OF 2016

South Africa's ferrous mineral sector production fell by 10.97 percent in the first quarter of 2016 (Q1 2016) to 19.2 Million tons (Mt) compared with the fourth quarter of 2015 (Q4 2015) (table 6). The decline in production was evident across all ferrous commodities with manganese ore being the hardest hit dropping 23.9 percent. Iron ore and chrome ore also followed the same trend, declining by 7.83 percent and 14.49 percent respectively in the same period. The drop in production could be attributed to a reduction in production particularly in iron ore mines and no production at all from some manganese ore mines which are currently on business rescue.

TABLE 6: SOUTH AFRICA'S AGGREGATED QUATERLY PRODUCTION AND SALES OF FERROUS MINERALS

Period	Production (Mt)	Local Sales		Export Sales		Total Sales	
		Mass (Mt)	Revenue (R'mil)	Mass (Mt)	Revenue (R'mil)	Mass (Mt)	Revenue (R'mil)
Q1 2016	19.2	3.8	2 732.4	17.0	11 351.4	20.8	14 083
Q4 2015	21.6	3.3	2 594	16.1	10 101	19.4	12 696
Q1 2015	27.1	5.1	3 723	21.2	16 125	26.4	19 849
QQ % change	-10.9	13.0	5.3	5.9	12.4	7.1	10.9
YY % change	-29.1	-26.2	-26.6	-19.6	-29.6	-21.0	-29.0

Source: Dmr Mineral Economics

Total ferrous sales revenue saw an increase of 10.9 percent quarter on quarter (q-o-q) to R14 083.9 million, due to an increase in local sales and export mass, coupled with slight improvement in manganese and iron ore prices as well as the effect of a weaker rand, which at an average of R15.15/$ in Q1 2016 a 9.78 percent higher compared with Q4 2015 at R13.8/$. Despite an increase of 13 percent in ferrous local mass sales, ferroalloys production declined slightly by 1.4 percent due to a shutdown of some furnaces particularly in the ferrochrome sector. Ferroalloys local mass and sales increased by 2.4 percent and 1.4 percent respectively, despite a decrease in local steel production, while export mass and revenue declined by 4.5 percent and 7.6 percent respectively, due to the continued weaker demand from the global steel producers.

TABLE 7: SOUTH AFRICA'S AGGREGATED QUATERLY PRODUCTION AND SALES OF FERROALLOYS

Period	Production (Mt)	Local Sales		Export Sales		Total Sales	
		Mass (Mt)	Revenue (R'mil)	Mass (Mt)	Revenue (R'mil)	Mass (Mt)	Revenue (R'mil)
Q1 2016	1.03	170	1 550	0.74	6 932	0.91	8 482
Q4 2015	1.04	166	1 528	0.78	7 500	0.94	9 029
Q1 2015	1.18	165	1 450	1.00	9 494	1.16	10 945
QQ % change	-1.4	2.4	1.4	-4.5	-7.6	-3.3	-6.1
YY % change	-13.1	3.0	6.9	-25.4	-27.0	-21.3	-22.5

Source: Dmr Mineral Economics

On a year on year (y-o-y) basis, total aggregated ferrous sector production decreased by 29.1 percent, from 27.1 Mt in Q1 2015 to 19.2Mt in Q1 2016, with total sales mass and revenue also declining by 21 percent and 29 percent, respectively. Ferroalloy production declined by 13.1 percent y-o-y, with ferromanganese being the most affected, declining by 62.05 percent in the same period, due high production costs resulting in majority of furnaces shutting down. The reduced demand from China is evident in the decrease in total sales mass and revenue by 21.3 and 22.5, respectively.

According to the world steel association (WSA), another year of contraction in steel demand is expected from China. However, a steady but slow growth in some emerging and developing economies is expected to grow by 1.8 percent in 2016. The shrunk in global steel demand is likely to contract South Africa's ferrous minerals and its alloys exports, putting the country's ferrous sector under severe pressure. South Africa's ferrous industry as critical inputs into steel manufacturing, plays a significant and strategic role in mineral beneficiation. In addition, steel as a key enabler of every part of the economy, including the automotive, mining, construction, energy and infrastructure sectors has been identified as a major growth driver in the National Development Plan. As such, future existence and sustainability of the ferrous and steel sectors are essential in underpinning the country's economic development goals.

Sources:

1. *DMR: Mineral Economics Statistics*
2. *www.wordlsteel.org*
3. *www.ssada.co.za*
4. *www.kumbaironore.com*
5. *http://ycharts.com/indicators?iron-ore-prices*

R. Ravhugoni and L Malebo

6. ANALYSIS OF EMPLOYMENT IN THE FERROUS COMMODITIES SECTOR OF SOUTH AFRICA DURING THE FIRST QUARTER OF 2016

Employment in the ferrous commodities sector reflected a 7.3 percent decline in quarter 1 (Q1) of 2016 from an average of 44 666 employees in quarter 4 (Q4) of 2015. Low commodity prices and weak demand from China, the largest consumer of these commodities, remain the concerning factors amongst producers in the ferrous commodities sector. The loss in employment was evident across all the sectors due to retrenchments in most mines in the sector, as well as a prolonged unauthorized strike at one of the chrome mine which led to staff retrenchments. The iron and chrome ore sectors declined by 5.5 and 7.6 percent, respectively with manganese sector being the hardest hit falling by

11.1 percent. As a result of the widespread lay-offs, total earnings in the ferrous sector declined by 7.2 percent in Q1 2016 to R961 million from R1.04 billion in Q4 2015.

TABLE 8: AVERAGE EMPLOYMENT IN THE FERROUS COMMODITIES SECTOR, QUARTER 1 2016

PERIOD	EMPLOYEES	TOTAL REMUNERATION
		R'000
Q1 2015	50,165	1,048,801
Q4 2015	44,666	1,035,763
Q1 2016	41,413	961,153
QQ % change	-7.3	-7.2
YY % change	-17.4	-8.4

Source: DMR, Mineral Economics Directorate

Year-on-year (y-o-y), the ferrous sector lost an average of 17.4 jobs from 50 165 workers in Q1 2015, with remuneration also falling by 8.4 percent from R1.05 billion. This was mainly due to a decline of 17 percent in the iron ore sector employment, which contributed 44 percent to total employment in the ferrous commodities sector in Q1 2016. Employment in the manganese and chrome sectors fell by 19.8 and 16.2 percent, respectively, or by a combined average of 4 863 jobs.

As the largest ferrous commodities sector employer, iron ore employment is expected to shed additional jobs in the coming quarter. Dramatic downscaling in this sector will depend largely on the price level. The iron ore price peaked above $70 per ton in April of this year, but is expected to fall below $50 per ton during the remainder of the second quarter.

Sources:

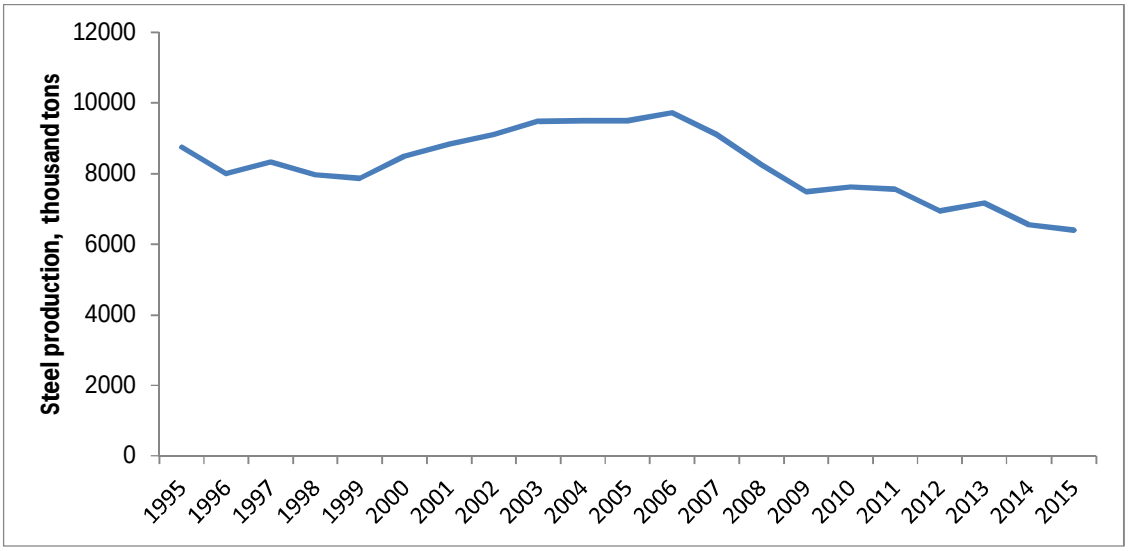
1. *Business Day, http//:www.bdaylive.co.za*
2. *Business Report, http//:www.iol.co.za*
3. *Mining Weekly, http//:www.miningweekly.com*
4. *Engineering News, http//:www.engineeringnews.co.za*
5. *DMR Mineral Economics Directorate*

M Khaile

7. Developments in South Africa's steel industry, 1995-2015

According to the World Steel Association (WSA), South Africa's total steel output declined on average by 1.2 percent between 1995 and 2015. In 2006, South Africa was ranked the 21st largest producer of steel globally, accounting for only 0.8 percent of global output. It was during this period that the country experienced an upswing in the demand for steel, driven primarily by the export market for automotive as well as the engineering and construction industries domestically and abroad, with production reaching 9.72 Mt, the highest ever recorded. Local sales of iron ore, a key input material into steel making, followed a similar trajectory, peaking at 12 407 kt in 2007, thereafter experiencing troughs in 2009 and 2012 due to weaker demand from the global steel sector.

FIGURE 1: SOUTH AFRICA'S PRODUCTION OF CRUDE STEEL, 1995 - 2015



Source: World Steel Association

Major challenges threatening South Africa's steel industry include, inter alia, the global steel oversupply, which is perpetuated primarily by subsidized Chinese imports. With the economic slowdown in China, investment in construction has notably contracted, leaving demand for steel in that country 3.5 percent weaker in 2015 compared with 2014 and prices at low levels. As such Chinese steel producers, having supply in excess of demand, have had to establish a customer base in foreign countries (including South Africa), supplying steel at a price lower than the prevailing prices in those foreign markets. Consequently, as South Africa experienced strife in its steel-making capacity from 2008 onwards, China's steel production grew at an average rate of 8.1 percent during the same period. Other challenges in South Africa's steel sector revolve around rising electricity and transportation costs which hinder export performance. On the latter, the Trade and Competitiveness Global Practice Group argues that regulatory intervention in the pricing system on the ports handling side could be instrumental in unlocking South Africa's export competitiveness.

In a bid to salvage their respective steel industries, the United States of America (USA) and the European Union (EU) imposed tariffs on imported steel, as a mechanism to reduce Chinese steel imports with USA at 266 percent tariff and EU at 24 percent. In early 2016 South Africa imposed a 10 percent tariff on imported wire rod and rebar, offering some relief to local steel producers as well as restoring the country's competitiveness.

According to Southern Africa Stainless Steel Development Association (Sassda), South Africa's stainless steel consumption, which has recovered from the slump experienced during the 2009 recession, is expected to improve in 2016, despite a challenging year (2015) for the industry. There has been particularly strong growth for architectural applications, while future growth potential is expected to arise from the structural, fuel cell and roofing subsectors. In addition, a feasibility study by a Chinese company, Han Noi to invest US$3,9 billion for a steel plant, amongst other projects, in the planned Musina Special Economic Zone which may boost South Africa's steel industry in the near future.

Sources:

1. *Forbes, http://www.forbes.com*
2. *Engineering News, http://www.engineeringnews.co.za*
3. *Minister Rob Davies, "Dti Budget Vote", Parliament, 20 April 2016*
4. *World Steel Association, http://www.worldsteel.com*
5. *D. Pieterse, T. Farole, M. Odendaal, A. Steenkamp. 2016. Supporting Export Competitiveness through Port and Rail Network Reforms. A case Study of South Africa. World Bank Group.*
6. *http://sassda.co.za/industry-news-2/*
7. *DMR, Mineral Economics Directorate.*

M Khaile

8. SOUTH AFRICA'S PRODUCTION AND SALES OF NON-FERROUS METALS AND MINERALS DURING THE FIRST QUARTER OF 2016

Preliminary data released by Mineral Economics Directorate indicate that South Africa's production of nonferrous metals and minerals, excluding aluminium and mineral sands, fell by 18.7 percent to 43.0 kt from 52.9 kt in the first quarter of 2016 (Table 9). Non-ferrous markets were still oversupplied in the Q1 of 2016 as a result of weak demand. On a year on year (y-o-y) basis, production declined by 12.8 percent from 49.4 kt in the first quarter of 2015. At 29 percent, copper recorded the highest decline compared to other nonferrous commodities in Q1 of 2016. Antimony production has also been increasing since it came on stream again, in September 2015 following technical and financial challenges.

TABLE 9: SOUTH AFRICA'S PRODUCTION AND SALES OF NON-FERROUS METALS AND MINERALS IN THE FIRST QUARTER OF 2016

NON FERROUS	PRODUCTION	LOCAL SALES		EXPORT SALES		TOTAL SALES	
QUARTER	(kt)	MASS (kt)	REVENUE (R'mil)	MASS (kt)	REVENUE (R'mil)	MASS (kt)	REVENUE (R'mil)
Q1:2016	43,04	7,93	706.52	37,10	2,593.24	45,03	3,299.76
Q4:2015	52,94	9,44	1,173.10	43,11	4,595.00	52,55	5,768.20
Q1:2015	49,38	12,21	1,865.20	32,18	3,742.80	44,39	5,608.00
Q/Q	-18.69%	-15.99%	-39.77%	-13.96%	-43.56%	-14.32%	-42.79%
Y/Y	-12.83%	-35.05%	-62.12%	15.27%	-30.71%	1.43%	-41.16%

Source: Mineral Economics

Local sales volumes of nonferrous metals and minerals dropped by 16.0 percent to 7.9 kt on a q-o-q basis, while local sales revenue also plunged by 39.8 percent to R706.5 million during the same period (Table 9). Export sales volumes and revenue decreased by 14.0 percent and 43.6 percent to 37.1 kt and R2.6 billion, respectively. Additionally, on a y-o-y basis, both local sales volumes and revenue declined by 35.0 and 62.1 percent, respectively. Export sales volumes rose by 15.3 percent, however, its sales revenue fell by 30.7 percent due to lower export prices. Demand for non-ferrous minerals dropped significantly, mostly as a result of the struggling Chinese economy, which is the largest consumer of these minerals. Domestically, lack of demand from major consuming markets such as construction and steel industry, has negatively impacted on sales volumes and revenues.

Most non-ferrous metal prices showed an improvement in the first quarter of 2016, with aluminium, copper and nickel settlement prices increasing by 1.4, 4.7 and 10.9 percent to average $1 515 /t, $4 887 /t and $9 423 /t, respectively, compared with the previous quarter (Table 10). This could be attributed to the declining production of nonferrous metals. However, lead and zinc prices continued to

plummet reaching $1 681/t and $1 611/t, respectively in Q1:2016, due the lower demand, particularly from the automobile industry. Year-on-year, all non-ferrous prices declined, owing to lower demand of these metals particularly from China and oversupplied markets.

TABLE 10: AVERAGE PRICES OF NONFERROUS METALS AND MINERALS, 2015-2016

Commodity	Q1:2015	Q4:2015	Q1:2016	Change%(Q/Q)	Change%(Y/Y)
Aluminium	1 801	1 495	1 515	1.4%	-15.9%
Copper	5 814	4 669	4 887	4.7%	-16.0%
Lead	1 806	1 742	1 681	-3.5%	-6.9%
Nickel	14 347	8 499	9 423	10.9%	-34.3%
Zinc	2 081	1 676	1 611	-3.9%	-22.6%

China's uncertain economic situation is likely to hang heavy over the non-ferrous metals sector in 2016. The country is one of the largest consumers and producers of non-ferrous metals and its decision to re-balance economic growth from an investment-focused one to a consumption-oriented one has upset demand-supply balances. It has not helped that the other emerging markets, too, are seeing slower growth, while Europe's growth continues to disappoint. The outlook for non-ferrous metals which staggered their way through the better part of 2015 is, therefore, not particularly encouraging, given the slowing economic growth in China.

In South Africa demand for nonferrous metals will remain subdued, as the economy struggles to grow at a reasonable rate. The oversupplied markets and weak economic conditions in China will continue to exert pressure on prices.

Sources:

1. Creamer Media: Base Metals Report, December 2015
2. DMR, Mineral Economics Directorate
3. International Lead and Zinc Study Group, Monthly Bulleting Lead and Zinc Statistics, February 2016
4. Metal bulletin, January 2016

L Ramane

9. EXPLORATION FOR LEAD AND ZINC IN THE NAMAQUALAND REGION, NORTHEN CAPE

Positive outlook for lead and zinc output in the medium to long term

Persistent low lead and zinc prices had put a damper on South Africa's exploration investment for these commodities for several years leading to declining production levels. For years, the country had only one primary lead and zinc producer, Vedanta's Black Mountain mine, whose production has been dwindling because at low commodity price levels expansions were unattractive. Vedanta Resources completed a feasibility study on its Gamsberg project which indicated prospects for growth in lead and zinc production and was currently exploring for additional resources to increase its portfolio. The introduction of a new player in the market could have positive spin offs for the country whose production rankings for lead and zinc fell from 9 and 25 in 2011 to 10 and 27 in 2015, respectively.

In January 2016, the Department of Mineral Resources awarded Horomela Resources prospecting rights to undertake the prospecting programme on lead and zinc resources. The rights covers about 150 000 hectares of land located in Namakwa District Municipality. The project has a potential of positive outcomes as the area lies within the Namaqualand complex known for its rich zinc resources. These resources are usually associated with minerals like copper, cobalt, nickel, manganese, iron

ore, and silver. Horomela Mining Investment and Resources, a base metal explorer, is currently undertaking the first phase of its prospecting programme on 14 zinc properties in the Namaqualand region of the Northern Cape.

The new developments are driven by positive medium to long term outlook for zinc metal owing to the increasing demand of this metal in the steel and agriculture sectors as well as anticipated supply deficit of 352 kt in 2016 created by the recent closure of mines due to ore depletion. The zinc industry in South Africa is currently exporting its concentrate following the closure of Exxaro's Zincor refinery in 2011. The development of new zinc resources together with the creation of stable electricity supply is likely to incentivise the construction of a zinc refinery in the country.

Sources:

1. *Creamer Media, Mining News, April 2016*
2. *Engineering news*
3. *DMR, Mineral Economics Directorate*
4. *ILZSG, Forecasts April 2016*

S Mnyameni

10. SOUTH AFRICA'S PRODUCTION AND SALES OF ENERGY COMMODITIES DURING THE FIRST QUARTER OF 2016

According to the preliminary data released by the Mineral Economics Directorate, South Africa's coal production declined by 5.65 percent to 60.57 Mt for the year ended March 2016, compared with 64.20 Mt in the previous year (y-o-y), (Table 11). Quarter-on-quarter (q-o-q), this represented a 0.16 percent decrease. This lower y-o-y production can be attributed to lower outputs recorded by several coal mines resulting from labour unrest and sluggish demand which resulted in operation being suspended at some mines due to contractual agreement with coal purchasers.

TABLE 11: SOUTH AFRICA'S PRODUCTION AND SALES OF ENERGY COMMODITIES IN THE FIRST QUARTER OF 2016.

Commodity	Period	Production	Local Sales		Export Sales		Total Sales	
		Quantity (Mt)	Quantity (Mt)	Value Billion (R)	Quantity (Mt)	Value Billion (R)	Quantity (Mt)	Value Billion (R)
Coal	Q1 2016	60.57	42.54	13.92	18.11	11.61	60.65	25.53
	Q4 2015	60.67	44.94	15.29	20.52	12.58	65.45	27.87
	Q1 2015	64.20	44.82	13.34	18.71	11.56	63.53	24.90
	Q1 2016 vs Q4 2015 (%)	-0.16	-5.33	-8.98	-11.72	-7.71	-7.33	-8.41
	Q1 2016 vs Q1 2015 (%)	-5.65	-5.09	4.34	-3.21	0.45	-4.53	2.54
Natural Gas	Q1 2016	0.20	0.20	0.32	-	-	0.20	0.32
	Q4 2015	0.28	0.28	0.48	-	-	0.28	0.48
	Q1 2015	0.25	0.25	0.45	-	-	0.25	0.45
	Q1 2016 vs Q4 2015 (%)	-26.49	-26.49	-33.98	-	-	-26.49	-33.98
	Q1 2016 vs Q1 2015 (%)	-17.28	-17.28	-29.52	-	-	-17.28	-29.52
Natural Gas Condensate	Q1 2016	0.014	0.014	0.085	-	-	0.014	0.085
	Q4 2015	0.016	0.016	0.115	-	-	0.016	0.115
	Q1 2015	0.021	0.021	0.156	-	-	0.021	0.156
	Q1 2016 vs Q4 2015 (%)	-15.69	-15.69	-26.30	-	-	-15.69	-26.30
	Q1 2016 vs Q1 2015 (%)	-35.67	-35.67	-45.57	-	-	-35.67	-45.57
*Uranium (kt)	Q1 2016	0.11	-	-	0.10	0.10	0.10	0.10
	Q4 2015	0.11	-	-	0.09	0.11	0.09	0.11
	Q1 2015	0.14	-	-	0.06	0.06	0.06	0.06
	Q1 2016 vs Q4 2015 (%)	-4.65	-	-	16.16	-7.53	16.16	-7.53
	Q1 2016 vs Q1 2015 (%)	-22.04	-	-	64.28	56.46	64.28	56.46

Source: Directorate Mineral Economics

Uranium production decreased by 22.04 percent and 4.65 percent y-o-y and q-o-q respectively to 0.11 kt, mainly due to lower gold production that fell 2.9 percent y-o-y. Uranium is mined as a by-product of gold mining in the country. Natural gas production also dropped by 17.28 percent y-o-y and 26.49 percent q-o-q to 0.20 Mt. On a y-o-y basis, natural gas condensate production fell by 35.67 percent while it fell by 15.69 percent q-o-q to 0.014 Mt. The lower production of both natural gas and its condensate can be attributed to the dwindling reserves (depleting resources).

The sluggish demand was also evident in the local market as local sales volumes dropped 5.09 percent and 5.33 percent y-o-y and q-o-q respectively to 42.54 Mt. However, revenue collected from local coal sales increased by 4.34 percent y-o-y to R13.93 billion, boosted by unit prices that appreciated by 11.72 percent to R327 /t (Table 12). Contrariwise, q-o-q revenue dropped by 8.98 percent attributed to the lower unit value that dropped by 3.91 percent compared to the previous quarter.

TABLE 12: PRICES OF ENERGY COMMODITIES IN THE FIRST QUARTER OF 2016.

Commodity	Period	Local sales	Export sales
		Unit Value (R/t)	Unit Value (R/t)
Coal	Q1 2016	327	641
	Q4 2015	341	613
	Q1 2015	293	721
	Q1 2016 vs Q4 2015 (%)	-3.91	4.51
	Q1 2016 vs Q1 2015 (%)	11.72	-11.10
Natural Gas	Q1 2016	1568	-
	Q4 2015	1723	-
	Q1 2015	1797	-
	Q1 2016 vs Q4 2015 (%)	-9.00	-
	Q1 2016 vs Q1 2015 (%)	-12.75	-
Natural Gas Condensate	Q1 2016	6220	-
	Q4 2015	7058	-
	Q1 2015	7207	-
	Q1 2016 vs Q4 2015 (%)	-11.86	-
	Q1 2016 vs Q1 2015 (%)	-13.69	-
*Uranium (kt)	Q1 2016	-	973.00
	Q4 2015	-	1222.00
	Q1 2015	-	1021.00
	Q1 2016 vs Q4 2015 (%)	-	-20.38
	Q1 2016 vs Q1 2015 (%)	-	-4.70

Source: Directorate Mineral Economics

Natural gas local sales volumes decreased by 17.28 percent y-o-y and 26.49 percent q-o-q to 0.20 Mt (Table 11). Revenues generated crushed 29.52 percent y-o-y and 33.98 percent respectively to R320 million exacerbated by the unit value that fell 12.75 percent y-o-y and 9.0 percent q-o-q to R1 568 /t (Table 12).

Similarly to the natural gas, natural gas condensate local sales volumes dipped 35.65 percent y-o-y and 15.69 percent q-o-q to 0.014 Mt. Unit values for natural gas condensate also dropped by 13.69 percent y-o-y and 11.86 percent q-o-q to R6 220/t. Consequently, the revenue generated fell by 45.57 percent y-o-y and 26.30 percent q-o-q to R85 million.

Uranium export volumes surged 64.28 percent y-o-y and 16.15 percent q-o-q to 0.10 kt. Uranium export revenue, boosted by higher sales volumes, swelled by 56.46 percent y-o-y to R100 million despite the unit value dropping by 4.70 percent to R973 /t. Q-o-q, the uranium export revenue dropped by 7.53 percent attributable to the unit value that fell by 20.38 percent (Table 12).

During the first quarter of 2016, coal exports decreased by 3.21 percent y-o-y and 11.72 percent q-o-q to 18.11 Mt mainly due to weak demand and to some extent, coal train derailment during March 2016. The price of export dipped by 11.10 percent to R641/t y-o-y (Table 2). However, q-o-q this signified a 4.51 percent increase. Revenues generated from coal export sales increased marginally by 0.45 percent y-o-y and decreased by 7.71 percent q-o-q to R11.61 billion.

Weak commodity prices, coupled with various structural constraints including weak confidence and rising input costs, will continue to place pressure on the coal mining throughout 2016. Market conditions will determine supply patterns in the next quarter with coal production expected to remain at current levels or slightly decrease if there is no improvement in demand dynamics in the second quarter of 2016. Local sales are also forecast to remain at current levels until Eskom commissions the next unit at the new Medupi power station. Domestic coal price is expected to edge up slightly, reaching R330 /t during the second quarter of 2016. Coal export volumes are anticipated to increase marginally due to the improved railing after the derailment in March of this year. The coal export price is expected to remain at current levels or decrease slightly as the next quarter of the year is the beginning of summer season overseas. .

Uranium production is expected to remain at current levels or decline in the second quarter of 2016. Similarly natural gas and natural gas condensate production is forecast to fall further due to the depleting resources at PetroSA's gas fields.

Sources:

1. *DMR, Mineral Economics Directorate*
2. *South Africa's February mining production down 8.7 percent y/y, in http://www.miningweekly.com, accessed on the 15 April 2016*
3. *China's rebounding imports lend support to Asian coal prices, in http://www.miningweekly.com, accessed on the 14 April 2016*
4. *Striking workers arrested at Glencore's South African coal mine, in http://www.mining weekly.com, accessed on the 06th April 2016*

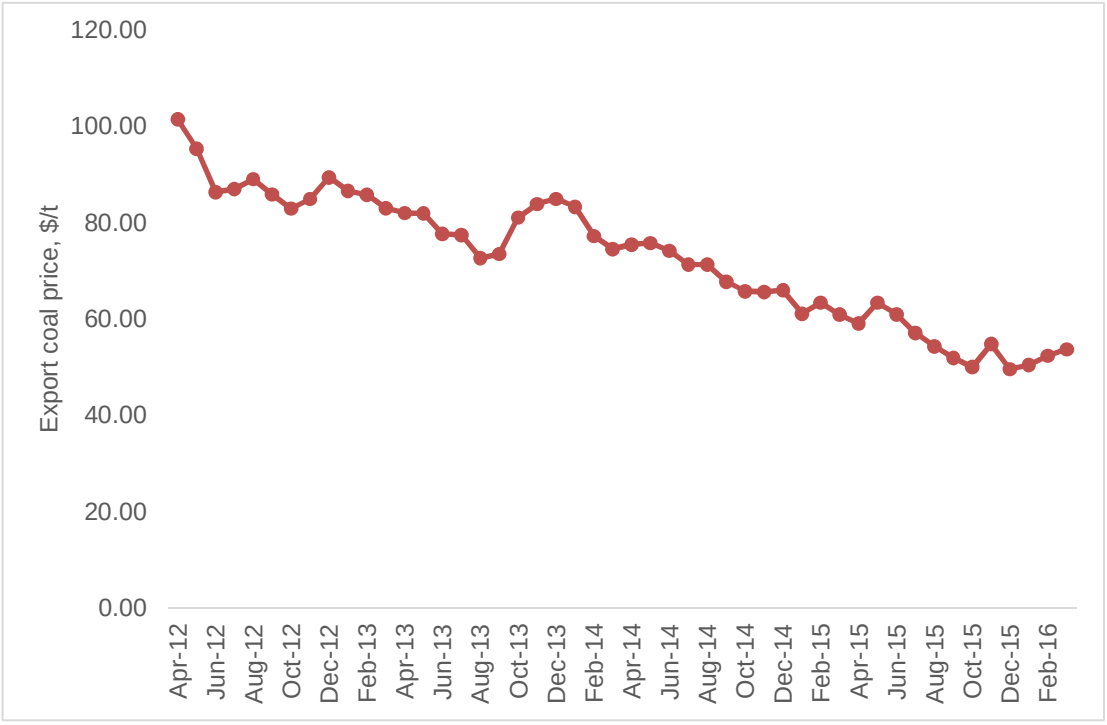
K L Revombo

11. OUTLOOK FOR THE COAL INDUSTRY FOR 2016

Commodity shock may adversely affect South Africa's coal industry's growth

There seems to be no end in sight for the downward trend of coal export prices which started in May 2012. Coal export prices have decreased by 50.37 percent from $105.62/t in February 2012 to $52.42/t in February 2016 (Figure 2). According to some economists, commodity prices would remain low and volatile for some time due to the continued slowdown in demand for coal and other commodities in 2015, which placed a damper on commodity price recoveries in 2016, compounded by lacklustre global economic growth fuelled by China's economic slowdown.

FIGURE 2. SOUTH AFRICA'S EXPORT COAL PRICES, FEBRUARY 2012 – FEBRUARY 2016.



Source: www.globalCoal.com

The outlook for South Africa's export coal prices for 2016 is gloomy as the persistent downward trend continues due to global glut. According to Business Monitor International (BMI), South Africa's export coal prices is anticipated to average $62/t during 2016 – 2019 representing a 15.43 percent increase from the current $53.71/t.

One of South Africa's large coal importers, China, has imposed a restrictions on coal imports impacting on the South Africa's coal demand. This has resulted in China's share of coal imports from South Africa falling from 10 percent in 2013 to 2.5 percent in 2014. India remains the expected major importer of South Africa's coal, due to India's increasing demand for coal. In 2014, India's coal imports from South Africa increased by 49.8 percent year-on-year, growing from 21.3 Mt in 2013 to 31.9 Mt in 2014. However, since Indian buyers are sensitive to high prices, demand from this country may not necessarily ease the current pressure on export coal prices. Overall, coal price weaknesses have impacted on profit margins forcing mining companies in cutting down on capital expenditure (Capex), delaying or halting projects with some disinvesting in the country.

The severe pressures of depressed demand, persistently low coal export prices and labour challenges faced by South Africa's coal mining industry amid, is expected to push coal production into stagnation in 2016. Business Monitor International's (BMI) South African Mining Report Q1 2016, forecasts that the country's 2016 and 2017 coal production will be 4.0 percent and 1.5 percent lower, respectively (Table 13).

Table 13: South Africa's coal production forecast, 2016 - 2020

Year	2015	2016	2017	2018	2019	2020
Production forecast (Mt)	264.2	253.7	249.94	253.6	258.7	265.1
Forecast % change	1.2	+4.0 %	+1.5%	+1.5%	+2.0%	+2.5%

Source: Business Monitor International

NB: Only percentage forecast used, percent forecast were applied on figures from the Mineral Economics Directorate).

The country's coal production is expected to increase slightly from 2018, increasing by 1.5 percent, followed by two percent growth in 2019. By 2020 production is expected to grow by 2.5 percent to reach 265.1 Mt. As a result of the forecast coal export price and sluggish demand, it is expected that domestic coal consumption will become the major driver of coal demand growth in South Africa, as according to BMI, the country's coal electricity growth will average 1.3 percent year-on-year during 2016 – 2024.

Sources:

1. *South Africa's February mining production down 8.7 percent y/y, in www.miningweekly.com, published 14 April 2016.*
2. *World Exploration Trends 2016, SNL Metals and Mining Report*
3. *South Africa Mining Report Q1 2016, Business Monitor International*

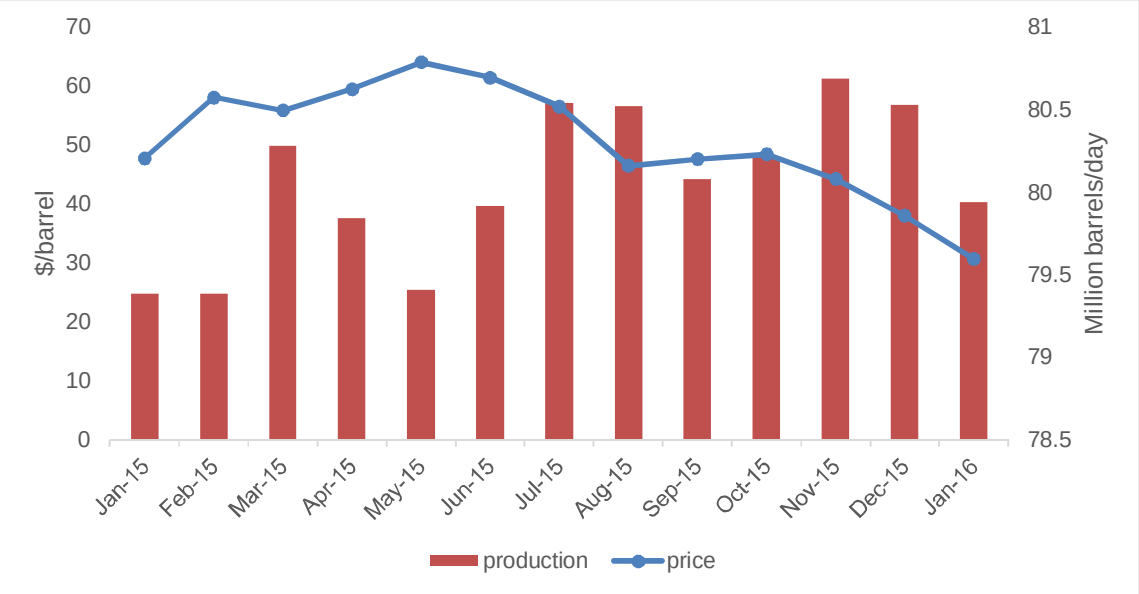
K L Revombo

12. THE OIL PRICE

Oil surplus exerts pressure on the price of oil

In 2015, global oil supply exceeded consumption, with global oil consumption amounting to 93.81 million b/d, less than the production of 95.77 million b/d. This was driven by Iran's return to the international oil market following the lifting of sanctions under an international agreement with major world powers to restrict its nuclear work. This market imbalance did not help the oil prices which were on the free fall since 2014, with the oil prices collapsing by 60 percent from a peak of $115/bbl in June 2014. The oil prices continued to drop reaching $47.76/bbl in January 2015. However, prices recovered slightly in May 2015 to $64.08/bbl, due to the weak dollar and production falling to 79.4 million b/d. Subsequently, the price continued to tumble as production gained momentum reaching $30.7/bbl in January 2016 (Fig.1).

FIGURE 3: BRENT CRUDE OIL PRICE, JANUARY 2015-MARCH 2016



Source: International Energy Agency (IEA)

The supply surplus that was responsible for the oil price collapse is not anticipated to change soon unless production is curtailed either by unconventional producers or The Organization of the

Petroleum Exporting Countries (OPEC). Oil prices are expected to average $35/bbl in 2016, resulting from high inventories which are anticipated to increase throughout 2016 to reach an average of 1.4 million b/d by 2017. It is projected that oil prices will recover to approximately $46/bbl in the last quarter of 2017, to an average of $41/bbl. The increasing oil prices will be sustained by reduced supply which should mostly come from OPEC members.

In South Africa, the prices of petrol, diesel and illuminating paraffin are linked to crude oil prices and the rand/dollar exchange rate. Hence, their prices in in South Africa have not significantly dropped in line with the plummeting oil price, mostly because of the weaker Rand against the US Dollar during this period.

Sources:

1. *Department Of Energy South Africa, www.doe.gov.za*
2. *http://www.nytimes.com/interactive/2016/*
3. *International Energy Agency, www.iea.org*
4. *US Energy Information Administration, www.iea.gov*
5. *www.miningweekly.com*
6. *www.oil.com*

L Ramane

13. INDUSTRIAL MINERALS SECTOR PERFORMANCE – QUARTER 1, 2016

Total volume of sales of industrial minerals was down by 13.2 percent (q-o-q) to 21.3 Mt in the first quarter of 2016 compared with 24.6 Mt in the fourth quarter of 2015 (Table 14). The value of total sales declined by 9.3 percent recording R4 billion in the same period, owing to subdued market conditions. Local sales volumes dropped by 12.6 percent to 21.1 Mt resulting in a 4.5 percent decline in revenue to R3.4 billion. Export sales volume declined by 44.2 percent to 254 kt resulting from losses from the phosphate industry due to technical challenges experienced by one of the major producers leading to minimal exports in January. Export sales value decreased by 27.8 percent to R657 million underpinned by weak commodity prices on the back of depressed market conditions.

TABLE 14: SOUTH AFRICA'S SALES OF INDUSTRIAL MINERALS QUARTER 1, 2016 COMPARED WITH QUARTER 4, 2015

QUARTERS	LOCAL SALES (FOR)		EXPORT SALES (FOB)		TOTAL SALES	
	Mass (kt)	R'000	Mass (kt)	R'000	Mass (kt)	R'000
Q4 (2015)	24 104	3 508 947	456	909 710	24 560	4 418 657
Q1 (2016)	21 061	3 350 013	254	656 465	21 316	4 006 478
Q1 (2015)	22 893	3 290 508	374	782 358	23 266	4 072 866
Change Q1/Q4 (q-o-q)	**-12.6%**	**-4.5%**	**-44.2%**	**-27.8%**	**-13.2%**	**-9.3%**
Change Q1/Q1 (y-o-y)	**-8.0%**	**1.8%**	**-32.0%**	**-16.1%**	**-8.4%**	**-1.6%**

Source: DMR, Directorate Mineral Economics

The average local unit values of andalusite decreased by 21.5 percent (q-o-q) to R1 482/t (Table 15). The decrease was due to a weak demand from the refractory industry and inability to maintain high margins. Fluorspar prices also decreased by 3.7 percent (q-o-q) to R2 834/t, as a result of poor

demand from fluorochemical markets, coupled with high inventories and new capacities coming on stream.

Local sulphur prices on the other hand, increased by 18 percent to R1 123/t (q-o-q) on the back of constrained supply experienced from oil refineries/synthetic fuel producers. Vermiculite prices surged by 16.8 percent (q-o-q) to R2 453/t owing to limited availability of finer grades in the markets. Phosphate rock prices increased by 11.4 percent (q-o-q) to R2 127/t as demand from fertiliser applications increased on the back of efforts to secure constant food supply. Prices for aggregate and sand increased by 2.2 percent (q-o-q) to R107/t, while prices for limestone went up by 20.3 percent (q-o-q) as a result of demand derived from the construction and civil industries. Dimension stone prices declined by 16.1 percent as demand for natural stone products kept on steadily rising especially in the building sector.

TABLE 15: AVERAGE UNIT VALUE OF SELECTED COMMODITIES

Commodity	**Q4 2015 (R/t)**	**Q1 2016 (R/t)**	**% change**
Andalusite	1 887	1 482	-21.5%
Fluorspar	2 944	2 834	-3.7%
Sulphur	952	1 123	18.0%
Vermiculite	2 099	2 453	16.8%
Phosphate Rock	1 909	2 127	11.4%
Limestone and dolomite	136	164	20.3%
Dimension stone	2 851	2 392	-16.1%
Aggregate and sand	105	107	2.2%

Source: DMR, Directorate Mineral Economics

Most industrial minerals applications are found in the construction industry. Consequently, the demand for these minerals is expected to rise in the medium term, underpinned by continued capital spending by general government in a bid to address infrastructure bottlenecks prohibiting growth in the economy. Infrastructure development is the key driver not only to economic growth, but also to poverty alleviation, job creation and skills development.

Industrial minerals use in horticulture and agriculture is also growing, as the effect of population growth, food shortages and climate change patterns continues to drive the demand for fertilisers, which will subsequently lead to increased demand for phosphate rock and vermiculite. Demand for other industrial minerals like fluorspar is still expected to remain flat under current global conditions. Weak demand from fluorochemical markets, coupled with high inventories and new capacities coming on stream, will continue to weigh adversely on fluorspar prices. However, developing nations are expected to be the drivers of growth in the fluorochemicals sector in the long term. South Africa is also tapping into the fluorochemical sector as envisaged by the country's mineral beneficiation strategy.

This move will see new projects coming online and mothballed operations resuming production as prices will move into favourable territory.

Sources:

1. *DMR, Directorate Mineral Economics*
2. *South African Reserve Bank. Quarterly Bulletin, March 2016*

R Motsie

14. WATER AND MINING

Is the recent water shortage a threat to mining?

The recent drought conditions and subsequent shortage of water poses a threat to South Africa's development, mining and agriculture in particular. Studies show that water reserves are rapidly depleting with experts predicting that the demand for water in the country will outstrip supply by as soon as 2025. Some of the country's small dams have also run dry, in a situation which may be the worst drought since the 1960s. Lack of access to water threatens food security, job creation, industrial development and economic growth. The mining industry is probably the second largest industrial user of water in the world after the agricultural industry. Although mining accounts for a comparatively low 3 percent of South Africa's water withdrawals, it has a significant role to play in driving efficiencies in this area. South Africa uses between seven and nine billion cubic metres of water per year.

The mining industry is highly dependent on effective water solutions and is reliant on a steady supply of large quantities of water. Mining operations use water for mineral processing and metal recovery, controlling dust, as well meeting the needs of workers on site. The amount of water required by a mine varies depending on its size, the mineral being extracted, and the extraction process used. For instance, metal mines that chemically process ore to concentrate metals such as copper and gold use much more water than non-metal mines such as coal, salt and gravel mines. The rate of water reuse and recycling in mineral processing is often very high at mine sites, especially in areas with arid climates. Mining operations are water intensive and thus require solutions for recycling and re-using of water. However, the recycled water is not sufficient. In addition, waste water and sludge must be treated before disposal to prevent contamination of environmental resources. Unlike other sectors, mining operations are fully reliant on the location of minerals with limited options to mitigate and adapt to regional water scarcity or quality impacts.

South Africa is one of the countries that dominate in the global mineral production, with operations often in water scarce regions. Critical water shortage issues are already a problem in many areas where natural mineable resources are abundant, leading mining companies to consider either water trading, water recovery and reuse technologies. Cost is a serious concern for mine-site operators, as alternative water sources come at a cost. The industry is also profit driven and thus, with low profit margins, it is essential to minimize the costs of water usage. Researchers are currently investigating the technical methods for dealing with mine water, acid mine drainage as well as the regulatory atmosphere surrounding the water management process in order to ensure that mines achieve a comprehensive and holistic approach in their mining activities.

Access to water has become one of the most significant business risks for miners. However, contingency plans are in place to mitigate the problem and it remains to be seen this mitigation will be sufficient and timeous enough to safe the affected economic sectors such as mining. The Department of Water and Sanitation provides 80 percent towards the provision of water to the South African population and is seeking to improve the figure in the not so distant future. The National Treasury has also shown its support in the water infrastructure agenda with the provision of R15 billion for special needs on the drought-affected areas to help relieve the related sectors by 2030 onwards. The

drought-affected sectors, with specific reference to mining houses also ought to use available water sparingly in their operations by using unconventional methods and technologies for harvesting water such as membrane based technologies, making use of brackish water and reticulation processes.

Sources:

1. *Cape Talk Articles, Lengwadishang Ramphele, 02 November 2015, http://www.capetalk.co.za/articles/6145/water-crisis-leaves-Capetonians-confused-of-bi-laws*
2. *Financial Times, James Wilson, 27 July 2014, http://www.ft.com/water-scarcity-and-rising-energy-costs-threaten-mining, accessed 11/04/2015*
3. *Mining Facts.org, http://www.miningfacts.org/Environment/ What-are-the-water-quality-concerns-at-mines/*
4. *Politics Web, Julius Kleynhans, 27 October 2015, http://www.politicsweb.co.za/politics/govt-to-blame-for-water-shortage-afriforum*
5. *The Economic Times World News, Nearly 1.8 billion people will face water scarcity by 2025:UN, http://articles.economictimes.indiatimes.com/2016-03-22/water-scarcity-and-purification-panel-discussions*
6. *SABC News, http://www.sabc.co.za/news/a/fa20cf004cceddb5a5f1bd1ab0f926ee/R59-million-required-for-disaster-drought-relief-20161805, accessed May 27, 2016.*

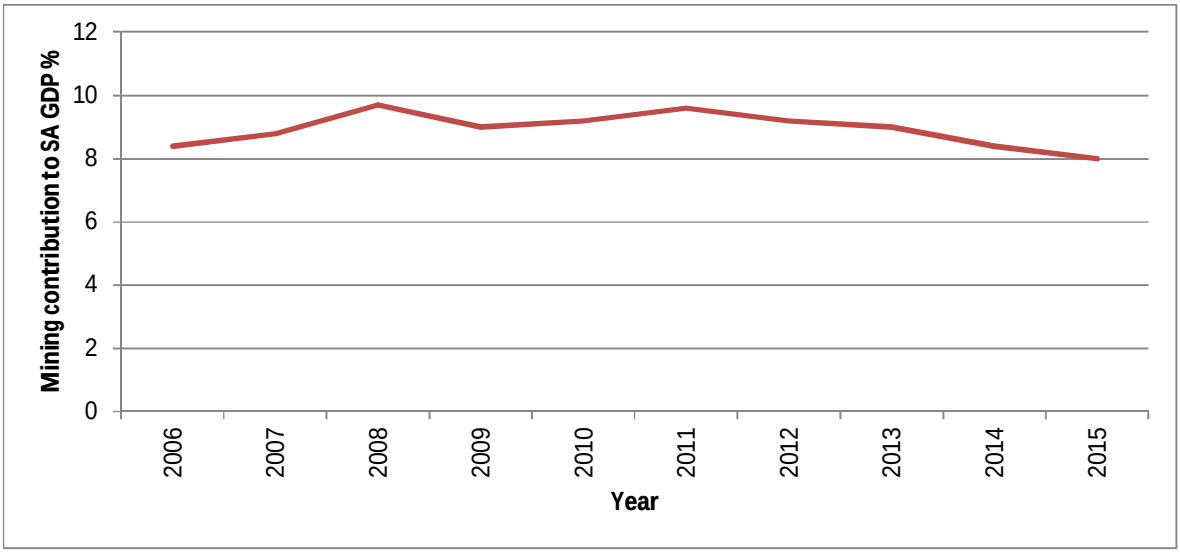
M Modiselle

15. SOUTH AFRICAN MINING INDUSTRY

A positive outlook for the industry in the midst of challenges

South Africa holds the greatest reserves in the world for a number of minerals. Almost every precious stone, metal and mineral known to humans has been found within the country in deposits varying from mere traces to quantities of unparalleled value. The mining industry dates back to about 1852 with the main catalyst to mineral revolution being the discovery of diamonds in 1860. The success of South Africa's modern economy was underpinned by the growth of the gold and diamond mining sectors, and the industrialisation of the economy achieved by growth of coal and iron ore sectors. The platinum sector has also grown to become one of the largest sectors, contributing significantly to economic growth in the country. However, in the face of all, the contribution of the mining industry towards the GDP has been declining over the recent years (Fig.1). The industry currently contributes about 9 percent towards the GDP of the country.

FIGURE 4: SOUTH AFRICA'S MINNING CONTRIBUTION TO GDP FOR 2006-2015



Source: DMR Statistics

Recently the industry has been hit with a number of challenges from labour unrest as well as low commodity prices which have resulted in uncertainties and loss of investors' confidence. The increase in input costs such as labour, direct and indirect energy related costs, coupled with lower productivity levels have impacted negatively on the industry, while increasing depth of most mining operations. The decreasing grades and complex geotechnical environments further add to the strains on mining operations. However, the country still has one of the most diverse and important mining industries in the world, as well as an attractive resource base that holds much promise for future mining activities. South Africa's mining industry ihas been commended for the development and implementation of the best underground safety measures in the industry.

Under current constraints of economic, socio-economic and environmental factors, the government has put programmes in place, that will ensure fast delivery of some of the country's development priorities e.g. Operation Phakhisa. The initiative is aimed at ensuring win-win situations by addressing constraints in legislative policies and fast-tracking the delivery of projects. Extensive promotion of mineral beneficiation drive, continues with a hope to acquire more value from minerals extracted within the country. This drive will unlock activities in other industries as it will present new market opportunities and move the country towards full industrialisation as set out by the government in the National Development Plan.

The South African government is also investing in infrastructure to ensure competitiveness of mining industry and in return unlocking the industry's full potential of enhancing the economy. Labour strikes and high employment costs have also slowed down the industry, however, this opens up an opportunity to introduce programmes that emphasize skilled and semiskilled labour within the industry that still banks on unskilled labour. Certainly the number of unskilled labour shall be reduced but not in the short term.

Exploitation of minerals and natural resources in SA remains strong as the investor market continues to open up, with increasing interest from some of SA's mineral and metals export destinations such as the US, Japan and Korea. Key commodities include ferrochrome, which is blended into most steels and metals for additional strength, as well as platinum-group metals (PGMs). Presently, companies are in a phase of preserving assets, supporting the notion that commodity prices might not rapidly improve within the next year, but possibly only within the next 18 to 24 months.

Sources:

1. *DMR, Directorate Mineral Economics*
2. *Mining weekly ,October 2015*
3. *http://www.southafrica.net/za/en/articles/entry/article-a-brief-history-of-mining-in-south-africa*
4. *http://www.sabc.co.za/news/a/5970988049cf6ede8703efc59f56a7b6/Revitalising-the-SA-mining-industry-20151109*

M Muravha

16. PHOSPHATE FERTILISERS IN SOUTH AFRICA

Phosphate rock is a major source of "phosphorus", which is one of the three primary crop nutrients, viz, nitrogen, potassium and phosphorus. This mineral is produced in three mines in South Africa and used to manufacture Monoammonium (MAP) and Diammonium (DAP) phosphate-based granular fertilizers. These fertilizers assist crops with photosynthesis, promote proper plant maturation and allows plants to withstand stress.

South Africa's production of phosphate decreased both q-o-q and y-o-y by 2.8 percent and 0.3 percent respectively (Table 16), as a result of technical challenges faced by Foskor, which is the largest producer of phosphate in South Africa. Local sales volumes increased by 3.4 percent q-o-q and decreased by 0.3 percent y-o-y. Revenue from local sales increased by 15.7 percent from R668.4

to R773.3 million due to increased sales volumes. Export sales volumes decreased by 50.8 percent q-o-q and 21.0 percent y-o-y, due to one of Foskor's biggest market (India), facing a drought crisis.

TABLE 16: SOUTH AFRICA'S PRODUCTION AND SALES OF PHOSPHATE.

Quarters	Production	Local sales		Export sales		Total sales	
	(kt)	mass (kt)	Value (R'000)	mass (kt)	value (R'000)	Mass (kt)	value (R'000)
Q1 2015	484.4	365.3	560 227	158.2	229 378	523.5	789 605
Q4 2015	496.8	352.3	668 364	254.1	419 332	606.4	1 087 697
Q1 2016	482.7	364.2	773 287	125.1	236 295	489.2	1 009 583
%change (Q-o-Q)	**-2.8**	**3.4**	**15.7**	**-50.8**	**-43.6**	**-19.3**	**-7.2**
%change (y-o-y)	**-0.3**	**-0.3**	**38.0**	**-21.0**	**3.0**	**-6.6**	**27.9**

Source: DMR, Directorate Mineral Economics

About 85 percent of phosphate rock is consumed in fertilizer usage. However, according to a report by *International Food Policy Research Institute*, Africa uses the least amount of fertilizer in the world. This presents an opportunity for growth and new markets development to be penetrated in future

South Africa experienced a drought crisis in 2015 which resulted in low crop production. Despite some rain during the early months of 2016, severe effects of the drought were still felt and will affect the lives of its citizens over a short term. Utilization of fertilizers can help restore soil fertility, enhance crop growth and also increase levels of productivity. However, programmes to encourage the use of fertilizers by South African farmers need to be introduced. The country has the capability to produce enough phosphate rock to supply for the anticipated demand, once enough awareness has been created.

Sources:

1. *DMR, Directorate: Mineral; Economics.*
2. *http://www.cropnutrition.com/diammonium-phosphate,date accessed: 3/14/2016.*
3. *http://www.ehow.com/info_8753936_disadvantages –phosphate-fertilizers.html, date accessed: 3/9/2016.*
4. *http://www.foskor.co.za,date accessed: 18/02/2016.*
5. *https://www.ukessays.com,Article: companies in South Africa that produce fertilizers-date accessed: 08/05/2016.*
6. *Understanding phosphorus and its use in agriculture, A.E Johnston & I Steen, European Fertilizer Manufacturers Association.*

M Singo

17. KAOLIN IN SOUTH AFRICA

New technology versus the paper industry

South Africa is endowed with a variety of clay minerals, such as attapulgite, bentonite and kaolin. Kaolin is mainly used as a filler material to enhance paper whiteness. Other applications are found in the production of plastics, brickmaking and refractory, purification of oils, as well as in the ceramic industry.

Kaolin production on both quarter on quarter (q-o-q) and year on year (y-o-y) decreased by 26.3 percent (Table 17). The y-o-y decrease was due to the subdued market conditions compared to the same period last year. Local sales quantity decreased by 12.2 percent q-o-q and increased by 3.1 percent y-o-y. Revenue from local sales decreased by 4.2 percent q-o-q and increased by 0.8 percent y-o-y as a result of sales from stockpiles. Currently, South Africa's kaolin is only consumed in the domestic market.

TABLE 17: SOUTH AFRICA'S QUARTERLY PRODUCTION OF KAOLIN

Period	Production (kt)	Local sales		Export sales		Total sales	
		Mass (kt)	Value (R'000)	Mass (kt)	Value (R'000)	Mass (kt)	Value (R'000)
Q1 2016	3,788	6,824	3,733,358	0	0	6,824	3,733,358
Q4 2015	5,141	7,772	3,898,203	0	0	7,772	3,898,203
Q1 2015	5,137	6,620	3,703,138	0	0	6,620	3,703,138
% Change (Q-o-Q)	-26.3	-12.2	-4.2	0.0	0.0	-12.2	-4.2
% Change (Y-o-Y)	-26.3	3.1	0.8	0.0	0.0	3.1	0.8

Source: DMR, Mineral Economics

The electronics market is currently competing with the paper market which has resulted in a decline in demand for kaolin from the paper industry. However, the paper industry remains competitive as the greater number of the population still prefer reading books and newspapers. According to *Industrial Minerals*, the paper market which consumes 62 percent of kaolin, contributes more to the domestic economy and the balance goes to ceramics and construction industries.

Online shopping is continually increasing, and so is the paperboard based packaging as it is the most viable option. A greater quantity of kaolin supply goes into packaging thus, balancing some of the decline in demand from paper markets. Growth opportunities for kaolin exist in other alternative industries such as wet-end chemicals and construction because of its desirable optical properties.

South Africa's drive for mineral beneficiation will ensure that domestic demand for minerals such as kaolin gain traction as they are used in other downstream industries. However, growth in kaolin consumption may probably be slow for the next coming years owing to the increasing electronic uptake, but the paper industry will slowly reclaim its position as it is of utmost importance to the society, particularly for commercial and domestic use. As paper has long been a necessary component of the human live, it can be proclaimed that kaolin and paper market will still be competitive in the long-run, irrespective of the improving technology.

According to *Transparency Market Research*, the global kaolin and metakaolin market is anticipated to reach $5.3bn by 2019. Following this trend the South Africa's construction industry is expected to strengthen kaolin demand on the back of approximately R292 billion government's infrastructure programmes over the next three years.

Sources:

1. *DMR, Mineral Economics*
2. *http://www.transparencymarketresearch.com/kaolin-market.html. Accessed 13/11/15*
3. *Industrial Minerals, October 2015*
4. *Pravin Gordhan, Budget speech. February 24th, 2016*

T Ndlovu