THE REAL COST OF GROWTH FOR GOLD MINERS PART 3

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In this series we turn our attention to **growth** in the gold mining sector, the most active of which, occurs at the Mid-Tier level.

We study the growth of eight Mid-Tier gold mining companies: B2Gold (TSX:BTO), New Gold (TSX:NGD), Endeavour Mining (TSX:EDV), Oceana Gold (TSX:OGC), Primero Mining (TSX: P), Newmarket Gold (TSX:NMI) , Teranga Gold (TSX:TGZ), and Alamos Gold (TSX:AGI).

In **The Real Cost of Growth for Gold Miners – Part 1** we measured and compared the cost of growth of the companies in the peer group. In **The Real Cost of Growth for Gold Miners – Part 2** we captured the market value of growth. In Part 3 we turn our attention to the operational health of the eight Mid-Tier miners.

MEASURING OPERATIONAL HEALTH

Sustainability of Operations and Growth

The main uses of cash in mining are Operating Expense (OPEX) and Investment in Mining Property (IMP). OPEX is the direct costs attributable to the production of the goods sold. Investment in Mining Property is classified as an outflow from Investing Activities in the Statement of Cash Flows.

The following tables illustrate the percentage of Revenues that OPEX and IMP represent for the companies in the period 2005-Q3 2015

OPEX as % of Revenues

Company	Q3 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Ave
B2Gold	55%	54%	48%	35%	33%	49%	88%	N/A	N/A	N/A	**52%**
Alamos	67%	51%	30%	21%	24%	25%	29%	39%	57%	49%	**39%**
Primero	55%	58%	44%	41%	41%	77%	N/A	N/A	N/A	N/A	**53%**
Newgold	59%	57%	56%	44%	44%	47%	55%	78%	62%	N/A	**56%**
Oceana	53%	51%	47%	59%	55%	49%	51%	64%	78%	N/A	**56%**
NewMarket	58%	72%	73%	71%	94%	89%	N/A	N/A	N/A	N/A	**76%**
Endeavour	64%	66%	100%	51%	45%	N/A	N/A	N/A	N/A	N/A	**65%**
Teranga	74%	80%	65%	51%	63%	72%	N/A	N/A	N/A	N/A	**68%**

Average	**61%**	**61%**	**58%**	**47%**	**50%**	**58%**	**56%**	**60%**	**66%**	**49%**	**58%**

IMP as % of Revenues

Company	**Q3 2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**	**2006**	**Ave**
B2Gold	21%	50%	46%	25%	25%	24%	204%	N/A	N/A	N/A	**56%**
Alamos	52%	31%	14%	12%	30%	32%	21%	19%	20%	32%	**26%**
Primero	27%	41%	36%	22%	19%	18%	N/A	N/A	N/A	N/A	**27%**
Newgold	43%	38%	37%	65%	59%	115%	34%	61%	21%	N/A	**53%**
Oceana	10%	13%	18%	26%	19%	33%	28%	21%	73%	N/A	**27%**
NewMarket	22%	24%	24%	45%	69%	124%	N/A	N/A	N/A	N/A	**51%**
Endeavour	18%	20%	68%	35%	14%	N/A	N/A	N/A	N/A	N/A	**31%**
Teranga	10%	7%	23%	23%	32%	3%	N/A	N/A	N/A	N/A	**16%**
Average	**25%**	**28%**	**33%**	**32%**	**33%**	**50%**	**72%**	**34%**	**38%**	**32%**	**36%**

Exploration and Development Cost (E&D) depending could be found as an expense item in the Income Statement or capitalized under Cash Flow Form Investment as a part of IMP.

E&D as % of Revenues

Company	**Q3 2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**	**2006**	**Ave**
B2Gold	26%	11%	14%	31%	17%	9%	32%	N/A	N/A	N/A	**20%**
Alamos	1%	7%	10%	8%	8%	4%	3%	0%	3%	8%	**5%**
Primero	0%	0%	0%	0%	0%	0%	N/A	N/A	N/A	N/A	**0%**
Newgold	1%	2%	4%	3%	1%	2%	2%	4%	3%	N/A	**2%**
Oceana	9%	5%	11%	49%	18%	2%	2%	28%	41%	N/A	**19%**
NewMarket	4%	1%	1%	1%	2%	3%	N/A	N/A	N/A	N/A	**2%**
Endeavour	0%	0%	2%	3%	2%		N/A	N/A	N/A	N/A	**1%**
Teranga	11%	0%	0%	0%	0%	0%	N/A	N/A	N/A	N/A	**2%**
Average	**7%**	**3%**	**5%**	**12%**	**6%**	**3%**	**10%**	**11%**	**16%**	**8%**	**6%**

OPEX + IMP +E&D gives us the total cost of carrying and sustaining operations.

OPEX+IMP+E&D as % of Revenues

Company	Q3 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Ave
B2Gold	102%	116%	108%	90%	75%	82%	325%	N/A	N/A	N/A	**128%**
Alamos	120%	89%	54%	41%	62%	61%	54%	58%	80%	90%	**71%**
Primero	83%	99%	80%	63%	60%	95%	N/A	N/A	N/A	N/A	**80%**
Newgold	103%	97%	97%	111%	105%	165%	91%	143%	85%	N/A	**111%**
Oceana	73%	70%	76%	134%	92%	85%	81%	113%	192%	N/A	**102%**
NewMarket	84%	97%	98%	117%	166%	216%	N/A	N/A	N/A	N/A	**130%**
Endeavour	83%	87%	170%	89%	61%	N/A	N/A	N/A	N/A	N/A	**98%**
Teranga	96%	87%	88%	75%	95%	75%	N/A	N/A	N/A	N/A	**86%**
Average	**93%**	**93%**	**96%**	**90%**	**89%**	**111%**	**138%**	**105%**	**119%**	**90%**	**101%**

Cash Adequacy Ratio

Cash Adequacy Ratio

In **The Real Cost of Mining Gold** we showed how following the cash can determine whether the companies generate adequate cash flows over a significant period of time in order to operate or they have to borrow money to survive and pay out dividends. We use Cash Adequacy Ratios or inflows over outflows of cash; in the case of Mid-Tier mining companies the formula we use is:

CAR (Revenues / (Operating Costs + IMP + Exploration + Development + 10% of Net Debt))

We take 10% of Net Debt as a standard cost of debt measure.

A ratio greater than 1.0 is healthy, a ratio below 1.0 over an extended period means that companies must continuously raise money from sources other than operations in order to stay in operation.

About Cipher Research

Cipher Research Ltd. is an independent research and analysis company covering Metals and Mining markets. We develop comprehensive valuation models applying the disciplines of Geology, Economics, Statistics and Finance ("Geonomics"). Our valuation models have proven to be successful in generating investing and trading strategies.