THE REAL COST OF GROWTH FOR GOLD MINERS PART 4

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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 **Part 2** we captured the market value of growth. In **Part 3** we turned our attention to the operational health of the eight Mid-Tier miners.

In the final part 4 we present the approach Cipher takes in valuing the Mid-Tiers.

OUR VALUATION APPROACH

In the most basic terms, the value of a gold mineral project is equal to the number of ounces in the ground that will be potentially extracted times the value or price of an ounce in the ground.

Value = Price X Quantity

Establishing Price

To derive the value of an ounce of gold in the ground (Reserves & Resources) we divide the Enterprise Value of a company by the total number of Reserves and Resources (EV/Total Reserves + Resources) and take the average for all companies and all years to use as a benchmark of what an ounce of gold in the ground is worth as a percentage of the price of gold.

The following tables show the historic EV/oz Reserve & Resource and average value of gold in the ground as percentage of the market price of an ounce of gold for our peer group:

EV/Total Reserves + Resources ($/oz)

Company	Current	Q3 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Ave
GOLD	**1,075**	**1,166**	**1,266**	**1,411**	**1,669**	**1,572**	**1,225**	**972**	**872**	**695**	**603**	**1,139**
Primero	122	167	268	310	241	237	206	N/A	N/A	N/A	N/A	**222**
Newgold	79	94	125	139	222	222	182	73	140	N/A	N/A	**142**
Alamos	52	83	65	115	205	212	209	145	110	143	188	**139**
B2Gold	69	87	121	127	89	259	164	83	N/A	N/A	N/A	**125**
Teranga	27	32	39	37	114	189	221	N/A	N/A	N/A	N/A	**94**
Endeavour	52	44	66	82	133	135	N/A	N/A	N/A	N/A	N/A	**85**
Oceana	50	55	63	61	96	77	72	49	63	83	N/A	**67**
NewMarket	21	22	21	18	67	42	62	33	N/A	N/A	N/A	**36**
Average	**59**	**73**	**96**	**111**	**146**	**172**	**160**	**77**	**105**	**113**	**188**	**114**

EV/Total Reserves + Resources (% of Gold Price)

Company	Current	Q3 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	Ave
GOLD	**1,075**	**1,166**	**1,266**	**1,411**	**1,669**	**1,572**	**1,225**	**972**	**872**	**695**	**603**	**1,139**
Primero	11%	16%	25%	29%	22%	22%	19%	N/A	N/A	N/A	N/A	**21%**
Newgold	7%	9%	12%	13%	21%	21%	17%	7%	13%	N/A	N/A	**13%**
Alamos	5%	8%	6%	11%	19%	20%	19%	13%	10%	13%	17%	**13%**
B2Gold	6%	8%	11%	12%	8%	24%	15%	8%	N/A	N/A	N/A	**12%**
Teranga	3%	3%	4%	3%	11%	18%	21%	N/A	N/A	N/A	N/A	**9%**
Endeavour	5%	4%	6%	8%	12%	13%	N/A	N/A	N/A	N/A	N/A	**8%**
Oceana	5%	5%	6%	6%	9%	7%	7%	5%	6%	8%	N/A	**6%**
NewMarket	2%	2%	2%	2%	6%	4%	6%	3%	N/A	N/A	N/A	**3%**
Average	**5%**	**7%**	**9%**	**10%**	**14%**	**16%**	**15%**	**7%**	**10%**	**11%**	**17%**	**11%**

Based on the results, our peer group benchmark becomes 11% of the price of gold. Currently this equates to about $115/oz per ounce of gold in the ground.

The next step in our valuation is to measure the debt leverage of each company. The debt measure we use is simplified. We divide market capitalization by enterprise value - a numbers close to 1.0 means the company has little or no net debt; above 1.0 mean more cash than debt on the balance sheet.

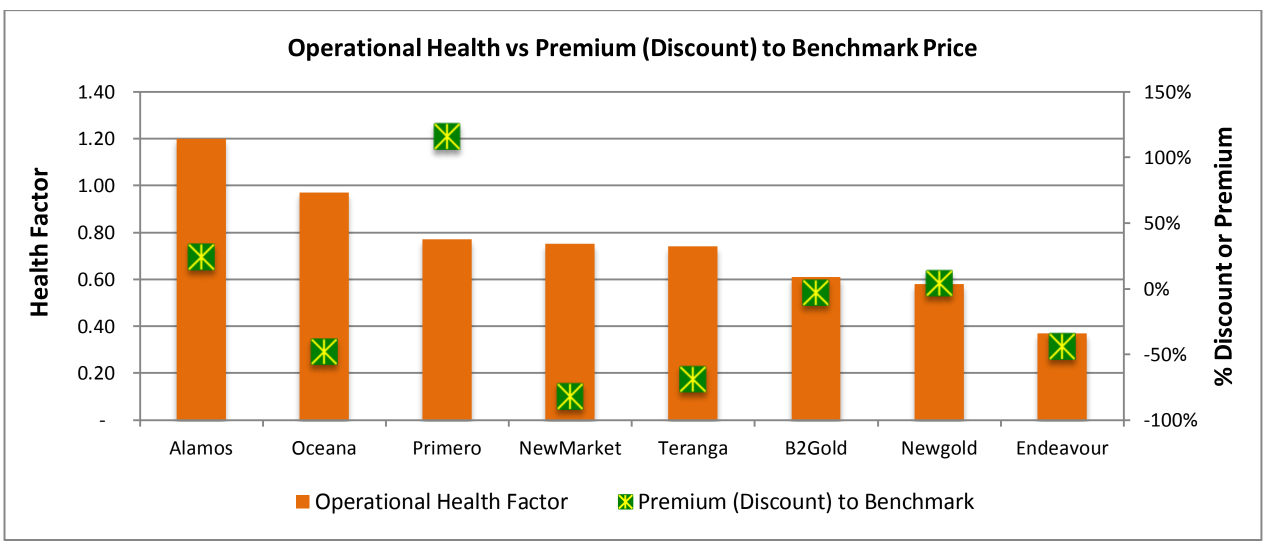
Multiplying the Cash Adequacy Ratio by the Debt Measure gives us what we call Operational Health Factor The higher the number, the healthier the company.

The following is a chart of the average ratios for each mining company for the period 2013-2015 along with their current discount to the benchmark $115/oz in the ground. A good way to think of this chart is to view it like a Health Chart.

Health Chart 2013-2015[1]

Company	**Cash AR**	**Debt Measure**	**Operational Health Factor**	**Premium (Discount) to Benchmark**
Primero	0.88	0.88	0.77	116%
Alamos	1.01	1.19	1.20	24%
Newgold	0.81	0.71	0.58	4%
B2Gold	0.74	0.83	0.61	(3%)
Endeavour	0.80	0.47	0.37	(44%)
Oceana	1.10	0.88	0.97	(48%)
Teranga	0.99	0.75	0.74	(69%)
NewMarket	1.17	0.64	0.75	(82%)
Average	**0.94**	**0.79**	**0.75**	**(19%)**

Operational Health vs Premium (Discount) to Benchmark for the period 2013-2015



Generally the higher the Operational Health Factor the higher EV/oz with the exception of Oceana, Teranga and NewMarket. Note however that these three companies are underperforming in terms of R&R growth – number of ounces and speed of growth.

[1] Simple averages used 2013-2015

Operational health is an important determinant of market value however size of R&R has an overwhelming significance. In fact growth in R&R can make up for below average operational health. This again confirms that size of R&R is essential to the market valuation the companies receive.

An important point to make is that Operational Health Factors have to be reviewed within the context of the companies' corporate development. Short-term decline in operational health might not be a bad thing if it would lead to a longer-term benefit.

For instance the operational health of B2Gold appears relatively low in the last 3 years however this is the case because a significant amount of their cash is committed to the development of the Fekola Mine in Mali which according to company guidance would nearly double their production by the next 2 years. Once operational, the Fekola Mine is operational we expect to see a considerable increase in B2Gold's Operational Health Factor.

CONCLUSIONS

In summary the key findings in the series are:

- To capture The Real Cost of Growth for Goldmines be sure to pay attention to the **Full Shareholder Dilution** to date and in the presence of streaming & royalty agreement, include forecasted dilution.

Major market value drivers for mid-tier gold miners are:

- Size of R&R
- Speed of growth

Other market value drivers for Mid-Tier gold miners are:

- Operational health
    - Cash adequacy
    - Debt level
- Production volumes
- The Benchmark value for EV/oz for mid-tier mining companies is $115 or 11% or the spot price of gold

Group Average		Comments
R&R (Mio z)	14.11	Ranges from 4.24 to 29.10 (Smallest major has ~40 Mi oz)
Production (oz/yr)	345K	Ranges from 187 to 506K (Smallest major has ~800K)
Speed of Growth Mio z/yr)	1.60	Ranges from 0.37 to 4.12
CAR	0.94	Ranges from 0.74 to 1.17 (on average they are not generating positive cash flows)
Net Debt	302	Ranges from 29 to 1,130 Mi
Debt Measure	0.69	Ranges from 0.50 to 0.92
Op Health Factor	0.66	Ranges from 0.40 to 1.01
Delta to Benchmark	(49%)	Ranges from -82% to 6% (benchmark is US$115/oz)

Primero		Comments
R&R	4.24	Over ½ is P&P, lowest of peer group
Production	215K	Near lowest in peer group, more risk to price drops
Speed of Growth	0.59	One acquisition over 6 years
CAR	0.88	Relatively low CAR
Net Debt	152	Below average
Debt Measure	0.71	Close to average
Op Health Factor	0.62	Below average

Delta to Benchmark	6%	Very highly valued relative to peers and for existing R&R and cash flows

New Gold		**Comments**
R&R	29.1	Highest in group, No growth since 2013
Production	405K	Range from 380-405 since 2010
Speed of Growth	4.12	Started with 9.8 Mi in 2008
CAR	0.81	Low CAR well below average
Net Debt	1130	Very high debt especially given low CAR
Debt Measure	0.51	Lowest in group
Op Health Factor	0.41	Lowest in group
Delta to Benchmark	(31%)	Valued above average – appears high relative to health of the operations

B2Gold		**Comments**
R&R	20.8	Well above average
Production	500K	Highest in group Fekola to add nearly 400K by 2018 (close to major status)
Speed of Growth	2.97	Started with 3.0 Mi in 2009
CAR	0.74	Lowest in group due to investment in the development of new mine in Mali (expected on-line in 2018)
Net Debt	452	Moderate to high debt
Debt Measure	0.69	Average for group
Op Health Factor	0.51	Low health due to ongoing investment in Fekola mine in Mali
Delta to Benchmark	(40%)	Reasonable value at present, Mali mine production should significantly increase value

Alamos		**Comments**
R&R	19.8	Well above average, questionable economics on pre-production resources
Production	370K	Merger with Aurico more than doubled production
Speed of Growth	1.87	Started with 3 Mi in 2005 fairly consistent growth
CAR	1.01	Company had very high CAR prior to merger may not be able to sustain post merger
Net Debt	227	Debt a result of the merger with Aurico
Debt Measure	0.78	Well above average
Op Health Factor	0.79	Reasonable health but to maintain will need higher gold prices
Delta to Benchmark	(55%)	Recently discounted value

Endeavour		**Comments**
R&R	10.9	Moderate R&R
Production	506K	High production relative to R&R
Speed of Growth	1.42	Started with 5.2 Mi in 2011
CAR	0.80	Below average CAR
Net Debt	287	Moderate debt
Debt Measure	0.50	Lowest in group
Op Health Factor	0.40	Lowest in group new mine in Burkina Faso will need to perform well or higher gold price to improve value
Delta to Benchmark	(55%)	Discounted slightly higher than average

Oceana		**Comments**
R&R	11.9	Moderate R&R all from producing mines
Production	353K	Average production relative to peers no new production immediately planned
Speed of Growth	0.41	Started with 8.6Mi in 2007
CAR	1.01	Very good CAR
Net Debt	49	Very low debt
Debt Measure	0.92	Very good debt measure
Op Health Factor	1.01	Highest in group
Delta to Benchmark	(57%)	Moderate to highly discounted would greatly benefit from acquisitions

Teranga		Comments
R&R	8.42	Low R&R
Production	187K	Production to increase through 2016 as new mine brought on-line in late 2015
Speed of Growth	1.08	Started with 3 Mi in 2010
CAR	0.99	Very good CAR
Net Debt	91	Very low debt
Debt Measure	0.60	Low debt measure result of low market capitalization
Op Health Factor	0.60	Low health result of low M/C, Stream could further impair health
Delta to Benchmark	(77%)	Highly discounted, proof of health or acquisitions should help value

NewMarket		Comments
R&R	7.71	Less than 650 K oz P&P at existing operations means mine life in question. Significant grade drop to M&I at Fosterville (50% of production) Will require increase IMP to upgrade M&I
Production	225K	Stable production needs new mines for increase
Speed of Growth	0.37	Started with 5.5 Mi in 2009, All attributed to increase in Au price used for calculations
CAR	1.17	Excellent rating – can it be sustained
Net Debt	29.0	Very low debt
Debt Measure	0.82	Dragged down by low MC
Op Health Factor	0.96	Very good, higher M/C would help
Delta to Benchmark	(82%)	Highest discount of group. Limited upside with current projects. Needs acquisitions to demonstrate long-term viability

About Cipher Research

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