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RESEARCH REPORT

December 29, 2015

FOLLOW THE CASH: REVIEW OF 7 MAJOR GOLD MINERS

In [The Real Cost of Mining Gold](#) we examined the operations of 7 major gold mining companies to determine the real cost of mining gold since reporting standards have failed to provide an accurate picture to investors. (Three short videos on the subject can be accessed here [Cipher Research Media](#)).

The report concluded that the 7 studied companies do not make sufficient revenues from operations to sustain their existing business models – evidently, a fact easy to obscure in a bull gold run.

Throughout 2015, “Free Cash Flow” has become the new mantra in mining. Analysts are now paying a close attention to free cash flow – a measure that was largely ignored in the past few years in spite of the well-known fact that mining companies are “price-takers” in an ever-cyclical environment. Major miners value proposition to investors was always focused on something else — optionality, net present value, resource base growth and production growth...

In the last couple years we saw all major mining companies incurring substantial write-downs and selling assets. In addition they have been taking measures to recapitalize their balance sheets, reduce capital budgets and lower expenses in order to show positive cash flow and win back investors who lost confidence in the sector.

Let’s have a look at what has changed in 2014 and the first three quarters of 2015 in the operations of the miners and then **examine some valuation metrics, which can help you rate their performance.**

MEASURING SUSTAINABILITY IN OPERATIONS AND GROWTH

In [The Real Cost of Mining Gold](#) we showed that the main uses of cash in all mining companies are Operating Expense (“OPEX”) and Investment in Mining Property (“IMP”). OPEX is indirectly classified under Cash Flow from Operations and represents 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 and increases Plant, Property and Equipment (PPE) on the Balance Sheet. IMP never makes its way onto the Income Statement except in the form of non-cash depreciation expense, which most per ounce cost estimates ignore or until there is a write down of PPE. It is important to note here that the cash spent for acquisition of new assets has its own separate category in the Cash from Investing Activities and is not included in IMP.

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	2005	Ave
Goldcorp	58.1%	60.7%	54.0%	42.1%	38.1%	38.9%	43.6%	48.1%	43.2%	37.6%	33.9%	45.3%
Newmont	53.6%	61.1%	62.3%	42.9%	37.6%	36.5%	39.6%	50.7%	53.9%	50.4%	52.7%	49.2%
Barrick	75.7%	66.7%	44.0%	40.8%	34.2%	35.9%	46.8%	48.7%	50.3%	48.7%	51.0%	49.3%
Eldorado	53.2%	47.6%	56.1%	47.2%	42.7%	35.7%	36.7%	31.9%	38.5%	54.1%	119.2%	51.2%
Yamana	60.1%	57.0%	48.9%	35.6%	33.0%	37.4%	40.6%	47.1%	38.5%	59.1%	66.0%	47.6%
Randgold	51.5%	65.6%	36.6%	26.9%	24.7%	19.0%	34.8%	53.1%	35.1%	24.9%	29.2%	36.5%
Agnico Eagle	50.9%	53.0%	56.5%	46.8%	48.1%	47.6%	47.9%	49.1%	38.4%	30.9%	52.8%	47.5%
Average	57.6%	58.8%	51.2%	40.3%	36.9%	35.9%	41.4%	47.0%	42.6%	43.7%	57.8%	46.7%
Ave Gold Price (\$)	1166	1266	1,411	1,669	1,572	1,225	972	872	695	603	445	1,081

IMP as % of Revenues

Company	Q3 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	Ave
Goldcorp	29.7%	59.0%	59.3%	54.6%	33.2%	20.2%	49.8%	56.7%	32.3%	27.7%	31.0%	41.2%
Newmont	15.9%	15.6%	22.8%	32.5%	26.9%	14.7%	23.0%	30.2%	30.2%	31.1%	28.4%	24.7%
Barrick	20.6%	23.9%	44.0%	43.8%	34.7%	34.3%	28.9%	23.0%	16.3%	19.3%	47.0%	30.5%
Eldorado	39.0%	38.5%	42.7%	37.1%	24.8%	28.6%	29.6%	-4.4%	51.1%	110.2%	300.5%	63.4%
Yamana	20.6%	36.1%	56.4%	65.0%	36.2%	19.7%	37.5%	34.4%	29.8%	129.6%	349.7%	74.1%
Randgold	20.7%	16.5%	18.5%	29.3%	24.6%	28.9%	30.7%	22.3%	11.1%	13.5%	30.3%	22.4%
Agnico Eagle	21.1%	25.1%	35.3%	23.2%	26.5%	36.0%	102.7%	238.8%	118.2%	39.1%	29.1%	63.2%
Average	23.9%	30.6%	39.9%	40.8%	29.6%	26.1%	43.2%	57.3%	41.3%	52.9%	116.6%	45.7%
Average*	23.9%	30.6%	39.9%	40.8%	29.6%	26.1%	33.2%	27.0%	28.5%	26.1%	33.2%	30.8%
Ave Gold Price (\$)	1166	1266	1,411	1,669	1,572	1,225	972	872	695	603	445	1,081

* Excluding outliers

The cumulative average for OPEX and IMP combined for the period 2005-Q3 2015 was 76% of revenues and ranged from 62% to 91%. Since the end of 2013, companies have taken steps to improve cash flows.

Average OPEX has increased approximately 14% from 51% in 2013 to 59% and 58% in 2014 and the first 3 quarters of 2015. This is somewhat expected since the yearly average gold price has fallen 14% from \$1400/oz to the \$1200/oz level. The value of the rock being mined has fallen 14% but the costs to process and mine will not have fallen much and therefore the costs as a percentage of revenues will naturally have risen. As companies begin to focus on mining higher-grade material in times of low prices we can expect revenues to increase relative to costs and for the OPEX % to fall slightly.

The most obvious changes in cash outflows in the most recent 21 months are in IMP. In 2012 and 2013 IMP were averaging 40% of revenues and yet in 2014 it fell to 30.6% and fell further in the first 9 months of 2015 to 24%. As these mining companies struggle to generate cash flows it follows that this would be the first area to take some cuts. Ongoing development of mines is cut back in an effort to conserve cash and as a result the companies focus on what is currently developed (a process known as high-grading). This is a temporary fix because without ongoing development (IMP outflow) accessible reserves become quickly depleted and eventually the company will be forced to increase spending on IMP to access additional ore.

The average OPEX plus IMP for the seven companies in 2014 was 89% and in the first 3 quarters of 2015 it was 81.5% of revenues (compared to 91% in 2013).

RATIOS REFLECTING SUSTAINABILITY OF OPERATIONS AND GROWTH

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 in order to survive and pay out dividends. To determine this we review their Cash Adequacy Ratios - inflows over outflows of cash. In the case of mining companies we use Revenues over Operating Costs + IMP + Debt Repayments + Dividends Paid. 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 survive.

Cash Adequacy Ratio = (Revenues / (Operating Costs + IMP + Debt payments + Dividends paid))

	Q3 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	Ave
Gold Price (ave)	1166	1266	1411	1669	1572	1225	972	872	695	603	445	1,081
Goldcorp	0.74	0.58	0.65	0.82	1.05	0.93	0.71	0.62	0.60	0.82	1.05	0.78
Newmont	1.10	0.94	0.80	0.74	0.83	1.07	0.78	0.52	0.63	0.89	0.88	0.83
Barrick	0.97	0.95	0.60	0.82	0.96	1.02	0.60	0.84	0.91	0.70	0.84	0.84
Eldorado	0.83	0.85	0.83	0.76	1.08	0.94	1.29	1.20	0.78	0.42	0.22	0.84
Yamana	0.68	0.70	0.73	0.77	1.15	1.13	0.70	0.84	1.00	0.33	0.23	0.75
Randgold	1.13	1.03	1.06	0.94	1.06	0.82	0.82	0.93	1.03	1.02	0.85	0.97
Agnico Eagle	0.78	0.75	0.81	0.80	0.94	0.50	0.49	0.29	0.59	1.10	1.04	0.74
Average	0.89	0.83	0.78	0.81	1.01	0.92	0.77	0.75	0.79	0.75	0.73	0.82

Key outcomes:

- In general adequacy ratios appear to be trending in the right direction in 2014 and 2015
 - Up from 2012, 2013 and the 9 year average
- Most companies still have a long way to go before they generate enough cash from revenues to cover their most basic costs
- Some companies stand out
 - Randgold, Newmont and even Barrick appear to be on the right track and ahead of the curve
 - Goldcorp, Eldorado, Yamana and Agnico Eagle still have a long way to go

VALUATION

Earnings reports and review of Cash Flows from Operations in isolation from the rest of the financial statements can often be misleading; particularly when it comes to classifying costs i.e. capital investment vs operating expense. The market of course knows all that; the market also knows that mining companies have to sustain constant growth as in they have to constantly replenish the reserves they deplete. When we look at cost classification from that vantage point, the difference between OPEX and IMP becomes just a matter of semantics. The market therefore values mining companies on the reserves & resources they have in the ground with a premium given to companies with a long history of successfully bringing those reserves & resources to market.

The value of a mining stock roughly follows the market value of its reserves and resources. In [The Real Value of Gold in the Ground](#) we showed that the value of a gold 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.

$$\text{Value} = \text{Price} \times \text{Quantity}$$

Establishing Price

To derive the value of an ounce of gold in the ground (Reserves & Resources) we divide the Enterprise Value of a company (Market Capitalization + Liabilities – Current Assets) 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 shows the historical EV/oz Reserve & Resource and average value of gold in the ground as percentage of the market price of an ounce of gold

EV/Total Reserves + Resources and % of Gold Price/oz

	Current	2013	2012	2011	2010	2009	2008	2007	2006	2005	Ave
Gold Price (ave)	1166	1411	1669	1572	1225	972	872	695	603	445	1081
Average EV/R&R \$/oz	\$126	\$160	\$237	\$256	\$282	\$295	\$231	\$246	\$228	\$292	\$247
EV/R&R as % of Au	10.0%	11.3%	14.2%	16.3%	23.0%	30.3%	26.5%	35.4%	37.9%	65.5%	22.9%

Based on the results, our peer group benchmark becomes 22.5% of the price of gold. Currently this equates to **\$220/oz** per ounce of gold in the ground.

As we mentioned the market gives premiums to companies with a history of successfully bringing gold to market and discounts those who do so less efficiently. In order to determine which companies deserve premiums and which deserve discounts we apply our ratios, as they are reflective of the health of operations.

GROWTH ADEQUACY RATIO

Debt repayments and dividend paid vary among companies and from year to year; in order to equalize the playing field we have developed the Growth Adequacy Ratio. The ratio is the same as the Cash Adequacy one except that debt payment is replaced with 10% of net debt and dividend paid is replaced with 5% of equity. Growth Adequacy Ratio allows for a better comparison of companies' operational health and their effectiveness in utilizing additional capital (debt and equity) for growth including the ability to repay its debts in a reasonable timeline. **The equation for Growth Adequacy Ratio is Revenues over Operating Costs + IMP + 10% of Net Debt + 5% of Total Equity.**

The Growth Adequacy Ratio can be applied in market valuation as a factor of healthy growth, the higher the ratio the healthier the operations are. Numbers close to or above 1.00 indicate the company generates sufficient cash to provide adequate ROIs. Since the market considers not only the debt and equity repayment but also the total burden of debt and the equity dilution, we need to address the overall debt load.

We need to come up with a measure of the existing debt burden the companies have. Our Debt Measure is a measure of the amount of total debt; numbers close to 1.00 mean the company has little or no net debt; above 1 mean more cash than debt on the balance sheet.

Combining these two ratios creates a measure of the overall operational health of a company, which we call the **Operational Health Factor**; the higher the number, the healthier the company.

The following is a chart of these ratios for each mining company along with their current discount to the benchmark \$220/oz in the ground. A good way to think of this chart is to view it like a Health Chart

	Growth AR	Debt Measure	Operational Health Factor	Discount to Benchmark	Comments
Goldcorp	0.67	0.81	0.54	21%	Relatively low AR, low debt - reasonably valued at present - needs catalyst to offer significant upside
Newmont	0.97	0.56	0.54	49%	Good AR, high debt, deep discount - as debt is managed should gain value, any catalyst will speed the upside
Barrick	0.79	0.46	0.36	46%	Very high debt, low-mod AR - reasonably valued at present - needs catalyst before significant upside
Eldorado	0.58	0.80	0.46	74%	Steep discounts (Greece political risk) needs operational improvement but should gain significant value on favorable resolution with Greece
Yamana	0.59	0.55	0.32	23%	Poor operational health but relatively small discount - signals downside potential; needs major catalyst or operational turnaround to create upside potential
Randgold	1.13	1.00	1.13	25%	Relatively high discount considering the good operational health - signals upside potential; any catalyst should speed the upside
Agnico Eagle	0.86	0.84	0.72	17%	Lowest discount and moderate to high operational health - operations need to improve to justify current values - reasonably valued at present - needs catalyst to offer significant upside
GROUP AVE	0.80	0.72	0.58	36%	

In Summary:

- **Randgold** and **Newmont** have the healthiest operation whereas Eldorado and Yamana require improvement.
- Barrick, Yamana and Newmont have the highest total debt loads that will require servicing and reduction before shareholders can expect a significant return. Randgold and Agnico Eagle should have the easiest time providing shareholders with growth
- **Randgold** clearly stands out as the healthiest company with Yamana and Barrick standing out as the least healthy
- All companies are suffering from a discount due to gold price uncertainty. Eldorado suffers the highest discount largely due to the uncertainty surrounding their Skouries gold-copper project in Halkidiki, northern Greece, after the recent forced shut down by the Greek government.

In the upcoming letters we will introduce our methodology for valuing the companies in the remaining two segments of the metals and mining sector - Mid-Tier Miners and Streaming & Royalty Companies.

Streaming & Royalty Companies have outperformed not only the metals and mining sector but also the overall Canadian market and we look forward to sharing with you the mechanics behind these deals.

Cipher's team would like to wish you Happy Holiday Season. May the New Year bring joy and prosperity to all.

All the Best;

"the Cipher Team"

For more insights and information on this and various other topics related to the metals and mining markets, please contact

Cipher Research Ltd.
Telephone: +1 604 670 7857
info@cipherresearch.com
www.cipherresearch.com

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