Tuesday, January 10th 2023

HALLGARTEN & COMPANY

Thinkpiece

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AISC:
A Rod for the Mining Industry's Own Back

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- + **All attempts to elucidate the real cost of mining and the margins and profits (or losses) emanating therefrom are to be encouraged**
- + **Trying to spread the ongoing capital costs (Sustaining Capital) across the LoM is an admirable endeavour brought into focus by AISC**
- ✘ **To accept slavishly a new non-GAAP measure, created without broad consultation, as the mining industry has done with AISC shows a lack of thought**
- ✘ **The calculation seems frozen in time, with no enhancements or tweaks, as occurs with other accounting rules**
- ✘ **While not averse to apportioning head office costs (GS&A) across revenue centres there is wide latitude for hiding the real management cost of fruitless exploration efforts elsewhere within the economics of a producing asset**
- ✘ **The treatment of capital costs is really lamentable and highly delusional, leaving enormous scope for investors to be, at best, confused and, at worst, deceived as to the real costs of capital impacting upon each ounce or tonne of metal produced**

A Transparent Fig-leaf for an over-exposed Mining Industry

As so often happens in the mining industry new measures are introduced with little thought or consultation and certainly little discussion with players lower down the totem pole. The "Great & Good" have a tendency to decide what is best for all. This might be acceptable if the policies introduced were well-thought out but, also typically, the ideas are half-baked and end up backfiring on the whole industry, not just on the authors. An example of this over the last decade was in the concept of publishing All-in Sustaining Costs (AISC).

That the AISC concept was the brain-child of the World Gold Council says quite a lot also. This dubious "initiative" has become an industry practice without any consultation or scope for pushback by miners.

As with the current ESG mania, the rather clueless mining executives (particularly in the lower tiers of the ecosystem) grasped at modernity only to find it a stinging nettle.

In the world of physics (and pretty much everywhere else) there is the concept laid out in Newton's Third Law that every action engenders an equal and opposite reaction. AISC was an attempt to reconcile the fact that miners were claiming that were producing at hundreds of dollars below the reigning gold price and yet were reporting meagre margins or indeed, losses.

However, despite the introduction of AISC by many companies, the murk in the numbers has not dissipated. Companies are still losing money (or disappointing on margins) despite this measure because of the costs that are NOT included in the measure (not to mention the sheer incompetence of many mining managements).

Below we can see an interesting table that shows what is in (or out) of various calculations of operating costs:

	Costs	Definition
1	Cash Costs	Includes COGS (Labor+ Energy + Consumables) + Royalties (Net of By-products credits.)
2	Total Cash Costs	Cash Costs + Head office costs + Off site costs
3	All-in Sustaining Costs	Cash Costs + Sustaining Capital + Exploration expenses + GS&A expenses
4	All-in Cash Costs	Cash Costs + Exploration expenses + Head office expenses + Sustaining Capital
5	Total Costs	Total Cash costs + Depreciation & Interests + Taxes + Projecting Capex

An interesting example is depreciation and amortization. In the first half of last decade we saw a welter of writedowns of producing assets (mainly by majors - RTZ, Kinross etc). These were largely a legacy of dumb deals done in the turbocharged Supercycle period.

The effect of the writedowns is to lower the residual value of the asset and thus lower the depreciation and amortization going forward as it pertains to depletion of the asset. Lowering D&A lowers the AISC despite the fact that the money has been spent to get the project to where it is.

On the following page can be seen a table that may prove useful in looking at what is “in” and what is “out” specifically for AISC:

HOW AISC IS CALCULATED

Cash costs:

On-site mining costs
On-site GS&A
Royalties & production taxes
Realised gains on hedges
Community Costs
Permitting Costs
3rd party smelting/refining/transport
Non-cash remuneration to site staff
Stockpiles/inventory writedowns
Stripping costs
By-product credits

Then add to get All-In Sustaining Cost:

Corporate GS&A including share remuneration
Reclamation & Remediation
Exploration & Study costs (at the mine)
Capital exploration
Capitalised stripping and U/g mine development
Capital Expenditure

Then add to get All-in Cost:

Community Cost (not related to current ops)
Permitting Costs (not related to current ops)
Reclamation & remediation (not relation to current ops)
Exploration & study (non-sustaining)
Capital exploration (non-sustaining)
Capitalised stripping & u/g development (non-sustaining)

We can't help but be suspicious of the Corporate GS&A (including share remuneration – largely options). This is very much at the election of management and as we have seen (both in mining and other industries) management is usually woeful at allocating central costs across divisions.

The temptation is to stack a lot of the GS&A onto the producing side and soft-pedal on the exploration division. This is even further enhanced if the mine is overseas and one is trying to shift expenses (travel et al.) onto the producing subsidiary to reduce local tax liabilities.

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Backwards & Forwards

The All-in Sustaining Cost contains numbers that are both forward looking and backward looking. The company that uses this is beating itself up on what the future mine closure costs will be.

An extreme example is to look at Antimony mines. As we have noted before these usually have thin reserves that signal only a few years mine-life. So does one presume a LOM based upon the reserves and thus artificially suppress earnings per oz/lb produced when the mine may run for multiples of the current mine-life. If one had used AISC on Bingham Canyon in the 1920s what sort of mine closure costs would one have used when the mine is still going nearly a century later.

In essence, the life of the mine (LOM) can never be more than poorly delimited in calculating the Sustaining Capital.

Then one might also consider that some of the costs are for future production (exploration, stripping etc) and not costs of current production. Does a retailer account for what a cashier will cost in one year's time when calculating whether he made money in the current quarter? This flies in the face of accepted accounting practice for the rest of the capitalist system. As we have seen money invested today in exploration or other mine development not related to production frequently does NOT bear any fruit so why should it be charged (even in theory) against current production?

As one can note the All-in Cost is largely bogus, particularly when it is linked to ounces currently produced as it contains items that have nothing to do with either production of the current output or the mine that is being produced from. It is essentially all the "other stuff" that a mining company may be doing, indeed sometimes on the other side of the globe.

Ernst & Young have noted that there is considerable complexity in differentiating between sustaining and non-sustaining capex with the main reasons being:

- Non-sustaining costs are costs incurred at new operations and costs related to "major projects" at existing operations where these projects will materially increase production
- All other costs related to existing operations are considered sustaining
- Does not address discretionary nature of certain capital expenditure
- Calculation is net of by-product credits

One does not have to have particularly sharp eyesight to note the proportional growth in the weighting of Sustaining Capital in the capex equation in recent years. It is also one of the most amorphous and unjustified items in a PEA or FS.

And By-Product Credits?

All of these points are valid but we would note that in some cases the by-product credits are now the tail that wags the dog when it comes to many gold and silver mines. Indeed there was a point in recent years with Zinc resurgent and silver static that it seemed the tables would be turned on many mines that deemed themselves “precious” but were likely to end up as dependent upon base metals’ revenues. And the curious case of Mandalay (TSX:MND) which doesn’t like to mention its Antimony production too loudly, but which is sometimes its greatest revenue earner (over the gold) from the Costerfield mine in Australia.

The tide ebbs and flows in quite a number of mines as to what is a by-product and what is the main game.

A recent report for a company, that caused us intense head-scratching, was using AISC calculated per silver-equivalent ounce without consideration for by-product credits. Fathoming how much the cost of producing the gold or the silver or the lead or zinc was beyond the most complex algebra and hence one wonders “why bother?”. The fundamental question is still “is the company making money?” and if the answer is “no” then AISC is yet another faulty crutch on which the industry leans for support.

Best Left Unspoken?

EY also noted that the items excluded from the calculations included:

- Income taxes
- Working capital (except for adjustments to inventory on a sales basis)
- All financing charges (including capitalised interest)
- Costs related to business combinations, asset acquisitions and asset disposals
- Items needed to normalize earnings, for example impairments on non-current assets and one-time material severance charges

Since when is working capital not part of the cost of production? Why aren’t financing costs (if allocated to a particular mine) not part of the cost of doing business at that mine? Any company worth its salt in whatever industry has a grasp of its cost- (and revenue-) centres and should know what each mine is costing without comingling numbers beyond shared central costs. If downsizing the workforce or firing expensive FiFo staff are not part of the cost of doing business at a particular mine then what are they?

Financing Issues

The issue of financing is the key decider these days as to whether a project achieves escape velocity from the drawing board… or not. For major with internal sources of funding this is purely a management decision on allocation of resources. For most mid-tier and junior wannabes it is a case of what the market will give them in funding, either debt.equity or something else (e.g. streaming)

Thus the treatment of financing costs is pivotal. In some cases, the financing can be done by the sale of more equity which translates into an increase in shares outstanding (and thus dilution) but does not involve cash going out of the company, as interest paid would be. This election is overlooked in the AISC calculation.

The tax rate is not in the equation. Maybe it should be. While as mentioned, the AISC can include central office costs the tax authorities in some distant country where the mine is are not going to allow those to be deductible.

Then there is the issue of foreign exchange moves over the longer term that can make a mockery of the Sustaining Capital projections. And then the location of the mine can be a negative or a positive factor which can influence the credit rating of the debt and thus cost of the debt.

Some have pointed out, and we are not sure whether to dispute this or not, that the dividend paid, which is in some cases a cost of capital (to attract investors to the equity) might be viewed as a form of royalty. Maybe a point that is too abstruse…

Conclusion

As a non-GAAP measure, AISC in itself becomes something that is largely self-regulated and can be to mining companies whatever they want it to be. Resembling the witches brew of the three hags in Macbeth it has toe of salamander, eye of newt and some wolfbane and, hey presto, here is a spanking new measure that will "keep 'em honest". Instead we feel that the mining industry has made a rod for its own back. AISC has only served to make deteriorating measures look worse and further confuse an investing public who want anything but confusion in troubled times for mining equities.

On a more prosaic level, apparently AISC costs were up 10% in last year. If this was the case while capital and interest rates were still low (and, yes, compared to 1970s/80s they are low) then does that imply an outsized move in wages and consumables largely produced the outsized hike in AISC? As we have oft-noted miners, in many cases, make their own cost inflation through bad management, their addiction to FIFO (not the accounting measure!) and folding in purchasing decisions when it's an issue of resisting a price hike or taking an attitude of "we must have it" and paying through the nose.

When we first wrote on AISC in the middle of last decade we urged companies to eschew this measure if it was not going to be compiled and calculated consistently across the industry. And we urged that if it was going to be so used and abused by players then the regulators should step in and shut it down. Has a company ever been forced by regulators to rewrite a NI43-101 or news release because its AISC calculation was found lacking?

Rumour had it the SEC was less than happy with it, so we were in good company. At the time, we found it ironic that the regulator that knows least about mining and its metrics should have lighted upon this new metric and decided that it is not really "apples to apples" and might deserve being pulped. He we are though all these years later and AISC has run rampant, with geological consultants, particular, being given free rein in PEAs and FS's to indulge in financial punditry, a subject at which they are so notoriously unskilled.

Is it a wonder then that so few mines come into production at the AISC levels previously projected?

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