

Gold in the time of Austerity

(What would César do?)



It seems the worst of the summer's swoon in gold and gold equities is behind us – this after prices on some shares kissed levels not seen since 2008 (and 2002 for that matter). But the fact remains that there are more projects with more funding needs than there is capital to go around. Another couple hundred bucks on the gold price likely won't change this fundamental imbalance. After a decade of cheap and plentiful capital, the sector is going to have to adjust to an era of rationed money. How well the gold miners can and do adapt will substantially impact their favour in the share markets. This will, in turn, hinge on the prism through which one sees “project economics”, an otherwise dull field that might get a little more interesting.

We learned our project economics from Prof. B, a most likeable character who wore coloured shoelaces and patrolled the hallways in a half-skip. Prof. B taught the entire engineering faculty the canonical course in engineering economics. It was from him we learned that the idea behind engineering was not to make cool things, but rather to make money making cool things. NPV, IRR, payback period – *optimize that*.

If Prof B played a formative role in our education, so did “César”, a mining entrepreneur in South America who has done rather well for himself. César owns and operates a *private* gold mining company with three mines, producing in aggregate several hundred thousand ounces per year. Most fortunes in the gold mining sector are not won by producing the gold but rather by selling the mines that produce the gold or the deposits that someday might. As far as we know, César has never sold anything but doré bars.

Although both individuals would be acutely attuned to the field of mineral economics, Prof B and César would approach a problem in the domain in very different ways. Prof B would attempt to maximize the value of the project – optimal truck size, optimal plant size, etc. – capex come as it may. By contrast, César would attempt to maximize the value of César. To our knowledge, César and Prof B have never met, but if they were to meet, for coffee or drinks or dinner, it is likely that César would insist on picking up the tab.

While many in the industry – including the technical consultants – would relate to Prof. B's mantra to *maximize the project*, shareholders of the beleaguered pre-production miners might feel a greater affinity to the likes of César. When César started out on his own, after a long and successful career at a multinational gold company, he didn't have any money. Or, at least, he didn't have

the money needed to build the kind of mine Prof B, our final year mining class, or your average technical consultant would recommend he build. It didn't matter how good César's projects were. It didn't matter that he was a proven mine builder. As a private company based out of Lima, the big-ticket capital just wasn't there.

The linkage between shareholder economics and project economics is cost of capital. At zero cost of capital, project economics are shareholder economics. For most of the last decade, the distinction between the two was moot, as investor interest was robust and cash was plentiful. Now, not so much. The only sector that printed faster than the Fed were the miners, as though obeying some Boyle's Law of capital formation, where supply expands to meet any and all available demand. Alas, here we are, buried under a glut of paper with names trading at a fraction of NAV and many sporting eye-popping capex tabs. The contrast between project economics and shareholder economics now stands as stark as ever.

We feel these issues are the prime drivers in today's gold equity market. Capital starvation is the new norm amongst the pre-producers and the degree to which these companies can navigate these conditions will be the determining factor as to market favour going forward. Prof. B's accumulated knowledge is no help. But what about César? What would *he* do?

Alright, then – what *did* César do? In a word, César made it big by starting small. One production drill, a handful of 40-tonne trucks, enough leach pad to get started and a simple gold plant to collect the gold. Initial capex out of the gate was likely less than \$10mm. But the mine kicked off free cash and that cash was used to buy a few more trucks and a bit more leach pad. Then, a few more trucks, a bit more leach pad and a second drill. Then – a second deposit. Rinse and repeat. Some mining empires are built by high capex and brute force. César, in contrast, built his by sweet seduction.

Alas, not every deposit is so amenable. Some deposits are *scalable*, some aren't. By “scalable” we are referring to a project's ability to support mining operations of varying sizes – that is unit costs which don't vary significantly with the size of the operation. A perfectly scalable deposit is a deposit whereby half the capex gets you half the NAV and one-quarter the capex gets you one-quarter the NAV. A series of buried coins is perfectly scalable. A dump leach operation – and César's operations were dump leach – is also substantially scalable. A massive low-grade deposit in the Maricunga requiring a de-

salinization plant on the coast and a crush-grind-extract plant at 4500m is not. Half a Maricunga operation, given the onerous economics of scale, is likely worth \$0.

It is interesting to map this concept back to standard techniques in project valuation. Here, typically, a single discount rate is used for the entire project life. But a cursory glance at the tape belies the notion of a single cost of capital for a project's life cycle. Non-producers trade at one multiple, producers trade at quite another. Ask a bank to quote you for a loan to build your mine and you'll get one price. Float a bond to optimize your capital structure as you undertake a final-year pushback and you'll get a much more attractive coupon. Modeling a project with a single discount rate distorts economic reality. By contrast, starting with a high grade pit and working your way into lower grade has the effect of matching higher margin (and thus lower risk) rock to higher cost capital. It is another way of seducing a deposit into life in a capital efficient manner.

Some cases in point: Guyana Goldfields came out with its feasibility study that spoke to an elaborate plan to build a plant, multiple pits and a shaft. The capex came in at \$1b, some now, some later. The market was not impressed. Might it have been different if Guyana had first contemplated a higher grade starter pit on their saprolite resource? There are several hundred thousand ounces of this resource, a resource that could be processed with less capex and limited drama. How much cash would drop to the bottom line? We can't say, but likely enough to make some headway towards getting the ~3g/t pits up and running. And proceeds from the pits would likely be sufficient to fund a ramp or two so that underground ore might be sourced. At some point a shaft could become attractive, but we're not sure César would budget for one upfront.

Volta Resources has a large low-grade deposit. The capex bill is a whopper and at this point we don't see how it gets financed in a manner that doesn't see most of the returns go to the banks. But they've also started to hit some higher grade to the south, albeit in skinnier intercepts. It's not a mine yet and may never be, but we'd be more encouraged by 1mozs of higher grade here than another slug of lower grade to the north. Even the suggestion of a low(-er) capex starter pit would ease the burden now weighing on the shares in the face of implied issuance. To a certain extent

we've seen this with Pretium – what started out as a large low-grade/high capex situation became more interesting as the higher grade was discovered. They've had no problem raising money.

Another junior comes to mind, one now so small we won't bother you with the name. But for sake of illustration, there's a million ounces sitting near surface, pretty decent grade, ok metallurgy and partially rippable (ie. no drill & blast needed.) The country politics are terrible. A study some years ago fore-saw a large investment that would return most of the gold. We're not so sure César would want to commit substantial funds to this part of the world, especially if he were to have to borrow the money at rates this company's equity now implies. Rather, we would imagine César going in and plucking the eyeballs out of the thing. Put a cheap gravity circuit in and undertake a quick smash and grab, the last 30% of the ounces be damned. Mineral economists might be appalled, but it is not their money, is it?

It is not just the juniors that have had to adapt to this more austere environment. On the Barrick Q1 call someone asked if they really *had* to build three new mines all at once. And lo and behold come Q2 we see the Company deferring two of these three mines (Cerro Cassale and Donlin Creek.) Barrick *could* have found the dough to finance these projects all at once; we take the decision as acknowledgment of shareholders' desire to fund projects whose returns are consistent with the times.

None of what we have described is entirely new. Just look at the "bargain" valuations high capex projects such as those of Andina and Exeter. But the themes touched on here are likely to persist for some time. Ten years of feast, ...

The deluge of inflows into gold equities over the last decade has had a corrosive effect on decision making. It has been a very Austrian lesson: excessively cheap capital results in malinvestment. That now looks to be over. Expect capital allocation going forward to be more consistent with that of César, at least to a greater extent than we've seen in the past. If there is any comfort to be taken from a depressed gold equity portfolio it is that we may, as a result, be able to expect more César-esque returns in the future.



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Toronto, Ontario
August 28, 2012