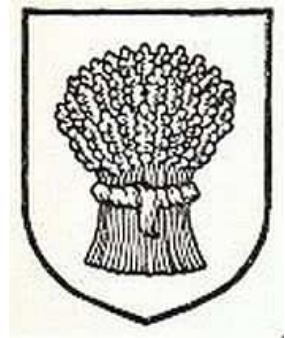


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HALLGARTEN & COMPANY

Portfolio Strategy

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Model Mining Portfolio: Rising Tide in Metals

Performance Review – August 2017

Model Mining Portfolio

Rising Tide in Metals

- + **Zinc burst through the \$1.40 level (with our \$1.50 target getting very near) while copper breached the \$3 per lb barrier**
- + **Gold and silver staged a rally through the month largely on North Korea fears**
- + **Tungsten is up 50% this year breaking through the \$300 per MTU of APT in the last week of the month**
- + **Vanadium is also on a tear and generating considerable excitement for a hitherto becalmed metal**
- ✗ **Gold's status as the safe haven is being challenged by Bitcoin's rise as a pseudo-currency outside the reach of governments and Central Banks**
- ✗ **Tensions rising in South Korea may damage industrial recovery or worse**

Lithium – The Lost Year?

It is easy to say that Cobalt stole lithium's limelight and that the illumination is yet to return to the grey metal from the blue one. However a better analogy would be to say that the Lithium sub-space dropped the baton in the relay race and has been too lazy to pick it up again.

Which Version to Believe?

We think it might be helpful to think of Lithium in terms of product cycles. Let's look back to 2010-11. That period was clearly the Lithium 1.0 version. It had a clearly defined beginning and end. The end was when Rare Earths came along and stole Lithium's clothing leaving the nascent subspace with nary a figleaf to cover itself.

Out of this first version we have the legacy of producers and near producers such as Galaxy (a Long in the Model Mining Portfolio), Orocobre, Neometals, Talison (since acquired) with Nemaska (moving closer to production) and RB Energy's Canada Lithium mine likely to reactivate. Other blasts from the past include Lithium Americas (which had merged with Western Lithium) and is moving forward with an Argentine salar, International Lithium (which is also a player in Argentina) and the Rincon project of Sentient funds in Argentina (which was owned by Admiralty Resources back in the first go around) is moving glacially towards production.

The period beginning in mid-2015 and stretching to the 3rd quarter of 2016 was what we tentatively call Lithium 2.0. This spawned an upsurge of repurposing of unwanted listed vehicles into Lithium plays that was reminiscent (maybe prophetically) of the Rare Earth boom. Some (mainly on the ASX) achieved stellar market capitalizations but most ended up doing micro-financings which have results in micro-exploration programs.

The old model is raise funds, drill, resource, PEA, PFs etc. But if you are only raising a few hundred thousand dollars in the first instance then you are not able to do an adequate campaign and thus never advance to the latter phases. This is where most of the Lithium 2.0 group find themselves currently with nothing more than some rock samples to show for nearly two years of Lithium “boom”.

A Study in Futility?

The starting gun for the Lithium 2.0 was partly the recovery in Lithium prices but also the announcement that Tesla had signed an offtake agreement with Bacanora Minerals on its Sonora project in Mexico. We had not even heard of this project at the time that it was pushed into the spotlight. Curiously the project had a PEA though, which put it ahead of the rest of the Lithium 2.0 crowd. However we were unimpressed with the “deal” with Tesla which read something like “we might buy some of your product if we feel like it and you might sell us some if you feel like it” and price to be paid for the output was vague indeed. It had all the hallmarks of Samuel Goldwyn’s classic observation that a “verbal contract isn’t worth the paper it’s written on”.

The stock soared but the company did not do a financing instead basking in Tesla’s reflected glory. Despite not having an alternate source of Lithium supply, Tesla walked away after a while and the stock has been drifting about listlessly ever since. Where is the PFS? Who even talks of this story anymore, except as an object (object?) lesson in how not to do it. We have had Bacanora as a Short position in the Model Mining Portfolio since December of 2015.

Next Up?

Thus far 2017 has been a bit of a wasteland. Even a sound stock like Neometals (another Long in the Model Mining Portfolio) with loads of money on hand and a rather sweet deal with the Chinese wallows quite significantly off its highs. If that is what happens to a class act then the punishment meted out to those lower down the food chain has been even more brutal with most of the Lithium 2.0 class being 60%-80% off their highs. With prices off so much and many of the piggy-banks in the space running low (and with very little work done) there is not much prospect of resource statements on most of the deposits, let alone the advanced project assessment (PEA/PFS) that might turn some of the wannabes into gunnabes. Already some in the space are casting their eyes around for the next big thing, whether it’s a “diversification” into cobalt or a move into other battery metals (as Alix Resources is doing with Vanadium).

This begs the question as to whether there will be a Lithium V2.1 in 2018 or whether a period of

prolonged quiescence will have many players drift away and we shall have to await a Lithium V3.0 in 2020 or thereabouts to satisfy frustrated demand for the metal as the EV applications expand.

Lithium Undulled

If 2017 is a lost year then is Lithium 2.0 also a lost generation? Should we draw a line under the flood of new players that arrived in the last years and start again? Lithium prospects improve by the day with various European governments (e.g. France and the U.K.) calling time on the internal combustion engine and envisioning a compulsory EV future. This speeds the transition to EV's by at least a decade despite both governments choosing dates in the distant future for this finishing line for the gasoline driven era.

However the ever better demand outlook for Lithium is like a tide that lifts no boats as Lithium 2.0 players have not delivered anything in the way of concrete plans to production. This makes us suspect that the new producers of the 2020s are names we have not even heard of yet.

Portfolio Changes

There were no changes to the portfolio during the month.

The Portfolio Move

The rising tide in many metals lifted the Model Mining Portfolio substantially during August from \$4.199mn at the end of July to \$4.69mn at the start of September, a 20% surge. Net cash remained unchanged at \$546,000. Teck has risen 40% since we instituted our position only a couple of month's back and has breached our target price. This will trigger a rethink of the position and fundamentals during the month to come. The Palladium ETF also went ballistic at the end of the month leaving far behind our target price. We remain wary here because ultimately the talk of the demise of the internal combustion engine will catch up with catalytic converter metals and it won't be pretty.

Nyrstar Awakes?

How tough can running a mine be? If worst comes to worst then you can hire management in to undertake the task. However if you were in the Zinc space post-2011 then no amount of hired staff could fix what ailed the sector as Nyrstar found to its grief. In the process of soldiering on it lost its independence to become a satellite of Trafigura.

We have been looking tentatively at Nyrstar for signs that it is getting over its Post-traumatic Stress Disorder from the rough times of recent years. Its sale of its Honduran operation was understandable because it was relatively small *vis-a-vis* the parent company's massive throughput but some of its bigger mines were key to what was a soup to nuts strategy enunciated at the end of last decade that attracted us to the stock. The company seems to be signaling that this vertically integrated model does not work. However, our response would be "tell that to Glencore". It is maybe not coincidental that the slimming

down of production occurred since Nyrstar became a creature of Trafigura via a “no premium” seizing of power by the trading house. Will Nyrstar be Trafigura’s Xstrata?

One of the gems in the Nyrstar crown is the Middle Tennessee Zinc Complex which is comprised of three underground zinc mines; Gordonsville, Elmwood and Cumberland and a processing plant located at the Gordonsville mine site. All three mines are located in Smith County, Tennessee. Situated approximately 100 miles from Nyrstar's Clarksville smelter, the mines and smelter operations have a history of close association as the smelter was originally constructed to specifically treat zinc concentrate from the mines.

Nyrstar Tennessee Mines, USA



However, the US assets also include the East Tennessee Zinc complex. This consists of a processing plant and three underground zinc mines; Young, Coy and Immel. The three mines are located in and around Tennessee’s Knox and Jefferson counties. All three mines are located within approximately 20 miles of each other, 150 miles from Middle Tennessee Mines and 250 miles from Nyrstar’s Clarksville smelter. Ore from the three mines is processed into zinc concentrate at the Young mine site. Production at this complex had been 62,000 tonnes of Zinc concentrate in 2016.

In late September 2016, Nyrstar announced that it had commenced the restart of its Middle Tennessee mining operations which were put into care and maintenance in early December 2015. Given the strength in zinc prices, the company decided that the rise was sustainable and that it was time to restart the three mines and processing plant. The cash flow generated from higher zinc prices, and from increasing Nyrstar's flexibility to optimize the feed book across the company, according to management.

Staffing was increased to facilitate mine development with ore production commencing during 1Q17, and mill processing operations to commence in 2Q17. Full capacity of 50,000 tonnes per annum of zinc

in concentrate is expected to be reached by November 2017. The capital costs of the re-start are estimated to be approximately USD\$14mn, spread over 12 months until the mill is at full production.

In the initial production months of May and June, 5,664,180 lbs of zinc were produced of which 4,814,553 lbs are payable. Average zinc prices per pound for May and June of US\$1.175 and US\$1.167 respectively. It is worth noting that at closing of the mine and mill in November 2015, the last month's production was at a high of 12,595,640 lbs of zinc (10,706,294 lbs payable).

The production portfolio of Nyrstar is now all North American. Beyond the Tennessee mines and assets there are the Langlois and Myra Falls mines in Canada. The former had production in 2016 of 34,000 tonnes of zinc in concentrate, 2,100 tonnes of copper in concentrate, 1,800 troy ounces of gold in concentrate and 554,200 troy ounces of silver in concentrate.

In the same period Myra Falls produced nothing as production is currently suspended. Mining and milling stopped in June 2015 with the company citing a need to upgrade facilities. In recent weeks a new contract has been agreed with the workforce and it shall shortly reenter production. At full capacity, the site employs around 356 workers. When the mine is operating, about 500,000 tonnes of poly-metallic ore, consisting of zinc, copper, lead, gold and silver, are produced annually. Ore is concentrated in an on-site mill and shipped from Campbell River to smelters outside the area.

With this last reopening all of Nyrstar's remaining mines will be in operation. Let's hope this spells the end of Nyrstar's miseries.

Parting Shot

The Gold Bugs and Silver Nuts have long railed against JP Morgan and the Bilderbergers as the Great Satans undermining their favorite metals. It's harder for them to find someone specific to stick horns on and to hand a pitchfork to in the case of the rise of Bitcoins and their existential threat to gold as a "medium of exchange" and "store of intrinsic value". Bitcoins are an intrinsic store of no value and yet are still managing to steal gold's clothes (and its thunder). That Jeff Christian of CPM Group should have felt moved to defend gold against this threat is a sign of the concern of gold's connoisseurs.

And well should gold feel threatened. For years the gold bugs have been claiming "we woz tricked" and that the gold supposedly backing ETFs did not really exist or, even more dastardly, was actually being used to short the gold price. This has left the door wide open for another crypto-asset to walk in and make a claim to represent itself as a fiat currency. Indeed by all accounts the fact that Bitcoins have been able to exist despite the best efforts of governments and Central banks to thwart its rise makes it an interesting alternative even to hardcore precious metals mavens who have fears of government control lurking in their subconscious. The denizens of the criminal community have also found that Bitcoins provide a good medium of exchange to get around attempts by the EU and the US to eliminate the large denomination bills that oiled the wheels of transactions in the drug trade. In a globalized world the consumers have found their ultimate globalized currency and it is not the US dollar or gold. Indeed

gold's portability and physicality are its downfall in servicing the needs of the type of people who use and indeed "need" Bitcoins. Who needs a Swiss bank when one has a bitcoin wallet?

The issue now is whether the *Powers-That-Be*, with their immense financial firepower, will be able to engineer a crisis or crash in the Bitcoin market that will send it tumbling back to earth. Such an event might revindicate forever the gold bugs. However if it doesn't happen then Bitcoins may take flight within the next year or two changing perceptions of what a fiat currency is and redefining the term "store of value" for a digital age. That would not be good for gold.

Mining Model Portfolio as at: 2-Sep-17

Security	Initiated	Currency	Price Avg.	Current	Portfolio Weighting	Increase in Value	Target	
Long Equities								
Various Large/Mid-Cap	Capstone Mining (CS.to)	5/29/2009	CAD	2.32	1.53	1.50%	-34.10%	\$2.00
	Teck Resources (TECK.B)	5/29/2009	CAD	22.46	31.58	8.30%	40.60%	\$30.00
	NevSun (NSU)	3/23/2012	CAD	3.45	2.78	2.80%	-19.40%	\$5.00
	Sherritt International (S.to)	7/11/2013	CAD	1.78	1.14	3.40%	-36.00%	\$2.50
	Palladium ETF (PALL)	10/16/2014	USD	72.08	93.76	4.70%	30.10%	\$85.00
	Metals X (MLX.ax)	29/5/2014	AUD	0.98	0.85	2.30%	-13.10%	\$1.00
Uranium	Uranium Participation Corp (U.to)	10/20/2010	CAD	7.01	3.71	1.90%	-47.10%	\$6.00
	Western Uranium (WUC.cx)	7/5/2016	CAD	2.25	1.09	1.30%	-51.60%	\$4.80
	GoviEx (GXU.cx)	6/29/2015	CAD	0.08	0.17	4.10%	106.90%	\$0.50
Zinc/Lead Plays	Zinc ETF (Zinc.L)	1/15/2010	USD	7.04	9.1	2.30%	29.30%	£9.00
	Canadian Zinc (CZN.to)	12/9/2011	CAD	0.82	0.19	0.50%	-76.80%	\$0.70
	Ascendant Resources (ASND.v)	10/31/2016	CAD	0.48	0.71	2.80%	49.50%	\$1.70
	Nyrstar (NYR:BR)	9/28/2009	Euros	65.1	6.18	3.40%	-90.50%	€ 11.00
	Southern Silver Exploration (SSV.v)	8/25/2016	CAD	0.41	0.485	2.40%	18.30%	\$0.94
Gold Producers	Patagonia Gold (PGD.L)	10/2/2013	GBP	3.6	1.35	0.90%	-62.50%	£4.00
	Komet Resources (KMT.v)	11/25/2016	CAD	0.47	0.4	1.60%	-14.90%	\$1.28
	Para Resources (PBR.v)	2/17/2017	CAD	0.23	0.2	2.00%	-13.00%	\$0.58
	Westgold (WGX.ax)	12/6/2016	AUD	2.01	1.92	3.20%	-4.50%	\$2.40
	Eldorado Gold (EGO)	6/21/2012	USD	9.12	2.56	1.90%	-71.90%	\$5.50
	Teranga Gold (TGZ.to)	6/21/2012	CAD	1.57	3.51	8.50%	123.50%	\$3.80
Copper Producer	Coro Mining (COP.to)	2/23/2015	CAD	0.03	0.14	2.80%	366.70%	\$0.30
	Tiger Resources (TGS.ax)	5/31/2017	AUD	0.049	0.05	2.00%	2.00%	\$0.12
	RNC Minerals (RNX.to)	11/17/2016	CAD	0.33	0.2	1.20%	-39.40%	\$0.60
Royalty Trust	Abitibi Royalty (RZZ.v)	5/31/2017	CAD	9.1	9.3	2.10%	2.20%	\$18.00
Processor	IBC Advanced Alloys (IB.v)	4/29/2016	CAD	0.3	0.37	0.70%	23.30%	\$1.40
Driller	Cabo Drilling (CBE.v)	9/28/2016	CAD	0.025	0.01	0.40%	-60.00%	\$0.08
Tungsten Producer	Almonty Industries (AII.v)	7/31/2015	CAD	0.36	0.46	4.60%	26.90%	\$1.00
Copper Explorer	Asiamet Resources (ARS.v)	4/28/2016	CAD	0.05	0.05	1.50%	-2.00%	\$0.12
	Western Copper & Gold (WRN.to)	4/25/2017	CAD	1.57	1.64	3.30%	4.50%	\$2.74
Nickel Explorer	Sama Resources (SME.V)	23/2/2015	CAD	0.16	0.16	2.60%	0.00%	\$0.30
Lithium	Neometals (NMT.ax)	7/31/2014	AUD	0.04	0.28	2.80%	656.80%	\$0.45
	Galaxy Mining (GXY.ax)	6/28/2016	AUD	1.73	2.04	1.80%	18.00%	\$2.80
Scandium Explorer	Scandium International (SCY.to)	8/23/2016	CAD	0.14	0.4	4.80%	185.70%	\$1.00
Graphite Producer	Elcora Resources (ERA.v)	29/5/2014	CAD	0.2	0.22	2.20%	10.00%	\$0.64
Graphite Developer	Talga Resources (TLG.ax)	8/25/2016	AUD	0.27	0.69	6.90%	160.40%	\$0.90
REE Explorer	Northern Minerals (NTU.ax)	6/9/2011	AUD	0.73	0.13	0.40%	-82.20%	\$0.28
NET CASH					546,407			
Short Equities								
Shorts	Bacanora (BCN.v)	12/4/2015	CAD	1.53	1.31	47.20%	14.40%	\$0.80
	Galane Gold (GG.v)	4/28/2016	CAD	0.06	0.08	52.80%	-33.30%	\$0.03

Current Cash Position	546,407
Current Liability on Shorts Not Covered	134,355
Net Cash	680,762
Current Value of Bonds	0
Current Value of Long Equities	3,999,781
TOTAL VALUE OF PORTFOLIO	4,680,543

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