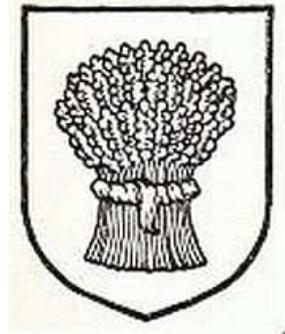


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HALLGARTEN & COMPANY

Portfolio Strategy

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Model Mining Portfolio: Storming Base Metals

Performance Review – June 2017

Model Mining Portfolio

Storming Base Metals

- + **Zinc burst through the \$1.25 level**
- + **Other base metals put in a strong showing**
- + **Financings bubbling along nicely**
- ✗ **Interest rates are heading higher and easing appears to be at an end which is bad news for gold**
- ✗ **Uranium remains in the doghouse with no sign of relief**
- ✗ **Tensions rising in Asia which may damage industrial recovery**

Zinc – Glencore Rules....

Blink and you missed it. Zinc several weeks ago was at \$1.10 and looked like it would shift decisively to the downside which could have been a breaking point. But instead in a matter of a few days, with no overt news, the metal turned around and was at \$1.25 per lb before anyone scarcely noticed it. This only reinforces to majors, like Glencore, the virtue of keeping supply under control via the extended care & maintenance of several global scale mines that they own. Glencore reported for the full year 2016 that its own-sourced zinc production of 1,094,100 tonnes was 24% down on 2015, due to the production curtailments announced in October 2015, mainly in Australia and Peru.

This means that smaller mine owners get to benefit from Glencore's renunciation of charging in full bore to exploit the price rise, however when one considers Glencore's dominance of the Zinc trading market one sees that the trader gets to skin the cat various ways even if it keeps a few mines in reserve. The win-win is even more poignant for Glencore as the "lesser" producers either high-grade or exhaust their mines then when Glencore does release its mines from their limbo then the price scenario will be even higher (and more solidly underpinned by shortages) than it is currently.

The degradation of the zinc mining space through mine closures, lack of a pipeline of new projects (or even old mines to reopen) and virtually zero exploration since 2011 means that the landscape is devoid of upcoming projects an exception being Nevada Zinc's) and a few brownfield revivals (such as Bunker Hill in Idaho on which we launched coverage in the past month).

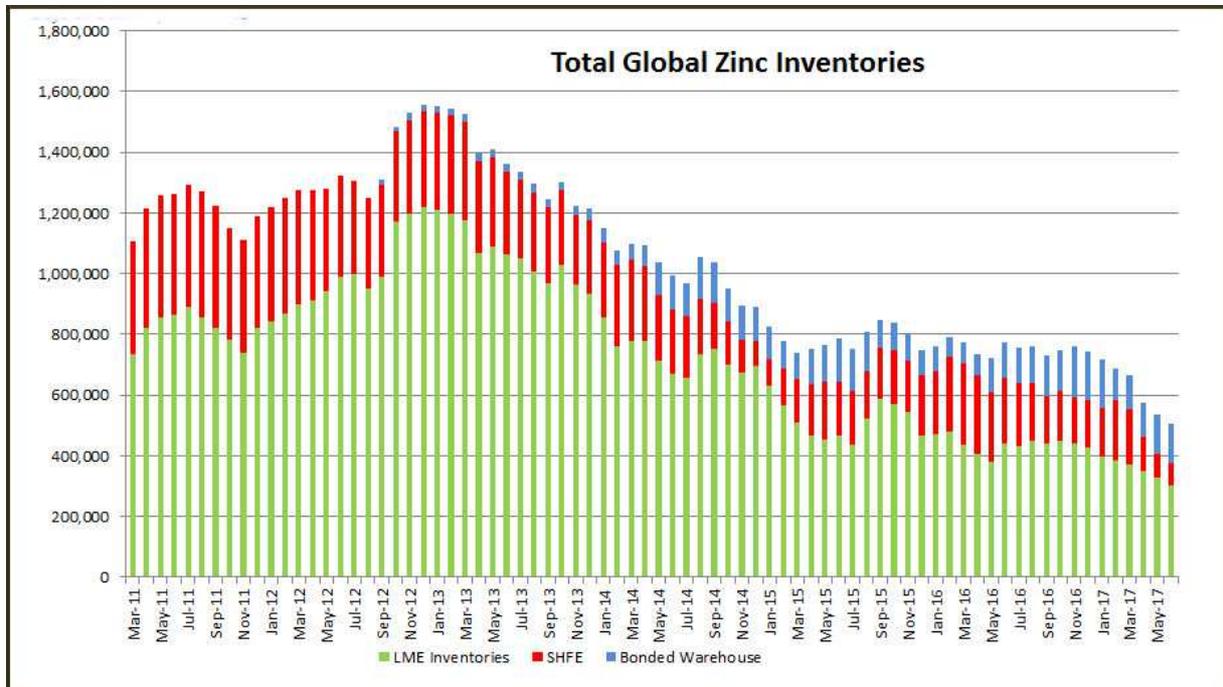
A key component of this turnaround has been long-expected mine closures (such as Century and Lisheen) due to deposits being mined out, combined with temporary mine closures (by the likes of Glencore) to get the market back in balance.

Zinc Capacity Closures - 2015 & 2016

Mine	Annual Capacity (Zinc contained - tonnes)	Owner
Century Australia	-500,000	MMG
Duck Pond, Canada	-34,000	Teck
Myra Falls, Canada	-27,000	Nyrstar
Wolverine, Canada	-53,000	Yukon Zinc
Lisheen, Ireland	-175,000	Vedanta
Campo Morado, Mexico	-10,000	Nyrstar
Naica, Mexico	-25,000	Penoles
Pallca, Peru	-15,000	Mitsui
Gordonsville, USA	-60,000	Nyrstar
Iscaycruz, Peru	-170,000	Glencore
Black Star, Australia	-75,000	Glencore

Therefore the International Lead and Zinc Study Group recorded shrinkage in supply for 2016, just as prices have started to surge, but then a rise in 2017.

This trend is feeding through to Exchange and bonded warehouse levels as the chart that follows shows. Statistics (always rubbery out of China) suggest that Shanghai stocks are not what they were either with a considerable shrinkage.



The chart below shows, Zinc has found resistance in previous years around the \$1.10 per lb level and has then retreated. However, the price has now definitively broken above that level. The \$1.10 zone is the new floor rather than the old ceiling.



With end-users scrambling to write contracts to guarantee supply, the price breached the \$1.20 per lb level this year where it has consolidated. The \$1.10 level used to be previously impenetrable and now appears to be a floor. What is happening now is that majors in the mining industry will want to see prices hold above \$1.20 for quite an extended period before getting over-excited about launching projects. This means an ever-worsening supply situation. For existing producers this will be a strongly profitable and long overdue development.

It's worth having a look at two transactions in recent times. One was the ill-fated acquisition of the Balmat Mine by Star Mountain Resources. The Balmat mining complex includes a permitted and equipped mine, a 5,000 tpd flotation mill, an office complex and infrastructure to enable the operation of the mine. The acquisition of Balmat includes 2,699-acres of fee simple real estate and over 50,000 acres of mineral rights within St. Lawrence and neighboring Franklin counties in New York.

The long-term owner was Hudbay, which had held the Balmat mine on care and maintenance since suspension of operations in August of 2008 due to low commodity prices and changing business priorities (its drift to copper). The care and maintenance workforce at the mine kept mining permits current, MSHA inspections up-to-date, and environmental controls and conditions in regulatory

compliance. There were no legal or regulatory roadblocks in place to delay the reopening of mining operations. A company called Northern Zinc run by some ex-Behre Dolbear executives correctly spotted the potential at Balmat (an asset that had first intrigued us back late last decade when we were covering HudBay). The Northern Zinc crew alas made the mistake in October 2015 of vending the asset to Star Mountain. At some time in the second half of 2016 (with Zinc on a tear) Star Mountain, for reasons unclear to any who are not insiders, managed to blow itself up just when everyone was clamouring for access to revived Zinc assets. That truly takes some doing.

In any case HudBay, and particularly Northern Zinc, have ended up nursing substantial losses from this debacle. Worse of all it puts the Balmat asset (temporarily one hopes) out of contention for reentry into production.

A hopefully more felicitous situation is evolving in Idaho as we recounted in our Banker Hill Mining note published in late June. The Bunker Hill Mine is one of the most storied base metal and silver mines in American history. Initial discovery and development of the property began in 1885, and from that time until the mine closed in 1981 it produced over 35.8 million tons of ore at an average mined grade of 8.76% lead, 4.52 ounces per ton silver, and 3.67% zinc.

The mine has 250 miles of tunnels with the key underground equipment (like hoists in pristine condition) and a sizeable historical *in situ* reserve/resource as well as unprocessed ore stacked in the stopes to give a potential plug-n-play aspect to a mine reboot. Additionally it has several unused mills in close proximity and the Trail smelter of Teck just across the Canadian border.

The parties that might be interested on moving on a proven-up project at Bunker Hill are really only the largest players in the base metal space with traditional Zinc interests. The most obvious candidate is Teck, who as owners of the Trail smelter would be creating a regionally vertically integrated source of Zinc/Lead concentrate supply. Other names to conjure with include Lundin or Trevally. HudBay these days seems to be obsessing about copper and would probably be more likely to revive Balmat (now that it has (in our view, fortuitously) fallen back in its lap.

This is not to say that the world is awash in past Zinc mines ready to revived but it is the case that the US (and Peru) have quite a number of such mines and that countries like Mexico have sizeable identified Zinc/Lead deposits that could be dragged into production given a favorable alignment of the pricing/financing planets. However with the requisite time delays for developing such greenfield mines the Zinc supply situation is likely to get worse before it gets better. In any circumstance, Glencore has made itself the swing producer and will call the shots on how the market develops over the next few years.

Portfolio Changes

There only one portfolio change during the month.

- Added a Long position in Teck Resources B Shares. Bought 13,000 shares in TECK.B at CAD\$22.46 per share on June 30th

The Portfolio Move

The Model Mining Portfolio slipped back slightly to \$4.096mn from its previous month-end value of US\$4.16mn. Net cash declined again from \$771,000 to \$546,000 due to our Teck purchase.

Teck Resources

We were spurred to cast our beady eye upon Teck Resources in late June when it announced that its Mexican subsidiary had entered into a binding agreement with a subsidiary of Goldcorp Inc. to purchase its 21% minority interest in the San Nicolás Project, located 60km southeast of the city of Zacatecas on the Mexican plateau, at approximately 2,150m above sea level, for cash consideration of US\$50 million. This takes Teck to 100% of the San Nicolás Project.

The transaction was intriguing because the deal was so long in the cooking, and also because in 2015 Teck had been mooted as a seller of San Nicolas rather than as a developer of the asset. A BFS on this project was published as long ago as 2002 when the 21% under discussion was held by Western Copper (which subsequently became part of Goldcorp. At that time the estimated mineral reserves included in the mine plan, totalled 65mn tonnes with an average grade of 1.32% copper, 2.04% zinc, 0.53g/t gold and 32.1g/t silver. These reserves include 1.9mn tonnes of proven mineralization with an average grade of 0.71% copper, 3.51% zinc, 0.94g/t gold and 44.8g/t silver; and 63.3mn tonnes of probable mineralization averaging 1.34% copper, 2.01% zinc, 0.52g/t gold and 31.7g/t silver.

The current resource of Zinc/Lead at San Nicolas can be seen in the table below:

Teck - Zinc/Lead Resources							
	Measured		Indicated		Inferred		Teck Interest %
	Tonnes (000's)	Grade %	Tonnes (000's)	Grade %	Tonnes (000's)	Grade %	
Zinc							
Red Dog					200	11.5	100%
Pend Oreille					2,900	6.1	100%
Antamina	19,600	1.2	135,600	1.6	493,300	1.5	22.5%
San Nicolas			91,700	1.7	10,800	1	100%
Lead							
Red Dog					200	3.8	100%
Pend Oreille			50	0.4	2,800	1.4	100%

Interestingly on its website the company no longer shows a Reserve for San Nicolas probably due to the antiquity of the last calculation.

The, admittedly ancient, BFS from 2002 had envisioned an open pit operation producing 230,000 tpa of copper concentrates and 190,000 tpa of zinc concentrates. That Teck has chosen this moment to clean-

up the ownership structure of the project is illuminating and would seem to suggest that this major is moving back into development mode on some long-mothballed projects.

Teck is North America's largest producer of steelmaking coal but also is a major miner in Zinc and Copper.

The Zinc Operations

Firstly we should note that Zinc takes a backseat to coal and copper at Teck at this time. However, it is our sentiment that this could be rebalanced over the medium term via the "resolution" of the coal "problem" and a move to develop San Nicolas. The current Zinc output of Teck Resources comes from its Red Dog and Antamina mines (with some minor production at Pend Oreille). In the first quarter of 2017 the Zinc in concentrate production fell to 130,000 tonnes from 165,000 tonnes in the same period last year, part of this being blamed on lower grades at Red Dog. Teck lowered its 2017 zinc guidance to 590,000-615,000 tonnes from 660,000-680,000 tonnes previously, due to weather and electrical equipment failures at Red Dog.

The Zinc division racked up a first quarter gross profit of \$164mn on increased operating costs and a 23% decline in output at the Red Dog mine. In 2016, Zinc made up 26% of Teck's gross profit.

Then there is the Trail Lead/Zinc smelter which processes some Teck production but is also well-known as a tolling facility for many others. This facility produced 312,000 tonnes of refined Zinc in 2016 alone.

As we noted in our recent Banker Hill research note there is potential for the revival of Zinc/Lead production in the Couer D'Alene region of Idaho with concentrates being easily shippable to Trail for refining. Trail is a unique asset in North American base metal smelting.



The Coal "problem"

We fell heavily out of love with Teck on the eve of the Crash of 2008 when it made the almost ruinous decision to acquire Fording Coal. After all this time, in our humble opinion, coal is still proving to be a drag and a distraction for Teck.

The company sold 5.9 million tonnes of steelmaking, or coking, coal, at an average realized price of US\$213 per tonne, in 1Q17. Total Q1 coal production was 6.1mn tonnes, 8% lower YoY, and production costs rose sizably by \$13 to \$56 per tonne. Spot prices for steelmaking coal stabilized at US\$150 to

US\$160 per tonne in the first quarter, nearly half the level of US\$300 briefly reached last November. Teck has reaffirmed a second-quarter sales forecast of at least 6.8mn tonnes of steelmaking coal.

To put this division in perspective, Teck Cominco (as it was then known) paid \$14.1bn for Fording Canadian Coal Trust in mid-2008 and that amount is still higher than the whole market cap of Teck some nine years later.

A demerger would not deprive Teck shareholders of coal exposure upside (if there is any) but would make

Debt Obsession?

After any near-death experience the mind becomes focused. Teck, since 2008, has been using cash flow and profit to cut debt. This debt stood at \$5.1bn at the end of the March quarter. Thinking about it a company that has a market cap of over \$13bn, debt of only \$5.1bn and cashflows and bottom line that are strong should not be obsessing with debt. In 2015, Teck cut its twice-yearly dividend two times.

In our opinion the company should be using the low interest rates of current times to issue long-term bonds at low rates and instead of dedicating profits to debt repayment instead it should be paying a rising proportion of its net profits as a dividend. In a positive sign the company has indicated to the market that, after completing its debt reduction plan, it will consider increasing or revising its dividend policy.

Next Moves

Frankly the company would be rewarded by the market if it split off the coal assets and set them free. Teck should take its cue from RTZ which is doing just that (though as a trade sale) at the moment in Australia.

It looks like the company is going to hit the development trail again with the consolidation of ownership at San Nicolas, which would signal the end of its retreat period since 2008. With a P/E of only 8 times the company looks very inexpensive even if one must tolerate the presence of the coal assets for the short to medium term. We therefore decided to add a double-strength position in Teck B Shares to the Model Mining Portfolio.

Parting Shot

We have been pondering the reasons behind the dalliance by hedge funds with derivatives on the mining sector, i.e. the GDXJ and their souped-up ETFs that were constructed on its back. As we have noted in recent months the inevitable (and yet avoidable) blow up of the GDXJ was caused by suspension of transactions in a derivative that gave outsized exposure to the upside (and downside) in the Gold Junior ETF. This triggered a reordering of the GDXJ with babies and bathwater going flying and

Monday, July 10, 2017

the junior gold/silver space taking a pummeling including those companies that had not a snowflake's chance in hell of ever being in the GDXJ. A rising tide sunk all boats.

That hedge funds prefer these large volume synthetic structures to actually stockpicking individual miners should be no surprise. If swiftness of entry and exit from a position is a priority then buying into an illiquid miner is not a realistic expectation. Ironically though, the ETFs that are derivatives of the GDXJ were building their investment thesis upon the very illiquid juniors and mid-tier miners that the hedge funds eschewed.

The matter has ended in tears for many but we must wonder how much of the blame has circled back to the creators of these ETFs, because frankly that is where the blame lies. They committed to make a market in something which beyond a certain size (of the ETF) they were unable to deliver on. Where is the punishment for the culpable parties (party?) here? Class action time?

Mining Model Portfolio as at: 2-Jul-17

Security	Initiated	Currency	Avg. Price	Current Price	Portfolio Weighting	Increase in Value	Target	
Long Equities								
Various Large/Mid-Cap	Capstone Mining (CS.to)	5/29/2009	CAD	2.32	0.94	1.00%	-59.50%	\$2.00
	Teck Resources (TECK.B)	5/29/2009	CAD	22.46	22.48	6.60%	0.10%	\$30.00
	NevSun (NSU)	3/23/2012	CAD	3.45	3.13	3.50%	-9.30%	\$5.00
	Sherritt International (S.to)	7/11/2013	CAD	1.78	0.77	2.60%	-56.70%	\$2.50
	Palladium ETF (PALL)	10/16/2014	USD	72.08	80.69	4.70%	11.90%	\$85.00
	Metals X (MLX.ax)	29/5/2014	AUD	0.98	0.67	2.00%	-31.50%	\$1.00
Uranium	Uranium Participation Corp (U.to)	10/20/2010	CAD	7.01	3.9	2.20%	-44.40%	\$6.00
	Western Uranium (WUC.cx)	7/5/2016	CAD	2.25	1.27	1.70%	-43.60%	\$4.80
	GovIEx (GXU.cx)	6/29/2015	CAD	0.08	0.17	4.60%	106.90%	\$0.50
Zinc/Lead Plays	Zinc ETF (Zinc.L)	1/15/2010	USD	7.04	7.86	2.30%	11.60%	\$9.00
	Canadian Zinc (CZN.to)	12/9/2011	CAD	0.82	0.17	0.50%	-79.30%	\$0.70
	Ascendant Resources (ASND.v)	10/31/2016	CAD	0.48	0.64	2.90%	34.70%	\$1.70
	Nyrstar (NYR:BR)	9/28/2009	Euros	65.1	5.34	3.40%	-91.80%	€ 11.00
	Southern Silver Exploration (SSV.v)	8/25/2016	CAD	0.33	0.485	2.70%	47.00%	\$0.94
Gold Producers	Patagonia Gold (PGD.L)	10/2/2013	GBP	3.6	1.61	1.20%	-55.30%	£4.00
	Komet Resources (KMT.v)	11/25/2016	CAD	0.47	0.36	1.60%	-23.40%	\$1.28
	Para Resources (PBR.v)	2/17/2017	CAD	0.23	0.22	2.50%	-4.30%	\$0.58
	Westgold (WGX.ax)	12/6/2016	AUD	2.01	1.84	3.60%	-8.50%	\$2.40
	Eldorado Gold (EGO)	6/21/2012	USD	9.12	3.44	3.00%	-62.30%	\$5.50
	Teranga Gold (TGZ.to)	6/21/2012	CAD	1.57	3.51	9.50%	123.50%	\$3.80
Copper Producer	Coro Mining (COP.to)	2/23/2015	CAD	0.03	0.11	2.50%	266.70%	\$0.30
	Tiger Resources (TGS.ax)	5/31/2017	AUD	0.049	0.05	2.30%	2.00%	\$0.12
	RNC Minerals (RNX.to)	11/17/2016	CAD	0.33	0.2	1.40%	-39.40%	\$0.60
Royalty Trust	Abitibi Royalty (RZZ.v)	5/31/2017	CAD	9.1	9.2	2.30%	1.10%	\$18.00
Processor	IBC Advanced Alloys (IB.v)	4/29/2016	CAD	0.3	0.37	0.80%	23.30%	\$1.40
Driller	Cabo Drilling (CBE.v)	9/28/2016	CAD	0.025	0.01	0.50%	-60.00%	\$0.08
Tungsten Producer	Almonty Industries (AII.v)	7/31/2015	CAD	0.36	0.23	2.60%	-36.50%	\$1.00
Copper Explorer	Asiamet Resources (ARS.v)	4/28/2016	CAD	0.05	0.04	1.50%	-11.00%	\$0.12
	Western Copper & Gold (WRN.to)	4/25/2017	CAD	1.57	1.29	2.90%	-17.80%	\$2.74
Nickel Explorer	Sama Resources (SME.v)	23/2/2015	CAD	0.16	0.16	2.90%	0.00%	\$0.30
Lithium	Neometals (NMT.ax)	7/31/2014	AUD	0.04	0.27	3.00%	629.70%	\$0.45
	Galaxy Mining (GXY.ax)	6/28/2016	AUD	1.73	1.65	1.60%	-4.50%	\$2.80
Scandium Explorer	Scandium International (SCY.to)	8/23/2016	CAD	0.14	0.32	4.30%	128.60%	\$1.00
Graphite Producer	Elcora Resources (ERA.v)	29/5/2014	CAD	0.2	0.19	2.10%	-5.00%	\$0.64
Graphite Developer	Talga Resources (TLG.ax)	8/25/2016	AUD	0.27	0.6	6.80%	126.40%	\$0.90
REE Explorer	Northern Minerals (NTU.ax)	6/9/2011	AUD	0.73	0.11	0.40%	-84.90%	\$0.28
NET CASH					546,407			
Short Equities								
Shorts	Bacanora (BCN.v)	12/4/2015	CAD	1.53	1.24	42.90%	19.00%	\$0.80
	Galane Gold (GG.v)	4/28/2016	CAD	0.06	0.09	57.10%	-50.00%	\$0.03

Current Cash Position	546,407
Current Liability on Shorts Not Covered	133,385
Net Cash	679,792
Current Value of Bonds	0
Current Value of Long Equities	3,416,466
TOTAL VALUE OF PORTFOLIO	4,096,258

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