

HALLGARTEN & COMPANY

Portfolio Strategy

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Model Mining Portfolio:

Prices Outrunning Value?

Performance Review – July 2016

Model Mining Portfolio

Prices Outrunning Value?

- + Gold and silver are trading in fairly narrow bands but definitely not showing signs of breaking out to the upside
- + Platinum and Palladium have been very strong performers with Platinum narrowing appreciably its gap with the gold price
- + Zinc broke through the \$1 per lb mark and is attracting strong interest on fundamentals of long-term underinvestment in new capacity
- + Thompson Creek surge on unattractive merger with Centerra at least yields a boost for long-suffering shareholders
- + Oil price has sagged again bringing relief to miners opex
- Lithium stocks have gone into a pause mode with some of the more speculative names giving back quite a bit of the "froth on their beer"
- × Uranium eased ever lower
- Lundin Mining has surged, possibly, on mistaken views of it as a good Zinc play
- Failed Turkish coup makes some names operating there look even less attractive

Turkey - Too Hot to Handle?

In their heyday one of the principles that the Rothschilds (supposedly) operated by was that the best time to invest was "when the blood was running in the streets". In more recent times the mantra has been cited by Mark Mobius, the guru/PM of Templeton as a measure for testing emerging markets for investability. By this criteria Turkey would certainly be a very attractive market for bottom fishers these days. However for us the "blood running in the streets" is less attractive if it is our own or that of mining executives, and thus investors should be careful what they wish for.

Multiple terrorist attacks in Turkey have made even walking through the airport or one of the major streets of Istanbul or Ankara an exercise in which one literally puts one's life at stake. This has been further compounded by the recent attempted coup in Turkey. In the wake of the failed coup has come a round of oppression that has sent all indicators of investability (or even moral acceptability) plunging leaving a challenge for miners that are either established already with operating mines in the country or in the process of proving up mineral properties. From my own bitter experience of the country, running a gold explorer in Turkey for three years, the problems for foreigners doing business in the mining sector there have been brewing over much longer period and predate the latest terrorist outrages and problematic coups. Turkey under the current regime is just "bad business".

Treasure Chest?

Turkey sits in the prime stretch of the Tethyan Belt that stretches from Pakistan, through Afghanistan, Iran, Turkey the Balkans and then arches up to become the Carpathian Mountains in central Europe. Along its way is strewn some of the most impressive base and specialty metals deposits on the planet, not to mention resources in precious metals. For obvious geopollitical reasons the "eastern end" of the Belt became a no-go zone in recent decades, except for the truly intrepid, while the western end has been intensively mined in the past but fallen into relative quiescence in the post-Communist period as states morphed into EU territories with varying degrees of mining friendliness (or unfriendliness). Turkey sat in the middle as ostensibly a Western(ish) state with a perceived rule of law and much vaunted "open for business" attitude.

Turkey has been the scene for Western companies (e.g. Alacer, Eldorado Gold, Pilot Gold), in particular hunting for gold and to a much lesser extent silver, some desultory hunting for base metals and almost no attention to its specialty metals. There was even a uranium hunt going on with an Australian-listed company involved, looking to service Turkey's nascent nuclear energy build-up.

Lobster Trap?

The trouble in paradise for miners began way before the political train was derailed. Newmont found out a decade ago that the duck could bite even if it didn't have any of the other advertised qualities. The company held the most advanced gold project in the country, Ovacik, when it ran into "local opposition" that effectively blocked it from moving forward and ended up with Newmont selling out for a song to a local group. The local group went on to greater glory, listing with much fanfare and sharp elbows amongst international investment bankers. It peaked at around a \$3bn market cap in a welter of enthusiasm that it was the "anointed" of the government in the gold mining space, a national champion. Things took a turn for the worse in recent years when the group fell out of political favour and was accused of being involved with the cleric that is currently getting the blame for the attempted coup. The group's problems mounted. Say no more...

We have frequently heard the claim about how foreigner-friendly the Turkish mining regime is, but our own experience belies this. Owners of mining concessions in Turkey may have once been able to stake them relatively cheaply but then they find themselves brutally milked for forestry licenses (even when there is nary a tree or bush on their properties). License and concession renewals and the rigmarole involved consume enormous amounts of time and money to the detriment of actual exploration.

When a project gets to the feasibility stage then it must obtain an Environmental Impact Assessment (a ÇED in the local parlance). This is when the fins start appearing in the water. Someone sidles up to the unsuspecting miner and tells them the news that that they hadn't heard before that to get the ÇED they must take on a local partner, indeed a "secret" partner. Accommodating the "secret partner (which is usually also a free-carry) is enormously challenging for Western partners.

Post-Coup

Ever ones to put a positive spin on a situation we are sure there are miners out there that probably say under their breath to investors that the coup was a good thing because it sunk the Turkish lira and thus made costs "so much lower". The slight wrinkle in this theory is that "secret" partners like to deal in dollars and they aren't in the business of haggling or giving discounts no matter how hairy the political situation gets.

Regimes that start heading down the road towards totalitarianism rarely have a Road to Damascus and get back on the path to righteousness. Turkey is now on the slippery slide. The EU was prepared to tie itself in moral knots to accommodate the increasing repression of critics. The US was prepared to play along with a major NATO partner. Now that both have felt the fangs of the dog that bites the hand that feeds, the mood is souring rapidly. Even as we write the history books are being rewritten on who lit the touchpaper on Syria and who sold arms to both sides in that war and then bought oil from both sides.

Is this a place that one wants to make a mining investment at this point? Sure the geology is great but frankly with Iran, its eastern neighbour in the Tethyan Belt, rising in the acceptability stakes as Turkey takes a dive and knowing what we know about Turkey's "mining friendly" regime (take a rabies shot before you negotiate) who needs it? Turkey will still be around when all this passes. Better to await the coup that finally works out.

The Portfolio Move

The Model Mining Portfolio only rose by around \$120,000 during the month to end at \$4.182 of which the cash holdings represented \$1.3mn. This was down due to our trades below.

Portfolio Changes

There were only two portfolio changes in July.

- ➤ Initiated Long position in Western Uranium. Bought 60,000 shares in WUC.cx at CAD2.25 per share on July 6th
- > Increased Short position in Galane Gold. Sold 500,000 GG.v at CAD 14.5cts per share on July 6th

The cash balance clearly needs to be reduced, however most gold producers and serious contenders to be producers have run away in recent times. Base metals stocks still have some "cheap" opportunities but these factors are countered by the possibility that some stories held in the portfolio are becoming overpriced already and might be shed, further increasing the cash balance. We moved up the target prices of several holdings this month to reflect the changed outlook.

On specific developments, the holding in General Mining has been converted through the merger into Galaxy Resources while we remain negative on Thompson Creek's merger with Centerra. We had been hoping for a counterbid from another source but this stock will be shed as we do not like the country

exposure (particularly to Turkey) of Centerra. After the end of the month Northern Minerals announced a \$30mn financing deal with a Chinese company that sent the stock price soaring.

Western Uranium - Mill Makes the Difference

Even operating on the most cynical of theories that "every dog has its day" one must see an eventual turn for the uranium price and yet in recent times, it has managed to make new lows as everything (even iron ore) in the mining space has moved higher. At the risk of being made to look foolish again, we think the tide has turned for Uranium and would not be surprised to see it close to \$40 per lb by year end and break through \$50 per lb by the end of next year. This is scarcely the stuff of which booms are made but players in the uranium space need the price going consistently in one direction to restore confidence. As we have seen before the WORST thing is a spike because it inevitably presages a plunge.

The Model Mining Portfolio signals this belief on our part with over 10% weighting in uranium names. That has been helped by GoviEx, the Friedland-inspired Uranium play having doubled since its inclusion. Most recently we have added a position in Western Uranium, a story that came to our attention because it had not only uranium (and Vanadium) mine, formerly mined by Dennison Mines, but also access to a permitted mill site at Piñon Ridge in Colorado. The mining assets are located along the Colorado-Utah border.

Western Uranium (WUC.cx) was created in an RTO transaction in November 2014 with the assets of the then privately held Piñon Ridge Mining LLC being backdoored into Homeland Uranium, a CSE-listed stock that had previously focused on Uranium prospects in Africa. Homeland's stock was then consolidated and the name change to the current designation. Former Energy Fuels president, George Glasier, now heads WUC.

The backstory to this is that in August 2014, Piñon Ridge Mining LLC (owned by Glasier and Baobab Asset Management) had acquired its mining assets from Energy Fuels, including historic uranium production sites and uranium exploration projects (the Sunday Complex, the Willhunt and San Rafael projects, the Sage and Van 4 mines, and the Farmer Girl, Dunn and Yellow Cat projects). In September 2015, WUC acquired additional properties from Black Range Minerals. Energy Fuels retained a 1% production royalty on all of the properties.

Energy Fuels acquired Piñon Ridge in 2007, and had been looking to build a 500-ton per day mill there and first received a license in 2011. The company subsequently acquired the already operational 2,000 ton per day White Mesa mill in Utah, meaning it no longer needed to construct a mill at Piñon Ridge.

The most interesting differentiator at Western Uranium is its milling ambitions, though it is worth mentioning that it claims to have is the second largest uranium resource holder in the United States with assets totaling over 100mn pounds of U3O8 and 35mn pounds of vanadium at its fully permitted Sunday Mine Complex.

With a pre-existing mine with a sizeable stockpile, Western Uranium, is relatively plug and play on the mining side. Western also holds an exclusive license to use ablation mining technology, a technology that improves the efficiency of the sandstone hosted uranium mining process.

The main thing it needs to do at this point is construct and wheel into the mine, the machines related to its ablation technology that works with sandstone-hosted Uranium deposits.

The key differential for a uranium company in the US these days is owning a mill and whether one builds it from scratch or buys an existing one then the permitting and environmental approvals are a key component of the equation. In recent times we have come across two up and coming US-focused "millers" (Peninsula Energy and Western Uranium).

The company intends to build the licensed and permitted Piñon Ridge Mill site near Nucla, Colorado. The goal of Western Uranium's management is that construction should begin in 2017, though that is dependent upon financing.

We shall be expanding upon Western's plans in a forthcoming research piece.

Rare Earths - What Goes Around Comes Around

The Rare Earths sub-sector has almost become a poster boy for what is wrong about the Vancouver promotional space. What might go wrong did go wrong with a massive influx of players creating a glut of projects while a few key projects hoovered up the available financing leaving many worthy projects to die of financial starvation. Then the industry leaders proceeded to implode under the weight of their own gargantuan capex projections with indifferent investors standing on the sidelines watching the calamity unfold.

Despite this Alkane was one of the forerunners of the Rare Earth development process (with Great Western and Avalon) and after the dust has settled it remains as clearly a survivor after literally hundreds of wannabes have been swept off the decks and Avalon has refocused on Lithium and Great Western has gone to its demise. There are still other REE plays out there and some with good prospects but Alkane is the "Great Survivor" in the space.

Looking in the Chinese Mirror from a Different Angle

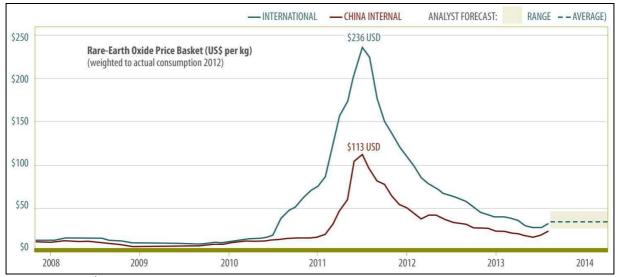
Conventional theory goes that over-production of Rare Earths resulted in the catastrophic fall in prices between 2011 and the current time. However, as there has been little to no reduction in REE consumption, as China remains the dominant player by a massive margin and that little new production has been added to the mix (and this might not even replace those mines closed in China for environmental reasons) then we are inclined to think that the Rare Earth bubble was first a burgeoning of prices brought about by official Chinese policy and then that the bust was similarly engineered.

The price surge was encouraged to finally reward Chinese producers for the nation's dominance of REE production after decades of selling at breakeven (or loss) levels. Two years later the Chinese saw that their dominance was imminently under threat if even 10% of the myriad REE projects outside China

came to some sort of fruition. Then the Chinese engineered a resetting of the REE price lower which killed or put in the deep freeze almost all the REE proposals and their promoting companies. In the process it managed to also fatally torpedo Molycorp below the waterline and that company eventually also slipped beneath the waves.

The myth that Western demand pushed the prices of the whole of the REE suite higher is just not supported by fact. Likewise in a market essentially dominated by a Chinese cartel the prices are set by Chinese companies (in cahoots with the relevant ministry) and therefore were set dramatically higher in 2008-9 and then plunged to market-clearing (literally) levels in 2011-12 by the internal "price-setters". What was made to go up could just as easily be made to come down.

The price surge and then plunge is even better documented by the chart below:



Source: Metal Pages/IMCOA

Therefore, our view of Rare Earth prices is that the levels are not some sort of random walk but in fact are put where the Chinese "powers that be" want them to be. The last few years of suppressing prices to clean out the REE space of potential competitors has largely been successful with Molycorp effectively eliminated and the number of junior challengers with any serious potential being now a mere handful. Can the Chinese afford to undercut themselves in REE pricing for any longer (because they are essentially loss-leading and providing a gift of a scarce and declining resource to the end users in the space) with the sole object of beggaring the few remaining wannabes?

Our thesis is that the loss-leading is near an end and that prices will start to be moved higher in all REE metals, excepting Lanthanum and Cerium. Such a strategy will keep Molycorp's Mountain Pass out of contention (and deep in administration) and leave Lynas underperforming its potential. Despite this we do think the outlook for Lynas will be enhanced in its higher value metals. The Chinese are also cognizant that there are several REE players with the potential to flick the "On" switch should prices uptick in a sustained manner. The question is whether the threat of these projects such as Alkane's DZP (and for example those of Peak Resources and Mkango) is great enough to keep Chinese pricing in

defensive mode. We would posit that it is not a dramatic threat and thus that the Chinese will raise prices gradually in a way that keeps the reins of pricing firmly in their hands.

Current spot prices in the Rare Earth space are almost all trading at below the long-term average price though admittedly the long term price was skewed upwards by the 20009-2011 spike.

Most commentators feel that the price deck is more likely to trend higher rather than lower in coming years. Most are also of the persuasion, as are we, that Lanthanum and Cerium remain in an extremely well-supplied state and that this is not likely to be mitigated short of a new application(s) appearing to clear away the glut. Alkane is not alone in the up and coming REE producers in resolving to stockpile these minerals rather than try to market them. This is then reflected in the poor pricing outlook for those two specifically.

Our 2020 estimates are shown in the table on the following page. Most of the envisaged price uplifts are not very ambitious and all represent discounts to the peak years of the REE phenomenon.

Product	Units	Current Price Range	Hallgarten Estimate 2020	
		US\$/kg*	US\$/kg	
Lanthanum Oxide	La ₂ O ₃	2.00 – 2.50	3	
Cerium Oxide	CeO ₂	2.00 – 2.50	2.50	
Praseodymium Oxide	Pr ₆ O ₁₁	62.00 - 75.00	90	
Neodymium Oxide	Nd_2O_3	45.00 – 50.00	92	
Samarium Oxide	Sm_2O_3	2.50 - 3.50	8	
Europium Oxide	Eu_2O_3	235.00 - 325.00	410	
Gadolinium Oxide	Gd_2O_3	15.00 – 20.00	30	
Terbium Oxide	Tb ₄ O ₇	550.00 - 650.00	630	
Dysprosium Oxide	Dy ₂ O ₃	260.00 - 310.00	393	
Holmium Oxide	Ho_2O_3	39.00 – 40.00	n/a	
Erbium Oxide	Er_2O_3	39.00 – 42.00	n/a	
Ytterbium Oxide	Yb_2O_3	29.00 – 31.00	n/a	
Lutetium Oxide	Lu_2O_3	980.00 - 990.00	n/a	
Yttrium Oxide	Y ₂ O ₃	6.00 - 8.00	13	

Source: Argus Metals/Hallgarten

Parting Arrow

After waiting so long for the markets to turn it is almost churlish of us to gripe at the enthusiasm that has descended upon the mining space but alas we are feeling the need to (selectively) run some warning flags up the mast. While Lithium has been over-bubbly for some time now, it has at least seen some of the less-real names that rely on promotional efforts alone to defy gravity, it is the gold space that concerns us more.

Gold is clearly a favoured horse in any mining race but frankly the gold price has not done nearly as well as some other metals like Zinc and Silver but moreover some VERY unworthy names have been moving up at leaps and bounds with no sign that the revenues and even less the bottom lines, are following the same trend in proportional terms. Gold has been up healthily in AUD and CAD terms for quite a while now and yet many bottom lines are not showing this effect.

Even in the Zinc space, we can see investors clutching at straws to get exposure, with the most egregious example being Lundin. This is a company that has doubled in price in the last twelve months when copper has not moved appreciably, so we presume the move is on Zinc and yet Lundin has been a notorious underinvestor in Zinc and has seen several mines exhausted in recent years. This gives us a feeling that investors are operating upon what they vaguely remember of companies pre-slump and frankly many companies, for better or worse, are not the same entities that they were back in 2011.

Mining Model Portfolio as at: 1-Aug-16

	Mining Model Porti	ono as at.	1-Aug-16					
				Pr	ice	Portfolio	Increase	Target
	Security	Initiated	Currency	Avg.	Current	Weighting	in Value	•
		Lon	g Equities					
Various Large/Mid	Thompson Creek Metals (TCM.to)	1/15/2010	USD	9.85	0.73	1.20%	-92.60%	\$1.00
	Capstone Mining (CS.to)	5/29/2009	CAD	2.32	0.86	1.20%	-62.90%	\$2.00
	Eldorado Gold (EGO)	6/21/2012	USD	9.12	5.35	6.10%	-41.30%	\$7.00
	NevSun (NSU)	3/23/2012	CAD	3.45	4.32	6.30%	25.20%	\$5.00
	Sherritt International (S.to)	7/11/2013	CAD	1.78	0.86	3.80%	-51.70%	\$2.50
	Palladium ETF (PALL)	10/16/2014	USD	72.08	68.21	5.20%	-5.40%	\$74.00
	Metals X (MLX.ax)	29/5/2014	AUD	1.04	1.7	6.10%	63.50%	\$1.80
Uranium	Uranium Participation Corp (U.to)	10/20/2010	CAD	7.01	4.01	2.90%	-42.80%	\$6.00
	Western Uranium (WUC.cx)	7/5/2016	CAD	2.25	2.5	4.40%	11.10%	\$4.80
	GoviEx (GXU.cx)	6/29/2015	CAD	0.08	0.17	5.90%	106.90%	\$0.50
Zinc/Lead Plays	Zinc ETF (Zinc.L)	1/15/2010	USD	7.04	6.7	2.60%	-4.80%	£9.00
	Canadian Zinc (CZN.to)	12/9/2011	CAD	0.82	0.35	1.20%	-57.30%	\$0.70
	Nyrstar (NYR:BR)	9/28/2009	Euros	65.1	8.27	1.40%	-87.30%	€ 15.00
Gold Producers	NewGold (NGD.to)	5/31/2013	CAD	7.05	6.78	5.90%	-3.80%	\$8.00
	Patagonia Gold (PGD.L)	10/2/2013	GBP	3.6	1.75	1.80%	-51.40%	£4.00
	Teranga Gold (TGZ.to)	6/21/2012	CAD	1.57	1.1	3.80%	-30.00%	\$1.50
Pre-Producer	Coro Mining (COP.to)	2/23/2015	CAD	0.03	0.15	4.40%	400.00%	\$0.30
Trader	Glencore (GLEN.L)	1/5/2016	GBP	0.88	1.89	9.50%	113.50%	£2.20
Processor	IBC Advanced Alloys (IB.v)	4/29/2016	CAD	0.3	0.74	2.20%	146.70%	\$1.40
Gold Explorers	Everton Resources (EVR.v)	4/17/2012	CAD	0.08	0.06	1.70%	-20.00%	\$0.10
Other Juniors	Almonty Industries (AII.v)	7/31/2015	CAD	0.44	0.42	3.70%	-4.30%	\$1.00
	Asiamet Resources (ARS.v)	4/28/2016	CAD	0.05	0.05	2.20%	0.00%	\$0.24
	Sama Resources (SME.V)	23/2/2015	CAD	0.16	0.09	2.10%	-43.80%	\$0.30
	Neometals (NMT.ax)	7/31/2014	AUD	0.04	0.4	5.80%	981.10%	\$0.28
	Galaxy Mining (GXY.ax)	6/28/2016	AUD	0.35	0.47	2.90%	36.00%	\$0.70
	Elcora Resources (ERA.v)	29/5/2014	CAD	0.2	0.37	5.40%	85.00%	\$0.64
	Northern Minerals (NTU.ax)	6/9/2011	AUD	0.73	0.07	0.30%	-90.40%	\$0.28
	NET CASH					1,307,856		
		Sho	rt Equities					
						Weighting		
Shorts	Bacanora (BCN.v)	12/4/2015	CAD	1.53	1.47	27.20%	3.90%	\$0.80
	Orocobre (ORE.ax)	6/28/2016	AUD	4.61	4.13	25.30%	10.40%	\$3.20
	Galane Gold (GG.v)	4/28/2016	CAD	0.06	0.14	47.50%	-133.30%	\$0.03

Current Cash Position	1,307,856		
Current Liability on Shorts Not Covered	248,255		
Net Cash	1,556,111		
Current Value of Bonds	0		
Current Value of Long Equities	2,626,472		
TOTAL VALUE OF PORTFOLIO	4,182,583		

Short Equities	-10%
Long Equities	110%

Important disclosures

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