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HALLGARTEN & COMPANY

Portfolio Strategy

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Model Resources Portfolio:
Trials & Tribulations

Performance Review – June 2022

Model Resources Portfolio

Trials & Tribulations

- + **Metals prices have declined at a rate and scale that is much less than that of the underlying equities that are exploring for, developing or producing the same metals**
- + **Lithium holds at high levels due to a near panic sentiment sweeping the batteries metals space with regard to securing supplies**
- + **Zinc crossed the key $2 per lb threshold in mid-April then slid backwards**
- + **Oil continues to shine**
- ✘ **The Battery Metals space as one of the most hyped subsectors was riding for a fall and it has happened….**
- ✘ **Interest rate rises have spread panic in the markets with knock on effects for mining even though most metals are holding up very well**
- ✘ **Financings are being severely crimped by the market turmoil, companies will shortly need to move into cash preservation mode**
- ✘ **Chinese growth is clearly being impinged by the misbegotten Zero-Covid policy**
- ✘ **The Tin price has been thumped, somewhat inevitably**

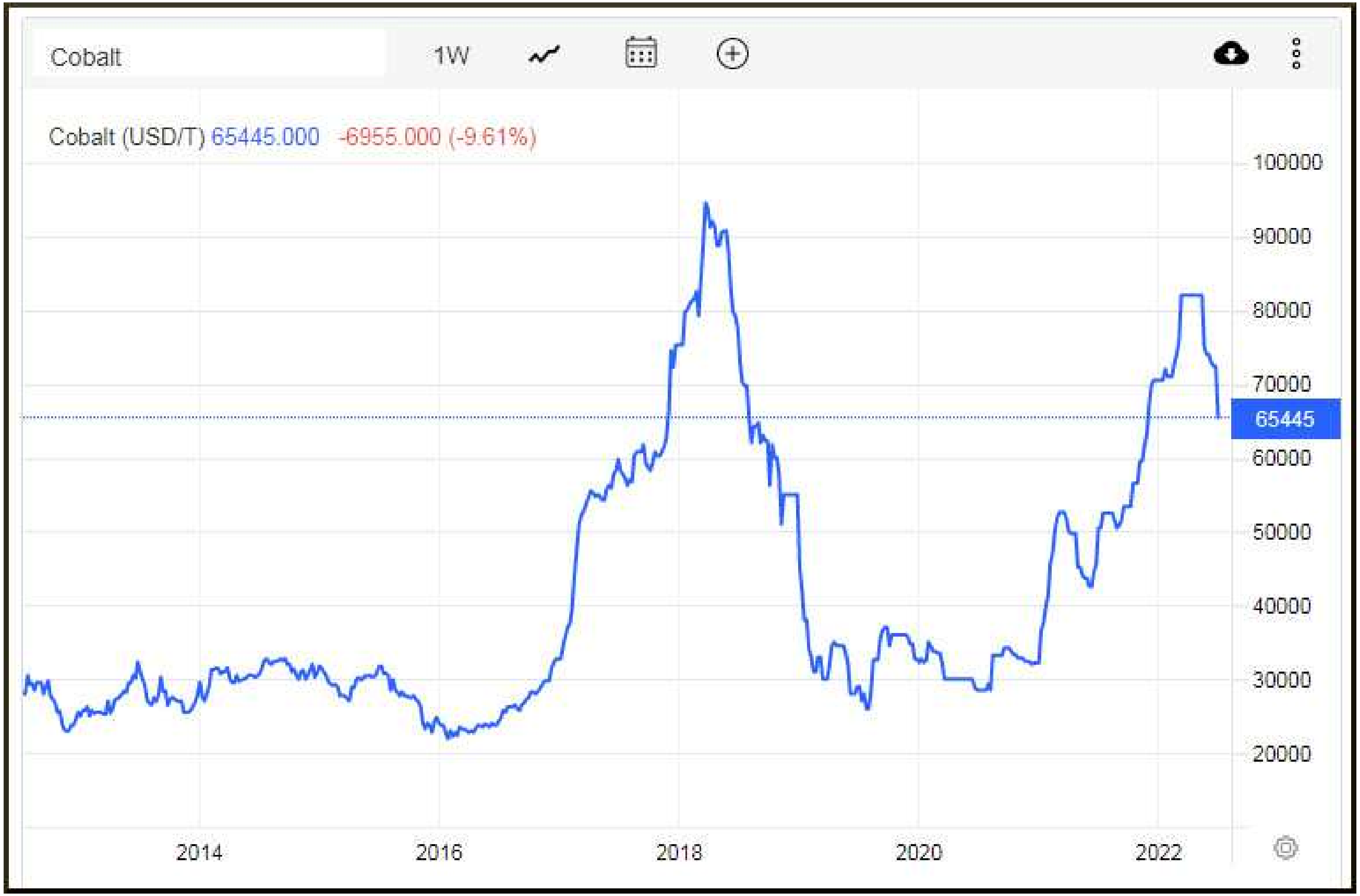
Cobalt – Much Ado about Do-Nothings

The remnant Cobalt players out there are not even making a pretense of being wannabe Cobalt producers. The overwhelming majority of them have nothing that anyone wants and they are not even faking it badly any more.

Never have so many promised so much and achieved so little. To put it in perspective there were more survivors and actual producers from the much derided Rare Earth boom of 2009-11 than there have been amongst Cobalt claimants after the price surge prompted by the Battery Metals Boom of 2017.

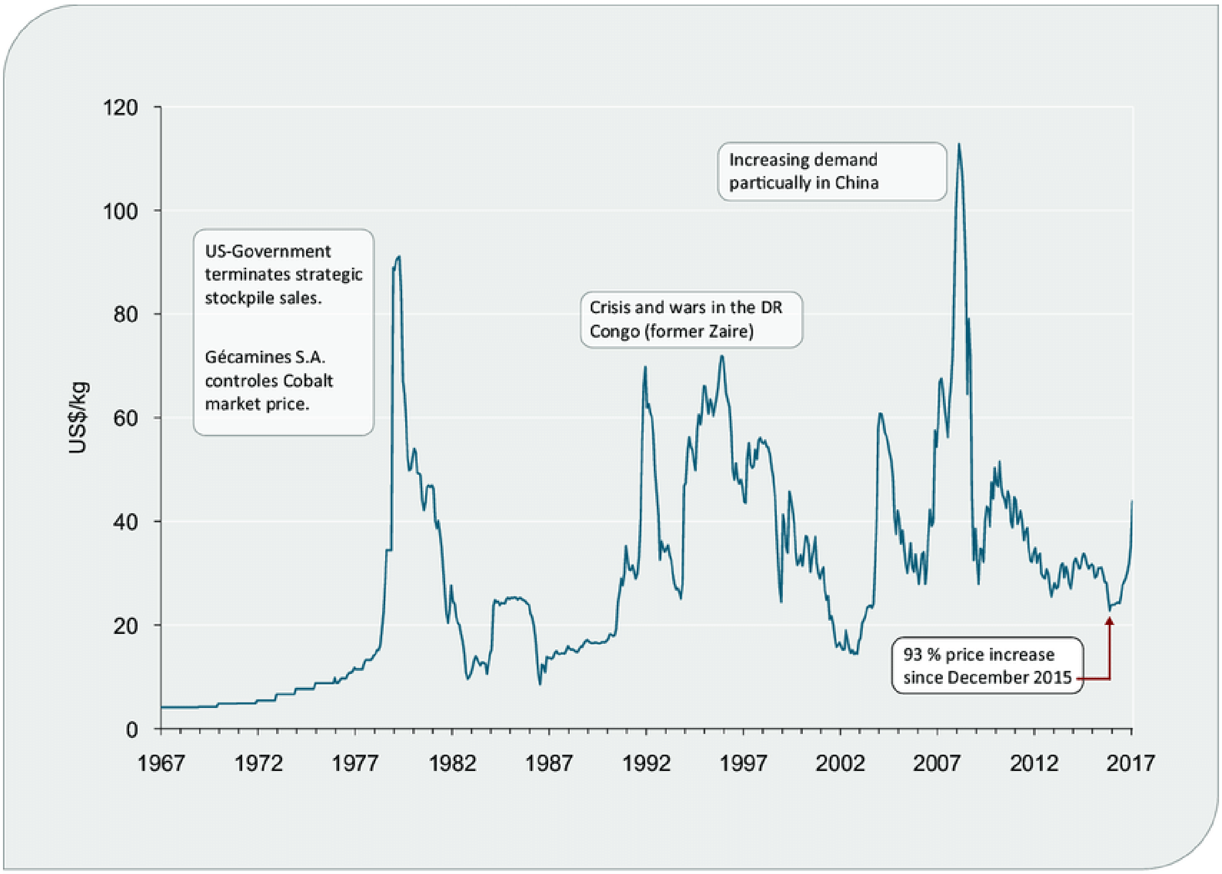
Ground zero of fakery was Cobalt, Ontario, a sometime (mainly silver) producing area which had a name that Vancouver promoters could wrap their lips around. The fact that the province had spent fortunes remediating the area and wasn't too keen to see a repeat of previous excesses did not faze the promoters because they weren't intending on producing anything anyway. No production = no pollution, the acme of Green mining!

The boom was so brief that the promoters didn't even have time to affix their figleafs before they blew away in a gust of reality.



Source: Trading Economics

Through much of the 1990s cobalt's price was sustained at high levels by disruption and civil war in Zaire/DRC. This is shown quite clearly in the longer-term chart below. However, with the onset of the so-called Commodity Supercycle in 2002 the metal rose, retraced, and then went stratospheric. The authors of this chart attributed it to Chinese demand while we would attribute it to pure speculation with hedge funds and other commodity newbies entering the space and driving prices to crazy levels.



Source: Uwe Nahaer

The price tumbled even before the global financial crisis and as we well-know the Chinese growth rate scarcely missed a beat in that crisis so there should have been no reason for such a steep fall except that it was unsustainable and not demand-driven.

Then again (where this chart ends) we see the start of the 2017 surge which was yet again another short-lived bubble that left a legacy of no extra production and just a lot of Cobalt wannabes slowly starving to death with their no-hope projects.

The ongoing problem of the space is the dominance of the DRC as a prime supplier and China's "dominance" of the DRC.

The table at the right shows the current production from the DRC and other regions.

Cobalt Prod by Region	
DRC	109
Other Africa	6
Asia	15
Americas	7
Europe	5
Oceania	9
Total	**151**

The prime survivor (and performer) from the recent crop of Cobalt "developers" is Jervois Global (ASX:JRV, TSX-v:JRV). Its asset base in Cobalt consists of its 100%-owned Idaho Cobalt Operations (ICO) and its Cobalt processing plants in Finland and Brazil.

The Idaho project came on board via the merger in July 2019 with eCobalt Solutions (TSE:ECS), this brought along the relatively advanced but perpetually stop- start construction project in Idaho.

The transaction followed upon Jervois's earlier takeover of M2 Cobalt Corp, an East African-focused exploration company with assets in Uganda. It might be remembered that Uganda (at the Kasese site) had long been one of the few primary Cobalt producers in the world (with Morocco being the other notable example).

Then Jervois acquired the Sao Miguel Paulista (SMP) nickel and cobalt refinery in Sao Paulo, Brazil from Companhia Brasileira de Alumínio (part of the Votorantim grouping) in September 2020. The SMP Refinery had annual refined production capacity of 25,000 metric tonnes of nickel and 2,000 metric tonnes of cobalt and was on care and maintenance. The cash purchase price was R$125 million (US$22.5 million), payable in tranches.

The Finnish processing plant had a long history as it had originally belonged to Outukumppu. When Jervois, in September 2021 purchased from Freeport McMoran all the shares of Freeport Cobalt Oy, and four affiliated entities from Koboltti Chemicals Holdings Ltd. (KCHL), for US$160 million it finally became clear that the "rubber was hitting the road" at Jervois and it was not just one of the horde of fakers in the Cobalt space. In the game of Monolpoly where strategic Cobalt play pieces were the assets to go for it would appear that Jervois had cleaned up several sides of the playing board and brought them under its control.

Jervois has stated that it expects to commence mill commissioning in Idaho in September 2022, with full production forecast for February 2023. This will be the US's first cobalt mine "for generations" when commercial production commences later this year.

An official opening ceremony for the ICO mine is scheduled at site for early October, with expected participation of U.S. political leadership and Australian government delegates. Jervois trumpets that it remains actively engaged with the U.S. government with regard to the geopolitical and economic importance of their endeavour. In a sign of its drift to a US-orientation, it has recently announced the change of its accounting currency to the US$.

At a market cap of around AUD$780mn, it still appears rather ritzy in valuation despite the fact that it is trading at half its 12-month highs. If it came significantly lower, then it would definitely become a **LONG** candidate for the Model Resources Portfolio.

One of the few other serious parties is another ASX player, **Cobalt Blue** (ASX:COB). This company is not short of ambition. At its Broken Hill project in New South Wales, Australia, it aims to represents 10% of non-DRC cobalt supply by 2025. In their words this would represent enough cobalt to enable ~300k Electric Vehicles (EVs) per year (or 5mn vehicles over the life of mine). The metrics of this operation would be:

- 3,500 tpa Cobalt metal (marketed as 10ktpa MHP or 17ktpa (20.8%) cobalt sulphate)
- 300,000 tpa sulphur

- 17-year operations

If this comes to pass it does not solve the Chinese panda-hug on DRC output but goes a small way towards ameliorating it.

Finally, it's worth mentioning that American Rare Earths (ASX:ARE), one of our covered stocks had a nine million share position (now reduced to four million) in Cobalt Blue having vended them an asset several years ago. ARE also holds a AUD$3mn promissory note with COB, maturing January 2025. Interest is earnt on the note for the final two years at 6%.

Clearly another one to watch for real action in Cobalt.

Cobalt Supply ex DRC

	2021	2030
China	6.9	5.5
Indonesia	4.8	15.4
Australia	4.8	8.6
Cuba	4.0	4.0
Philippines	3.7	4.2
Canada	2.6	4.3
Russia	2.4	3.5
Finland	2.1	2.2
Madagascar	1.6	3.2
Zambia	1.6	4.3
Morocco	1.6	1.6
New Caledonia	1.1	2.2
South Africa	0.7	0.7
Others	1.2	2.0
Total	**39**	**62**

Portfolio Changes

Two months have gone by since our last Monthly so a few changes have occurred. We have decided to retire Verde Agritech from the portfolio after its stunning rise in recent months. This has left its valuation quite seriously ahead of itself.

We have added Perpetua Resources, the gold/Antimony developer controlled by Paulson & Company, as a **LONG** position. Its steep reversal in value appears entirely unwarranted.

Mid-month it was announced that two of our Model Resources Portfolio constituents, Elemental Royalties and Altus Strategies had agreed to merge on all share basis. Not at our behest we might add.

The deal is recommended by both boards and major shareholders (58% at Altus and 51% at ELE) so deal will go through. The current CEO of Altus, Steve Poulton will be Executive Chairman and Fred Bell of Elemental will be CEO of the merged entity.

The new Elemental Altus company will be 52.9% ELE and 47.1% ALS based on respective capitalisations at the time of the deal with estimated combined revenues of $20mn for 2022 and $25mn for 2023.

Together the merged company will have a 69-project portfolio with ELE near-term producing royalties (many a legacy of the South32 deal) rising faster but the ALS royalty portfolio. It should be remembered that Altus is more of a project generation portfolio as currently constituted.

Project generators and royalty companies have not escaped the general market malaise despite the revenue generating nature of the latter category. One should also note that ELE was seriously disrupted by the unsolicited bid from Gold Royalties in January.

We shall continue to maintain the merged entity as a **LONG** in the portfolio and shall issue a new target price when we see what it starts trading at.

Lithium – Argentina eyes the Transfer-Pricers

The introduction of a reference price of US$53/kg for Argentine lithium by the Federal government was an interesting development. It would appear to us to be a shot across the bows of the cartel (and others) playing in the Argentine *salares* space. Transfer pricing has been rife in the mining industry for a couple of decades now and the government is moving in to nip it in the bud. Await the moans….

We saw also that Canaccord regarded the reference price as likely to have no impact. They noted recent media articles referencing the introduction of a lithium reference price in Argentina. Allkem (AKE.ax) stated that this was merely a reference price to be used by regulatory authorities when reviewing lithium export data to counter under-invoicing and improve price transparency. Allkem stated that the price is not to be used as a basis to calculate taxes, royalties, duties, nor is it a price cap (as has been suggested in some recent media).

For some perspective FOB Chile prices are currently US$56k/t, and China CIF "Spot" at ~US$70k/t (based on third party reporting).

Of course, this development got some investors' knickers in a twist as they failed to realise that it meant nothing as Argentina remains ground zero for the Lithium boom while Chile… well… fades away…

Lake Resources - The One that Got Away?

We are kicking ourselves that we did not add Lake Resources (ASX:LKE) to the SHORT list in the Model Resources Portfolio. Take your eye off the ball for a few minutes and one is confounded. That stock was briefly over $2.50 and now is around 80cts. Even here it has a market cap of AUD$1.2bn implying the market cap was over $3.7bn at its peak. That must have produced a Wile E. Coyote moment for those who were buying at the top and suddenly realized just how out there the valuation was.

This stock is certainly the poster child for silliness in the Battery Metals space. We might dare mention we cast a favourable eye on this stock in the Portfolio Review of January 2020 when its stock price was sub-5cts. These days we shall keep our eyes peeled for it rising again in the hope we can get a second bite of the cherry (i.e. another **SHORT**ing opportunity).

Lithium Power International (ASX:LPI) – Bundling Up

It's taken a while but finally LPI is tidying up its messy ownership structure of the Maricunga *salar*. We suspect the outmoded arrangement was stymying efforts to raise new funds or maybe market the asset as a unified package. To an outsider it looked like one would have to haggle with three parties to get any traction. We would note that LPI has been in our Model Resources Portfolio now since we first visited the project in late 2017.

However the rise from around 46cts to the 38.5cts today is one of the most torpid performances in the Lithium space and can be attributed more to the change of investor sentiment towards the Chilean government than LPI's legacy structural issues. Chile has been rattling its sabre about Lithium nationalizing in a very dangerous "playing with fire" exercise.

The latest announcement was that LPI would consolidate 100% ownership of the Maricunga brine project, by way of a three-party all-scrip merger with its JV Partners MSB SpA (owner of 31.31% of Maricunga) and TSX-V listed Bearing Lithium (17.14%).

We would note though that we published a LONG call on Bearing Lithium in March of 2019 at 24 cts and despite the Lithium boom in between and the current deal, BRZ stands today at the same 24cts it was then. Our take on this is that Bearing always was in a weak position and it is still stuck so it is being taken out for no premium over where it was three years ago.

LPI have publicized the deal as very accretive for the main partner (i.e. them) as the transactions increase the current LPI shareholders' proportionate interest in Maricunga from the current 51.55% to ~57.9%. LPI will consolidate the ~48.45% of the Project that it does not currently own at a valuation which is a discount of ~17.1% compared with LPI's current look through value of Maricunga.

It is fairly evident that LPI holding 100% ownership of the project will simplify decision-making and provides the optimal structure to oversee the rapid development of Maricunga.

We have long felt that this project would have better been served by having the rubber hit the road through a smaller scale project but management have persisted with advancing as large as possible. The NPV8 is US$1.425bn, while the CapEx is a ritzy US$626mn.

The consideration will be paid in LPI shares thereby allowing the shareholders of the JV Partners to retain exposure to the project. We are maintaining our **LONG** rating on the stock and a twelve-month target price of 80 cts (which has breached this year anyway). We are of the opinion that the Chilean government will NOT be engaging in any nationalization of this asset or other producers in the country.

Measure for Measure

It's not like Canadians to be pompous but frankly their *Holier than Thou* touting of NI41-101 as the best thing since sliced bread is getting rather tedious. The JOREC standard is perfectly fit for purpose and yet you don't see ASX or LSE companies wandering the streets with a copy of it under their arm like Mormon missionaries trying to convert the uncommitted.

We need to ask the fundamental question, "Did NI43-101 turn Vancouver into a haven of virtue from the low-lives and scamsters that were formerly its denizens?". If your answer is "yes" then you'd better "Get thee to a nunnery, Pollyanna" to mix some metaphors.

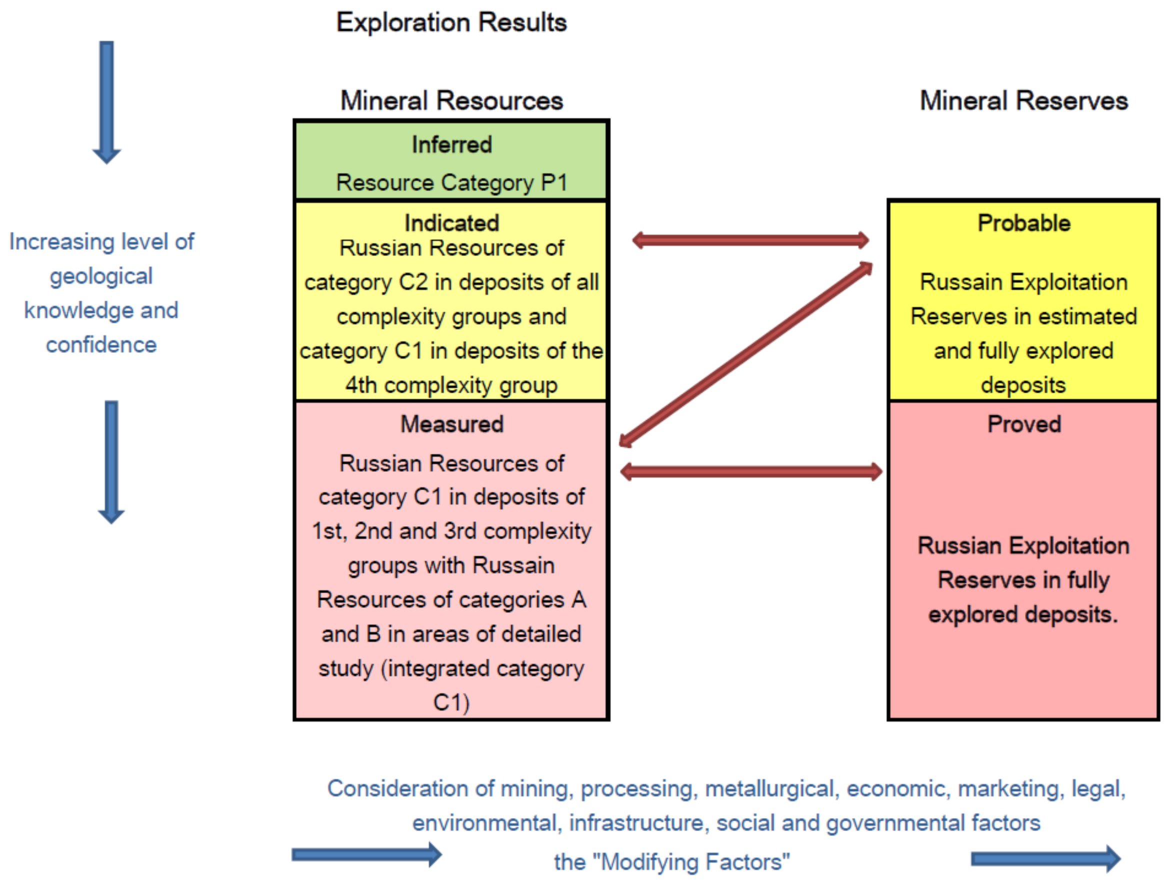
One of the more outrageous things we have seen in recent years is the breezy waving of the hand dismissing any mention of Soviet resource classifications. Our first encounter with Soviet resource classifications was in Albania early last decade. Our interest was in Chromite deposits. We reported to investors that when the Albanian government auctioned off properties these were deposits/resources not exploration territory. This was greeted by great scepticism. How could the state have spent all than money definition a Measured resource without some suckers (sorry, investors) pushing them to do so. Well, we explained, they had armies of geos to keep employed and they wanted to know what Chromite resources they had to blandish at the Chinese (Enver Hoxha's bulwark against Moscow's bear hug). Can you think of a better reason to define a resource of a country's major export?

Likewise we were recently looking at some Slovakian assets and noted that enormous effort had been expended on "exploration adits" (in the 1949-1989 period) to prove up the economics of the resource. This goes to show that "money" was no object to identify a resource in Eastern Bloc countries whereas nowadays much of the money goes into feathering the nests of consultants rather than into the ground.

The other bugbear (bears again!) is that, of course, old ex-Comecon area resources are historic. Now word has got around on Bay Street that regulators don't like "historic" resources because they don't keep consultants in the luxury to which they are accustomed. And regulators and consultants are joined at the hip in Canada. In theory everywhere (in the age of the spreadsheet macro) one should be able to change a cut-off or the metals prices that feed the cut-off decision and *voila*, resource recalculated! But no, that would not make money for consultants (though this is all they do in their smokey backrooms).

Thus a Soviet-style resource is anathema to one to the gatekeepers (sorry, consultants) that are the only ones who know the incantations required to make a NI43-101 out of thin air. One of the issues for them with Soviet resources in incompatibility. But if they bothered to educate themselves then in broad terms, the translation is simple.

The mapping is shown in a generalized form in the graphic below with the added detail of how these then represented as reserves:



Source: Russian Code for Public Reporting of Exploration Results, Mineral Resources, Mineral Reserves (NAEN Code) (2011)

Russian categories map to mineral resources in the following manner:

- C1, B, A map to Measured Mineral Resources
- C2 maps to Indicated Mineral Resources
- P1 maps to Inferred Mineral Resources

Hmmm, rocket science this is not….

There are nuances though as in more complex deposits (Russian "complexity class 4") there will be relatively little C1 material and this will map to Indicated Mineral Resources.

The Russian P2 and P3 categories of "prognostic resources" have no CRIRSCO equivalent, and express more general concepts of mineral potential of a region. But dare we say it the increasingly used "Target Resource" of ASX-listed miners (which gives Canadian consultants sleepless nights should it ever catch on) would seem to be somewhat like these P2 and P3 categories.

The best explanation of all this we have found is in an article "New guidelines for international reporting of Russian mineral resources and reserves" by Stephen Henley published in November of 2010.

He explains that often C2 and C1 resources are quoted, but they are "authors' estimates" and have not been registered with GKZ (the State Commission on Mineral Reserves). These have therefore not passed through the associated "expert review" independent audit which can, and does, modify reported figures. For this reason, it is not recommended in Henley's view that these authors' estimates be converted to higher than the Inferred category.

The biggest irony is that the Soviet system used to focus on economic deposits. The ultimate goal of the exercise was to find a mine worth mining. This was all for the good of the proletariat or at least to keep the *nomenklatura*'s children in blue jeans and their wives able to buy hair dye that didn't make it all fall out.

However "economic" is a worthy goal. How many fantastic M&I resources have Western (particularly Canadian) investors seen that are totally uneconomic? The Golden Triangle in Northern BC is the happy hunting ground of M&I resources that are destined to stay in the ground. Woolly mammoths, indeed.

Even the definition of the Russian "Competent Expert" was surprisingly similar, in Henley's view, to that of the (Canadian) Qualified Person or (international) Competent Person (QP/CP), although the more prescriptive Russian system allows less scope for professional judgement.

Perish the thought that a Russian expert might be less subjective and more objective than a Canadian one…

Parting Shot

It’s hard being Chinese these days…. No-one likes you.. you can’t even buy friends.. Xi is definitely the unpopular girl in the playground in this geopolitical remake of the film Clueless. .

It was particularly telling when, in 2015, ISIS made an incursion into the Malian capital Bamako and seized 170 hostages at the Radisson Blu Hotel. Back in the old days it would have been IBM executives or French missionaries that were chosen to be frog-marched down to a courtyard and machine gunned. In this case though it was three execs of China Railway Construction Corporation. When it comes to the game of “know thy oppressor” the ISIS guys were not so unworldly as they appeared.

Now encirclement is starting to crystallise. In particular, the 10-nation Mineral Security Partnership (MSP), which was formed mid-June at a conference in Canada, represents a clear statement of “them” and “us”. The MSP members are Canada, Australia, Finland, Germany, France, Japan, South Korea, Sweden, the UK, the US and the European Commission.

The best way to counter this is of course to cobble together China’s own friends and family group. But when that group consists of the Solomon Islands and Sri Lanka (the latter under duress) one should be wary of who one’s friends are. Chinese executives, emissaries and other Fifth Columnists should be wary of the “reverse Boxer Rebellion” phenomenon where Chinese walking the streets of their new neo-colonial empire don’t find themselves dragged off into dark alleyways as happened in Peking to the likes of the German plenipotentiary in 1900.

If the Rooseveltian Big Stick that the Chinese wield is debt servitude over the Third World they should ask how that turned out for US and European banks in Latin American in the late 1970s and early 1980s. What is the Chinese translation of Brady Plan?

MODEL RESOURCES PORTFOLIO @ END JUNE

	Security	Ticker	Currency	Price	Change last 12 mths	Change last mth	12-mth Target
LONG EQUITIES							
Diversified Large/Mid-Cap	Hochschild	HOC.L	GBP	0.955	-41%	-16%	£3.40
	Sherritt International	S.to	CAD	0.41	-21%	-33%	$0.95
Uranium	Sprott Physical Uranium	U-UN.to	CAD	13.87	154%	-7%	$18.70
	GoviEx	GXU.v	CAD	0.24	-14%	-21%	$0.45
Zinc/Lead Plays	WisdomTree Zinc ETF	ZINC.L	USD	9.78	9%	-18%	$14.00
	Altaley Mining	ATLY.v	CAD	0.18	-77%	-32%	$0.90
Silver Explorer	Southern Silver Exploration	SSV.v	CAD	0.215	-16%	-14%	$0.75
Silver ETF	IShares Silver ETF	SLV	USD	18.64	-24%	-9%	$26.00
Gold Producer	Soma Gold	SOMA.v	CAD	0.31	3%	17%	$1.20
	Orvana Minerals	ORV.to	CAD	0.33	10%	-1%	$0.60
Gold/Antimony Developer	Perpetua Resources	PPTA.to	CAD	4.24	-43%	22%	$16.00
Metallurgical Coal	Colonial Coal	CAD.v	CAD	1.96	216%	20%	$2.45
Project Generator	Altus Strategies	ALS.L	GBP	0.42	-30%	-16%	£1.00
Copper Explorers	Panoro Minerals	PML.v	CAD	0.14	8%	-13%	$0.30
	Phoenix Copper	PXC.L	GBP	0.3665	-19%	-28%	£0.90
	C3 Metals	CCCM.v	CAD	0.05	-71%	-17%	$0.44
Tungsten Producer	Almonty Industries	AII.to	CAD	0.85	-20%	2%	$1.25
Graphite Developer	Blencowe Resources	BRES.L	GBP	0.0329	-51%	-21%	£0.22
Vanadium Developer	Vanadium Resources	VRB.v	CAD	0.08	33%	-30%	$0.08

MODEL RESOURCES PORTFOLIO @ END JUNE

	Security	Ticker	Currency	Price	Change last 12 mths	Change last mth	12-mth Target
LONG EQUITIES							
Lithium	Neometals	NMT.ax	AUD	0.91	75%	-26%	$1.50
	Lithium Power Intl	LPI.ax	AUD	0.42	100%	-18%	$0.80
Scandium Developer	Scandium International	SCY.to	CAD	0.10	-55%	5%	$0.25
Gold Explorer	Cabral Gold	CBR.v	CAD	0.26	-52%	-15%	$0.60
	BTU Metals	BTU.v	CAD	0.04	-71%	0%	$0.12
	Desert Gold	DAU.v	CAD	0.10	-33%	18%	$0.35
	Gunpoint Exploration	GUN.v	CAD	0.53	-29%	-9%	$0.75
	Bold Ventures	BOL.v	CAD	0.10	43%	0%	$0.18
	MetalsTech	MTC.ax	AUD	0.35	56%	-14%	$0.68
Cesium et al.	Essential Metals	EXX.ax	AUD	0.37	236%	-23%	$0.30
Rare Earths	Rainbow Rare Earths	RBW.L	GBP	0.1236	-16%	-23%	£0.30
	Neo Performance Materials	NEO.to	CAD	12.43	-24%	-5%	$24.00
	Aclara	ARA.to	CAD	0.4	n/a	-9%	n/a
Tin Miners	Alphamin	AFM.v	CAD	0.83	12%	-24%	$2.00
	Metals X	MLX.ax	AUD	0.33	43%	-30%	$0.45
Oil & Gas	Shell	SHEL.L	EURO	21.60	50%	-10%	£24.00
Royalties	Elemental Royalties	ELE.v	CAD	1.47	10%	5%	$2.30
SHORT EQUITIES							
Shorts	NioCorp	NB.to	CAD	0.90	-38%	-20%	$0.40
	Aya Gold & Silver	AYA.to	CAD	6.56	-34%	-3%	$8.00
	Galane Gold	GG.v	CAD	0.09	-61%	-31%	$0.06
	Texas Mineral Resources	TMRC	USD	1.88	-8%	7%	$0.30

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