

Pendulum swings in favour of uranium but momentum is stalling elsewhere

After opening the week up on a positive note the market hit a speed bump on Wednesday, as a number of stocks started to hit resistance levels. Recent falls in the copper price started to get some publicity, having fallen from US\$3.16/lb to US\$2.96/lb over two weeks. Money started to move away from gold as that commodity continued to fall away with nothing to stimulate it. The oil price was a little more subdued after having risen strongly since July. It adds up to a loss of momentum, for the time being.

In the more specialist areas of uranium and cobalt it has all been positive news and higher prices. Additional production cuts in uranium have led to uptrends forming with uranium company share prices, and cobalt has hit a nine year high with no pullback in sight. A year ago cobalt was US\$14/lb. It has just touched US\$31.75/lb.

Brokers continue to pump out placements in an end of year rush, which might explain the profit taking in a number of companies as punters free up capital for the new raisings.

Notwithstanding the above, there is nothing obvious that threatens to spoil Christmas this year, and every reason to believe that the favourable market will flow over into the January/February period.

Uranium pendulum is swinging the right way

First we had the temporary closure of mines in Canada, by Cameco, and now we have the Kazakhs curbing production. There is a good case for saying that the uranium price will fall no further. So, the uranium company share prices are spiking higher. The price has risen from US\$20/lb to US\$26.50/lb, but the question is whether this will lead to a new uptrend or not.

The reason why there is so much uranium around is due to Kazakhstan cranking up production levels over the last 10 years, to a point where that country accounts for about 40% of world production. Each time the uranium price fell, Kazakhstan would allow its currency to depreciate to preserve its profit margins in its domestic currency. But, enough is enough; Kazakhstan has announced that it will cut production levels by 20% over three years. Add this to the cuts by Cameco and you get a 15% cut in world supply. It sounds good but that is too simple a figure. Cameco is talking of a temporary closure of about 10 months. Kazatomprom's cuts will be a scale down over three years, so the 15% figure is technically not accurate.

The traders will have a field day with the increased volatility that the news brings. Nuclear power is still the cleanest and cheapest form of base-load energy, and we should all be in favour of it, but uranium companies will continue to do it tough for a while yet. The corner has been turned but there is no suggestion that a boom is about to ensue. Still, the future now looks better.

Cobalt high flyers - what is the next one?

With the cobalt price hitting a nine year high the search is on for the next runner in the market. We have seen the strong performance of Northern Cobalt (N27) on the announcement of high grade intercepts up in the Northern Territory, and more recently we have seen Cobalt Blue (COB) (for which FEC was Lead Manager in the IPO a year ago) go for a run following a tight, \$2.5m placement managed by Sydney-based broker, Blue Ocean. Both of these companies have JORC resources and represent more advanced opportunities than many of the other juniors that have been trying to promote laterite nickel or porphyry copper plays as cobalt projects. Both of them are in Australia, which tends to make them more accessible in the eye of the investor.

Just as lithium stocks have had a number of waves of buying in the current bull market, cobalt stocks will follow a similar pattern. So far there is no lead being given from existing cobalt producers for cobalt comes as a co-product. Maybe we could view Highlands Pacific as a proxy, as that company is producing a nickel-cobalt intermediate product at Ramu, in PNG.

There are many juniors with sniffs of cobalt, but these are not going to have widespread appeal after the initial flurry. What other companies are coming though the system? The most interesting one we have seen in recent weeks is **Blackstone Minerals** (BSX), a company that has only just come to light, though it first traded in January 2017, following an a \$4m IPO at 20¢. The shares hovered around the issue price the first six months, then it started the upwards climb in July, when it announced a deal to acquire 100% of Little Gem, a very high grade cobalt and gold project in British Columbia. The consideration was 25 mill. shares and another 8 mill. performance shares, and the paying of C\$700,000 in option payments to a third party vendor. Royalties payable include a 20% net profit interest on the first 10,000 tonnes of ore mined, and a 2.5% NSR royalty on additional tonnes. A second, 1% NSR royalty is also payable.

The deal was executed on 25/8/17. In theory, the purchase price was \$6.6m in paper (at the share price of 20¢) plus the royalties, but the rising share price makes it look much richer. The upfront cost to the company is negligible, with the issue of shares making it a performance-based deal. Is it worth the \$18m+ price tag implied by the current share price?

A quick look at four historic drill results, with grades of 1.4-2.4% cobalt and 11-112 gpt gold, over widths of 1.8m to 4.1m, shows that there is some really high grade here. Adit channel samples of massive sulphides in the range of 1-2m have given cobalt grades of 3.1%-6.6% cobalt, and 26-76 gpt gold. These are vey impressive. Samples in the

disseminated sulphide are understandably lower but still good at 0.8%-3.5% cobalt and 4-34 gpt gold.

BSX is drawing analogies with the Bou-Azzer district of Morocco, which has produced over 100,000 tonnes of cobalt and tens of tons of gold, from more than 50 deposits over 75 years. Current production is 2,000 tpa of cobalt at a 1.3% head grade, with up to 3-4 gpt gold.

There isn't space in this column to go into great detail, so readers should go to the ASX releases to obtain more information, but there are some important observations that need to be made in determining whether the shares offer value or not.

Cobalt is hot in the market just now. We have seen both Cobalt Blue and Northern Cobalt pushed to much higher levels than their IPO prices. The market is hungry for high grade cobalt plays. The grades at Little Gem are about as good as you can get, and dramatically higher than almost any other prospect. The high-grade gold is a fantastic co-product. The shares are tightly held. There won't be much news flow until the field season next year, but I believe we are waiting on results from a single hole. In any event, there is enough historical information to whet the appetite.

At the risk of being blunt, this stock is a prime candidate for a big move. All the elements are in place. The only thing missing so far has been the buyers, though there hasn't been much incentive to pay up when there is so little on the offer. It will only take one broker to get excited, like we saw with Blue Ocean and Cobalt Blue, to get the ball rolling. I have already taken a punt.

STOP PRESS: After writing the above comment on Thursday, I see the shares have gone into a Trading Halt on the Friday, regarding a capital raising. This may solve the shortage of scrip available in the market.

Disclosure: Interests associated with the author own shares in Blackstone Minerals, Cobalt Blue and Northern Cobalt. FEC received payment for acting as Lead Manager for Cobalt Blue.

Plenty of work being done on graphene in lithium-based batteries

There is no shortage of companies working to enhance lithium-ion batteries through the addition of graphene. Just which innovation will be the best remains to be seen, but the message is that graphene is where the future lies. An article last week went so far as to describe lithium-ion as "archaic battery tech".

Samsung has just published a study that says graphene balls can boost battery capacity by 45% and charging speed by 500%. Significantly, it says it can incorporate the innovation into its existing manufacturing facilities without having to retool, but it still has to optimise the application process.

Samsung says that it can use silica to process graphene in a 3D form, and these balls are used as a protective layer on the anode and cathode. However, this is not the first time that we have seen graphene applied as a protective coating. We have read how cathodes for lithium-sulphur batteries are being enhanced by a protective layer of graphene that prevents degradation of the sulphur. This would clear the way to commercialisation of lithic-sulphur batteries and a four times increase in efficiency as measured by the specific energy of 500 W h/kg with up to 1,500 cycle lives.

Elsewhere, Rice University in Texas has said that graphene coated ribbons of vanadium oxide could be the best cathode for lithium-ion batteries, significantly increasing both energy and power densities. Interestingly, they describe the product as something in between batteries and supercapacitors. It is graphene's high conductivity that appeal here overcoming the low conductivity of vanadium oxides.

Every week there are additional news items about improvements that graphene is adding. Battery technology is just one small area though it is big in the minds of investors.

First Graphene commences shipments from Henderson facility ...

FGR has reported that it has despatched its first graphene shipment from the Henderson facility, officially opened in late November. This has gone to a cement additive company in the USA, following on from enquires at the IDTechEx conference in Santa Clara, USA. Further trial samples have also been despatched to Italy and the UK for testing and optimisation.

The release should be pleasing to shareholders who were looking for news flow from Santa Clara, and who were showing impatience on web chat sites. The fact that social media commentary is instantaneous doesn't mean that companies are in the position to respond in the same manner. We have seen how irresponsible some of the Twittering has been from President Trump. Woe be tide the day when shareholders anxiety causes companies to go down a similar path. Company releases should at all times be accurate and informative first and foremost, in priority to being spontaneous.

While the Henderson production facility is one of the largest in the world, it is still just the starting point. In due course FGR will need to double and quadruple, and expand its capacity again and again as the graphene becomes more widely used in industry. This growth curve will go on for decades. Graphene is starting from a small base of 1,000-2,000 tpa of global demand, but with the expected growth rate of 60% p.a., growth will quickly compound. Ability to supply demand will be a key parameter for stimulation of growth.

The Henderson facility has design capacity of 25 to 100 tpa of graphene, depending upon how many shifts are operating. It hopes to build up actual production rates throughout 2018, as companies who have received trial samples work first to optimise the product for their purposes and as they commence commercial application. Once the process starts we should expect it to snowball with no ceiling in sight.

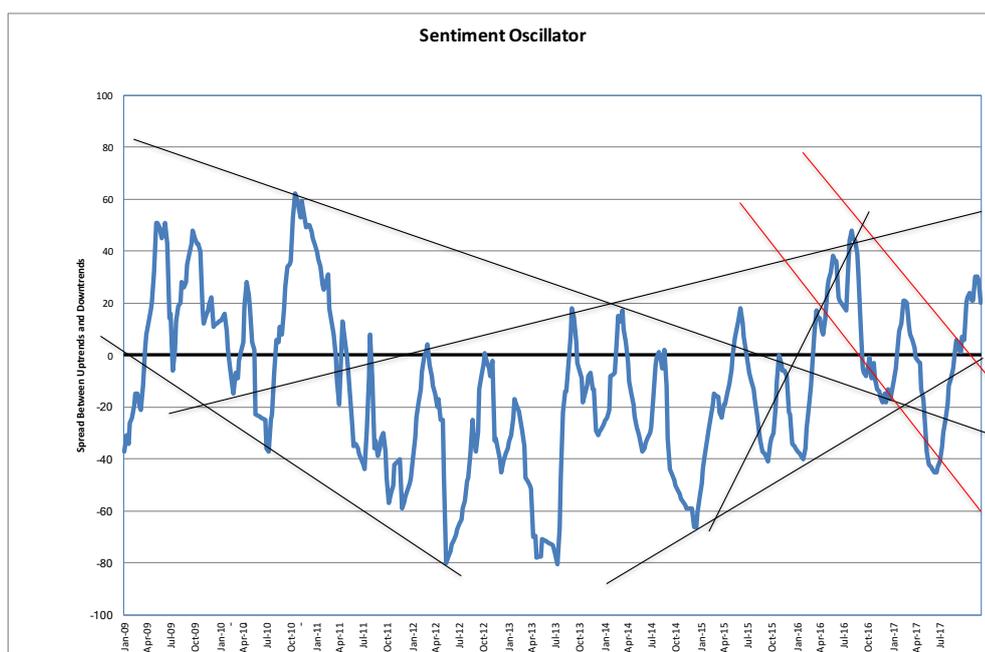
... and receives \$1.5m research grant

First Graphene has announced a successful application for a \$1.5m CRC-P funding grant for the advancement of the BEST Battery and the development of a process for making graphene oxide, from the Federal Government. It is in keeping with the redefinition of FGR as an advanced materials company, accessing the best research brains in the country, to achieve commercial outcomes for graphene. This is a great outcome for FGR, confirming that it is a serious technology company in the eyes of the Federal Government, on an exciting growth curve.

Disclosure: The author is chairman of First Graphene Ltd and interests associated with the author hold a sizeable number of shares in FGR. FEC has received capital raising fees from FGR.

Graphene will cut into the demand for zinc

Zinc has been the traditional material for anti-corrosion applications, but graphene is shaping up as a serious substitute. The Chinese are using graphene on the surface of bridges and steel wind turbine towers, saying that the addition of graphene in anti-corrosion coatings can reduce the amount of zinc needed by 25-80%. The corrosion protection time doubles, thereby providing significant labour saving costs and of course, the graphene is less polluting than zinc. It will take time for the full effect to flow though, but zinc is yesterday's hero.



Sentiment Indicator: Sentiment deteriorated over the week. There were 46% (50%) of the charts in uptrend and 26% (21%) in downtrend on Friday's close. The Oscillator shows the pause in momentum.

NB. Only the bold comments have been updated. Comments in grey type are from previous weeks and will be less relevant.

Indices	Code	Trend Comment	
All Ordinaries	XAO	flag forming near highs	
Metals and Mining	XMM	testing uptrend	
Energy	XEJ	maintaining highs	
Stocks	Code	Trend Comment (updated comments in bold)	Main Interest
ABM Resources	ABU	breached trend line	gold
Aeon Metals	AML	new high	copper + cobalt
Alacer Gold	AQG	holding uptrend	gold – production
Alkane Resources	ALK	down after hitting LT resistance	gold, zirconia
Acacia Resources	AJC	Sideways at the bottom	coal
Aguia Resources	AGR	back in downtrend	phosphate
Alicanto Minerals	AQI	sideways	gold exploration

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Allegiance Coal	AHQ		support at 3c	coal
Alliance Resources	AGS		sideways	gold exploration
Alltech Chemicals	ATC		new high	industrial minerals
Anova Metals	AWV		falling again	gold
Antipa Minerals	AZY		sideways	gold
Apollo Consolidated	AOP		new high	gold exploration
Archer Exploration	AXE		fallen back to support line	magnesite, graphite
Argent Minerals	ARD		back to lows	polymetallic
Artemis Resources	ARV		slump	gold, nickel
Aspire Mining	AKM		new low	coal
Alta Zinc	AZI		weak - name change from Energia	zinc
Aurelia Metals	AMI		on support line	gold + base metals
Auroch Minerals	AOU		collapse on negative drill results	exploration
Aus Tin	ANW		edging higher	tin, cobalt
Australian Bauxite	ABX		down	bauxite
Australian Potash	APC		breached downtrend	potash
Australian Mines	AUZ		working around highs	cobalt/nickel
Australian Vanadium	AVL		off its high	vanadium
Avanco Resources	AVB		sideways	copper
AWE	AWE		stronger on takeover approach at 71c	oil and gas
Azure Minerals	AZS		testing uptrend	silver
BHP	BHP		sideways through uptrend	diversified
Base Resources	BSE		rallying	mineral sands
Bathurst Resources	BRL		breaching downtrend	coal
Battery Minerals	BAT		back to recent lows after placement	graphite
BBX Minerals	BBX		suspended	gold
Beach Energy	BPT		hitting resistance	oil and gas
Beadell Resources	BDR		around lows again	gold
Berkeley Resources	BKY		more gentle uptrend	uranium
Berkut Minerals	BMT		spiked to new high, then heavy fall	cobalt
Blackham Resources	BLK		new low	gold
Blackstone Minerals	BSX		steep rise	gold, cobalt
Broken Hill Prospect.	BPL		strongly higher	minerals sands, cobalt
Buru Energy	BRU		strongly higher	oil
Canyon Resources	CAY		new high	bauxite
Cardinal Resources	CDV		breached uptrend	gold exploration
Cassini Resources	CZI		rising	nickel/Cu expl.
Chalice Gold	CHN		surge	gold
Cobalt Blue	COB		consolidating after vertical rise	cobalt
Comet Resources	CRL		pushing higher	graphite/graphene
Consolidated Zinc	CZL		downtrend being tested	zinc
Corizon Mining	CZN		down	cobalt
Crusader Resources	CAS		new low	gold/iron ore
Dacian Gold	DCN		rising again	gold exploration
Danakali	DNK		bounced off support line	potash
Doray Minerals	DRM		back in downtrend	gold
Draig Resources	DRG		new high	gold
Eden Innovations	EDE		new low	carbon nanotubes in concrete
Emerald Resource	EMR		sideways	gold
Evolution Mining	EVN		gently stronger	gold
Excelsior Gold	EXG		slump, testing uptrend	gold
Finders Resources	FND		stronger	copper
FAR	FAR		testing uptrend	oil/gas
First Cobalt	FCC		sideways	cobalt

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First Graphene	FGR		strong rise	graphite
Fortescue Metals	FMG		downtrend forming	iron ore
Galaxy Resources	GXY		steeply higher	lithium
Galilee Energy	GLL		surge out of downtrend	oil and gas, CBM
Gascoyne Resources	GCY		testing steeper downtrend	gold
Global Geoscience	GSC		new high	lithium
Gold Road	GOR		uptrend continuing	gold exploration
Graphex Mining	GPX		new uptrend	graphite
Heron Resources	HRR		still down	zinc
Highfield Resources	HFR		back into downtrend	potash
Highlands Pacific	HIG		correcting from recent high	copper, nickel
Hillgrove Resources	HGO		sideways	copper
Iluka Resources	ILU		surged higher	mineral sands
Image Resources	IMA		spiked higher	mineral sands
Independence	IGO		breached uptrend	gold, nickel
Intrepid Mines	IAU		sideways	copper
Karoo Gas	KAR		spiked higher	gas
Kibaran Resources	KNL		breached downtrend	graphite
Kin Mining	KIN		testing ST uptrend	gold
Legend Mining	LEG		rising	exploration
Lepidico	LPD		another steep rise	lithium
Lithium Australia	LIT		rising again	lithium
Lucapa Diamond	LOM		back to lows	diamonds
Macphersons Res.	MRP		downtrend	silver
Marmota	MEU		rising	gold exploration
MetalsX	MLX		pullback	tin, nickel
Metro Mining	MMI		stronger	bauxite
Mincor Resources	MCR		spiked higher	nickel
Mineral Deposits	MDL		on support line	mineral sands
Mustang Resources	MUS		collapse	diamonds, rubies
Myanmar Minerals	MYL		testing uptrend	zinc
MZI Resources	MZI		breaching short term uptrend	mineral sands
Northern Cobalt	N27		strong rise, then heavy retracement	cobalt
Northern Minerals	NTU		down again	REE
Northern Star Res.	NST		rising again	gold
NTM Gold	NTM		longer term downtrend forming	gold
Oceana Gold	OGC		down after steep fall	gold
Oklo Resources	OKU		back to highs	gold expl.
Orecorp	ORR		strong rally	gold development
Orinoco Gold	OGX		collapse on 1 for 2 issue	gold development
Orocobre	ORE		correcting lower	lithium
Oz Minerals	OZL		at apex of wedge	copper
Pacific American Coal	PAK		good bounce to meet resistance line	coal, graphene
Pantoro	PNR		breached uptrend	gold
Panoramic Res	PAN		on support line	nickel
Peel Mining	PEX		new high	copper
Peninsula Energy	PEN		new uptrend forming	uranium
Perseus Mining	PRU		breaching uptrend	gold
Pilbara Minerals	PLS		correcting lower	lithium/tantalum
PNX Metals	PNX		sideways	gold, silver, zinc
Red River Resources	RVR		holding longer term uptrend	zinc
Regis Resources	RRL		near highs again	gold
Resolute Mining	RSG		breached support	gold
RIO	RIO		rising	diversified

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Salt Lake Potash	SO4	Orange	testing short term uptrend	potash
Saracen Minerals	SAR	Green	holding long term uptrend	gold
St Barbara	SBM	Green	new high	gold
Sandfire Resources	SFR	Orange	breaching downtrend	copper
Santana Minerals	SMI	Red	short term down	silver
Santos	STO	Green	steeply higher	oil/gas
Sheffield Resources	SFX	Red	down	mineral sands
Silver Lake Resources	SLR	Red	heavy fall	gold
Silver Mines	SVL	Red	down again	silver
Sino Gas & Energy	SEH	Green	breached final resistance	gas
Southern Gold	SAU	Red	drifting lower	gold
Stanmore Coal	SMR	Green	rising	coal
Sundance Energy	SEA	Green	new uptrend started	oil/gas
Syrah Resources	SYR	Green	stronger	graphite
Talga Resources	TLG	Red	downtrend	graphene
Tanami Gold	TAM	Red	down	gold
Tempo Australia	TPP	Orange	sideways to higher	mining services
Tiger Realm	TIG	Orange	sideways	coal
Torian Resources	TNR	Red	new low	gold expl'n
Triton Minerals	TON	Orange	uptrend being tested	graphite
Troy Resources	TRY	Red	back in downtrend	gold
Tyranna Resources	TYX	Orange	spiked higher, then heavy fall	gold exploration
Vango Mining	VAN	Red	testing downtrend	gold
Vimy Resources	VMY	Green	new uptrend confirmed	uranium
West African Resources	WAF	Green	uptrend	gold
Westwits	WWI	Green	new uptrend on Pilbara deal, but pullback	gold exploration/development
Western Areas	WSA	Orange	testing uptrend	nickel
White Rock Minerals	WRM	Orange	sideways	silver
Whitehaven Coal	WHC	Green	gently higher	coal
WPG Resources	WPG	Orange	back to lows	gold
Wolf Minerals	WLF	Orange	testing downtrend	tungsten
Totals	46%	67	Uptrend	
	26%	37	Downtrend	
		145	Total	

Guides to Chart Interpretations

- Charts usually go pass from one trend (up or down) into the other via a period of indecision and uncertainty during which the trend can either recover or change. This period is signified by the orange colour. The orange represent both the greatest risk and greatest reward possibilities.
- Once a chart is in confirmed up or downtrends it is not uncommon for 10-20% of that trend to have already transpired.
- There are trends within trends. The focus of this chart review is the immediate trend that affects the sentiment i.e. it can be a downtrend within a long-term uptrend.
- Not every chart warrants a new comment every week. The new comments are in bold type. Grey type comments may be dated.
- Individual charts provide a single view. It is valuable to look at charts of other companies in similar commodities, and the overall sentiment is also very valuable. Not many stocks can swim against the tide.
- We periodically add or delete charts, some times for obscure reasons. If a chart consistent gives poor signals or is very erratic, we may delete it. Sometimes we add a chart because we want to see what all the fuss is about. We do have a preference for charting stocks that we cover in our research as well.
- Errors and omissions may occur from time to time, especially in fast moving markets.

Amber Lights in Tables: Just a reminder if when the amber light is used in the table – it is when the charts are ambiguous or when there is a change of trend taking place. If a chart is breaching a downtrend it can either be a positive sign or a trap. Only once it has done more work can it be confirmed as a new uptrend. Maybe it is a new uptrend (or conversely a new downtrend); the risk takers can decide to jump on board early (or sell). They will maximise their profits (or minimise their losses if indeed it is the start of the new uptrend (downtrend). More risk-averse investors should wait a little longer, being prepared to give up some of the gains in return for greater certainty.

Weightings of Sectors Represented in the Company Charts			
Sector	No. of Companies	Weighting	
Gold	32	22.1%	
Gold Exploration	16	11.0%	
Copper	11	7.6%	
Coal	9	6.2%	
Oil/Gas	9	6.2%	
Mineral Sands	7	4.8%	
Graphite	8	5.5%	
Zinc	7	4.8%	
Silver	6	4.1%	
Lithium	6	4.1%	
Nickel	4	2.8%	
Potash/Phosphate	5	3.4%	
Cobalt	6	4.1%	
Uranium	3	2.1%	
Bauxite	3	2.1%	
Tin	2	1.4%	
Diamonds	2	1.4%	
Iron Ore	1	0.7%	
Other	8		
Total	145		

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