

Does Zinc Stink? Maybe Not This Time!

Zinc has been a perpetual disappointment as many market forecasts have come unstuck as forecast zinc supply never turns out to be as dire as it is interpreted to be. Indeed there have always been major mines shutting down as reserves are exhausted but manage to keep going longer than anticipated. I am reminded of what an ex CEO of MIM (now Glencore) once told me, that he can remember one good year for zinc in the past 30 years!

The outlook for zinc started to change back in October 2015 when Glencore announced the curtailments of 500,000 tonnes zinc in concentrate production by Glencore pushed the concentrate market into a significant deficit while global mine production was steadily falling in the background. Many analysts have been upbeat on the zinc price, largely reflecting ongoing forecast supply constraints. We are more mildly bullish and believe the best was to play the zinc story is through a diversified base metal approach – base metals often perform in unison, which is normally driven by unexpected demand at a time when supply is constrained and stocks are low. The other reason is that there aren't any great 'pure' zinc stocks apart from some of the exploration juniors.

Increases in mine production and approved projects have been summarised by RBC and are listed below in *Figure 1: Mine Production Increases At Existing Operations And Approved Projects*. This most significant impacts are the development of King Vol in Queensland, the impact of Bisha in Eritrea and Antamina in Peru.

Figure. 1. Mine Production Increases At Existing Operations and Approved Projects.

Mine	Location	2016	2017	2018	2019	2020
Dugald River	Queensland		-	80	170	170
McArthur River Bulk Conc	Northern Territory	97	97	97	97	97
Mungana King Vol	Queensland		20	40	50	50
San Cristobal	Bolivia	50	50	-	-	-
Fujian Other	China		38	63	63	63
Changba (Baiyin)	China	-	20	40	55	55
Guojiagou	China	8	25	40	50	50
Castellanos	Cuba	-	10	75	75	75
Bisha	Eritrea	18	188	180	228	241
Sotkamo	Finland	20	52	55	58	63
Sindesar Khurd	India	6	33	43	64	64
Zawar Mines	India	1	21	52	59	57
Antamina	Peru	-	102	122	129	19
Kyzyl Tashtygskoe	Russia	84	83	83	83	83
Gamsberg	South Africa	-	-	25	150	250
Other <50ktpa		692	1,274	1,545	1,633	1,642
Total		975	2,013	2,540	2,964	2,980

In comparison, production falls at the various mines account for around half of these increases in production. As evident in *Figure 2: Zinc Mine Production Reductions At Existing Operations* (page 11), the big production falls stem from the closure of Century, and Lisheen and the delay in moving from open pit to underground mining at Rampura-Agucah in India.

Figure 2. Zinc Mine Production Reductions At Existing Operations

Mine	Location	2016	2017	2018	2019	2020
Century	Queensland	376	393	393	393	393
Endeavor (Elura)	NSW	34	20	15	15	15
Jaguar	WA	1	15	40	40	40
Mount Isa	Queensland	193	28	33	33	33
Mt Garnet	Queensland	19	29	29	29	29
Bolivia	Bolivia	7	27	27	27	27
San Cristobal	Bolivia	-	-	-	-	30
Bracemac-McLeod	Canada	-	-	38	52	52
Guangxi	China	38	8	8	8	8
Hunan	China	54	31	6	6	6
Neimenggu	China	51	37	4	-	-
Rampura-Agucah	India	185	51	123	118	128
Lisheen	Ireland	103	103	103	103	103
Penasquito	Mexico	62	28	28	23	-
Skorpion	Namibia	12	10	10	125	125
Antamina	Peru	35	-	-	-	-
Mae Sod Other Conc	Thailand	19	35	35	35	35
Gordonsville (MTM)	USA	47	7	-	-	-
Pend Oreille	USA	-	-	-	-	-
Red Dog	USA	-	29	33	40	40
Other < 25 ktpa		412	326	334	486	613
Total		-1,535	-1,096	-1,181	-1,333	-1,477

Source: RBC

In terms of supply/demand balance, Breakaway Research has aggregated data from a number of sources to formulate a consensus around the outlook for zinc in *Figure 3: Supply/Demand And Zinc Price Forecasts* (page 12).

Figure 3. Supply/Demand and Zinc Price Forecasts.

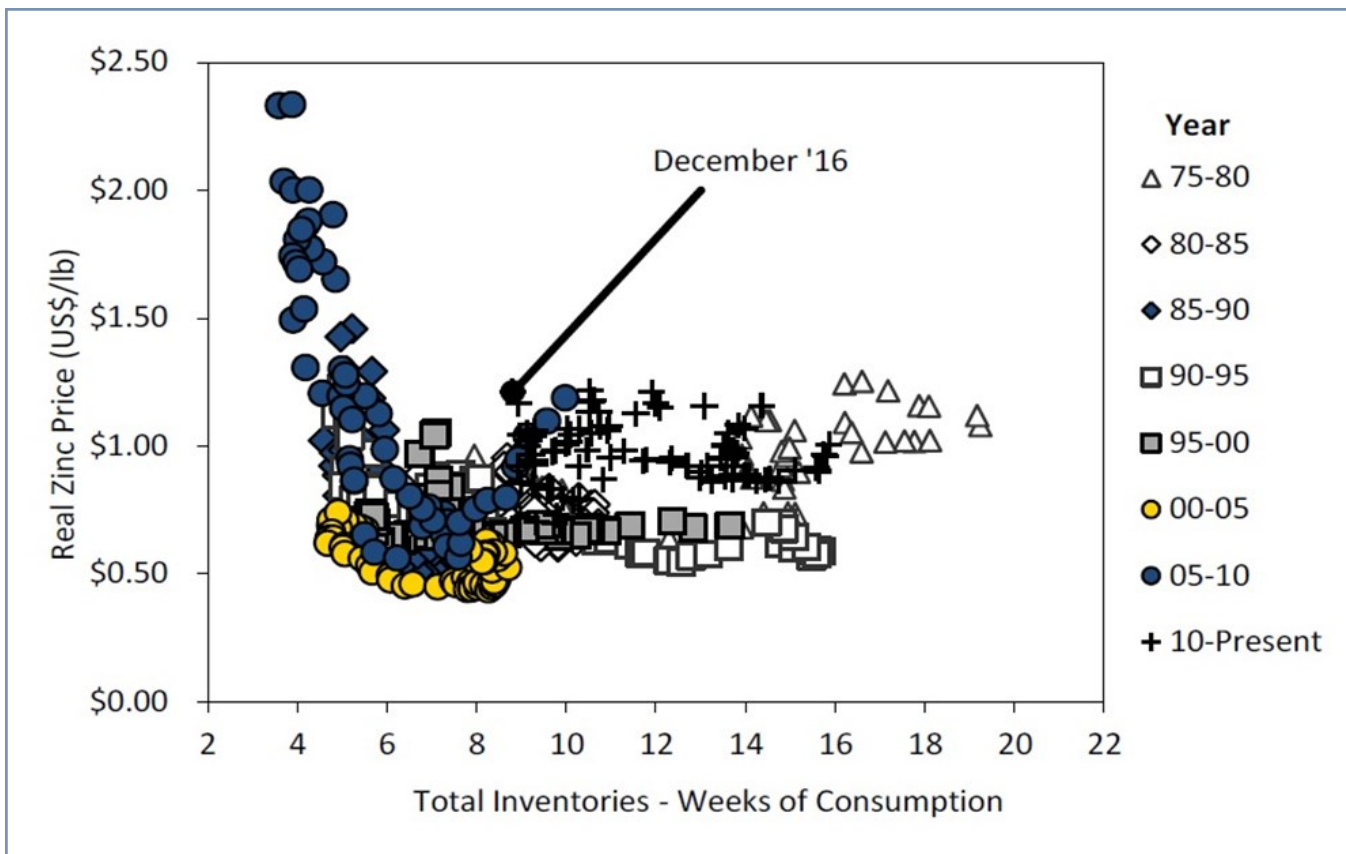
Parameter	Source	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Supply (Refined)	RBC	12,896	13,039	12,607	13,005	13,485	13,650	13,602	14,202	14,793	15,151	15,348
	Merrill Lynch			12,835	12,943	13,232	13,794	13,750	14,000			
	Macquarie			18,820	13,195	13,631	13,563	13,753	13,973	14,532	15,258	
	International Lead and Zinc Study Group			12,607	13,004	13,485	13,651	13,668				
Breakaway Research	BR	12,832	12,974	12,620	14,443	13,349	13,682	13,645	13,286	14,095	14,396	14,844
	Change yoy		1.1%	-2.7%	14.4%	-7.6%	2.5%	-0.3%	-2.6%	6.1%	2.1%	3.1%
Total Global Demand	RBC	12,702	12,680	12,279	13,118	13,732	13,461	13,824	14,344	14,868	15,203	15,547
	Merrill Lynch			12,719	13,094	13,483	13,568	13,927	14,304			
	Macquarie			13,040	13,040	13,594	13,621	13,914	14,251	14,506	14,753	15,044
	International Lead and Zinc Study Group			12,378	13,160	13,735	13,462	13,936				
Breakaway Research	BR	12,702	12,680	12,459	13,103	13,636	13,528	13,900	14,300	14,760	15,023	15,296
	Change yoy		-0.2%	-1.7%	5.2%	4.1%	-0.8%	2.8%	2.9%	3.2%	1.8%	1.8%
% change												
Implied Surplus / (Deficit)		130	294	161	1,340	-287	154	-255	-1,014	-665	-627	-452
Total Reported Stocks	RBC	1,472	1,703	1,996	1,634	1,305	1,248	1,025	884	809	757	557
	Merrill Lynch			1,925	1,550	1,197	1,131	953	650			
	Macquarie			2,592	2,298	2,298	2,210	1,906	1,408	875	654	868
	Breakaway Research	BR	1,472	1,703	1,996	2,113	1,826	1,980	1,725	711	546	420
	Change yoy		15.7%	17.2%	5.9%	-13.6%	8.4%	-12.9%	-58.8%	-23.2%	-23.2%	11.5%
Weeks of Consumption (Western World)	RBC	11.3	13.3	16.0	12.7	10.0	9.7	7.9	6.7	6.0	5.5	4.0
	Merrill Lynch			7.9	6.2	4.6	4.3	3.6	2.4			
	Macquarie			10.3	8.8	8.8	8.4	7.1	5.1	3.1	2.3	3.0
	Breakaway Research	BR	11.3	13.3	16.0	11.1	9.3	10.1	8.7	3.5	2.6	2.0
Nominal LME Cash Price	RBC	US\$/lb	\$0.98	\$0.99	\$0.88	\$0.87	\$0.98	\$0.95	\$1.25	\$1.35	\$1.35	\$1.50
	Merrill Lynch	US\$/lb		\$0.88	\$0.88	\$0.87	\$0.98	\$0.93	\$1.23			
	Macquarie	US\$/lb		\$0.87	\$0.87	\$0.87	\$0.98	\$0.95	\$1.32	\$1.41	\$1.18	\$1.05
	Breakaway Research	BR	US\$/lb	\$0.98	\$0.99	\$0.88	\$0.87	\$0.88	\$0.94	\$1.27	\$1.38	\$1.40
			1.0%	-11.1%	-1.1%	12.6%	-10.2%	7.2%	34.3%	8.9%	1.4%	-3.6%

Source: ILZSG, RBC, Merrill Lynch, Macquarie, Breakaway Research

The forecasts present a solid case for zinc prices increasing beyond the current LME spot price of US\$1.23/lb. Indeed, the 12% increase to our forecast average price of US\$1.38/lb average price in 2018 will underpin the performance of zinc related stocks.

The following chart *Figure 4: Historical Zinc Price Against Inventories As Expressed In Weeks Of Consumption* plots the historical zinc price against inventories as expressed in weeks of consumption.

Figure 4. Historical Zinc Price Against Inventories As Expressed In Weeks Of Consumption



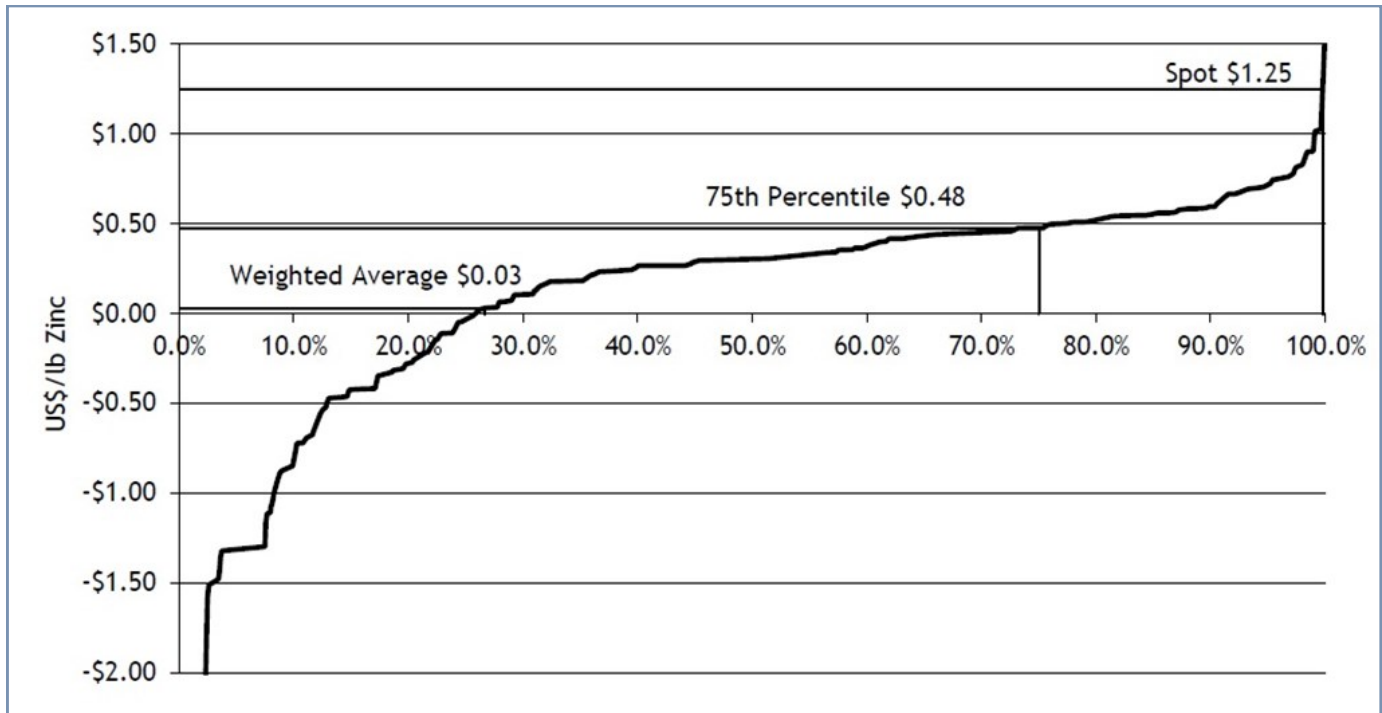
Source: RBC

Figure 4 (above) suggests that inventories at less than 5 weeks of consumption are bullish for the zinc price and we are moving well below this level. The forecast low levels of inventories could lead to extremely high zinc prices although historically this has only be realised on selected occasions and prices above a real price of US\$1.25/lb meet with some resistance.

We will continue to monitor the situation but normally the risk lies with the emergence of unexpected zinc concentrate supply coming out of China.

The Zinc Cost Curve (Figure 5) on page 14 is relatively flat and existing production is not at risk in the current zinc price regime.

Figure 5. C1 Zinc Cost Curve.



Source: RBC

This article extract has been taken from the recent Breakaway Mining Research Weekly Report - a subscription based product providing investors with daily summary and analysis on the Australian Resource Sector, as well as weekly commentary on investment themes and stock recommendation portfolio ideas. Sign up for a one month free trial by visiting

http://www.breakawayresearch.com/breakaway_mining_research