

THE STRAIGHT TALKING

# CURVED THINKING

FUND FEATURE



TANTALUM RESOURCES FUND

LAUNCHED MARCH 2013

## RESOURCE RELATIONSHIPS



Given popular supply/demand economic theory, one would expect that the absolute and relative pricing of resources should, to some extent, be determined by the availability or scarcity of the various resources.

Six elements make up more than half of the earth's crust (see table below).

Ranking	Element	Symbol	Abundance (%)	2011 production (t) (2)
1	Silicon	Si	27.000%	8,000,000
2	Aluminium	Al	8.200%	44,400,000
3	Iron	Fe	6.300%	2,600,000,000
4	Calcium	Ca	5.000%	
5	Magnesium	Mg	2.900%	780,000
6	Sodium	Na	2.300%	290,000,000
7	Potassium	K	1.500%	
8	Titanium	Ti	0.660%	6,700,000
9	Carbon	C	0.180%	
10	Manganese	Mn	0.110%	14,000,000
24	Copper	Cu	0.068%	16,100,000
49	Uranium	U	<0.001%	
50	Tantalum	Ta	<0.001%	790
63	Silver	Ag	<0.001%	23,800
69	Platinum	Pt	<0.001%	192
70	Gold	Ag	<0.001%	2,700
72	Palladium	Pd	<0.001%	207
75	Rhodium	Au	<0.001%	

Source, Wikipedia Mar 2013

As shown in the table, on average aluminium is more than 8,200 times more abundant than gold in the earth's crust; on this criteria alone, one can understand why gold is so precious! Historically the evolution of metal prices has varied considerably from metal to metal with many different factors contributing to these variances in nominal and real term pricing.

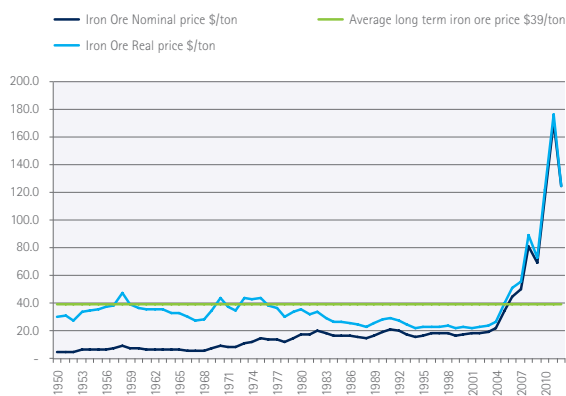
We fully acknowledge that looking at abundance of a mineral to determine its pricing over time is far too simplistic an analysis, but for the purposes of this article, this is the main point we are going to consider. The price of a commodity ultimately depends on the supply and demand dynamics of that market. Embedded in this price are a whole series of factors with scarcity of supply being one such factor.

Aluminum and iron ore are the 2nd and 3rd most common elements in the earth's crust – given this, one would not necessarily expect a huge price relative variation between the two commodities. Viewing the historic price charts (refer to charts 1 and 2) it is evident that since 2000 the US\$ price of iron ore has significantly outperformed the US\$ price for aluminium.

China is the dominant producer of aluminium and the cost curve is relatively flat with tight margins.

In fact using annual 2012 price points, iron ore is trading at 3.2 times its average real price, while aluminium is trading at 0.82 times its average real price, (all real prices have been calculated using pricing data from 1950 to 2012). Given the relative abundance of both of these metals one could expect the relative pricing patterns to be similar. The industry structure and cost curves impact relative pricing significantly. China is the dominant producer of aluminium and the cost curve is relatively flat with tight margins. Iron ore by comparison has a much steeper cost curve (especially the 4th quartile) and is dominated by three large low cost producers.

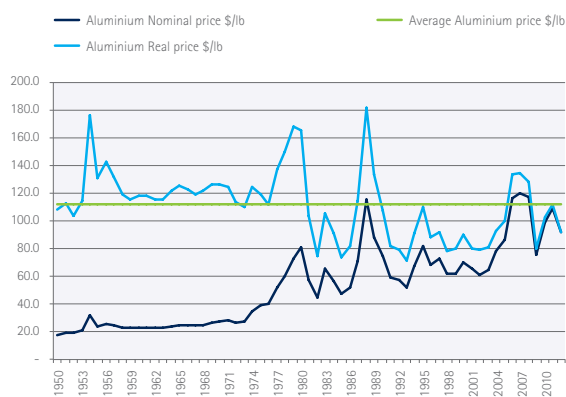
### Iron Ore Price



Source, UBS Mar 2013

Chart 1

### Aluminium Price

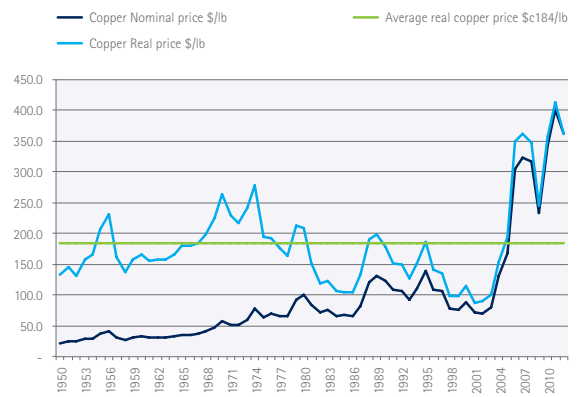


Source, UBS Mar 2013

Chart 2

Let's take this analysis a little further to one of the less abundant elements, namely copper which is around 100 times less abundant than aluminium and iron ore. The current copper price is almost 2 times its average real price average from 1950 (see Chart 3). Arguably, copper prices could have been higher had substitution and thrifting not taken place. In graph 4 we show the real prices of the 3 above mentioned metals, all based to 100 in 1950.

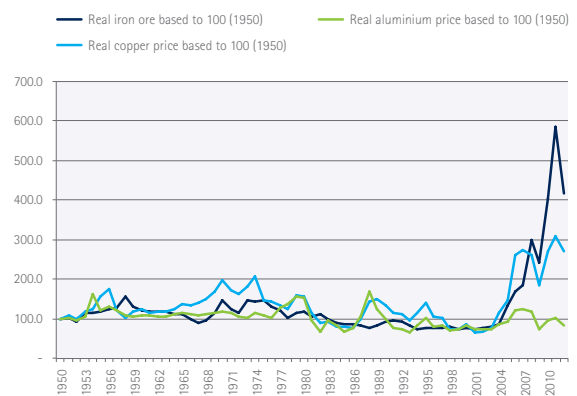
### Copper Price



Source, UBS Mar 2013

Chart 3

### Average Real Prices



Source, UBS Mar 2013

Chart 4

Chart 4 above clearly reflects the relative distortion in real prices in the last 60 years and highlights the extent of the recent distortion that has come about since 2000. The obvious question that the chart highlights is why an abundant metal (iron ore) is trading at a significantly higher relative real price to a much less abundant metal (copper).

In the case of metals, the final product tends to be homogenous, but this is generally not the case for bulk commodities

There are many different factors to look at when answering this question: While scarcity of a mineral is important, there are numerous other geological, mining and processing factors to consider in extracting the mineral from the ground and getting it to the ultimate end-user. These include: the concentration of mineral within a defined area, its depth from surface, its immediate surrounds, ore quality and yield and processing recovery levels. In the case of metals, the final product tends to be homogenous, but this is generally not the case for bulk commodities (i.e. coal, iron ore etc), in part because these are not the end products, requiring further processing; coal to electricity, iron ore to steel.



China typically consumes between 40 to 50% of the world's industrial commodities.

In a topic of this nature it would be remiss not to mention the China demand impact over the past decade. Infrastructure development, coupled with increasing urbanization levels, and to a lesser extent personal consumption growth, have been the key drivers of Chinese economic growth. Today China typically consumes between 40 to 50% of the world's industrial commodities. Chinese economic growth rates going forward will likely be lower as the mix of the economy changes towards consumption, which is typical of a maturing economy. However, the base effect of Chinese commodity consumption will remain significant.

On the supply side, numerous other factors have contributed to relative pricing differentials arising across the industrial metal and bulk commodity universe. Some of these are listed below:

- The insipid commodity cycles of the 90's (low commodity pricing and poor economic returns on new capacity growth) and the fact that most mining corporates underestimated the demand growth that came from China post 2000 led to very little new project capital being spent in a long lead time industry. Bottom line – commodity supply was found wanting as China drove demand.
- In response to crystallising demand growth and high metal prices, miners threw capex at new projects in an attempt to grow production (and market share) and lock-in the (super) profits that were available. Unfortunately this "run on new projects" had other unintended consequences. Shortages in skilled miners significantly impacted labour costs in the mining industry. With contracting and engineering utilization levels running close to full capacity, most capital projects exceeded both scheduled delivery dates and projected capital budgets.
- The "super-profit" cycle encouraged sovereign's to demand higher royalty rates across the globe.

- Infrastructure (rail & ports) required massive investment to meet the growing demand needs of miners to deliver product to China – these bottlenecks also added to commodity pricing pressure.
- Declining mining grades (especially in copper) as a result of little new investment since the early 1990s impacted cost of production and ultimately commodity pricing.
- One final point worth mentioning: China had its own impact on supply too. In the case of aluminium, China threw significant capital (low/zero cost of capital and relatively lower labour rates) at smelting capacity which in essence led to an overbuild in capacity.

**Aluminium and the PGM space is likely to see higher long term pricing going forward.**

The result was a perfect storm for commodity prices. Iron ore is one such example where the big 3 producers (RIO, BHP, Vale) could not meet the significant growth in traded seaborne demand. As we know the earth is not short of iron ore – Australia's backyard is full of it. The massive price spike was largely due to industry's inability to match supply with the sudden and largely unanticipated increase in demand. What we now know is that the big three (and many smaller players) are bringing on significant new capacity from 2013 onwards.

In our view the long term prices of both iron ore and copper are more than likely to be lower than the current price levels (\$135/t and \$c3.50/lb respectively). Aluminium and the PGM space is likely to see higher long term pricing going forward. What is not certain is the timing of these expected longer term pricing adjustments.

# TANTALUM RESOURCES FUND

## Fund Objective

To maximise total returns by investing in a global portfolio of mining and energy equities, commodities, and associated derivatives. The initial focus will largely be in bulk commodities, precious and base metals, with equity exposure on the LSE, JSE, ASX, TSX & NYSE.

## Fund Universe

The universe will broadly include all global mining, steel and energy companies with a bias towards those companies listed on exchanges in South Africa, United Kingdom, Australia, Canada and the United States. Within mining, the commodity focus will be bulks (iron ore, coking coal, manganese and chrome ore), base metals, industrial metals (heavy minerals and ferro alloys) and precious metals (PGM's, gold and silver.) Energy is broadly defined as oil and condensates, thermal coal, natural/shale gas and uranium.

## Expected Return

15-25% pa over a rolling 3 year period.

## Strategy

Long / Short Equity, Resources.

## Mandate Limits

- Maximum single position exposure: 20% long, -10% short;
- Maximum gross exposure: 250%;
- Maximum net exposure: 125% long, -25% short;
- Stop-loss per position or paired trade: 2% of TMV.

## Fund Data

<b>Full Fund Name:</b>	Tantalum Resources Fund en Commandite Partnership Agreement
<b>Domicile:</b>	South Africa
<b>Fund Manager:</b>	Tantalum Capital (Pty) Ltd
<b>Subscriptions:</b>	Monthly
<b>Redemptions:</b>	1 Calendar Month
<b>Base Currency:</b>	ZAR
<b>Prime Broker:</b>	Deutsche Bank AG
<b>Administrator:</b>	Independent Data Services (IDS)
<b>Auditors:</b>	Deloitte & Touche
<b>Minimum Investment:</b>	R5m individual, R25m institutional
<b>Top-up Investment:</b>	R100 000
<b>Annual Management Fee:</b>	1%pa
<b>Annual Performance Fee:</b>	20% with a high water mark and STEFI trigger
<b>Launch Date:</b>	March 2013

## Investment Philosophy

The investment universe comprises 80-100 thoroughly researched equities and associated underlying commodities. The fund will largely focus on the mid to large cap stocks. The maximum single stock exposure is set at 20%, with a 2% stop-loss limit being applied. Within these rules, there is ample scope to add value through strong proprietary research and high conviction. Sector specific and country ratings are also a function of equity selection, but are monitored within the portfolio as a risk precaution, as is the respective liquidity of all investments. Underpinning the investment philosophy is an intra/intersector investment strategy approach.

## Investment Process

Fundamentally driven research of the equities and associated commodities is the cornerstone of the investment process. The investible universe spans a multitude of commodities, with mining operations across all five continents. It is a global universe which is under constant revision and analysis, taking into account global equity valuation and investment cycles. Key to our investment approach is determining long term mid-cycle margins on normalised commodity prices. We do not subscribe to momentum investing. Instead our preference is to identify mispriced assets using fundamental research. The ultimate objective remains to buy cheap "world class" assets and sell expensive "non-world class" assets.

## Fund Managers

### Michael Lawrenson

Investment Manager - Tantalum Capital. Has 19 years' experience in financial services. Prior to joining Tantalum Capital in 2006, he co-managed the Coronation Fund Managers' Resources and Industrial Funds.

### David Pleming

Investment Manager - Tantalum Capital; joined in Nov 2011. Worked for 19 years in stockbroking; voted top South African mining analyst for a decade. Headed up mining research for Macquarie First South, Nedcor and BJM Securities.

## Contact Details

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