

## Minor Metals

The omens that LME's cobalt and molybdenum contracts would be accepted by producers as a basis for their pricing were good, we noted in a previous report shortly before their introduction. This appears to have been the case.

Certainly, we have noted flurries of activity in both contracts. The metals started trading on February 22 with business for three months out to 15 months and cash trading began on May 19. Metal has been delivered onto warrant – there were 152 tonnes of cobalt (64 tonnes on cancelled warrant) and 186 tonnes of molybdenum (none cancelled) at the end of June.

Both metals started well when cash trading opened and we noted much activity in the spreads. Cobalt has been by far the more active contract. In mid-June, we noted a flare-up in nearby tightness and TOM/next traded at a backwardation of \$325 at one point. Cash-to-three-months molybdenum traded at a contango of \$500.

## Cobalt

Pre-LME global prices rebounded from the lows of 2005, driven by strong demand from China. Having reached a high of \$50 per lb (\$110,230 per tonne) in early 2008, prices had slumped to \$15 (\$33,060) by the end of that year. Despite a relatively quiet start to 2009, the market bounced to around \$20 (\$44,092). At the time of writing, the LME three-month price is trading in rather thin conditions in a wide range centred around \$40,000.

Until recently, much of global cobalt supply was derived from the African Copper Belt spanning the Democratic Republic of Congo (DRC) and Zambia but more recently cobalt as a by-product of nickel operations has risen significantly following the development of several nickel laterite projects

Global production increased in 2009, the latest data from the Cobalt Development Institute (CDI) show. The 7.2-percent increase from a year earlier was mainly driven by higher output in non-CDI member countries, most notably China, Japan and India. CDI production fell, mainly reflecting the drop in output at Vale's Sudbury operations in Canada and Xstrata's plant in Norway. Overall, we expect global production to increase this year.

Global Production of Cobalt (tonnes)						
Country	Company	2005	2006	2007	2008	2009
Australia	Murrin Murrin	1750	2096	1884	2018	2350
	BHPB*	1400	1600	1800	1600	1700
Belgium	Umicore	3298	2840	2825	3020	2150
Brazil	Votantim	1136	902	1148	994	1012
Canada	Vale Inco*	1563	1711	2033	2200	1193
	ICCI	3391	3312	3573	3428	3721
China	Various	12700	12700	13245	18239	23138
Finland	OMG	8170	8580	9100	8950	8850
DRC	Gécamines*	600	550	606	300	415

<b>France</b>	Eramet*	280	256	305	311	368
<b>Japan</b>	Sumitomo*	471	920	1084	1071	1332
<b>India</b>	?	1220	1184	980	858	1001
<b>Morocco</b>	CTT*	1613	1405	1591	1711	1600
<b>Norway</b>	Xstrata*	5021	4927	3939	3719	3510
<b>Russia</b>	Norilsk	4748	4759	3587	2502	2352
<b>RSA</b>	?	214	257	307	250	236
<b>Uganda</b>	Kasese	638	674	698	663	673
<b>Zambia</b>	Chambishi	3648	3227	2635	2591	2350
	Mopani	1774	1438	1700	1450	1300
<b>CDI members</b>		29455	29328	29491	28901	25074
<b>Others</b>		25379	24304	24166	27920	34777
<b>Total production</b>		<b>54834</b>	<b>53632</b>	<b>53675</b>	<b>55821</b>	<b>59851</b>
<b>DLA deliveries</b>		1199	294	617	203	180

**Source: CDI** (\* denotes CDI members)

Historically, the superalloys sector has been the major cobalt end-user; while demand from this application has risen since the reversals of the early 2000s, it has now been overtaken by demand from the rechargeable battery market. Demand for superalloys is driven by growth from commercial and military aircraft construction and demand for gas turbines. Although suffering a temporary hiatus, underlying demand from this sector will remain a positive influence on cobalt demand. Further increases are expected over the next decade in demand from the battery sector, particularly for portable devices and electric and hybrid electric vehicles.