

Fortis Asian metals monthly

March 2008



Gold, silver, aluminium,
copper, lead, zinc, steel.

VM Group

Tel. +44 20 7487 3600
info@vmgroup.co.uk

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Strategic view

Analysts

Gary Mead

Tel: +44 20 7487 3600

Email: gary@vmgroup.co.uk

Introduction

Plenty of negative data from the US economy has been elbowed aside so far this year in the rush of investors to plunge into just about every commodity, base and precious metals included. Partly this is a changed perception as to what today, in these uncertain times, constitutes a safe haven, while to some extent it is simply a reflection of the very weak US dollar making a host of dollar-denominated assets much cheaper. Meanwhile in China the authorities are faced with strongly rising inflation, largely a result of soaring food prices, and an economy where consumer spending remains very strong. New car sales are still roaring ahead in China, up by almost 22% in 2007, year-on-year, to 6.3m units, according to the China Association of Automobile Manufacturers. With inflation at an 11-year high in February of an annualised 8.7%, the authorities are likely to step up their policy of tighter monetary control, and this will inhibit demand growth for base metals.

Gold

February saw a few price corrections but in the context of a US economy sliding into recession and further dollar weakness, it is not surprising – given the preceding bullish momentum – that on Nymex the futures' price has now broken through \$1,000/oz; if inflation begins to get out of hand there may be a headlong rush into gold later this year.

Silver

Silver finally began to catch up with gold in February, rising to a 27-year peak and crossing the \$20/oz barrier. The gold/silver ratio has thus begun to come back more into line with the historic average, which for most of the last century was 1:47 – one ounce of gold would purchase 47 of silver.

Aluminium

Aluminium prices gained ground in February and climbed above \$3,000/t on anticipation of a medium-term shortfall in the supply of the metal – not least because China has emerged as a net importer. More bullish news is likely, as the costs of production are rising.

Copper

Copper has got beyond itself once more. Are the underlying supply-demand conditions really as attractive as they were two years ago, when there was talk of copper at \$10,000/t? No – but investors are currently impervious to logic. This situation might persist a little longer before harsh reality (tumbling US demand for copper) spoils the party.

Lead

Lead prices on the London Metal Exchange have so far this year (to early March) risen by 30%; yet the supply-demand outlook has not noticeably deteriorated. As with some other base metals, the degree to which this metal is being driven by investor enthusiasm is, in our opinion, beginning to get out of line with the true underlying physical conditions of the market.

Zinc

Zinc prices held their ground in February, although the supply-demand fundamentals remain very poor for the next three years, with strongly rising supply running into what is likely to be much slower demand growth.

Steel

There was a softly-softly start to the LME's latest addition to its contracts' portfolio, and, with little trading data to go on, it is too soon to make any predictions for the exchange's new steel futures. The steel world itself is seeing some very strong price rises and – as yet – little gloom from a US-led recession.

Forecasts

Price forecasts

		End-February	1-month	2-month	3-month	12-month
Gold	\$ per oz	971.50	950-1,100	980-1,200 (r)	1,000-1,400 (r)	1,500 (r)
Silver	\$ per oz	19.62	18-22 (r)	19-23 (r)	20-25 (r)	27 (r)
Aluminium (3-month)	\$ per tonne	3,121	3,100-3,300 (r)	3,100-3,300 (r)	3,100-3,300 (r)	3,500 (r)
Copper (3-month)	\$ per tonne	8,460	7,800-8,300	7,500-8,000 (r)	7,500 (r)	6,000
Lead (3-month)	\$ per tonne	3,381	2,900-3,200	>3,000 (r)	>3,000 (r)	>3,000 (r)
Zinc (3-month)	\$ per tonne	2,745	2,500-2,800	2,400 (r)	2,400 (r)	2,000
		Average 2009	Average 2010	Average 2011	Average 2012	Average 2013
Gold	\$ per oz	1,000 (r)	800 (r)	650 (r)	600 (r)	500
Silver	\$ per oz	23 (r)	15 (r)	13 (r)	13 (r)	10 (r)
Aluminium (3-month)	\$ per tonne	4,000	3,500	3,500	3,000	2,500
Copper (3-month)	\$ per tonne	6,000 (r)	5,000	5,000	5,000	4,000
Lead (3-month)	\$ per tonne	2,500 (r)	2,000 (r)	1,300	1,200	1,000
Zinc (3-month)	\$ per tonne	2,200	2,200	2,500	2,500	2,500

Source: VM Group

(r) = revised from last month

Market Update

Prices and stock levels

Prices	10 Mar	Most recent price	Average over past 12 M	High	Low	Price 1 week ago	WoW (%)	Price 1 month ago	MoM (%)	Price 12 month ago	YoY (%)	Average 2007	Average 2006
Gold	\$/oz	972.5	747.4	988.5	642.1	971.5	0.1	916.3	6	647.75	50	696.5	604.0
Silver	\$/oz	20.22	14.11	20.80	11.67	19.62	3.1	16.95	19	12.97	56	13.38	11.57
Aluminium	\$/tonne	3,211	2,656	3,212	2,376	3,121	2.9	2,709	19	2,735	17	2,662	2,593
Copper	\$/tonne	8,560	7,440	8,810	6,175	8,460	1.2	7,560	13	6,175	39	7,096	6,671
Lead	\$/tonne	3,140	2,784	3,880	1,846	3,381	(7.1)	2,885	9	1,846	70	2,558	1,282
Zinc	\$/tonne	2,670	3,037	4,106	2,201	2,745	(2.7)	2,361	13	3,265	(18)	3,243	3,252
LME Stocks	10 Mar	Most recent stocks	Average over past 12 M	High	Low	Stocks 1 week ago	WoW (%)	Stocks 1 month ago	MoM (%)	Stocks 12 month ago	YoY (%)	Average 2007	Average 2006
Aluminium	Tonnes	951,225	880,889	957,900	797,700	948,225	0.3	953,300	0	798,275	19	842,573	723,253
Copper	Tonnes	130,250	151,518	201,000	97,550	138,150	(5.7)	164,125	(21)	199,725	(35)	158,899	119,593
Lead	Tonnes	46,150	39,221	49,325	20,850	46,175	(0.1)	49,050	(6)	30,900	49	37,218	76,115
Zinc	Tonnes	123,900	84,293	123,925	58,100	122,500	1.1	116,100	7	94,125	32	81,377	218,452

Source: VM Group

Analysis

Analysts

Gary Mead

Tel: +44 20 7487 3600

Email: gary@vmgroup.co.uk

Matthew Turner

Tel: +44 20 7487 3600

Email: matthew@vmgroup.co.uk

The IMF and gold

The debate over whether or not the International Monetary Fund should sell some of its 3,217t of gold, to finance its way out of budget problems, sharpened in February. First the G7 countries (the US, Japan, Germany, UK, France, Italy and Canada) approved the idea, with Italy's economy minister, Tommaso Padoa-Schioppa, the outgoing head of the IMF's Steering Committee, saying that details would be finalized in April. Subsequently, the US Administration's under secretary for international affairs, David H. McCormick, said (on 25th February) that the White House also gave its backing to the idea. More important, he said that the Treasury had held "a number of quiet discussions on the Hill [Capitol Hill, seat of the US Congress], and I have some confidence that there will be some support for this."

Leading official sector gold holders and their % reserves held in gold

Country	Gold (Moz)	Gold (Tonnes)	Gold value (SDRm)	Forex (SDRm)	% gold of gold/forex reserves
All countries	1,286	29,992	509,132	4,055,850	13
Euro Area	354	11,001	186,747	136,236	58
United States	261	8,134	138,071	37,668	79
Germany	110	3,417	58,012	28,050	67
IMF	103	3,217	54,616	n/a	n/a
France	84	2,603	44,189	28,926	60
Italy	79	2,452	41,622	17,962	70
Switzerland	37	1,145	19,441	28,144	41
Japan	25	765	12,990	602,933	2
Netherlands	20	621	10,549	6,499	62
ECB	19	605	10,265	40,637	25
China	19	600	10,185	968,379	1

Source: VM Group from IMF and ECB data

This tentative indication that the US Congress will not oppose IMF gold sales is crucial, and leads us to believe that such sales are now a *fait accompli*. There is clearly a degree of high-level coordination about this issue, and this is a new factor in the whole debate, which has been ongoing since at least 1999. Back then, a proposal for IMF gold sales to fund debt relief for Heavily Indebted Poor Countries (HIPC) was rejected, when it became clear it would not get US Congressional approval. The US Congress effectively enjoys a veto over such sales, as Congressional authority is required for the US to vote for gold sales, and the US's voting strength within the IMF is enough to block a sale. Instead, funds were then were freed up by some adroit financial accounting which revalued the IMF's gold.

The latest proposals, to sell gold to fund the IMF itself, stem from a commission led by Sir Andrew Crockett, formerly general manager at the Bank for International Settlements, and comprising other central banking luminaries such as former US Federal Reserve chairman Alan Greenspan; the head of the European Central Bank, Jean-Claude Trichet; South African Reserve Bank Governor Tito Mboweni; and the Governor of the Bank of China, Zhou Xiaochuan. This commission, which sat during 2006-2007, was given the job of finding a way to plug a looming hole in the IMF's budget – perhaps as much as \$400m annually – caused by the reduction of its main income-earning asset, loans to governments, which fell from \$83bn in 1999 to \$24bn in 2006. The Crockett Commission wrote a report that laid out the idea of gold sales.¹

¹ <http://www.imf.org/external/np/oth/2007/013107.pdf>

What are the long-term implications for gold?

There are six important questions for the gold market arising from this.

- How much gold will the IMF sell?
- Can the US Administration get the necessary Congressional agreement?
- If so, when will sales begin?
- What agency will conduct them?
- What will such sales do for the price?
- Will such sales influence gold policies of other big national holders?

The answer to the first question is that the precise amount of the proposed sale is yet to be decided. The Crockett Commission suggested 400t, which was the amount and the actual gold used in the 1999 revaluation. The Commission based this quantity on a gold price of \$500/oz, which would have raised \$6.4bn. Invested at a 3% real return (the rate assumed by the Crockett Commission) would yield around \$200m/year. At the time, the use of a price of \$500/oz was conservative. Clearly today such a sale would be likely to yield far more, even allowing for weaker prices due to the sale. Assuming the IMF could get \$850/oz, this would yield \$10.9bn, and at a 3% real return allow for an income of \$327m/year. This would be more than enough to solve the budgetary issue on current estimates, particularly if the IMF's new managing director, Dominique Strauss-Kahn, succeeds in his drive for budget cuts. So it is possible that the required sales of gold would be smaller than 400t. However, if the political difficulty of making any sale can be overcome, we suspect the IMF and G7 would prefer to go the whole hog and sell the full 400t.

The main political obstacle against such sales will come from the US Congress.² This is not because Congress is particularly wedded to the IMF retaining all its gold reserves, but rather because there is a strong bi-partisan consensus within Congress that the IMF is a bloated bureaucracy whose purpose in life is no longer obvious and is certainly failing to meet US interests. To sell gold, the IMF needs votes from 85% of members. The US has 17% of the votes, and as such can exercise a veto. In 1999, as noted above, Congressional opposition was enough to scupper gold sales. Ironically, it was not then clear that the Administration needed Congressional approval. However, due to opposition to the plan in 1999, Congress passed laws in the 2000 Consolidated Appropriations Act, which stipulated that Congressional approval was indeed necessary. Will that approval be granted? Strauss-Kahn has proposed cost reductions for the IMF of \$100m, by losing 380 staff, a reduction of 15% in its head count, which should appease some of the Fund's critics. But other issues remain for Congress, particularly that of the IMF's role in a world with much larger private flows of capital, and the rise of sovereign wealth funds that have vastly higher resources than the Fund.

As for how the sale should be carried out, Sir Andrew Crockett noted in an interview that the Commission believes gold sales should be conducted in such a way as to not affect the wider market. He has spoken of imposing a "few safeguards", including limiting the volume of gold sold to that which was sold and repurchased in 1999; and fitting any sales within "the existing sales programmes of central banks, mainly European ones, so that they won't result in any additional gold sales." This last point is quite important. If Crockett's recommendations are followed – and it would be astonishing if they were not, given that John Lipsky, the senior deputy managing director of the IMF, said on 11th March that the IMF has "an agreement in principle" to fit IMF gold sales into a "pre-existing central bank umbrella" – then this must rely on the assumption that Germany is not going to sell any of the 500t-600t which (it is believed) it was allocated in the current Central Bank Gold Agreement (CBGA), which permits its signatories to sell a collective maximum 500t/year from their reserves. To the extent that the market had got used to no German sales and had

² For a good summary of the issues see <http://fpc.state.gov/documents/organization/93480.pdf>

not factored in IMF sales, there will therefore be a slight negative impact, although given the current buoyancy of the market it would be hard to see it as decisive.

The timing of sales will depend mainly on the Congressional veto. The current CBGA has just over 18 months to run, and could accommodate 400t of gold sales in one or both years, given our knowledge of current sales plans. The IMF hopes to finalise its plans by April. If there is any Congressional opposition it seems highly unlikely that sales could start then. It is more likely that the sales of gold could take place perhaps by Q3 this year, when the final year of the current CBGA begins, although even that time estimate seems a tall order for the Congressional timetable in an election year.

As for questions five and six, we believe the gold price is no longer as responsive to official sector disposals – either outright sales or announcements of sales' intentions – as it was at the start of this new century. The best demonstration of this changed environment was the response of the gold price to McCormick's veiled acknowledgement that the US Congress might be willing to let the IMF sell some gold – the price dropped a negligible \$13/oz to \$934/oz. This was a very muted reaction and shows just how far circumstances have changed; 10 years ago such a declaration would have knocked the gold price for six. The IMF sale of 400t will almost certainly happen under the auspices of the CBGA and thus be shrugged off by the gold market; it might have been slightly different if the proposed IMF gold sale was to be in addition to the CBGA sales programme.

Interestingly, the fact that the IMF sale can be accommodated within the CBGA suggests that there is a diminished appetite for gold sales among those national central banks in Europe who have become established sellers or might have started a major sales programme, such as Germany. In the context of today's global macro-economic uncertainty, major currency weakness (except for the euro), and resurging inflationary fears, little wonder that the gold price is so high, or that central bank sales are slowing.

Fly in the ointment

There is just one fly in the ointment concerning this scheme to sell IMF gold to get itself out of a budgetary hole. It centres on China, and allegations by US Treasury and other finance officials that its currency has become very overvalued, and that this poses a threat to international financial stability. Many US industrialists have been lobbying their Congressional representatives with demands to pressure China into letting its currency appreciate more quickly against the dollar. They regard the 'undervalued' Yuan as leading to cheap imports from China, which in turn, they argue, hurts US companies and jobs. China's authorities have their own agenda for currency flexibility, however, at a much more cautious pace than the US desires. Nevertheless, the Yuan has appreciated against the dollar by more than 15% since 2005.

What the US Treasury wants is for the IMF to press China to relax still further its slow-moving peg to the US dollar, but the IMF is reluctant to do that, even though new currency monitoring rules allow it to identify currency misalignment and make recommendations for realignment. It is conceivable that there will be some tough negotiating between the IMF management and the US Administration over the months ahead; the US Congress is likely to insist that the *quid pro quo* for its support for IMF gold sales is that the Fund makes some representation to China about its rate of exchange. Yet if the Fund bows to that kind of pressure, what damage might that do to its claim to be a supra-national and objective body?

Focus

Analysts

Gary Mead

Tel: +44 20 7487 3600

Email: gary@vmgroup.co.uk

Matthew Turner

Tel: +44 20 7487 3600

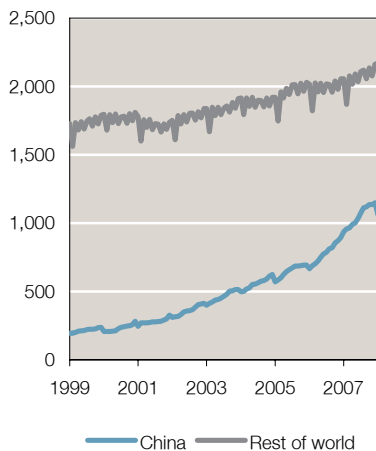
Email: matthew@vmgroup.co.uk

China's aluminium producers feel the pressure

China has emerged as a net importer of primary aluminium, that is, unwrought metal. Given that it is the world's biggest national producer of aluminium, this might be construed as being very supportive of prices, going forward. The picture is more complicated however, as global aluminium demand is growing much more slowly than in China and may even slip into negative territory this year in more industrially advanced regions, if the US economic slowdown proves lengthy and spills over into other markets. Nevertheless, there are various factors supporting the notion that the world will have to get used to China being a net importer of aluminium for some time to come – and this should see aluminium prices average much higher this year than the past two years.

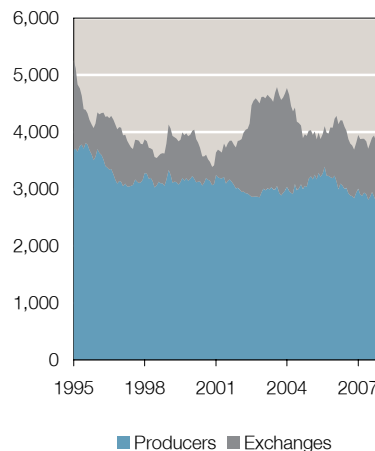
At the end of February it became firmly clear that China was now a net importer of aluminium. According to data from China's General Administration of Customs, China's exports of primary (unwrought metal) aluminium in January and February totalled 92,004t, 10.6% lower than the same two-month period in 2007, while its imports of primary aluminium, aluminium alloy and aluminium semis amounted to 158,158t, 6.3% higher, year-on-year. This is beginning to represent a new trend, one that might be quite supportive of higher prices for the metal, all else being equal. The last time China was a net importer of primary aluminium was back in 2000.

Aluminium production (000 tonnes a month)



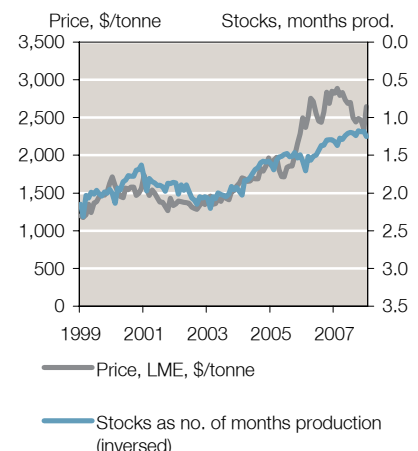
Source: IAI

Aluminium stocks (000 tonnes)



Source: VM Group from Reuters Ecwin

Stocks as a number of months production



Source: VM Group from Reuters Ecwin

The data for January and February may be slightly distorted, of course – the country's aluminium producers, along with many other sectors of the economy, both industrial and agricultural, were hit badly by the unusually severe late winter snowstorms. In Guizhou province, Chalco (Aluminium Corporation of China, the country's biggest single aluminium producer) shut two of its subsidiaries on 23rd January; the province as a whole saw about 700,000t – around 90% of its total aluminium production capacity – shut down, as the country's hard-pressed power supply network collapsed under the arduous weather conditions, which prevented coal supplies from being shipped to power stations.

Because China's aluminium smelting industry is highly fragmented, with many small-scale plants dotted around the country, it's still too early to tell precisely how much production will have been lost this year as a consequence of the weather; estimates currently vary widely, from 200,000t to 700,000t, against a likely total output this year (prior to the disruption) of some 14.5 Mt. Chalco's production in January fell 1.4% compared to the previous month, to 863,000t.

According to China's Nonferrous Metals Industry Association, China's total primary aluminium production in January was 1.06 Mt, 87,000t less than in December 2007, and representing an annualised growth rate of almost 11%, against more than 30% throughout 2007. Whether this abrupt slowdown will be sustained across the whole of 2008 is currently an open question. If it is, then we could see China's primary aluminium imports rise even more sharply in the months ahead.

Electricity gets more expensive

The January/February power crisis will not be of great significance longer-term, in that it appears no lasting damage was done to China's aluminium production capacity. However, it did represent a wake-up call for China's political authorities, who have for some years been walking a tightrope between ensuring that the country's industrial sector (very dependent on aluminium) develops rapidly enough to satisfy consumer demand and provide sufficient infrastructure growth, and keeping in check the propensity of heavy users of electricity (base metals' producers especially) from excessive electricity consumption, which contributes to socially highly disruptive power shortages. The snowstorms of late January will have had one important consequence as far as industrial policy goes – it has tightened Beijing's determination to bring base metals' production more into line with domestic demand.

No-where will this be more felt than in China's aluminium production, the rate of growth of which has been staggering, rising eight-fold between 1990-2005. This pace of expansion has slowed as a result of the bad weather in January, but other factors – not least the rising cost of electricity – are more likely to drag down the rate of aluminium production capacity growth. For several years China's aluminium smelters have benefited from preferential power supply tariffs; but now they face paying electricity bills more in line with the true costs of supplying that power. In late February the country's National Development and Reform Commission, (NDRC) announced that the previous preferential electricity price tariffs for aluminium smelters were to be scrapped. It is not easy to come to an overall view of how much extra aluminium producers will have to pay for their electricity, as different provinces have flexibility over own tariffs (and are notoriously prone to ignoring central government decrees when it suits them), but electricity price rises of between 12.75% and more than 24% are now being faced by some of the main aluminium producers.

Production of a tonne of aluminium in China consumes about 14,500 kWh (kilowatt hours); the removal of the preferential prices for aluminium smelters is likely to increase producer costs by about Yuan 145 (\$20)/tonne. These additional costs, in themselves, are therefore unlikely to put any producer out of business or see the suspension of any currently existing capacity, but, given that electricity accounts for about 35% of production costs, they will help slow new capacity expansion. The average smelter cost for China's aluminium producers prior to the removal of these preferential tariffs was about \$2,000/t, about \$300/t lower than their European competitors.

The Chinese authorities are determined to rein-in aluminium production and the removal of preferential power tariffs is but one plank in a whole raft of measures designed to do just that. Back in November 2006 the authorities imposed a 15% export tax on exports of primary (unwrought) aluminium, which led to a 45% drop in China's exports of primary metal in 2007, to 263,451t. The aluminium industry, however, showed itself to be nimble-footed and in response to this higher export cost simply switched to exporting much more aluminium products, which were not subject to the export tax. The authorities in July 2007 responded by imposing a 15% export tax on exports of aluminium rods and bars, matching the levy on exports of primary metal, and removed tax rebates for such products. However, exports of aluminium tubes still qualify for a 13% export tax rebate, but this looks like it might be about to change; in recent weeks several Chinese port authorities have declined to grant export tax rebates to low value-added

aluminium tubes, arguing that they are in fact thinly disguised exports of primary metal. If the tax rebates are removed from tubes that might finally close the door for China's aluminium producers keen on getting their relatively cheaper-to-produce metal onto export markets. Some estimates suggest that if the rebate on exported aluminium tubes was ended, that could result in as much as 40,000t/month fewer aluminium product exports from China.

South Africa has its power problems, too

The world's eighth-biggest aluminium producer, South Africa, also has its power problems and, like China's, they are systemic, resulting from long-term under-investment and a failure to anticipate the rapidity with which demand for electricity would grow. On 25th January this year South Africa's state-run electricity utility, Eskom, abruptly announced it was unable to guarantee security of supply. This saw the immediate closure of most of the country's mining industry, which halted underground operations on safety grounds – the mines could no longer be sure they would be able to get workers back up from the very deep underground shafts.

This event has helped push platinum and gold prices this year to unprecedented levels; South Africa accounts for about 70% of global platinum supply and slightly less than 10% of gold. It has also cast a shadow over the country's aluminium sector. Eskom has restored power by to 95% of normal levels, but the problems it faces in meeting rapidly growing demand for electricity will not be overcome before 2012 (at the earliest). Moreover, there could be a repetition of the January collapse of the national grid in the next few months; peak electricity demand in South Africa is still to happen, during the winter months of June-August. BHP Billiton said on 11th March it would cut by almost 50% its production at its Bayside smelter in South Africa, while output from its Hillside operation (also in South Africa) and its Mozal plant in Mozambique would be 90% of normal, with total annual lost production from all three smelters of 120,000t.

Estimating prices – trickier than ever

Rio Tinto Alcan's CEO, Richard Evans, said at the end of February that in his view another shock could see aluminium prices rise to \$3,500/t "or even higher". For once, this was not simply a case of a base metal producer talking his own book. Evans thinks it reasonably probable that aluminium could move from surplus to deficit during the course of 2008. His company has a close interest in what happens to South Africa's power supply – it has long-standing plans to build a new smelter at Richards Bay, but this project, called Coega, which was due to come into action in 2010, now appears to be in suspended animation until Rio Tinto Alcan gets some very strong guarantees from Eskom and the South African government that sufficient power supply will be available for the very long-term – and such guarantees are almost impossible to give, right now.

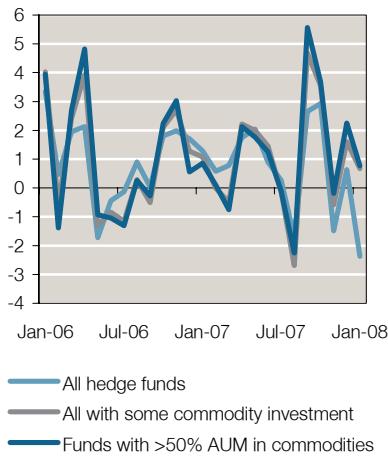
Yet Evans's view that the global aluminium market could be moving into deficit is surely contingent on demand holding up in key mature economies such as those of North America and the EU, and right now this must be questionable. Last year the global market was roughly in a supply-demand balance at some 38 Mt. This year a slowing US economy may see its consumption of aluminium fall sharply, creating space for a potential global surplus of perhaps as much as 1 Mt. What happens to the price hinges on the degree to which any economic recession in the US and other industrialised economies will see negative demand growth for aluminium from those economies, and the extent to which China's own rate of aluminium demand will continue growing.

Globally, production growth may grow by more than 10% this year to more than 40 Mt, which, if western world economies slow, should mean continued ample supply, even if consumption grew by 5% over that of 2007, to 39.9 Mt. Aluminium stocks on the London Metal Exchange, are about 950,000t currently, while producer-held stocks may be as much as 1.5 Mt; together this provides a

comfort level that should discourage any immediate rash new wave of speculative investment. Moreover, China currently has under construction more than 2.3 Mt new capacity of aluminium products, such as plates and foil; stemming the tide of this new capacity will not be easy. Estimating the price for the rest of 2008 is thus extremely difficult, given the uncertainties deriving from any likely downturn in demand in the wake of the US-driven economic slowdown. But, given the combination of China's power problems, the determination of Beijing to curtail energy-costly base metal production growth, and the country's continual strong aluminium demand growth, it is probable that China's aluminium import needs will continue growing. This may not in itself be enough to boost prices through \$4,000/t in 2008 (although 2009 may be a different matter) – but it could be sufficient to stop them slipping below \$3,000/t for the rest of this year.

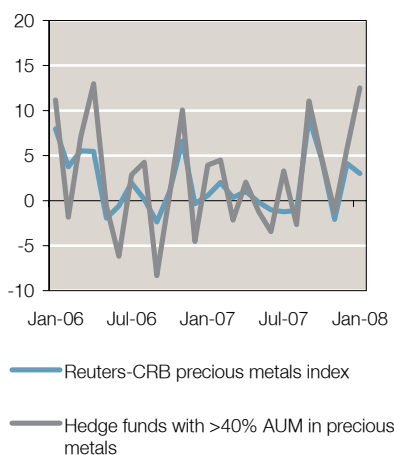
Hedge funds activity

Hedge fund returns, monthly (%)



Source: VM Group from Barclay Hedge Fund Database

Precious metals hedge funds and Reuters-CRB precious metals index, monthly returns



Source: VM Group

News

- Mar 9th: EPFR Global, the US-based company which tracks investment fund flows, said commodity funds it monitors since the start of 2008 and up to 5th March had gained \$3.6bn, compared to \$495m during the same period of 2006, with returns of 18%.
- Feb 28th: Congressional investigators have declared that hedge funds, despite improvements in their management and disclosure practices, pose a “systemic risk” to the economy. No new legislation was proposed as an outcome of the findings, although hedge funds will likely be under greater scrutiny than previously.
- Feb 22nd: UK private investors will be allowed to invest in hedge funds directly, the Financial Services Authority announced. Consultations on the new proposals will be ongoing until 22nd May and should come into force by April 2009.

Analysis

- Mixed performance in January

An analysis of the Barclay hedge fund database, our preferred source of industry-wide data concerning hedge funds, helps shed some light on this secretive industry. The number of hedge funds that invest in commodities varies from month-to-month, but currently we estimate there are about one thousand funds with some commodity investment. The vast majority of those funds, perhaps 80%, invest in all commodity categories, including energy, softs and metals. Far fewer, in February 2008 just 186, invest only in a single commodity. Of these, 128 are pure energy funds, whilst 31 are metals funds and 27 softs.

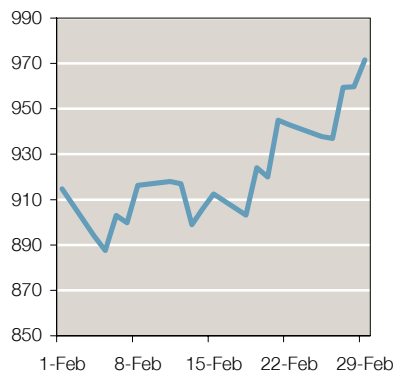
In terms of AUM, the hedge fund investment in commodities, estimated at about \$55bn, splits like this: \$14.6bn is in soft commodities, of which grains (\$6.3bn) are the largest component; next biggest is energy, with \$14.4bn; that is followed by general commodity investment, with \$11bn; next is base metals, with \$7bn, precious metals \$5.6bn, and undefined metals, \$1.7bn.

How are these funds performing? Overall, all the hedge funds surveyed had a poor January, losing 2.4% on average (unweighted). Hedge funds with some commodity exposure did better, returning a gain of 0.7%, whilst those with more than 50% of their AUM in commodities did slightly better, with a 0.8% gain. This translates into a 31% return since the beginning of 2006 for hedge funds with more than 50% of their AUM in commodities, compared with 29% for hedge funds with any commodities’ exposure and 22% for those with none (see the first chart).

Focusing on the hedge funds that have more than 40% of their AUM in precious metal-related investments shows that they returned 3% in January 2008, far more than those focused on other commodities. This can be explained by trends in the precious metals market – the second chart shows the returns for those hedge funds compared with the Reuters-CRB precious metals index. Although the hedge fund returns are less volatile, as you might expect given their mandate and as they invest in other financial products as well as precious metals, the trends are very similar.

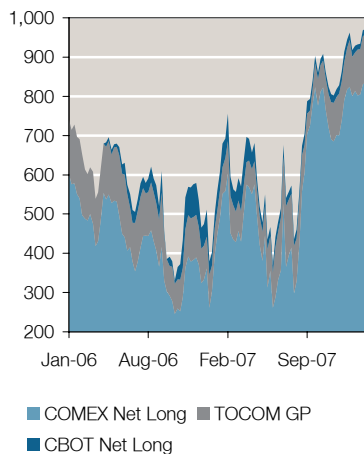
Gold

Gold price (\$/oz)



Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: VM Group

News

- Feb 27th: Global gold dehedging fell by 2.3 Moz in Q4 2007, the 23rd consecutive quarterly decline, with total dehedging last year at 13.5 Moz. The global hedge book is now less than 27 Moz. We expect dehedging this year to slow to a total of 6-8 Moz.
- Feb 25th: Gold Fields said it may have to cut 6,900 jobs, or 13% of its South African workforce, because of the country's current power shortages.

Analysis

- \$1,000 topples – but sharp swings ahead

Gold hit a new high for the London afternoon fix of 3rd March of \$988.50/oz and the futures' price on Nymex finally nudged through \$1,000/oz on 13th March. At times during February it looked as if the 'correction' that much of the market is expecting was beginning, but on each occasion the price fall was checked and gold's ascent continued after only a few days, testament to the underlying strength in the market. Nevertheless, now that the \$1,000/oz mark has crumbled, price gyrations may become more common, as investors become increasingly prone to shaving profits wherever possible. The gold market is now firmly in the hands of investors, with their sentiment (and the price) being driven by global macro-economic trends. Every bit of bad US economic data boosts gold in two ways – first because it reinforces the return of its role as a 'safe-haven' asset, and second because the dollar falls on expectations of further Federal Reserve rate cuts. It is no accident that gold's fresh high coincided with the US dollar falling to its lowest level against other major currencies since the Federal Reserve's index began in 1973. The largest one-day fall in the gold price so far this year came on 25th February when David McCormick, US undersecretary for international affairs, said that the Administration backed the IMF's plans to sell as much as 13.0 Moz of its 103.4 Moz of gold reserves and that he thought Congress – long seen by the gold market as opposed to IMF gold sales – would back it too. Physical demand at these prices is dismal. Indian imports in February were 10.2t, following 5t in January. This compares to 110t in the first two months of 2007. Indian imports have been weak at times of high price volatility often over this bull market, but if demand does not return when the price stabilises it would suggest we are nearing the top of what the market can bear.

Outlook

For the gold price *not* to break through \$1,000/oz in March, some clear signs are needed that US fiscal measures to avert recession are working. Of that there is zero hope – such measures will take months to have any impact. Looking further ahead, once \$1,000/oz topples the forward price slope is likely to get vertical very quickly. However, in these uncharted waters we must expect more large one-day swings. Short-term London daily pm fix: \$950/oz-\$1,100/oz.

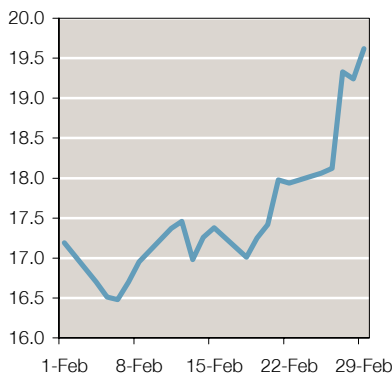
Market data (February unless stated)

Prices	US\$/oz:	Yuan/kg	Yen/gr	ETF inv.	Holdings end-month	Monthly change	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	920	211,980	3,172	US (2)	699.4	16.0	Average	0.21	0.28	0.46	0.45	1-month:	26.40
High	960	220,321	3,282	UK (2)	133.2	9.6	High	0.27	0.40	0.58	0.58	3-month:	27.40
Low	888	204,987	3,047	Aus	19.0	2.4	Low	0.17	0.17	0.33	0.36	6-month:	27.65
				S.Africa	27.0	0.7						12-month:	27.75
				Swiss	31.1	1.0						24-month:	26.40
				India (4)	4.2	0.1							
				German	4.8	1.3							
				Turkish	1.3	0.0							

Source: Prices: London Bullion Market Association, Others: Virtual Metals. Indian ETF holdings calculated from rupee amounts and thus are approximations

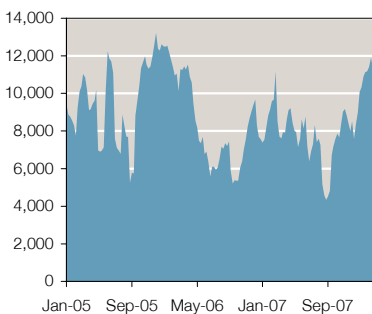
Silver

Silver price (\$/oz)



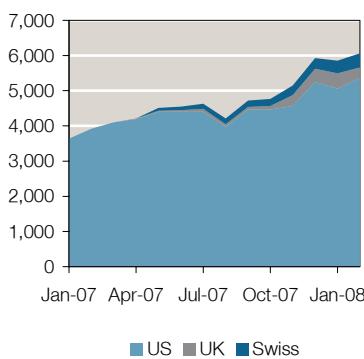
Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: Comex

Silver ETF offtake



Source: VM Group from company data

News

- March 4th: Ecu Silver, the Toronto-listed mining company, expects its Velardeña mill at its Mexican operations to be processing 300t/day in Q2 2008, against 200t previously.
- Feb 29th: Mexico, the world's second-biggest silver producer, saw its output fall 5.9% in December against the previous month, to just over 193t.
- Feb 29th: Apex Silver, which operates the vast San Cristobal deposit in Bolivia, reported net income of \$11.6m for 2007, against a net loss of \$513.5m in 2006, thus notching up its first annual profit in a decade.
- Feb 29th: Coeur d'Alene, the US-based silver producer, said Q4 2007 silver sales fell 8% to 3.04 Moz; it estimates 2008 production will rise 39%, to 16 Moz.
- Feb 29th: Peru's Buenaventura expects its 2008 output will rise slightly, year-on-year, to about 14 Moz.
- Feb 22nd: Pan American Silver said its Q4 2007 production rose 63% to 5.1 Moz.

Analysis

- Silver catches up with gold

Silver seriously lagged behind gold's rise much of last year but has now begun to catch up – in a general flood of investor enthusiasm all boats will rise and silver is doing just that. In February the silver price rose by 17%, ending the month at \$19.62/oz. By 4th March it had climbed to a 27-year high, fixing in London that day at \$20.32/oz. Like gold it has benefited from the concern about the US economy and is being boosted as investors, looking for a safe haven from inflation concerns and the withering dollar, pile into this cheap and often underestimated alternative to its more lustrous cousin, gold.

As with gold, however, this is a rally based on strong investor rather than physical demand and some very big physical end-users are beginning to feel the pinch as a result of the higher price. Belgium's Agfa-Gevaert, which is Europe's biggest maker of health-care imaging systems and uses 800t of silver a year, reported on 27th February an unexpectedly large Q4 2007 loss of €27m, which it attributed in part to the strong silver price, as well as rising prices for aluminium. The spot price for silver in Q4 2007 averaged 13% more than the same quarter of 2006; this is hurting industrial end-users and will accelerate the demise of consumer mass market film photography.

Outlook

The same fundamental factors as those of gold are underpinning silver's rise – the bad shape of the US economy and the dollar, and the need of investors to find some safer havens to ride out the storms ahead. The silver/gold ratio has been recovering swiftly and by the end of February it was 49.5 (the number of silver ounces that would buy one ounce of gold). We would expect more healthy gains in March as silver looks toward \$25/oz. Short-term London daily fix: \$18/oz-\$22/oz.

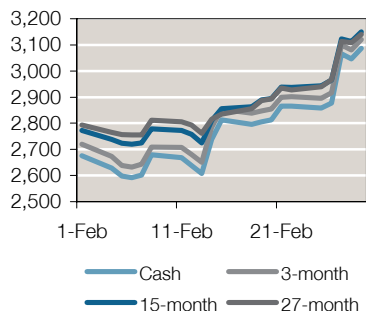
Market data (February unless stated)

Prices	\$/oz	€/oz	£/oz		Imports (kg)	Exports (kg)	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	17.467	11.84	8.89	USA (Dec)	310,703	201,672	Average	0.00	(0.01)	0.25	0.37	1-month	41.00
High	19.330	12.78	9.75	Japan (Dec)	391,786	826,505	High	0.05	0.02	0.36	0.56	3-month	39.50
Low	16.480	11.26	8.40	China (Dec)	473,541	343,608	Low	(0.03)	(0.04)	0.13	0.13	6-month	38.00
												12-month	37.00

Source: Prices: London Bullion Market Association, Others: VM Group.

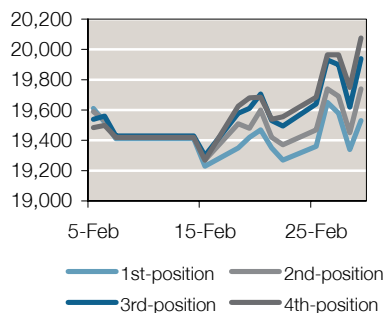
Aluminium

Aluminium price (\$/tonne)



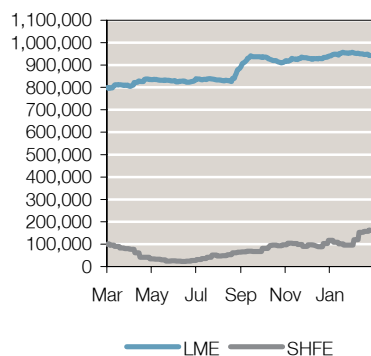
Source: London Metal Exchange

Aluminium price, SHFE (yuan/tonne)



Source: Reuters Ecowin

Aluminium stocks (tonnes)



Source: London Metal Exchange

News

- Feb 28th: Japanese aluminium products' shipments fell for the fifth successive month in January, down 2.6% from a year earlier at 176,301t, according to the Japan Aluminium Association.
- Feb 23rd: Oman's Sohar Aluminium smelter project, with annual capacity of 350,000t, is expected to start up in June. Rio Tinto has a 25% stake in the project.
- Feb 22nd: India's aluminium production capacity is expected to rise by 700,000t/year to as much as 2 Mt/year by 2020, according to the country's mining ministry.
- Feb 22nd: Russia's United Company Rusal, the world's biggest aluminium producer, has restarted Nigeria's sole smelter, which had been idle since 2000. It plans to modernise the Alscop smelter in southeast Nigeria so that it can reach full capacity of 197,000t/year in 2010.
- Feb 22nd: Total world primary aluminium production, including China, was 3.23 Mt in January compared with 3.308 Mt in December, the International Aluminium Institute (IAI) said. Daily average primary aluminium output, including China, was 104,200t in January from 106,700t in December 2007.

Analysis

- Prices rise on supply worries, China imports

Supply disruptions in China, the result of power shortages in January, together with power-related disruptions in South Africa, are encouraging investors to look on aluminium futures with much greater favour than for many months. BHP Billiton said in February that operating its three southern African aluminium smelters on lower power because of a shortage was "unsafe and unsustainable" in the long run. China's power problems could mean a reduction in the country's primary aluminium output of about 600,000t this year. As a result China, which remains the world's biggest aluminium producing nation, was a net importer of primary aluminium in January for the first time since 2000, since when the country's aluminium smelter capacity has risen dramatically. In January, China's primary aluminium imports climbed 46.5% (against January 2007) to 14,443t, while its exports fell 75.5%, to 5,521t. China's exports of primary aluminium are likely to slip further this year, as Beijing takes action to enforce the elimination of power subsidies it can no longer afford, and increases levies on power intensive industries such as aluminium production.

Outlook

The LME's three-month price for aluminium closed very strongly at the end of February, settling on 29th at \$3,121/t. It has since fallen back moderately in early March but given the probability of China becoming a bigger net importer this year the metal looks almost certain to remain on an upwards trajectory, at least until a clearer picture emerges. LME 3-month short-term: \$3,100/t-\$3,300/t.

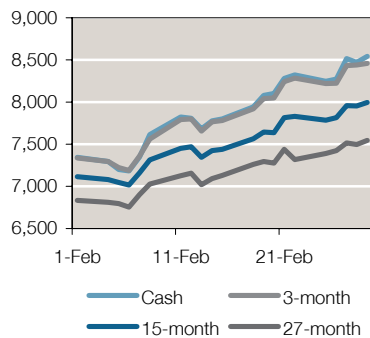
Market data (February unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	Stocks (tonnes)	LME	SHFE	Prod (kt)	Dec 07	Jan-08	LME Open Interest (contracts)	Interest
Average	2,776	2,816	2,866	2,877	Jan-08	956,475	89,115	Europe	765	782	Aluminium	703,807
High	3,086	3,121	3,150	3,140	Feb-08	947,425	94,954	Americas	718	721		
Low	2,591	2,632	2,720	2,755				Asia	317	320		
								China	1,147	1,060		
								Other	351	346		
								Total	3,298	3,229		

Source: London Metal Exchange, except Production: International Aluminium Association

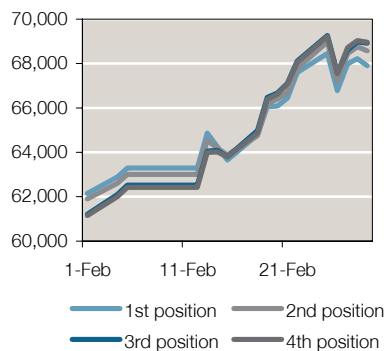
Copper

Copper price (\$/tonne)



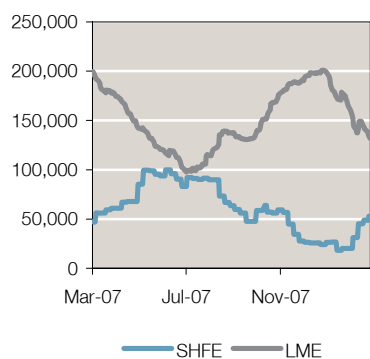
Source: London Metal Exchange

Copper price, SHFE (Yuan/tonne)



Source: Reuters Ecowin

Copper stocks (tonnes)



Source: London Metal Exchange

News

- March 3rd: Peru's copper output in January rose 3.8% (compared to January 2007) to 86,255t.
- Feb 29th: Mexican copper output fell 38.6% in December, to 18,730t, against the same month in 2006 as a result of industrial action.
- Feb 28th: Japan's exports of refined copper in January rose about 4% from a year earlier to 34,125t.
- Feb 27th: Zambia and foreign owners of its copper mines agreed a 35% power tariff increase, effective from January this year. The government has warned of possible power cuts to the mines due to a power generator fault.

Analysis

- Copper – still a bull phase

Copper prices have sustained their early year rally on the back of surprisingly strong supply-demand signals. Chile's state-owned Codelco, the biggest copper miner in the world, saw its full production for 2007 slip 6.6% year-on-year to 1.67 Mt, including its 49% stake in the El Abra mine. This is the third successive year Codelco has reported decreased output and 2008 does not appear to be getting much better. Codelco's production was hit by strikes in June and July last year but the problem seems to be recurring low grades. Added to that are growing concerns over Chilean power supply. The country's public works ministry said in early March that Chile was experiencing its worst drought in a century and that this means hydroelectric reservoir levels are critically low, and would need a year to recover to normal levels, even if rainfall this year is average. Chile's President Michelle Bachelet said on 6th March that electricity rationing might have to be implemented later this year. Were that (currently remote) possibility to happen it would be bound to impact the country's copper miners, which account for around a third of global production.

Outlook

LME copper stocks have fallen by about one third since the start of 2008 and by 6th March were down to 135,800t, equivalent to about three days of current global consumption. The net speculative long position in copper futures on Comex has been increasing in recent weeks and, in the week to 4th March, rose by 63%, to a net 9,096 contracts. On the other hand, copper stocks held by the Shanghai Futures Exchange more than doubled in February to more than 48,000t by the end of that month. China's authorities are determined to rein-in economic growth this year, cutting it by more than 3%, to 8%. If they succeed that will dent copper demand there, while a worsening outlook for the US economy will also take its toll on copper consumption. The big question for copper remains how much China's demand for refined metal might grow this year over last, when it consumed about 4.5 Mt. Currently, copper is still a bull market, having risen by some 30% since the start of the year – but basing long-term hopes on Chinese growth could prove a risky strategy. LME 3-month short-term: \$7,800/t-\$8,300/t.

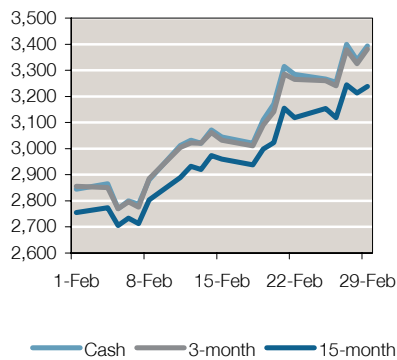
Market data (February unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	Stocks (tonnes)	Contracts			LME Open Interest (contracts)		
						LME	SHFE	SHFE traded (average)			
Average	7,888	7,857	7,517	7,171	Jan-08	177,800	25,597	Jan-08	243,414	Copper	278,377
High	8,541	8,450	7,995	7,545	Feb-08	141,375	20,245	Feb-08	180,303		
Low	7,181	7,189	7,015	6,755							

Source: London Metal Exchange

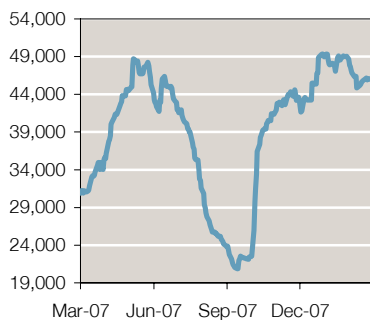
Lead

Lead price (\$/tonne)



Source: Reuters Ecowin

LME stocks (tonnes)



Source: Virtual Metals from LME

News

- Mar 5th: Ben Travers, CEO of UK-based Calder Group, Europe's biggest non-battery lead producer, forecast further consolidation in the lead production industry in Europe, driven by the growing costs of compliance with the European Union's ever-tightening regulations (known as REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals) on the processing and use of hazardous substances.
- Feb 18th: The International Lead and Zinc Study Group (ILZSG) reported that the global refined lead market was in deficit in 2007 by 70,000t.

Analysis

- Lead price remains strong

Last year's decision by the Chinese authorities to change the export and value added tax regime for lead exports continues to reverberate through the global market. The introduction of a 10% export tax on refined metal, plus the removal of the rebate of a 17% value added tax on such exports, has made the cost of such exports almost a third higher than they used to be. This altered tax position has helped depress China's refined lead exports, which in 2007 were probably no more than 250,000t, 50% lower year-on-year. At the same time China's domestic production of lead concentrates is rising by about 10%/year to about 770,000t in 2007.

While China's domestic demand for lead is on a steep growth path – primarily because of its rising use of lead-acid batteries – the rest of the world is likely to see a rapid slowdown in demand this year, partly because of the strong deceleration of consumer spending. China's own lead-acid battery demand is being driven not just by its rapidly growing sales of new cars, but also thanks to the strong growth in the cheaper alternative to the car, the electricity-power bicycle and motorcycle market. According to some estimates the Chinese market for lead-acid battery power cycles may grow to more than 45m units within two years, against some 50,000 units a decade ago from today. This has become a key market for China's refined lead producers and will help soak up domestically produced metal that might otherwise have gone overseas.

Outlook

Prospects for lead still look strong, given the continued low level of Chinese exports of refined metal and its acceleration towards greater self-sufficiency in lead. Lead stocks on the LME scarcely moved in February, dropping in the course of the month by just 2,700t to 45,825t, yet despite this relatively comfortable level prices rose almost 20% in February. Such high prices – the LME three-month contract is now up more than 30% since the start of this year – largely reflect the market's perception that Chinese refined lead exports will remain very low and perhaps shrink further this year, as more Chinese production is diverted to meet the country's own growing needs. At the same time there appears as yet to be very little account being taken by investors of the sharply slowing economies of the US and other industrialised markets, which will eventually hit lead-acid battery demand. LME 3-month short-term: \$2,900/t-\$3,200/t.

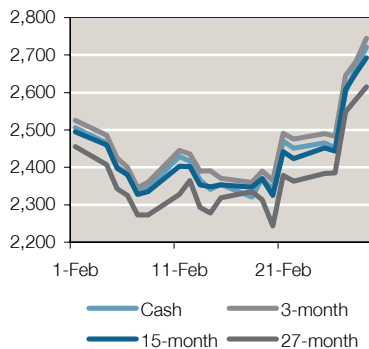
Market data (February unless stated)

Prices (\$/t)	Cash	3-month	15-month	LME stocks	Lead	LME Open Interest (contracts)
Average	3,080	3,069	2,969	Jan-08	48,525	Lead 67,548
High	3,400	3,381	3,245	Feb-08	45,825	
Low	2,770	2,770	2,705			

Source: London Metal Exchange

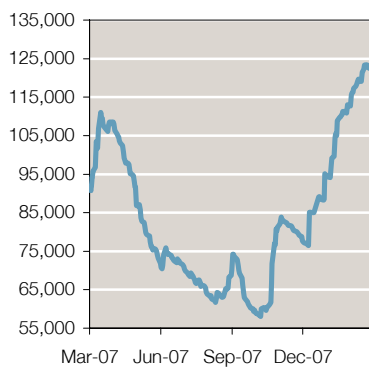
Zinc

LME zinc price (\$/tonne)



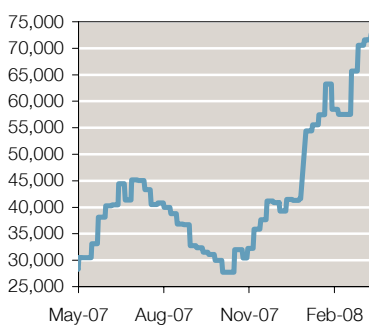
Source: London Metal Exchange

LME stocks (tonnes)



Source: Reuters Ecowin

SHFE stocks (tonnes)



Source: Reuters Ecowin

News

- March 3rd: Australia's Oxiana and Zinifex announced they are to merge, forming what will be the world's second-largest producer of zinc, after Xstrata. The merged company, which should be a single entity by mid-2008, will account for about 10% of global zinc production, about 1.2 Mt/year, and 250,000t of lead/year.
- March 3rd: Peru's zinc output rose 12.4% in January compared to the same month of 2007, to 29,752t.
- Feb 28th: Japanese exports of refined zinc in January rose year-on-year by 32% to 7,378t.
- Feb 27th: In China, Chihong Zinc and Germanium resumed lead and zinc production following a 12-day stoppage after severe snowstorms in January. Luoping Zinc also re-started operations. An estimated loss of 50,000t of China's refined zinc production resulted from what were the worst snowstorms in 50 years at the end of January/early February.

Analysis

- 2007: deficit. 2008: growing surplus

The International Lead and Zinc Study Group's (ILZSG) latest assessment of the global market put the refined zinc market in a deficit of 15,000t in 2007. This was perhaps one factor that encouraged investors to give a boost to zinc futures in February, the LME three-month price rising by almost \$200/t between the start and the end of the month, settling on 29th February at \$2,745/t. This trend is unlikely to be sustainable however – barring irrational investor enthusiasm – as the outlook is increasingly for a substantial refined metal surplus by the end of 2008. Almost 2 Mt more zinc a year is lining up to hit the global market by 2010 and this looming surplus will inevitably depress prices. The compelling logic behind the Oxiana-Zinifex merger is to meet this challenge by being able to strip out unnecessary costs and create a more efficient company, better able to survive what will be a rocky road in the medium term. A similar trend, towards greater zinc mining consolidation, is likely to be seen elsewhere this year. China's biggest zinc producer, Hunan Nonferrous Metals, is reportedly putting aside the equivalent of more than \$700m to fund acquisitions not just in zinc but also lead, tungsten and molybdenum projects in Australia, Canada and China. China remained a net refined zinc exporter in January, albeit at a very modest level – the latest set of trade data shows the country exported a net 7,164t.

Outlook

The prospects for zinc prices look pretty dim over the mid term. According to the ILZSG's review of the global market in 2007, China's zinc metal production rose almost 19% year-on-year, almost 4% faster than its demand growth, and China's net exports of refined metal rose to 127,000t, against 7,000t in 2006. Meanwhile, demand fell in the US, Australia, Japan, South Korea and Taiwan, implying an overall rise in global consumption of just 3.7%. In our view there is little obvious reason why these trends will change in 2008 – apart from yet more falls in demand in the mature markets, which should mean a growing surplus. LME 3-month short-term zinc: \$2,500/t-\$2,800t.

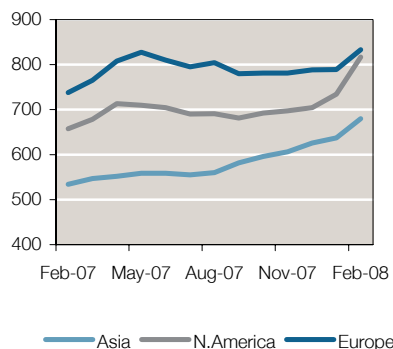
Market data (February unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Zinc	LME Open Interest (contracts)
Average	2,438	2,462	2,429	2,372	Jan-08	111,350	Zinc
High	2,721	2,745	2,693	2,615	Feb-08	122,525	
Low	2,321	2,346	2,325	2,243			195,038

Source: London Metal Exchange

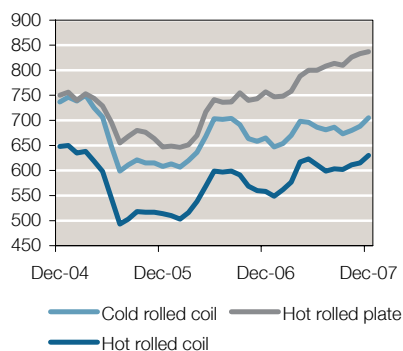
Steel

Composite steel price (\$/tonne)



Source: London Metal Exchange

Steel products, world prices (\$/tonne)



Source: MEPS, Reuters Ecwin

Note: "World" is average of Asia, N.America, and Europe

News

- Mar 5th: The Tangshan Iron and Steel Group, China's third biggest steel producer, said it plans to increase its output this year by 10%, to 25 Mt.
- Mar 5th: China's National Development and Reform Commission, the country's main state-run central planning agency, plans to force the closure of 6 Mt of what it calls obsolescent steel-making capacity during 2008, as well as eliminate 14 Mt of the country's iron production capacity. The aim is part of a much wider scheme under which 78 Mt of steel production capacity, about 14% of the current total, would be closed by 2010.
- Mar 4th: The Australian Bureau of Agricultural and Resource Economics forecast the country's iron ore production in 2008-2009 would rise to 354.8 Mt, 35.9 Mt higher than 2007-2008, while iron ore exports would rise to 325.5 Mt, up by 35 Mt.
- Feb 25th: The London Metal Exchange made a low-key launch of its new steel billet contracts, via telephone and electronic trading; full ring trading will start at the end of April.

Analysis

- Substantial rise in contract iron ore prices

Vale, the Brazilian mining company and the world's biggest iron ore producer, set a new benchmark for contract iron ore prices for 2008-2009 in late February, striking a 65% rise, the sixth successive year of price increases, with Asia's three biggest steel producers – JFE Holdings and Nippon Steel of Japan, and South Korea's Posco. The three agreed to pay \$78.88/t from 1st April. A similar rise was also agreed to by China's steel producers. This is a significant rise over last year's 9.5% contract increase, but is justified by iron ore producers who point to spot prices having risen by about 150% in the past year. The substantial increase in iron ore contract prices has already begun to feed through into announcements of higher steel prices. The price rise was immediately criticised by Eurofer, the European Confederation of Iron and Steel Industries, as too high and indicative of what it argues is too great a consolidation among iron ore producers. Eurofer is highly critical of BHP Billiton's desire to take over Rio Tinto, which, together with Vale, accounts for some 75% of globally traded iron ore. "Imagine the pricing power which these suppliers will have when trade is dominated by just two companies," was the rhetorical question posed by Gordon Moffat, director general of Eurofer. The China Iron and Steel Association (CISA) estimated that the country's consumption of crude steel this year will rise by around 11%, year-on-year, to as much as 485 Mt. CISA also forecast China's production would rise more than 6% in 2008, to around 520 Mt.

Outlook

Steel prices are set to rise strongly across the world this year, as producers pass on much higher contract iron ore prices to their customers. Continued strong demand growth for steel is currently expected this year and next, although this may be negatively impacted by the deteriorating economic outlook for the US and slower growth in China.

Market data (February unless stated)

Prices (\$/t)	Asia Composite	N. America Composite	Europe Composite	World Composite
Dec-07	626	704	788	706
Jan-08	637	734	789	720
Feb-08	680	817	833	776

Source: MEPS: VM Group

Quantitative research

Quantitative Modelling team

Peter Cauwels

Tel: +32 265 47 90

Email: peter.cauwels@fortis.com

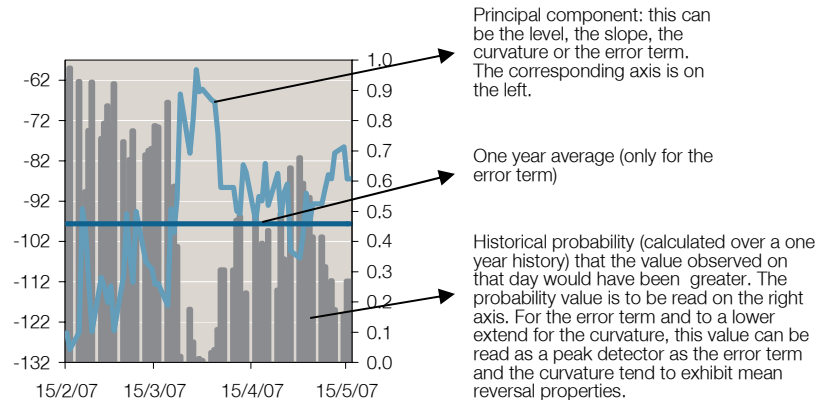
PCA background

PCA stands for Principal Component Analysis. It is a standard technique used for the study of forward curve dynamics. At any point in time, a future curve can be represented by three values known as the level, the slope and the curvature. Each of these values has a physical meaning. A variation of the level represents a parallel shift of the curve, while a variation of the slope represents a rotation. An increasing slope indicates a clock-wise rotation and therefore reveals a backwardation of the curve. By contrast, a decreasing slope indicates a curve that shows a contango. We can therefore expect the slope to respond to market events associated with supply, demand, and stocks. Furthermore, the curvature gives an insight into prices during the particular month. A rising curvature indicates that during the first and the last third of the contract month the price increases, while the second third decreases. This provokes a distortion, or a sharper bend of the curve.

Provided charts

For each metal there are five graphs. The first, at the top of the page, displays the forward curve for a number of dates. These are selected in order to demonstrate specific evolutions of the curve during the last month, and also to illustrate some particular features of the curve. The vertical axis displays the price of each contract (in USD) as provided by Bloomberg. The horizontal axis gives the future's settlement date. The used contracts are known as generic and are constructed by using successive contracts which always expire "in N months", as appropriate.

Demonstration of PCA graph



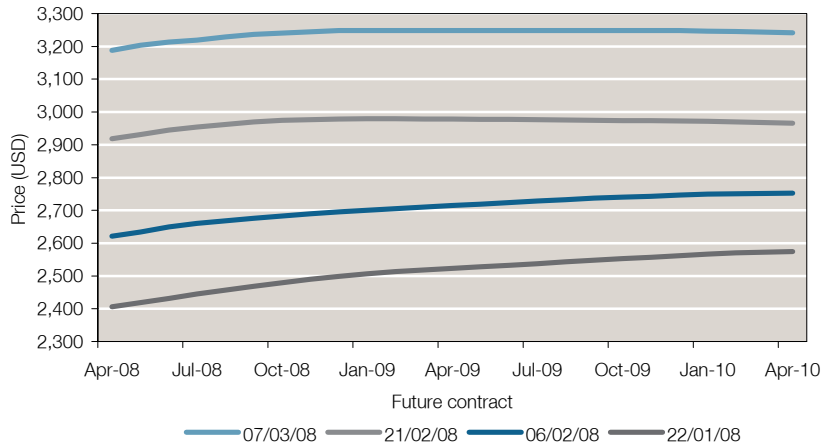
Source: Fortis Modelling

Aluminium Future curve analysis

Future contract

Fundamental outlook

Aluminium futures have perked up in recent weeks on growing indications that China's aluminium demand is not only still growing strongly, but that it is beginning to find it difficult to meet that demand from its own production. Power problems in South Africa – which are unlikely to be resolved in the next few years – may well damage output from that country. And energy prices are continue to rise strongly, pushing production costs up even for those regions – the Middle East, former Soviet republics – that are well-endowed with energy resources. As yet, economic slowdown in the US and worries of the same in the EU have not fed through into lowered demand. While that is a concern over the next six months, aluminium is poised to make further gains as investment support gathers strength. LME three-month contract short-term: \$3,100/t-\$3,300/t.

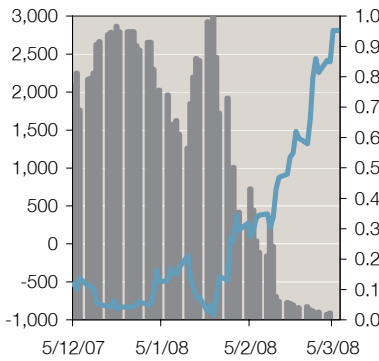


Source: Fortis Modelling, Bloomberg

Principal component analysis (arbitrary units)

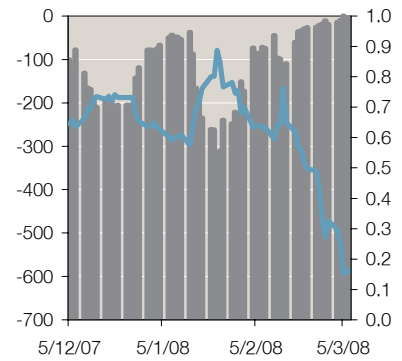
The futures curve movement for aluminium has been mainly level driven during the past month. Supply disruptions caused by power shortages resulted in a global curve price rise.

Level (t)



Source: Fortis Modelling

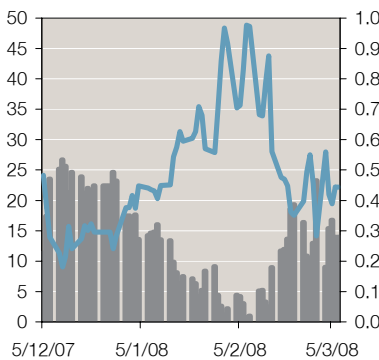
Slope (t)



Source: Fortis Modelling

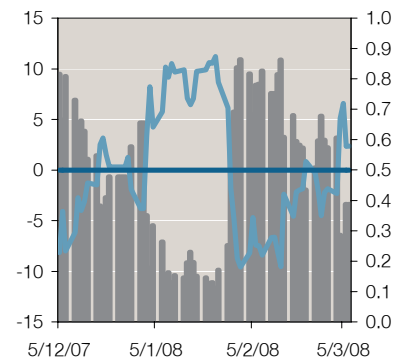
A significant drop in slope and curvature occurred mid February. Between FEB13 and FEB14 the curve tilted completely with a drop in long term and a rise in short term contracts on the back of news on supply disruptions caused by power outages.

Curvature (t)



Source: Fortis Modelling

Error (t)



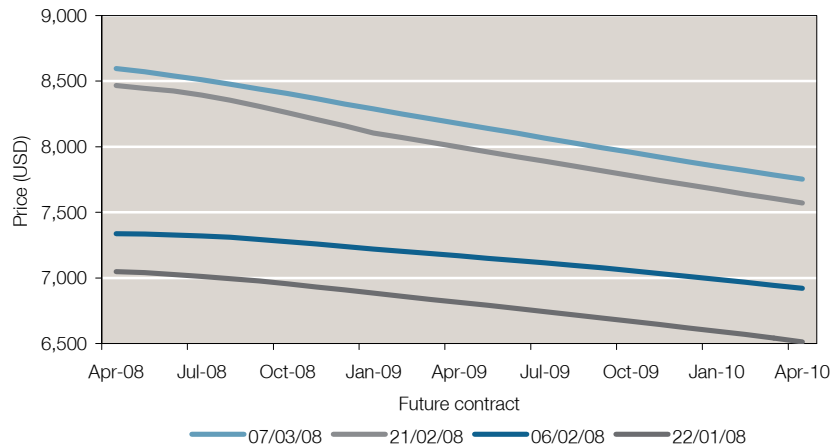
Source: Fortis Modelling

Copper Future curve analysis

Fundamental outlook

Copper prices have sustained a relatively high level thanks to some strong supply-demand signals. Chile's state-owned Codelco, the biggest copper miner in the world, saw its full production for 2007 slip 6.6% year-on-year to 1.67 Mt, the third successive year Codelco had decreased output. LME copper stocks have fallen by about one third since the start of 2008 and right now are equivalent to about three days of current global consumption. On the other hand, copper stocks held by the Shanghai Futures Exchange more than doubled in February to above 48,000t. Copper's outlook will be determined partly by the efforts of China's authorities to slow the country's growth rate to 8% this year; if they succeed, that will dent copper demand, while a full US recession will also lower consumption. Currently, copper is still a market in a bull phase, but basing long-term hopes on more supply-side problems could prove a risky strategy. LME 3-month short-term: \$7,800/t-\$8,400/t.

Future contract

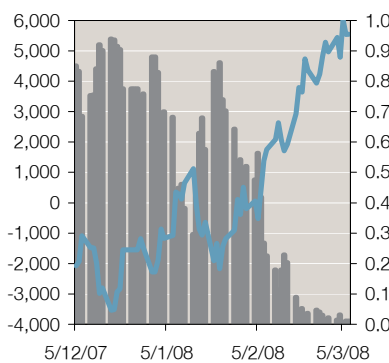


Source: Fortis Modelling, Bloomberg

Principal component analysis (arbitrary units)

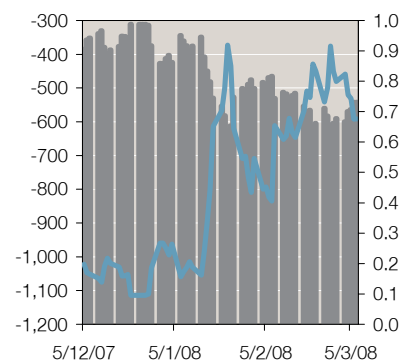
The past month, copper's future curve movement has been mainly level driven, based on a parallel increase in price.

Level (t)



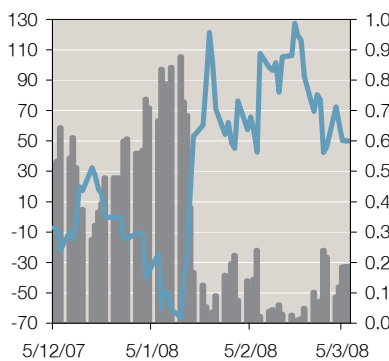
Source: Fortis Modelling

Slope (t)



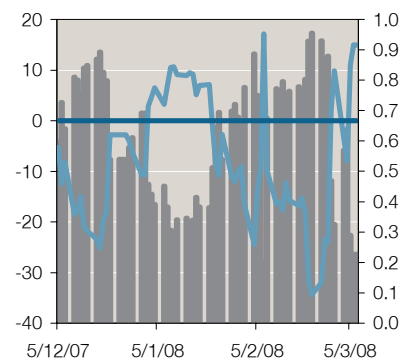
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



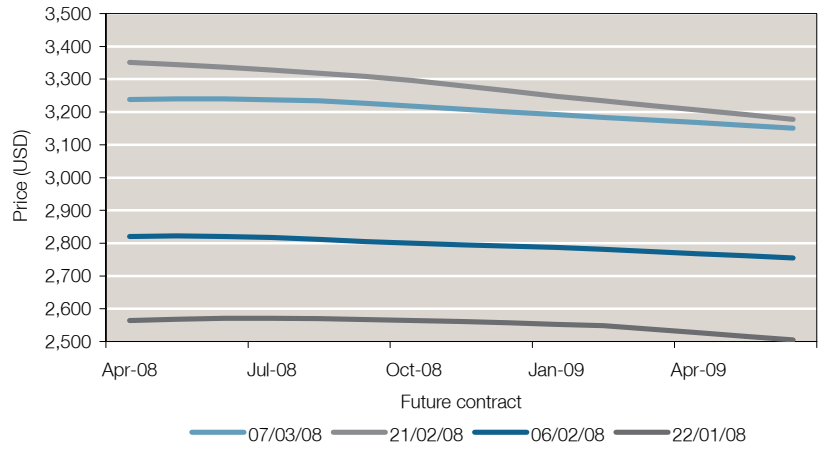
Source: Fortis Modelling

Lead Future curve analysis

Fundamental outlook

As with nickel, there is a degree of optimistic investment ebullience in lead right now, which is unjustified by a closer attention to the supply-demand outlook. It's certainly true that Chinese exports of refined lead remain far lower than normal, but little has changed since lead dropped below \$3,000/t late last year. Moreover, demand for car batteries in the northern hemisphere should be entering its weakest period of the year, as warmer weather returns. So all in all we would expect lead to retreat marginally in the short-term, with the LME three-month contract trading in a range of \$2,900/t-\$3,200/t over the next month.

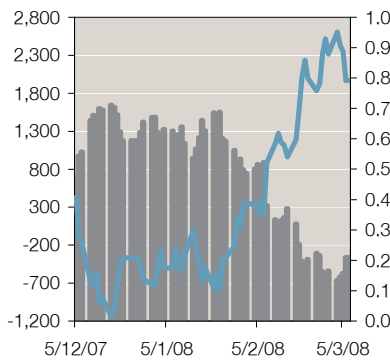
Future contract



Source: Fortis Modelling, Bloomberg

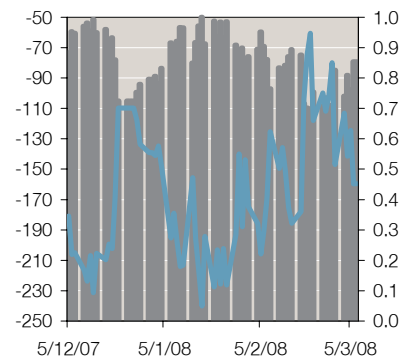
Principal component analysis (arbitrary units)

Level (t)



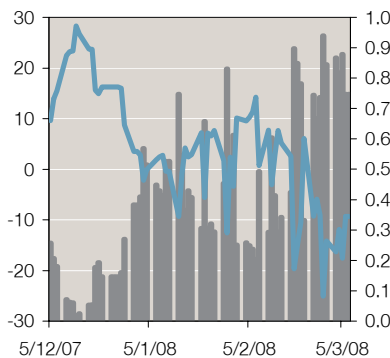
Source: Fortis Modelling

Slope (t)



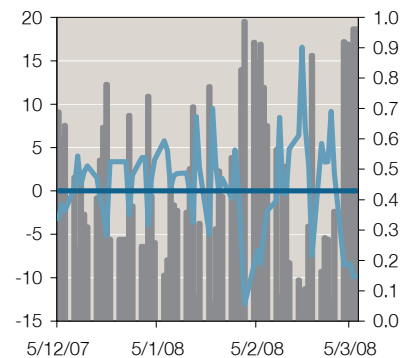
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



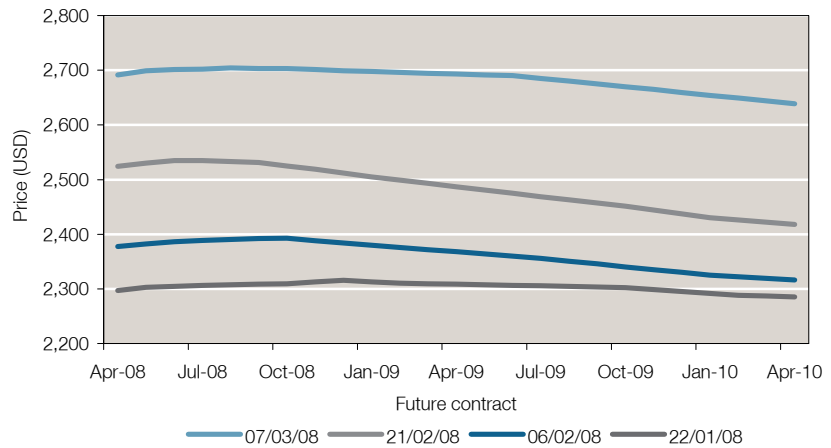
Source: Fortis Modelling

Zinc Forward curve analysis

Fundamental outlook

Zinc remains our least favoured base metal, from an investment standpoint. The global market could be facing a tidal wave of new zinc supply over the next two years, with perhaps as much as 2 Mt/year extra over today. This should spell much weaker prices over the mid-term, although the wild card (as ever) is China, which may act to curtail exports of high-grade zinc at some point in the future. LME three-month short term: \$2,500/t-\$2,600/t.

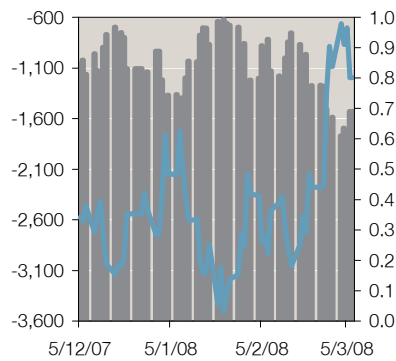
Future contract



Source: Fortis Modelling, Bloomberg

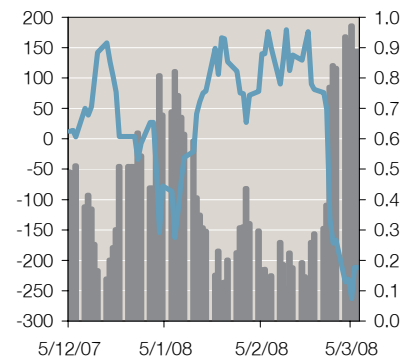
Principal component analysis (arbitrary units)

Level (t)



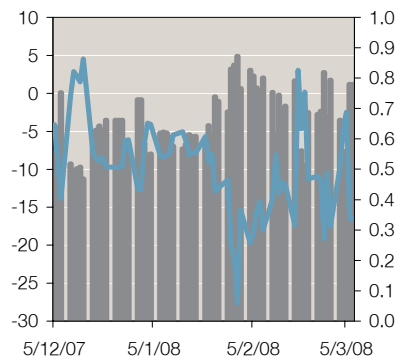
Source: Fortis Modelling

Slope (t)



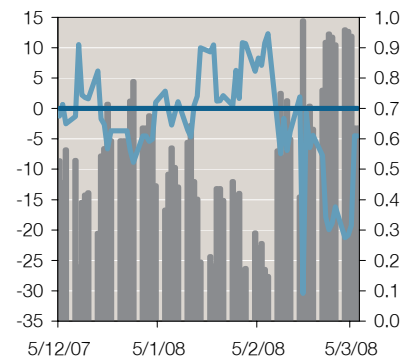
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

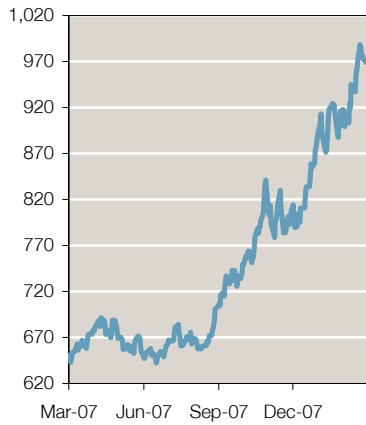
Error (t)



Source: Fortis Modelling

Prices

Gold (\$/oz)



Source: London Bullion Market Association

Silver (\$/oz)



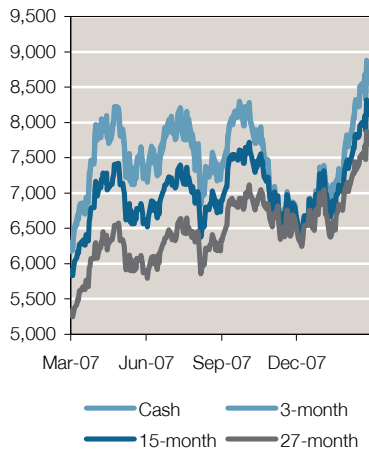
Source: London Bullion Market Association

Aluminium (\$/tonne)



Source: London Metal Exchange

Copper (\$/tonne)



Source: London Metal Exchange

Lead (\$/tonne)



Source: London Metal Exchange

Zinc (\$/tonne)



Source: London Metal Exchange

Notes

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About VM Group

VM Group

85 Albany Street
London NW1 4BT

Tel: +44 20 7487 3600

Fax: +44 (0)870 051 2261

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To see further how we can meet your research and consulting requirements, please email info@vmgroup.co.uk or call or fax on the numbers above.

Fortis Commodities Contact List

Commodities

Ian Downes (Executive Director Head of Fortis Commodity Derivatives)	+44 20 7444 8741
John King (Director & Head of LME & Precious Metals Brokerage GCG)	+44 20 3296 8330
Gery Schubert (Deputy Head of LME and Precious Metals)	+44 20 3296 8407
Jonathan Parkman (Head, Agricommodities Brokerage)	+44 20 3296 8407

Global Commodities Group

Piet-Hein Ingen Housz (Global Head of Metals/SCF)	+31 10 401 67 93	
Rotterdam	Bram de Veer	+31 10 401 97 83
London	tbd	
New York	Antonio Nanez	+1 212 418 87 00
	Kimberly Oates	+1 212 418 87 00
Dubai	Silvan Doorenspleet	+97 14 363 57 40
Singapore	Ng Chuey Peng	+65 65 394 923
Shanghai	Steven Jin	+862 15 049 88 33
Hong Kong	Lee Mei	+852 28 47 94 20

Structured Commodity Finance

Piet-Hein Ingen Housz (Global Head of Metals/SCF)	+31 10 401 67 93	
Carl Shipman (Managing Director) - London	+44 20 3296 8785	
New York	Juan Mejia	+1 212 340 53 56
Hong Kong	Christian Muchery	+852 39 20 33 40

Global Markets Sales Contacts

Adam Rose

(Global Head Sales & Marketing Group)

Investment Products Sales

Paul Wagner (Head Investment Products Sales) +352 42 10 44 50

Institutionals

Belgium	Marc Sollie	+32 2 565 74 70
The Netherlands	Bert Veenstra	+31 20 535 74 54
Luxembourg	Paul Wagner	+352 42 10 44 50
France	François Girod	+33 1 55 67 90 56
UK-Ireland	Steven Harnie	+32 2 565 86 35
Italy	Franco Mora	+39 02 57 53 24 61
Spain	Jean-Louis Degand	+34 91 436 56 27

Retail and Private Banking

Belgium	Alain Cadron	+32 2 565 75 50
The Netherlands	Bert Veenstra	+31 20 535 74 54
Luxembourg	André Wagner	+352 42 10 49 07

Equities Sales

Institutionals

Johan van Megesen (Head)		+32 2 565 96 22
Belgium	Koen Devos	+32 2 565 76 50
France	Philippe Barroso	+33 1 55 67 90 82
Luxembourg	André Wagner	+352 42 10 49 07
The Netherlands	Nils Ten Berg	+31 20 535 73 32
Spain (Domestic Sales)	Manuel Torres	+34 91 436 56 51
Spain (International Sales)	Luis Broto	+34 91 436 56 52
United Kingdom	Nils Ten Berg	+31 20 535 73 32
United States	Francis Grevers	+1 212 418 87 14

Fixed Income/New Issues

Katherine Dior (Head)		+32 2 565 63 08
Syndication	Martine Klutz (Head)	+32 2 565 62 47
Origination Corporate	Olivier Tasnier (Head)	+32 2 565 16 38
Origination Financials	Jacques Massin (Head)	+32 2 565 62 37
MTN Desk	Jacques Massin (Head)	+32 2 565 62 37
Commercial Paper	Marie-Jose Rodriguez (Head)	+32 2 565 60 98

Structured Products

Ludovic Plas (Head) +33 1 55 67 90 56

Interest Rate Derivatives

Bernard Van Gils (Head) +32 2 565 74 70
+32 2 565 87 61

Forex Derivatives

Johann Barchéchath (Head) +32 2 565 76 30
+32 2 565 12 27

Equity Derivatives

Fabian de Prey (Head) +32 2 565 78 82
+32 2 565 91 05

Credit Derivatives Structuring

Frédéric Monneret (Head) +32 2 565 77 20
+33 1 55 67 90 58

Structured Product Services

Emmanuel Grimée (Head) +352 42 42 49 65
+352 42 42 49 25

Sales Treasury Products

Serge van Loenhout (European Head Sales Treasury) +44 207 444 86 63

Corporate

Matthias Locker (Head)		+32 2 565 85 64
Belgium		+32 2 565 72 05
The Netherlands	Alfonso Vera Evertman	+31 20 535 71 66
Luxembourg	Manfred Hawelka	+352 42 10 49 42
France	David Alfandari	+33 1 55 67 90 05
Italy	Francesco Scotto	+39 02 57 53 24 64
Spain	Louis Veldman	+34 91 43 26 726
United Kingdom	Tim Kirkham	+44 20 73 98 93 53
Norway	Bjorn Kaaber	+47 23 11 49 60

Financial Institutions

Laurent Leveque (Head)		+33 1 55 67 90 67
Belgium	Alex Devroye	+32 2 565 61 03
	Fiduciaries	+32 2 565 72 60
	Institutionals & Banks	+32 2 565 72 70
The Netherlands	Ronald Riko	+31 20 535 70 93
Luxembourg	Dominique Chaumaz	+352 42 10 47 00
Italy	Francesco Scotto	+39 02 57 53 24 64

Mid-Caps

Belgium	Conrad Fieremans	+32 2 565 19 77
O/W Vlaanderen	Gerrit Bauwens	+32 2 565 78 57
Sud	Stéphane Christiaens	+32 2 565 78 56
Brussels/Public	Filip Moens	+32 2 565 70 40
VL Brabant/Limburg	Herwig Jaspers	+32 2 565 73 10
Antwerpen/Kempen	Jef Van Camp	+32 2 565 78 48
The Netherlands	Bart Solleveld	+31 20 535 71 84
Luxembourg	Thomas Kraemer	+352 42 10 46 00
Germany	Reinhold Beisler	+49 22 11 61 12 25
Austria	Alfred Buder	+43 181 10 43 81 58
Rest of Europe	Geert Blancke	+32 2 565 16 05
France	Muriel Flasse	+33 1 55 67 80 84
Spain	Jose Bravo Galisteo	+34 91 43 26 767
Portugal	Rui Lopes	+35 12 13 13 93 03
Italy	Marco Toja	+39 02 57 53 23 72
Poland		+48 225 66 99 04
Hungary	Attila Toth	+36 14 83 81 09
Czech Republic	Tomas Blazejovsky	+42 02 25 43 60 10
Denmark	Flemming Warhol-Rasmussen	+45 32 71 19 09
		+46 732 02 08 59
Sweden	Mats Cardemo	+30 210 9544 370
Greece	Marinos Danalatos	+41 58 322 09 70
Switzerland	Patrick Schaerer	+90 212 274 42 80
Turkey	Bahar Bezmez	+44 20 73 98 93 53
United Kingdom	Tim Kirkham	

Sales Treasury Products - United States

Foreign Exchange	Richard Vullo	+1 212 838 14 87
Money Markets	Maurice Fiol	+1 212 644 15 75
Interest Rate Derivatives	Emanuel Sanz	+1 212 838 37 05

Automated Trade and Service Desk

Marc Vidts		+32 2 565 71 10
ATS Desk		+32 2 565 73 00
Service Desk		+32 2 565 74 90
Netherlands	Wim Verwaal	+31 20 535 72 39

Energy & Environmental Markets

Philippe Arickx (Head)		+32 2 565 75 60
Energy Europe, Brussels		+31 20 535 73 67
Energy Europe, Amsterdam		+31 20 535 72 02
Carbon Banking		

Global Markets Research Contacts

Paul Gennart +32 2 565 60 45
(Global Head Research & Strategy)

Economic Research

Guy Verberne (Head) +31 20 535 73 25

The Netherlands

Joost Beaumont +31 20 535 74 31
Peter de Bruin +31 20 535 70 38
Nick Kounis +31 20 535 71 06
Aline Schuiling +31 20 535 71 31

Spain

Estefanía Ponte (Head) +34 91 436 55 37
Diego Fernández +34 91 436 55 00

Strategy

Françoise Bernard (Head) +32 2 565 83 02
Frédéric Atlan (Fixed Income) +33 1 55 67 72 81/+32 2 565 86 06
Arnaud Bornet (Forex & Money Markets Quant) +32 2 565 63 27
Lucian Briciu (Forex & Money Markets) +32 2 565 68 99
Frank Claus (Fixed Income) +32 2 312 16 81
Alexandre Dieudonné (Forex & Money Markets) +32 2 565 69 67
Sébastien Gillis (Fixed Income) +32 2 228 69 47
Helios Padilla Mayer, Ph.D. (Commodities) +32 2 312 13 85
Bart Robenek (Forex & Money Markets) +32 2 312 08 31
Joseph Tan, CFA (Asian Markets) +65 62 16 38 84

Technical Analysis

Françoise Bernard (Head) +32 2 565 83 02
Karel De Bie (Fixed Income/Forex/Commodities) +32 2 565 85 46
Stephan Debruyne (Equities) +32 2 312 13 02

Modelling

Peter Cauwels, Ph.D. (Head) +32 2 565 47 90
Philippe Brimmel +32 2 565 40 29
Stéphane Couteaux +32 2 312 10 30
Alain Cram +32 2 565 60 52
Michel Örün +31 20 535 74 82
Herman van der Sluis +31 20 535 72 98
Amjed Younis +32 2 565 31 00

Credit Research

Hélène Séré (Head/Utilities & Energy) +33 1 55 67 72 83/+32 2 565 75 87

Credit Bonds

Benoit Feliho (Banks/Insurance) +44 20 32 96 68 42
Cyril Loiry (Telecom/Chemicals) +33 1 55 67 72 86
Christine Passieux (Banks) +33 1 55 67 72 87
Karine Petitjean (Consumer Non-Cyclical) +33 1 55 67 72 88
Bertrand Rocher (Automotive) +33 1 55 67 72 84
Olga Zubkova (Building & Basics/Utilities & Energy) +33 1 55 67 72 80

Structured Finance

Sabrina Marchal (Head/ABS, RMBS & CDO) +32 2 565 86 82
Jim Cheng (ABS & RMBS) +32 2 565 16 41
Santosh K.C. (ABS & RMBS) +32 2 312 01 09

Equity Research

Marc Pauwels (Head) +31 20 527 13 55

Benelux

Michel Aupers (Head) +31 20 527 28 62
Bart Jooris, CFA (Co-ordinator Belgium) +32 2 565 60 99
Felix Oberdorfer (Co-ordinator The Netherlands) +31 20 527 23 28
Paul Andriessen (Mid & Small Caps) +31 20 527 21 82
Maarten Bakker (Mid & Small Caps) +31 20 527 23 32
Kenn Curt Daniël, Ph.D. (Biotech) +31 20 527 34 17
Kurt De Baenst (Banks/Retail) +32 2 565 60 42
Justin De Meersman (Shipping) +32 2 565 12 45
Niels de Zwart (Semiconductors/Mid & Small Caps) +31 20 527 22 30
Mark Gevens (Industrials) +32 2 565 60 71
Tim Heirwegh (Mid & Small Caps) +32 2 565 87 60
Klaas Kruijer (Banks) +31 20 527 91 44
Geraldine O'Keefe (Biotech) +31 20 527 91 50
Robert Stassen (Real Estate) +31 20 527 12 55
Teun Teeuwisse (Temporary Employment/Media) +31 20 527 13 01
David Vagman (Holdings) +32 2 565 67 25
René Verhoef (Mid & Small Caps) +31 20 527 91 45
Robert Jan Vos (Food Producers/Food Retail) +31 20 527 91 47
Miriam Wijnands (Real Estate) +31 20 527 23 23

France

Philippe Ezechian (Head) +33 1 55 67 72 29
Thomas Alzuyeta (Leisure & Services) +33 1 55 67 72 48
Séverine Blé (Food) +33 1 55 67 72 41
Claire Deray (Transport/Consumer Goods/Retail) +33 1 55 67 72 43
Lazare Hounhouayenou (Media) +33 1 55 67 72 45
Marc Huberty (Industrials) +33 1 55 67 72 30
Bertrand Laport (IT Hardware) +33 1 55 67 72 31
Olivier Macquet (Industrials & Services) +33 1 55 67 72 42

Spain

Antonio López (Head/Utilities) +34 91 436 56 50
Diego Barrón (Banks/Insurance) +34 91 436 56 29
Fernando Cordero (Mid & Small Caps/Technology/Media) +34 91 436 56 16
Luis Padrón (Telecom/Media) +34 91 436 56 07
Rafael Rico, CFA (Oil/Basic Materials/Mid & Small Caps) +34 91 436 56 84
Emilio Rotondo (Construction/Real Estate) +34 91 436 56 12
Francisco Ruiz (Mid & Small Caps/Retail) +34 91 436 56 76
Manuel Zayas (Mid & Small Caps) +34 91 436 55 41

US

David Garrett (Biotech) +1 212 340 54 94
Patrick Moriarty, Ph.D. (Biotech) +1 212 340 54 97

Retail Banking and Private Banking Research

Koen Van de Steene (Head/Healthcare) +32 2 565 86 14
Laurent Bailly (Technology/Consumer Cyclical) +32 2 565 44 05
Christel Bosch (Energy/Industrials/Utilities) +32 2 565 82 34
Rudy De Groot (Financials) +32 2 312 03 43
Geert Ruysschaert (Co-ordinator Top-Down/Telecom/Media) +32 2 565 19 58
Alain Servais (Editor) +32 2 228 92 30
Kristof Wauters (Fixed Income/Forex) +32 2 565 51 35

Economic, Fixed Income, Forex & Money Markets Research
www.merchantbanking.fortis.com/forpro
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Please send an e-mail to customer care.forpro@fortis.com to request login/password for Bloomberg and/or website

Fortis Bank S.A./N.V.

Montagne du Parc 3
B-1000 Brussels
Belgium
Tel: +32 2 565 11 11

Fortis Bank Nederland N.V.

Rokin 55 (visiting address)
P.O. Box 243
1000 AE Amsterdam
The Netherlands
Tel: +31 20 527 91 11

Fortis Banque Luxembourg

50, avenue J.F. Kennedy
L-2951 Luxembourg
Luxembourg
Tel: +352 42 421

Fortis Bank, Succursale en France

30, quai de Dion Bouton
F-92824 Puteaux Cedex
France
Tel: +33 1 55 67 72 00

Fortis Bank Germany

Christophstrasse 33-37
50670 Cologne
Germany
Tel: +49 221 161 13 30

Fortis Bank Hong Kong

27/F, Fortis Bank Tower
77-79 Gloucester Road
Hong Kong
Tel: +852 28 23 04 56

Fortis Bank Italy

Via Cornaggia 10
I-20123 Milano
Italy
Tel: +39 02 57 53 24 61

Fortis Bank Norway

Haakon VII's gate 10
0161 Oslo
Norway
Tel: +47 23 11 49 50

Fortis Bank Polska S.A.

P.O. Box 15
02-676 Warszawa
Poland
Tel: +48 22 566 90 00

Fortis Bank Portugal

Rua Alexandre Herculano 50-6 Andar
1250-011 Lisboa
Portugal
Tel: +351 213 13 93 16

Fortis Bank Singapore

63 Market Street #21-01
Singapore 048942
Tel: +65 65 38 03 90

Fortis Bank S.A., Sucursal en España

Serrano 73
28006 Madrid
Spain
Tel: +34 91 436 56 00

Fortis Bank Turkey

Yıldız Posta Caddesi
No: 54 Gayrettepe
34353 Istanbul
Turkey
Tel: +90 212 274 42 80

Fortis Bank UK

5 Aldermanbury Square
EC2V 7HR London
United Kingdom
Tel: +44 20 32 96 80 00

Fortis Bank USA

520 Madison Avenue, 3rd Floor
New York, NY 10022
United States
Tel: +1 212 418 87 00

Fortis Securities LLC

520 Madison Avenue, 3rd Floor
New York, NY 10022
United States
Tel: +1 212 418 87 14

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Merchant Banking
Montagne du Parc
Warandeberg 3
B-1000 Brussels
Belgium
www.merchantbanking.fortis.com