

Fortis metals monthly

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Gold, silver, platinum,
palladium, aluminium, copper,
nickel, lead & zinc, tin, plastics.

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Metals and plastics – Strategic view

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Introduction

As widely expected, the US Federal Reserve lowered its main interest rate in October by 25 basis points to 4.5%. Together with continuing nervousness in the global capital markets and record crude oil prices, this helped most precious metals rise strongly in October and early November. Base metals however weakened on fears of slowing industrial demand. We expect another US interest rate cut before the end of the year, and for the current trends for metals to persist – generally stronger for precious, weaker for base.

Gold

The spot price finally pushed through \$800/oz on 2nd November. With the US dollar trading at a 30-year low against a basket of other currencies as of 6th November there is now plenty of leeway for gold to surge to \$875/oz by the end of the year.

Silver

Silver responded to the rise in gold by climbing above \$14/oz. Investment in silver futures has risen substantially in the past two months and is likely to remain strong in the current circumstances.

Platinum

Platinum prices also rose significantly but, unlike gold or silver, the strength here has as much to do with increasingly clear signs of an impending physical deficit.

Palladium

Despite its discouraging supply-demand fundamentals palladium rose in tandem with platinum, pulled higher by generally stronger investment interest in precious metals.

Aluminium

Aluminium prices held up well in October, putting in a rally at the start of November as stocks of the metal held in LME warehouses fell.

Copper

Rising copper stockpiles on the LME have knocked back the copper price, which by early November was looking weaker still on fears of slowing global economic growth. The earthquake in Chile may provide some price support, depending on how long mines take to get back to full operation.

Nickel

An expected rise in stainless steel production in Q4 should see nickel hold onto its recent recovery.

Lead and zinc

Yet more volatility at high levels for lead in October, although some of the speculative puff has dissipated; the zinc price came under pressure on gloomier economic data and the expectation of a surplus of the metal in 2008.

Tin

Continued uncertainty about Indonesian exports supported tin prices, which may rise further in Q4 2007.

Plastics

Higher oil prices boosted the price of some plastics contracts.

Forecasts

Price forecasts		End-October	End 1-month	End 2-month	End 3-month	End 12-month
Gold	\$ per oz	789.50	795-840	800-850(r)	900(r)	700
Silver	c per oz	14.32	14.50-15.50	14.50-15.50(r)	16(r)	12
Platinum	\$ per oz	1,440	1,400-1,490	>1,400	>1,400(r)	1,300
Palladium	\$ per oz	370	350-380	375	375(r)	320
Aluminium (3-month)	\$ per tonne	2,537	2,500-2,650	2,300	2,300	2,400
Copper (3-month)	\$ per tonne	7,760	6,800-7,400	6,500(r)	6,500(r)	6,000(r)
Nickel (3-month)	\$ per tonne	31,450	30,000-35,000	>30,000(r)	>30,000(r)	>30,000
Lead (3-month)	\$ per tonne	3,666	3,500-3,700	>3,500(r)	>3,500(r)	2,500
Zinc (3-month)	\$ per tonne	2,821	2,600-2,800	2,500(r)	2,500(r)	2,200(r)
Tin (3-month)	\$ per tonne	16,755	16,500-17,500	16,500(r)	16,000(r)	14,500
Plastic: LL (Global, October)	\$ per tonne	1,330	1,380	1,430(r)	1,430(r)	1,300
Plastic: PP (Global, October)	\$ per tonne	1,350	1,400	1,450(r)	1,450(r)	1,350

		Average/2-years	Average/3-years	Average/4-years	Average/5-years	Average 6-years
Gold	\$ per oz	600	575	550	550	500
Silver	c per oz	11	10	10	9	9
Platinum	\$ per oz	1,500	1,400	1,300	1,200	1,000
Palladium	\$ per oz	280	280	250	230	230
Aluminium (3-month)	\$ per tonne	2,000	2,000	1,800	1,800	1,800
Copper (3-month)	\$ per tonne	6,000	6,000	5,000	5,000	4,000
Nickel (3-month)	\$ per tonne	25,000	25,000	15,000	14,000	14,000
Lead (3-month)	\$ per tonne	1,500	1,500	1,300	1,200	1,000
Zinc (3-month)	\$ per tonne	2,200(r)	2,200(r)	2,500(r)	2,500(r)	2,500(r)
Tin (3-month)	\$ per tonne	14,000	13,000	13,000	12,000	10,000
Plastic: LL (Global, second month)	\$ per tonne	1,300	1,200	1,200	1,200	1,200
Plastic: PP (Global, second month)	\$ per tonne	1,250	1,250	1,250	1,250	1,250

Source: VM Group

(r) = revised from previous month

Analysis

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Commodity Indices: rebalancing in 2008

It's that time of year when the major commodity indices begin to draw up their balance sheets and consider how best to re-weight their baskets for the new year ahead. The two commodity indices with the largest amount of investment linked to them, the GSCI and the Dow-Jones AIG, will rebalance and re-weight their holdings in early January 2008. As commodity indices purchase futures, and the data (at least for the agricommodities) from the Commodity Futures Trading Commission (CFTC) in the US shows that these can account for up to half of the open interest in those markets – we estimate these two indices probably account for 90% – then this rebalancing will have a direct and immediate impact in early January on the volume of contracts bought or sold in the commodities contained in their baskets. This can obviously also impact the futures price of these commodities, although it is conceivable that by then the futures prices may have already adjusted themselves, in the light of the expected rebalancing of these indices.

The largest index, the **S&P GSCI**, which we estimate has \$70bn-\$90bn in assets under management (AUM), announced its new weightings on 1st November. These will be implemented during the first 'roll period', which will be between 8th-14th January. We expect the impact on futures from this re-balancing will be relatively small, first because the GSCI holds a relatively small percentage of metals, and, at least as importantly, because the weightings are chosen on the basis of the average of each commodity's production in the five most recent years for which data is available, and the price prevailing in those five years does not affect this calculation. Thus the weighting of each commodity in 2008, compared with 2007, will reflect the relative differences in their average production between 1999-2003 and 2000-2004. As commodity production rarely varies enormously from year-to-year (particularly in metals and energy), and three of the five years being averaged will be the same, the changes in weightings are not large and the impact for most commodities will therefore be relatively small. There is one complicating factor, concerning commodities that are 'grouped', such as the energy complex. Here the volume traded affects the split among the commodities. This doesn't typically affect the weightings much, but this year has made a particular difference in the case of RBOB gasoline.

Some explanations and context

Impact of S&P GSCI JAN 2008 re-weighting

	Contract size	2007 S&P GSCI CPW	2007 ACRP	2007 dollar weight	% weight	2008 S&P GSCI CPW	2008 ACRP	2007 dollar weight	% weight	Change required in				As % open interest
										% weight	Dollars assuming AUM = \$80bn (000)	Units (000)	Contracts	
Aluminium	25t	33.2	2,391	90,995	3.5	34.9	2,742	95,762	3.5	0.08	63,224	26	1,058	0.1
Copper	25t	15.2	5,832	107,963	4.1	15.5	7,112	109,955	4.1	-0.04	-33,064	-6	-227	-0.1
Lead	25t	6.6	1,108	13,803	0.5	6.8	2,093	14,133	0.5	0	-1,982	-2	-72	-0.1
Nickel	6t	1.2	18,098	43,246	1.6	1.2	37,540	45,047	1.7	0.02	16,374	1	151	0.2
Zinc	25t	9.3	2,574	34,094	1.3	9.7	3,665	35,450	1.3	0.01	11,008	4	171	0.1
Gold	100 oz	83.1	574	54,275	2.1	81.5	652.8	53,226	2	-0.1	-77,099	-134	-1,344	-0.3
Silver	5000 oz	584.5	10.74	7,614	0.3	605.7	13.03	7,891	0.3	0	1,679	161	32	0

Source: VM Group calculations from published data and methodologies

The table above shows our calculations for the metals.¹ The second column gives the 2007 "Contract Production Weight" (CPW) while the sixth gives the same for 2008. When the index comes to rebalance in January 2008, it will use an "Average Contract Reference Price" (ACRP) for each commodity, calculated

¹ Please contact us via email for a version that includes all commodities in either index – a summary is given at the end of this article.

as the average of the first day of each month between September 2006-August 2007. This is shown in the seventh column (and for comparison the 2007 ACRP is shown in the third column). Multiplying the CPW by the ACRP gives a dollar weight for the index, shown for both 2007 and 2008. From this can be calculated the % share of each commodity, and hence the change in weighting, and the change in units of each metal and therefore the amount of futures contracts that need to be bought or sold. These are shown in the last four columns.

To calculate the change in units or contracts required, we have assumed that the funds linked to the GSCI currently have \$80bn of assets under management; the precise amount is not known.² Based on AUM of \$80bn, the second of these four columns shows the amount in dollars of each commodity the index funds will need to buy or sell. The next column shows the required change in units of each commodity and the one after the change as a number of contracts. The amounts in themselves do not really mean much, so the final column puts this into perspective, by expressing it as a % of open interest for each contract.³

The largest change (not shown) will be in RBOB unleaded gasoline, where the funds' holdings will have to rise by an estimated 31,236 contracts, or 15.5% of open interest. This is a rather special case as RBOB gasoline was only added to the index part way through last year, and the data on which its weighting was set was incomplete. No other commodity sees an increase of more than 3% of open interest, and most are well below 1%. From the perspective of the metals it is significant that the changes are very small indeed.

The Dow-Jones AIG Index, which is the second largest commodity index by AUM, with an estimated \$35bn-\$50bn in funds tracking it, announced its new weightings in August. These will come into force during the roll period that begins on the 4th working day of 2008, which is January 7th.

With the DJ-AIG Index there is more potential for changes than in the GSCI for two reasons, first it holds more proportionately more metals than the GSCI, and second because its weightings are set not in terms of ounces/tonnes, but by *dollar value* (each commodity is allocated a percentage share of the total value of the index), based two-thirds on rolling five-year dollar value averages for liquidity (contract volume traded), and one-third rolling five-year dollar value averages for production.

This means there are two factors behind the extent of the rebalancing required by the DJ-AIG Index – the change in the target weighting, and the change in the price of a commodity since the last rebalancing. The latter factor means that, even if the target weights of the index remained unchanged, rebalancing would still be inevitable, as the actual weighting would have changed in line with relative price movements.⁴

² Another source of information is the Commitment of Traders report from the CFTC; this gives the amount of contracts held by Index Trackers. The GSCI invests in two commodities, feeder cattle and cocoa, which the DJ-AIG index does not. An AUM of \$80bn in the GSCI would mean it owns contracts worth 92% of the COT figure for feeder cattle but only 54% for cocoa. In the latter case we think this is because cocoa is only a small amount of the GSCI and the Reuters CRB index, where cocoa has a much larger weighting, might account for the rest of the contracts.

³ Open interest as of early November or latest available date. For commodities that are particularly heavily or lightly traded relative to their economic importance, this comparison might understate or overstate the rebalancing impact.

⁴ A simple example makes this clearer. Imagine a commodity index worth \$2, made up of one unit each of two commodities, A and B, which are both worth \$1. Thus the actual weighting is 50:50, which we can assume was equal to the *target* weighting at the start of the year. Let's assume that over the first year the price of A doubles to \$2, whilst that of B remains the same at \$1. Now the index is worth \$3, \$2 of A and \$1 of B. Thus the *actual* weighting is now 66:33 A:B. If the index wants to return to the original weighting of 1:1, it would need to sell \$0.50 of A and purchase \$0.50 of B. If, however, the *target* weightings had been changed to (say) 60:40 for A:B, then the index would only have to sell \$0.20 of A and purchase \$0.20 of B to make the actual weighting equal the target weighting. Note, however, that in this second example the index is still selling A despite its *target* weighting having risen, because the *actual* weighting has risen further.

We cannot know the extent of the rebalancing that will happen in the DJ-AIG Index until we know the prevailing prices for each commodity on 7th January 2008. However, we can get an indication, by looking at current prices.

The following table does this for the Dow-Jones AIG index. The first column shows the size of the contracts in metals that the DJ-AIG invests in. The second column shows the 2007 target weighting. The third shows the commodity price at the start of the year and the fourth the price on 1st November 2007. The fifth shows our estimate of what weighting the commodities now *actually* have in the index, given their price movements. For example, zinc has fallen in price from \$3,735/t at the start of the year to \$2,637/t on 12th November. Its *actual* weight has therefore fallen to 1.56%, from 2.8% at the start of the year. The next column shows the new 2008 *target* weights. This is 3.0% for zinc, hence an increase from its 2007 target weight and a large 1.5 percentage points higher than its current actual weight – this required change is shown in the next column.

The final four columns show our estimate of extent of the rebalancing that will be needed, if today's prices (as of 12th November) prevail on 7th January, and assuming the AUM of the index is then \$45bn. In zinc then, for example, 252,000t will need to be bought to return it to a 3.03% weighting by value. Again, using % of open interest as a guide to the importance of each move, the major gainers are copper (up 7.1%)⁵ and zinc (up 4.1%), but all the metals in the index will be gainers.

Impact of DJ-AIG re-weighting

	Contract size	2007 target weight	Start 2007 price	Current Price (Nov 12th)	Current weight	2008 target weight	Change required in % weight	\$ (assuming AUM = \$45bn) (000)	Units (000)	Contracts	as a% open interest
Aluminium	25t	6.80%	2,617	2,525	5.17%	7.11%	1.94%	873,474	346	13,836	1.46%
Copper	25,000 lbs	6.20%	252.8	311	5.99%	7.04%	1.06%	476,645	153,509	6,140	7.07%
Zinc	25t	2.80%	3,735	2,637	1.56%	3.03%	1.48%	665,227	252	10,091	4.10%
Nickel	6t	2.70%	31,675	33,390	2.25%	2.79%	0.54%	242,565	7.27	1,211	1.56%
Gold	100 oz	6.80%	609.4	806	7.10%	7.40%	0.29%	131,780	164	1,635	0.33%
Silver	5,000 oz	2.30%	12.36	1,472	2.14%	2.72%	0.58%	259,611	17,637	3,528	2.87%

Source: VM Group calculations from published data and methodologies

⁵ Note that the % of open interest (Comex) for copper is misleading as copper also trades (and in greater volume) on the LME.

Combining the GSCI and the DJ-AIG

Combined impact of S&P GSCI and DJ-AIG re-weighting

	DJ contracts	GSCI contracts	Total	Open Interest	% open interest
Natural Gas	1,314	-2,150	-836	760,401	-0.11%
Crude Oil	-14,191	-19,128	-33,319	634,882	-5.25%
Unleaded Gas	-5,144	31,236	26,092	201,891	12.92%
Heating Oil	-4,171	-10,875	-15,046	237,360	-6.34%
Live Cattle	-493	485	-9	251,894	0.00%
Lean Hogs	10,303	-447	9,856	196,170	5.02%
Wheat	-16,358	11,999	-4,359	413,257	-1.05%
Corn	24,840	1,837	26,676	1,173,871	2.27%
Soybeans	-14,551	1,351	-13,200	585,945	-2.25%
Aluminium	13,836	1,058	14,893	948,194	1.57%
Copper	6,140	-227	5,914	86,858	6.81%
Zinc	10,091	171	10,262	246,288	4.17%
Nickel	1,211	151	1,362	77,624	1.75%
Gold	1,635	-1,344	291	489,471	0.06%
Silver	3,528	32	3,560	122,842	2.90%
Sugar	40,022	585	40,607	718,923	5.65%
Cotton	-5,510	964	-4,546	245,742	-1.85%
Coffee	5,823	-192	5,631	172,511	3.26%

Source: VM Group calculations from published data and methodologies

These two leading commodity indices invest in 19 contracts that are the same, listed in the above table. In bold are the ones where the impact of the re-weighting and rebalancing will work in the same direction, not in bold are where they offset each other to an extent. Given the small quantities involved, particularly for the GSCI in most commodities, the combined impact remains small, even when both indices are buying or selling. As a % of open interest the commodity to see the largest purchase remains unleaded gasoline, although the DJ-AIG index will be a net purchaser, followed by sugar. The largest disposal will be of heating oil. For metals the impact is usually smaller, although given the likelihood that collectively these indices will be net purchasers of rather than sellers of futures contracts in aluminium, copper, nickel, zinc, gold and silver, the re-weightings should be mildly positive for metals prices. Lead is held only in the GSCI and not in the DJ-AIG but the small amount of futures' contracts that are likely to be sold amounts to less than 2,000t and is unlikely to impact the price.

Factors that could alter these findings

Prices: In the case of the DJ-AIG index, the calculations are made using 12th November prices; any changes between now and 7th January 2008 will change the volume of commodities that needs to be bought or sold.

AUM: We have estimated the AUM of funds backing the GSCI and DJ-AIG indices on the basis of published statements, adjusted for valuation growth and using data from the CFTC's Commitment of Traders' report. These are estimates only, and the AUM will change between now and 7th January. If it is higher than our estimate then the volume of commodities that will be bought or sold will all be slightly higher for each index.

Open Interest: The open interest of the commodities in the index will alter between now and 7th January 2008.

Other commodity indices: There are numerous commodity indices for investors. Although the GSCI and Dow-Jones AIG are by far the largest in terms of AUM, the weightings of some particular commodities in the other indices might be considerably higher, and thus their investment in those commodities could be relatively large.

Focus

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Indonesia tinkers with tin

Indonesia is trying to prop up the price of one of its most important exports, tin. Could history be about to repeat itself? The last time tin producers attempted to put a floor under the metal's price it all ended in tears, when in 1985 the London-based International Tin Council collapsed under the burden of a billion-dollar debt mountain. Commodity producers have a very poor record when it comes to trying to constrain supply to ensure minimum prices. Admittedly, 22 years ago the global tin market was caught out by growing supply rapidly outstripping demand, a situation very different to that of today. But even the most tightly managed cartels – think of the Organisation of Petroleum Exporting Countries – prove to be very 'leaky' during a period of historically high prices. And tin substitutes are not that hard to come by for most applications.

You could be forgiven for having a momentary sense of *déjà vu*, following the announcement by the provincial government of the Bangka-Belitung islands, Indonesia's largest tin producing province, that it would introduce an informal cartel in an attempt to support tin prices. Visions of the ill-fated and long defunct International Tin Council's buffer stock system flooded back to mind. But we still have a long way to go before the world faces a new tin cartel. Regardless as to whether the province has the legal right to enforce the mooted tin export cap – Indonesia's federal government is still looking into that question – it is unlikely that, even if any informal quotas were adhered to, the tin price could be as easily regulated as some Indonesian tin producers imagine.

Although Indonesia's trade ministry denied (on 6th November) that the central government has any plans to introduce tin export quotas, there have been strong hints that the government will not prevent producers from exercising an informal regime, one that may amount to the same thing. Simon Sembiring, who is director general of minerals, at Indonesia's Energy and Minerals Resources Ministry, suggested in late in October that there would be no government action to prevent the proposed cartel. Sembiring said government would like to see Indonesia exports of tin at around 100,000t in 2008, with the price at about \$15,000/t. There were also strong hints that Indonesia might consider setting up a strategic stockpile to support the price. There have also been remarks from Indonesian tin producers that what they have in mind is not a tin export quota but a tin production quota.

Time will tell precisely what the country's tin producers have in mind. Certainly some of them have recently floated the idea that tin exports, expected to be between 80,000t-95,000t this year – at least 23,000t less than exported in 2006 – could be held at around 90,000t-100,000t in 2008. Their stated aim is to prevent tin prices falling below \$15,000/t on the LME. In line with the proposal for export quotas, the Bangka-Belitung provincial government has said tin smelters on the islands must now apply for a sales quota for each of their operations. This is to be based on the smelter's production capacity; these quotas must be renewed each year. The directive proposes limiting the size and number of shipments, and all exports have to be 99.85% refined tin. There is also a clause stipulating that producers provide evidence that they have paid the relevant mining royalty.

A tight market – which may get tighter

Indonesia's tin producers certainly have clout. The mere threat of restricting exports has been enough to help the three-month contract on the LME rise to fresh highs, firmly above \$16,000/t, at a time when other base metals have been weakening out of fright of a US-led global recession. Indonesia is the world's second largest tin producer after China. Global demand for tin, including recycled metal, is currently about 350,000t/year, roughly equivalent to global refined tin production. Tin prices have surged 45% this year, a far cry from the \$4,000/t seen only six years ago. It's a tight market and what Indonesia does

with its tin industry matters. Although China is the biggest tin producer it exports relatively little – its tin exports in the first nine months of 2007 were, according to official data, 20,570t. This is more than it exported throughout all 2006, but its tin exports have recently been declining; in September China exported 1,525t but imported 3,911t of refined metal, mainly from LME warehouses. While China's exports appear to be on a slowing trend, supplies from other big producers have also been subject to unexpected disruption. This time last year violent clashes between independent miners and state-enrolled unionists in Bolivia saw output disrupted at the country's Huanuni tin complex, one of the world's biggest. And in August this year an earthquake in Peru temporarily put out of action the Funsur smelter near Pisco, operated by its parent company, Minsur. Funsur has been operating normally since mid-September, but refined tin production in the nine months to September was 24,265t, more than 20% lower than for the same period of 2006.

Indonesia's tin production has also been in decline since it peaked at some 140,000t in 2005. Last year the country's central government waded in against allegedly illegal independent tin smelters, accusing them of failing to abide by safety and environmental regulations but actually seeking to reduce tax avoidance. It could also be viewed as resource nationalism by the back door, with government keen to support metal prices and make sure Indonesia gets what it deems to be its fair share of the upside from the global commodities boom. Many smelters have not applied for export licences and not all of those that do have new licences have started to export again. According to the International Tin Research Institute (ITRI) this government intervention resulted in an immediate 20% decline in Indonesia's tin smelting capacity.

Buffer stock buffoonery

It's unlikely that the Indonesian scheme will repeat precisely the same mistakes of the past – it will no doubt come up with some of its own. The 1985 collapse of the International Tin Council's 29-year-old scheme to support the tin price ended, paradoxically, when the market price for tin weakened so much that tin producers found it more profitable to sell much of their output to the Council's buffer stock scheme, which consequently swiftly ran out of cash, having accumulated a total stock of 62,000t (and with outstanding contracts to purchase another 68,000t), with another 100,000t (then equivalent to about six months' demand) in LME warehouses. With more than one year of total global demand either in the LME or the buffer stock the Tin Council disappeared in a puff of smoke, with red faces all round. Tin trading on the LME was suspended for almost four years following the debacle. Such was the crisis that even the very survival of the LME was in doubt for a while.

There are a number of reasons why Indonesia's move to constrict its own tin exports is unlikely to find national producers flocking to join, beyond the discouraging example of the International Tin Council. US and EU competition authorities would certainly oppose it, and Indonesia might also find itself facing difficulties with the World Trade Organization, of which it has been a member since 1995. The key reason is the currently very buoyant world demand for tin which itself is supporting prices – other big national producers, particularly in Latin America, would see little self-interest in artificially controlling supply at a time of strong global demand and record prices. On the supply side the collapse of the price in the mid-1980s and the lacklustre price in subsequent years has discouraged fresh capital investment in tin mining or smelting, although a few junior tin miners have emerged. There is certainly no lack of tin in the earth: South America, from Bolivia to Peru and up to the Amazon, is a known tin belt, as is a massive resource stretching from Australia (Tasmania), moving north to the borders of China. The Democratic Republic of Congo (DRC) has significant reserves of cassiterite, which is exported and smelted into tin. And China has cut its export quotas for tin in 2008, as well as those for tungsten and antimony. China is permitting exports of 33,300t of tin next year, against 37,000t in 2007. Stocks in LME warehouses are much lower today than in 1985, under 20,000t,

and producer inventories are also relatively low. Finally, one previously important source of supply – US Defence Department stockpiles – have been gradually wound down from 30,000t a few years ago to about 8,000t today, most of which will go in the next year.

Arguably with this strong supply and demand backdrop, Indonesia's tin producers have little need to curb their own exports to secure high prices – they should be here to stay for the rest of this decade at least. So far this does not seem to have hit home with Indonesia's producers, however. At the start of November Wachid Usman, president of the state-owned tin refiner PT Timah said that the government is thinking of imposing an export quota limit of 90,000t for 2008, about 25% less than Indonesia's total exports in 2006. While China's tin producers can rely on not only a large and expanding tin-plate domestic demand but also strong demand for electronics, Indonesia's market is largely exports. The danger for Indonesia's tin sector is that by curtailing exports it may not just put a floor under the tin price, but such a high floor that ultimately its tin buyers turn to much cheaper substitutes wherever possible.

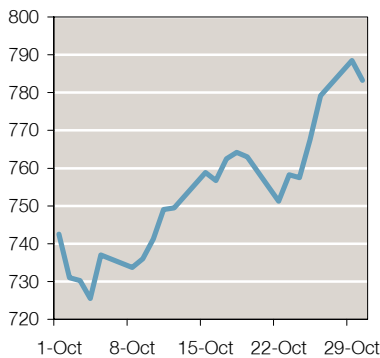
Better and worse

Back in 1985 tin had only one real application, as tin-plate for canning, a market that has been steadily eaten into by plastics and aluminium. Tin has however had a new lease of life thanks to the European Union, whose Restriction on Hazardous Substances Directive (RoHS, which came into force in July 2006) has virtually eliminated the use of lead in electronic soldering. The lead solder has been replaced by tin, usually in an alloy with copper or silver. Electronics soldering demand for tin accounts for about 50% of global tin consumption today, while tin-plate is less than 20%. Other uses – in glass manufacture, in other alloys and in the chemical industry – comprise the other 30% of demand for tin. As electronics circuit boards rapidly become more ubiquitous, inserted into all manner of products (and equally rapidly disposed of) so tin demand should steadily grow; it has a new and entirely captive market. So the context for tin today is much better than that of 1985.

Yet there is a threat, albeit one that is quite obscure at the moment. Scientists and engineers from a wide range of industries in which electronics components are critical are beginning to complain vociferously about the RoHS. In the words of Joe Smetana, who is a senior engineer with the French telecoms equipment manufacturer Alcatel-Lucent: "The EU's decision was irresponsible and not based on sound science. We're solving a problem that isn't, and creating a bunch of new ones." Smetana is just one of many engineers who is cross about 'tin whiskers', which are microscopic splinters that can form without warning in tin solder within circuit boards. Once the tin-alloy solder begins to develop these 'whiskers', short-circuiting is inevitable – leading to an electrical breakdown or, worse, possible fire hazards. Small amounts of lead mixed with the tin prevents such whiskering – but lead is now banned in soldering within not just the EU but the US and other markets too, for all but a few safety-critical applications. In 2006 one of the most high profile failures attributable to tin whiskers was identified by NASA engineers on the space shuttle Endeavour; whiskering of a component was discovered to be affecting the trajectory of the rocket that was carrying Endeavour. While researchers are toiling to come up with a solution to tin whiskers, by experimenting with various tin-based alloys, nothing works quite so effectively as a little bit of lead. It's highly unlikely that the EU will overturn the RoHS Directive – at least until there is a very public disaster. If that happens, tin's new found demand source could evaporate faster than you can crush a tin can.

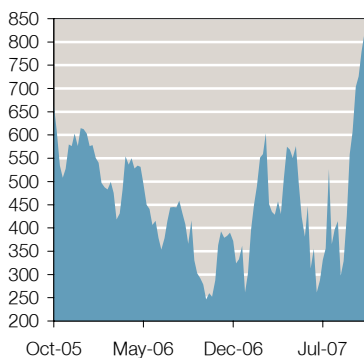
Gold

Gold price (\$/oz)



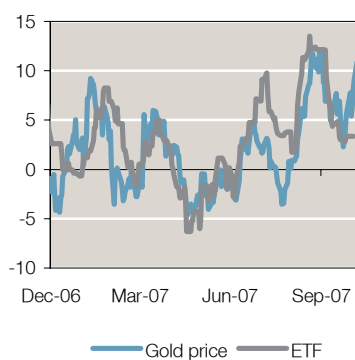
Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: VM Group

ETF & gold price (% change month on month)



Source: VM Group

News

- Oct 31st: Newmont Mining was the last in a line of gold producers to report quarterly results. For Newmont, Q3 profits rose to \$397m. Gold Fields previously in October reported net income over the same period fell 19% to R428.6m, while Barrick's quarterly profit fell 15% to \$345m.
- Oct 24th: Venezuela is to review a contract for Gold Fields for the \$520m sale of local assets to Canadian-listed Rusoro Mining, including the Choco 10 gold mine.

Analysis

- Macro-economic fears push gold higher

Investors on Comex and in the gold ETFs as of the week ending 30th October were long more than 1,676t of gold – the gold ETFs are perhaps more important right now than Comex because they are long about half of that, almost 850t of physically-held gold. The weak US currency – and the probability that it will go down even further as the Federal Reserve maintains its policy of benign indifference to the dollar's fate – is the key factor in spot gold prices breaking through the psychologically important \$800/oz barrier. If we see another interest rate cut soon and further dollar weakness then \$900/oz could be with us before we can bat an eyelid. This is heady stuff and may eventually take its toll of physical demand in the key markets, although the strengthening of the rupee is helping Indian buyers. Global jewellery market demand so far this year has been strong; Turkey's imports are up 24% in the first nine months of this year compared to 2006, at 192t, as much as the total for all of last year, according to the Istanbul Gold Exchange. This year too imports of gold into the largest consuming market, India, are expected to rise to a record of over 800t. Central banks participating in the European Gold Agreement have got off to a cracking start of the latest EGA year, its fourth, which started at the beginning of October. In the first five weeks of this new EGA year the eurosystem central banks sold 41.4t, a much faster rate of selling than seen in the last three months, and, if there are more sales from the Swiss National Bank, surprisingly on course to sell the maximum 500t permitted in the current EGA year.

Outlook

The gold spot price finally broke through \$800/oz at the start of November, hard on the heels of the latest US interest rate cut. There is a very strong likelihood of yet another small (25 basis points) cut by the Federal reserve in US interest rates before the end of 2007; the mere thought of that was enough to drag the dollar down and see gold zip up close to \$850/oz in the first week of November. The banking sector crisis in the US is reverberating across many sectors and this, together with the historic high nominal price for crude oil, spells a very strong outlook for gold. At the same time the sheer size of the futures' longs in gold right would suggest some correction might be on the cards – were it not for crumbling investor confidence in other assets. Short-term London daily pm fix: \$795/oz-\$840/oz.

Market data (October unless stated)

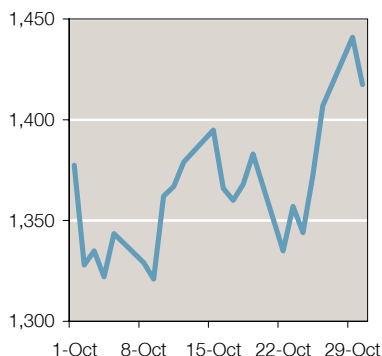
Prices	US\$/oz	Euro/oz	Rand/kg	ETF investment	Tonnes holdings	Monthly change	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	750	528	163,136	US (2)	649.85	21.79	Average	0.21	0.32	0.35	0.37	1-month	20.10
High	779	541	167,192	UK	108.65	7.22	High	0.27	0.38	0.39	0.45	3-month	19.30
Low	726	513	160,478	Aus	15.06	0.77	Low	0.15	0.26	0.26	0.26	6-month	18.90
				S.Africa	18.33	0.61						12-month	18.60
				Swiss	22.44	0.49						24-month	18.45
				India (2)	3.41	-							

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

Note: Indian ETF holdings calculated from rupee amounts and thus are approximations only.

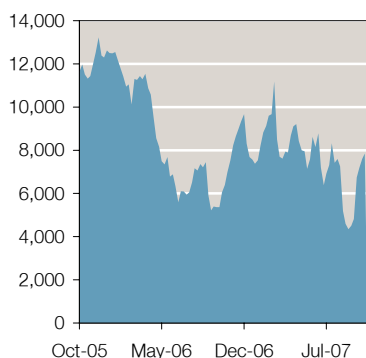
Silver

Silver price (cents/oz)



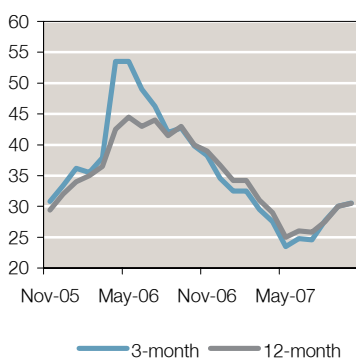
Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: Comex

Silver option volatility (%)



Source: VM Group from BGI data

News

- Nov 2nd: Coeur d'Alene reported Q3 profits down 80% at \$3.6m, compared to the same quarter of 2006. During the period, the company's silver production fell 19% to 2.7 Moz. Total silver production for the first nine months of 2007 was 8.3 Moz, against 9.4 Moz for the same period last year.
- Oct 31st: Mexico's silver output was up 3% in August compared to the same month a year earlier, at more than 5.615 Moz.
- Oct 22nd: Apex Silver delivered its first shipments of concentrates from its San Cristobal silver and zinc mine in Bolivia.
- Oct 19th: Peru's silver production in August increased by 4% to more than 9.55 Moz compared to the same month a year earlier.
- Oct 17th: The second largest silver producer in Peru, Hochschild Mining, said its Q3 output rose 31% as it started production at its Moris and Pallancata mines.

Analysis

- Russian output stumbles

Silver production at Russia's largest silver miner, Polymetal, has stalled this year, falling 7% to 12.1 Moz in the nine months to the end of September, compared with the same period a year earlier. Polymetal has now lowered its expectations for full-year silver production to 16 Moz-16.5 Moz, against an earlier projection of up to 18 Moz. The hiccup is unlikely to have any impact on the silver supply and demand balance, and Polymetal in any case said production would grow next year. Barring any acquisitions, Polymetal has set a target of producing 17 Moz-18 Moz in 2008. Silver production in the next two years is going to rise significantly. Coeur d'Alene's latest quarterly output results showed a drop-off compared to last year, but plans to increase its silver output by 142% from current levels between 2007-2009. The massive San Cristobal mine in Bolivia, with proven and probable reserves of 420 Moz of silver, is beginning to get up a head of steam. There are also numerous other new, although smaller, projects in the pipeline. Silver Standard Resources, a Canadian mining company, plans to start production at its Pirquitas mine in Argentina late 2008. The mine has an expected life of nine years and once up to speed would produce 9.6 Moz/year. And another Canadian company, Apogee Minerals, said it had started its planned expansion project at its La Solucion zinc-lead-silver mine in Bolivia. The company said it intended to triple the metal output within the next 15 months.

Outlook

When gold does well, silver climbs too. Such was the case at the start of November, with gold first breaching \$800/oz and then climbing further just a few days later. This rise in the bullion price – mostly related to the crumbling US currency – helped drag silver to its highest in 28 years, above \$15/oz. The last peak was May 2006, when it hit a 25-year high of \$15.17/oz. The disconnect between the underlying physical situation – a substantial global surplus – and the futures' price is sharper than ever before, but that probably won't deter fresh investors joining the party. Short-term London daily fix: \$14.50/oz-\$15.50/oz.

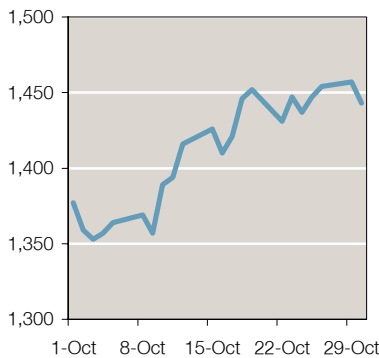
Market data (October unless stated)

Prices	c/oz	E/oz	p/oz	Imports	kg	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	1,357.6	956.0	665.0	USA (Jul)	545,543	Average	-0.16	0.07	0.21	0.33	1-month	28.25
High	1,407.0	981.7	685.4	Japan (Aug)	323,710	High	-0.04	0.12	0.28	0.43	3-month	28.75
Low	1,321.0	935.4	648.2	China (Aug)	585,237	Low	-0.32	-0.01	0.13	0.18	6-month	29.00
											12-month	29.50

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

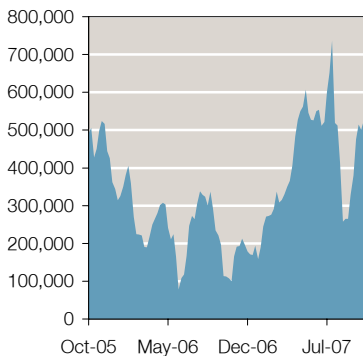
Platinum

Platinum price (\$/oz)



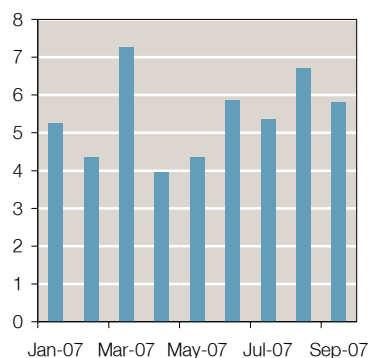
Source: London Platinum & Palladium Market

Nymex: Non-commercial net position (ounces)



Source: Nymex

Japan imports platinum (tonnes)



Source: Reuters Ecowin

News

- Nov 13th: Johnson Matthey estimated the global market would see a 265,000 oz deficit in 2007 on lower than expected supply.
- Oct 25th: China's imports of platinum in the first nine months of 2007 were 848,458 oz, up 42.4% on the same period of 2006, according to customs data.
- Oct 18th: Canada's Platinum Group Metals is seeking more mining prospects in South Africa as it waits for its permit to start development of its Project 1 of the Western Bushveld Joint Venture. The company and Anglo Platinum both have 37% stakes in the project, with the other 26% held by Wesizwe Platinum.
- Oct 18th: South Africa's Competition Tribunal approved the proposed \$1bn takeover of Eland Platinum by Xstrata. Eland has forecast initial production of 160,000 oz/year of pgms in concentrate rising to 270,000 oz by 2012.

Analysis

- Platinum deficit now certain

Platinum prices rose to fresh highs in October and early November, partly on rising investment interest in platinum futures and partly on some serious supply-side mishaps and lowered output forecasts from major South African producers. On Nymex and Tocom in the week up to 30th October platinum futures' investors added a net total 29,704 oz to their longs, taking the total long position back up above 1 Moz. In South Africa, Implats briefly shut one shaft at its Marula mine after a fatal accident, as did Northam Platinum, while Angloplat scaled down its 2007 full-year platinum output to between 2.6 Moz-2.65 Moz, against its own previous estimate of 2.8 Moz-2.9 Moz, and compared with 2.82 Moz in 2006. Lonmin reported a 16% drop in platinum sales for its fiscal year, to 793,584 oz from a (restated) 939,654 oz in the previous year, partly on earlier smelter problems, and some 200,000 oz below its original output estimate. Lonmin now expects to sell 900,000 oz of platinum in 2008, well below earlier forecasts, a decline it attributes to lower than expected grades. Lonmin also shaved 200,000 oz from its production target by 2012, estimating it will now see output by then of 1.2 Moz.

Outlook

We consider the deficit this year could be higher than Johnson Matthey's estimate, at least 300,000 oz, and prices are only likely to rise yet higher in the short to mid-term. Strikes by contract workers at South African producers in early November are so far reported to have had little impact on production, but it's proving much more difficult for South Africa to keep production growing in line with strong industrial demand. However, retail prices for diesel in EU markets have risen strongly in the wake of higher crude oil prices and this may eventually depress demand for diesel-fuelled vehicles, to the detriment of platinum. There is also a growing likelihood of a significant squeeze on diesel supplies to Europe longer-term, meaning diesel prices may climb significantly higher than gasoline. London daily pm fix short-term: \$1,400/oz-\$1,490/oz.

Market data (October unless stated)

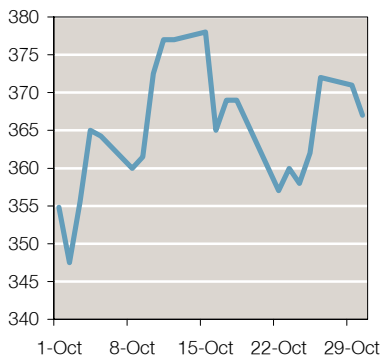
Prices	US\$/oz	Lease rates	1m				Trade (kg)	Imports	Exports	ETF offtake (oz)		Option volatility (end month, %)		
			1m	3m	6m	12m				Holdings	Change			
Average	1,409	Average	3.6	4.6	4.7	4.8	USA (Aug)	7,293	4,364	UK*	39,847	13,812	1-month	21.5
High	1,457	High	7.0	7.2	6.5	6.4	Japan (Sep)	5,812	2,133	Swiss	52,939	19,233	3-month	22.5
Low	1,353	Low	2.1	3.2	3.7	3.7	Hong Kong (Aug)	2,101	474				6-month	24.0
							Switzerland (Sep)	4,373	3,272				12-month	25.0
							China (Aug)	5,293	0					

Source Price: London Platinum and Palladium Market, Others: VM Group

* Includes 'basket' ETF

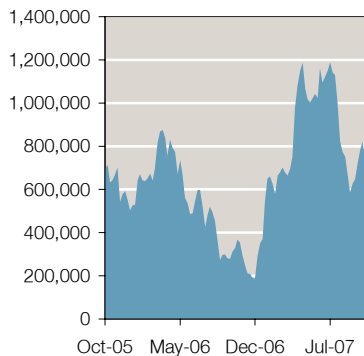
Palladium

Palladium price (\$/oz)



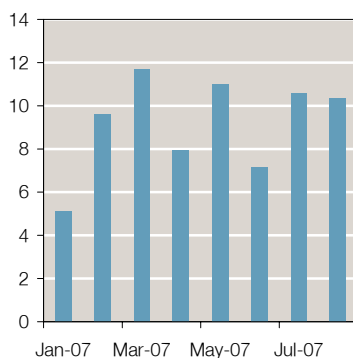
Source: London Platinum & Palladium Market

Nymex: Non-commercial net position (ounces)



Source: Nymex

US imports palladium (tonnes)



Source: Reuters Ecowin

News

- Nov 6th: North American Palladium reported a net loss of \$14m for Q3 2007 compared to a net loss of \$11m for the same period of 2006, giving a cumulative loss of \$17.6m for the first nine months of 2007, compared to a net loss of \$26.7m for the same period last year. In October, the company said its Lac des Iles mine produced 69,283 oz of palladium in Q3 compared to 59,756 oz in the same quarter of 2006 and 66,651 oz in Q2 this year.
- Nov 5th: Stillwater Mining reported a net loss of \$11.1m for Q3 2007 compared to net profits of \$6.9m for the same period of 2006, giving a total net loss of \$14.6m for the first nine months of the year, against net profits of \$5.1m for the same period of 2006. The company blamed a week-long strike earlier this year for some of the losses; production of pgms in the first nine months of this year was 405,800 oz, compared to 446,000 oz for the same period of 2006.

Analysis

- Palladium moves higher

Palladium is enjoying the kind of relationship with platinum that silver has with gold – being dragged higher by the more expensive metal, despite lacking its more attractive investment and supply-demand characteristics. We estimate that 2007 will see a global palladium surplus of more than 640,000 oz, and although there are innovations being made in increasing palladium loadings at the expense of platinum in autocatalysts, these will take some years to make themselves felt in car manufacturing. The high price of platinum is making a sizeable number of junior platinum-focused mining projects increasingly viable, and others are in the wings. For most of them palladium will be an inevitable by-product, rather as silver is an inescapable by-product of increased lead and zinc mining. Meanwhile, established palladium producers are also increasing their production – the world's biggest palladium producer, Norilsk, has now raised its estimated palladium output this year by 50,000 oz to 3.05 Moz-3.10 Moz – its Q3 output rose 4.7% to 804,000 oz from 768,000 oz. Palladium producers have staked their hopes on expanding the metal's jewellery market but this has not yet taken the world by storm.

Outlook

We continue to see a disconnection between the relative ebullience of investors in palladium futures and the underlying realities of the physical supply-demand balance. According to CFTC data for the week to 6th November net total investment in palladium futures on Nymex and Tocom rose by more than 70,000 oz, taking the total net long position substantially above 1 Moz, which seems remarkably confident given the probability of a healthy physical surplus of the metal for the foreseeable future. Given the general strong interest in precious metals' investment right now however we are unlikely to see a price correction in the short term. London pm fix short-term: \$350/oz-\$380/oz.

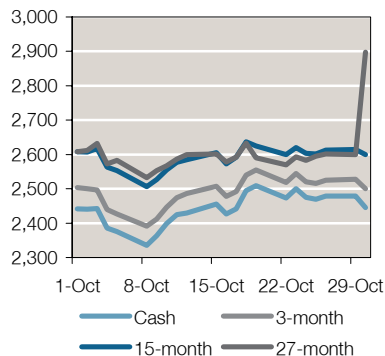
Market data (October unless stated)

Prices	US\$/oz	Lease rates	1m				Trades (kg)	Imports	Exports	ETF offtake (oz)		Option volatility (end month, %)		
			1m	3m	6m	12m				Holdings	Change			
Average	365.1	Average	-0.01	0.18	0.22	0.02	USA (Aug)	10,350	7,765	UK	33,821	3,922	1-month	25.5
High	378.0	High	0.14	0.49	0.44	0.26	Japan (Sep)	193	1,571	Swiss	237,446	12,738	3-month	27.0
Low	347.5	Low	-0.33	-0.30	-0.14	-0.36	Hong Kong (Aug)	2,513	195				6-month	28.5
							Switzerland (Sep)	1,135	6,086				12-month	31.3
							China (Aug)	1,461	0				24-month	32.3

Source: London Platinum and Palladium Market, Others: VM Group

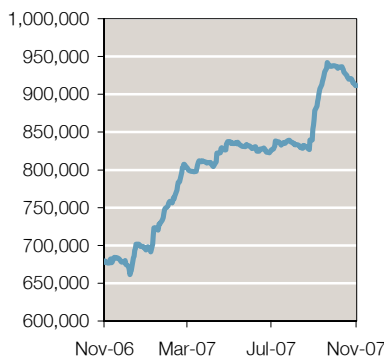
Aluminium

Aluminium price (\$/tonne)



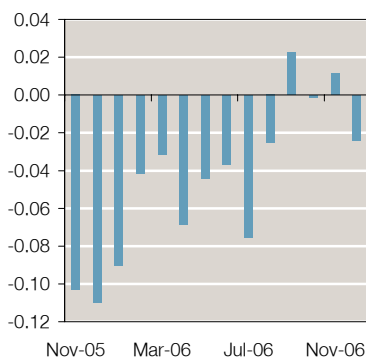
Source: London Metal Exchange

Aluminium stocks (tonnes)



Source: London Metal Exchange

Aluminium stocks, World (% change yoy)



Source: Reuters Ecowin

News

- Nov 1st: Aluminium Corporation of China (Chalco) expects its aluminium output this year will exceed 2.7 Mt.
- Oct 25th: China's exports of primary aluminium in the nine months to the end of September fell 79% to 142,763t compared to the same period last year.
- Oct 18th: UC Rusal is considering building a new smelter on the island of Sakhalin. Earlier in the month the company said it plans to invest up to \$7bn in building what would be the world's largest aluminium smelter, with capacity of 1.05 Mt, near the Volga River and expanding a nuclear power station to secure energy sources for the plant.
- Oct 9th: The steel company Corus, owned by India's Tata Steel, plans to sell its primary aluminium smelters in Germany and the Netherlands.

Analysis

- Steady as she goes

The International Aluminium Institute (IAI) reported that total world primary aluminium production in September was 2.057 Mt compared with 1.957 Mt in September 2006. This rising trajectory for aluminium output looks likely to extend into 2008, when Chinese production alone is expected to increase by more than 20%, from about 12.5 Mt this year to more than 15 Mt. That, however, may not be enough to meet growing Chinese demand and by 2009 it may be a net importer of aluminium. However, new production capacity is growing strongly to meet this rising demand. BHP Billiton and the Democratic Republic of Congo are planning to co-operate to build an 800,000t/year smelter. This comes as state-owned Emirates Aluminium (EMAL) is contemplating construction of a new 1.4 Mt/year plant, which would be the world's largest smelter, in Abu Dhabi. A small surplus is expected next year with a tightening in supply seen in 2009. Higher energy costs are going to constrain some producer expansions, and there are reports that the Chinese authorities are readying yet further measures to curtail the country's energy-hungry smelting industry.

Outlook

Aluminium prices were becalmed in October – on the LME the three-month contract kicked off at \$2,503/t and by 31st October had barely moved, closing \$2,537/t, while LME stock movements (falling from 937,400t at the start of October to 918,250t by 1st November) gave no impetus in either direction. While higher power costs are likely to take a further toll on production in the EU and North America and also China, other major producers, notably Russia and the Middle East, should be cushioned to some extent and are rapidly building considerable additional capacity. We see this year's global surplus (around 300,000t) rising significantly into 2008, particularly if a US economic slowdown eventuates. LME 3-month short-term: \$2,500/t - \$2,650/t.

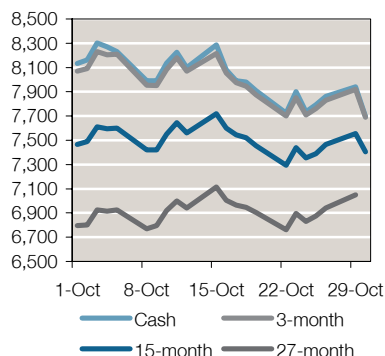
Market data (October unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Tonnes	Prod (kt)	Aug	Sep	LME Open Interest (contracts)	
Average	2,439	2,491	2,590	2,604	Sep-07	937,400	Europe	752	752	Aluminium	642,607
High	2,508	2,556	2,637	2,898	Oct-07	918,250	Americas	701	682		
Low	2,335	2,391	2,507	2,533			Asia	316	307		
							China	1,111	1,119		
							Other	351	239		
							Total	3,231	3,099		

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

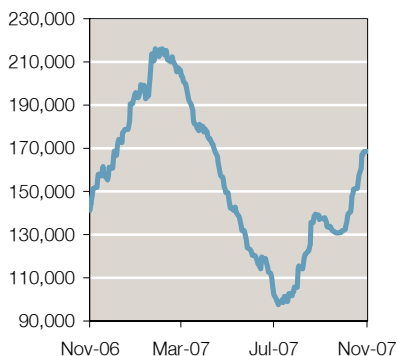
Copper

Copper price (\$/tonne)



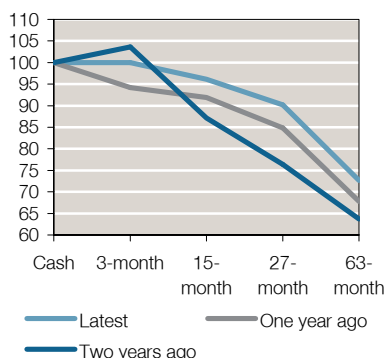
Source: London Metal Exchange

Copper stocks (tonnes)



Source: London Metal Exchange

LME copper yield curve (cash price = 100)



Source: Reuters Ecowin

News

- Nov 14th: A 7.7 magnitude earthquake struck northern Chile, killing two and disrupting copper production in the region. Early assessments were that power supplies were interrupted rather than any significant mine damage.
- Oct 31st: Chile's Antofagasta reported its Q3 production fell 5.2% to 100,600t, against 106,100t in Q2. Earlier in the month the state-owned Chilean producer Codelco said its copper output would be about 1.6 Mt in 2008, excluding metal from its El Abra mine. Total Chilean copper production in the first nine months of 2007 was just over 4.1 Mt, almost 6% higher than for the same period of 2006.
- Oct 29th: The copper market was 318,000t in deficit during January-July, according to the latest estimate by the International Copper Study Group (ICSG), against a deficit of 26,000t in the same period of 2006.

Analysis

- Growing surplus of refined metal

The prospect of a large and growing surplus of refined copper in China – despite Chinese consumption growing at about 9% this year to more than 4 Mt, with domestic production at least 600,000t less than that – will act as a brake on the copper price in 2008, along with what is rapidly turning into a slowing US economy, hit by high oil prices and a credit squeeze that is likely to take months rather than weeks to find resolution. China's National Bureau of Statistics reported the country's refined copper production grew by more than 16% between January-September this year, to more than 2.5 Mt and, on an annualised basis, is running at 3.738 Mt as of September. According to the Chinese state-owned research group Antaika, China may have a surplus of 360,000t of refined copper in 2007. The ICSG's latest global supply-demand estimate posited a chunky global deficit for the first seven months of this year but revealingly put the global market into a small (16,000t) surplus in July. The ICSG estimates that, overall, 2007 will see the global refined copper balance return to a 110,000t surplus, rising to 250,000t in 2008. Inevitably this estimate takes little or no account of the background woes in the US economy, which, if they deteriorate further, could naturally mean a much bigger surplus as consumers tighten their belts, buy fewer new cars and construct fewer new homes. Some copper producers are optimistic that strongly growing Asian economies, China especially, will be able to take up any slack if that of the US falters. To which at this stage the only response is – it all depends how uncomfortable the US economy gets.

Outlook

Copper prices have retreated almost 15% the past six weeks, the LME three-month price dropping from \$8,070/t on 1st October to \$6,900/t in early trading on 12th November. Partly this reflects increasing LME stocks, up 36,150t in October and up 80% since July, partly from speculative investors taking an increasingly dim view of the prospects for the US economy. Added to Chinese refined copper production roaring ahead, the price should begin slipping back towards \$6,000/t in 1H 2008. LME 3-month short-term: \$6,800/t-\$7,400/t.

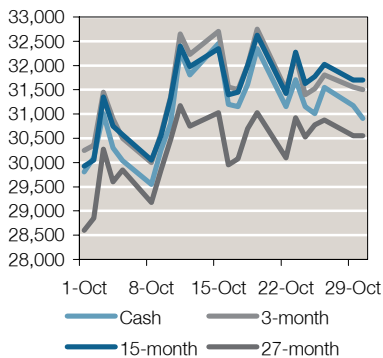
Market data (August unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Tonnes	LME Open Interest (contracts)
Average	8,020	7,977	7,505	6,911	Sep-07	130,675	Copper 238,417
High	8,301	8,229	7,720	7,115	Oct-07	167,000	
Low	7,695	7,685	7,295	6,760			

Source: London Metal Exchange

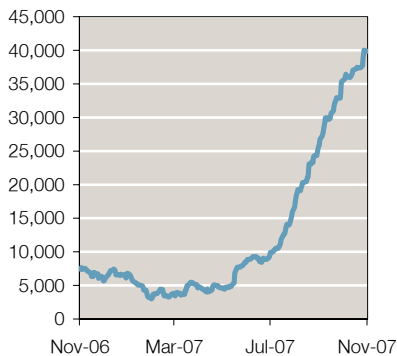
Nickel

Nickel price (\$/tonne)



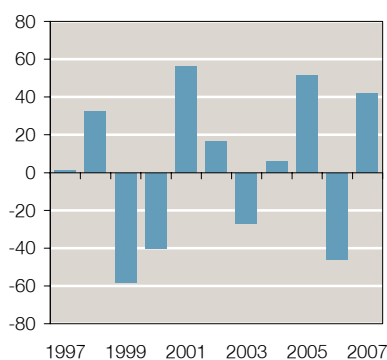
Source: London Metal Exchange

Nickel stocks (tonnes)



Source: London Metal Exchange

Nickel surplus/deficit (000 tonnes)



Source: Reuters Ecowin

News

- Nov 1st: CVRD Inco estimated its nickel output will increase 11.5% to 290,000t in 2008.
- Oct 25th: China's imports of refined nickel in September fell 19.6% to 6,944t against August; in the first nine months of this year its refined nickel imports were 76,529t, a rise of almost 12% compared with the same period last year.
- Oct 24th: Australia's Allegiance Mining, which is backed by China's largest producer of nickel, Jinchuan, said it was on track to start nickel production from its new 8,500t/year mine, Avebury, in Q1 2008.
- Oct 17th: Xstrata gave the go-ahead for development of its Koniombo nickel project in New Caledonia, which has planned output eventually of 60,000t/year. It expects to start processing ore from the mine in 1H 2011.

Analysis

- Nickel stocks still rising

The nickel price has held steady since its precipitous collapse down to around \$25,000/t in August, against a backdrop of rising stocks in LME warehouses and signs of reinvigorated demand from stainless steel producers. LME warehouse stocks rose by almost 5,000t in October and were 37,662t on 1st November; if they continue this trend they will early next year be back above 45,000t, a level not seen since the start of this new century. There were some bearish supply-side noises in the wings in October, the loudest of which was from Norilsk, which reiterated its nickel output forecast for this year at 295,000t-300,000t and said its nickel output rose 22% to 75,000t in Q3 compared to the same period a year earlier. There is a growing list of planned new nickel mine projects and refining expansions – Norilsk itself hopes its Harjavalta refinery in Finland will this year produce about 54,000t of refined nickel compared with 46,000t in 2006. In the Philippines the Berong nickel mine, majority owned by Toledo Mining, and potentially the world's fourth-largest deposit, made its first shipment of nickel ore, almost 1,000t of contained nickel, in October. Berong is expected to export up to 9 Mt of nickel (with average grades of 1.3% contained nickel) annually by 2012.

Outlook

The nickel price has done well to hold its head above \$30,000/t given the backdrop of a rising trend in LME stocks – clearly there is some lingering investor confidence still lurking. But this year's global refined nickel deficit, which we estimate will have been some 45,000t, is on track to reverse into a surplus in 2008 of some 40,000t, barring supply-side disruptions. Against that, stainless steel producers have returned to the market and are re-stocking, and continued strong economic growth in China and its concomitant increase in stainless steel capacity will require more nickel. We could be in for a period of significantly diminished volatility in the nickel price, as the market takes its time to digest growing supply meeting continued strong demand from stainless steel producers. LME 3-month short-term: \$30,000/t-\$35,000/t.

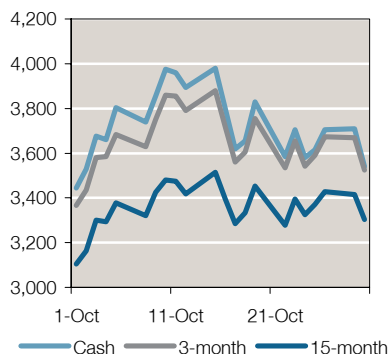
Market data (August unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Tonnes	LME Open Interest (contracts)
Average	31,063	31,432	31,423	30,258	Sep-07	32,934	Nickel 55,063
High	32,450	32,745	32,625	31,175	Oct-07	37,662	
Low	29,550	29,995	29,925	28,600			

Source: London Metal Exchange

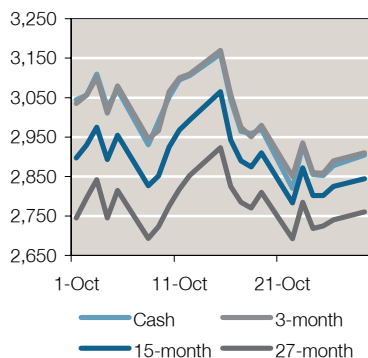
Lead and zinc

Lead price (\$/tonne)



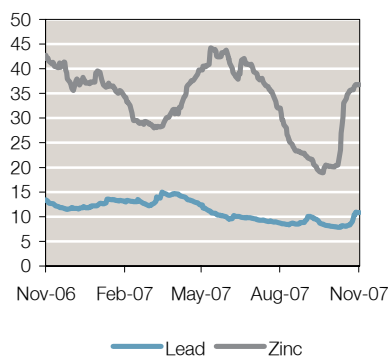
Source: London Metal Exchange

Zinc price (\$/tonne)



Source: London Metal Exchange

Stocks on LME (Jan. 1st 2004 = 100)



Source: VM Group from LME

News

- Oct 29th: Korea Zinc, the world's largest zinc refiner, raised its lead output in Q3 by 24.8%, to 42,271t, against the same period last year.
- Oct 26th: China's refined zinc production rose by 16% in September compared to August; in the first nine months of this year its total refined zinc output rose 19% to 2.7 Mt, against the same period last year.
- Oct 25th: The Australian miner Zinifex said its zinc production rose 13% in the quarter up to the end of September compared to the same period a year ago.
- Oct 23rd: Global refined lead consumption was 5.515 Mt in the first eight months of 2007, against 5.282 Mt a year earlier, according to the International Lead and Zinc Study Group (ILZSG). Refined lead production rose to 5.431mt from 5.224 Mt in the same period.

Analysis

- Deficits in 2007

The ILZSG's latest data estimated a global refined zinc deficit of 28,000t between January-August this year, compared with a 311,000t deficit for the same period of 2006 and posited a surplus of almost 250,000t in 2008. On current supply-demand projections it is quite feasible that 2009 could see an overall global refined zinc surplus in the region of 500,000t. Unsurprisingly, zinc prices have been coming under pressure and by 2nd November had fallen to \$2,655/t on the LME (three-month contract). Zinc prices recovered in a generalised base metals mini-rally on 6th November, the benchmark three-month contract closing at \$2,820/t. Continued conflicting trade signals from China make it difficult to detect a genuine trend line – China switched to being a net importer of zinc in September, the first time since May. Its exports of refined zinc in September fell to 12,325t, down 44% from August and a decline of 18.5% from the same month in 2006. Imports more than doubled compared with August, to 13,029t, but were down 2.1% from August 2006.

As for lead, the ILZSG estimates a global refined metal deficit of 89,000t in 2007, shifting towards a more balanced situation in 2008, as various production hiccups are resolved. This might be too optimistic, as the world's biggest refined lead producer, China, has dramatically slowed its exports this year after the imposition of a 10% export tax – in September its refined lead exports fell to 5,436 t, down 81.4% from September 2006. Lead imports also fell, to 1,532t, a drop of 30.6% from August and 41.8% lower than September 2006.

Outlook

The question for zinc right now is to what extent the prospect of a growing global surplus for the next two years (at least) has already been priced in. It's likely that zinc (down more than 36% since the start of 2007) will sink further before finding a solid floor. As for lead, the global market will in our view take rather longer to return to balance than the ILZSG considers likely. LME 3-month short-term zinc: \$2,600/t-\$2,800/t, lead \$3,500/t-\$3,700/t.

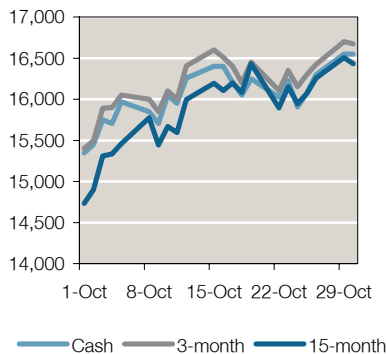
Market data (August unless stated)

Prices (\$/t)	Cash	Cash	3-month	3-month	LME stocks	LME Open Interest (contracts)	
	Lead	Zinc	Lead	Zinc		Lead	Zinc
Average	3,721	2984	3,648	2988	Sep-07	22,550	60,850
High	3,980	3161	3,880	3170	Oct-07	40,100	77,075
Low	3,445	2816	3,366	2826			

Source: London Metal Exchange

Tin

Tin price (\$/tonne)



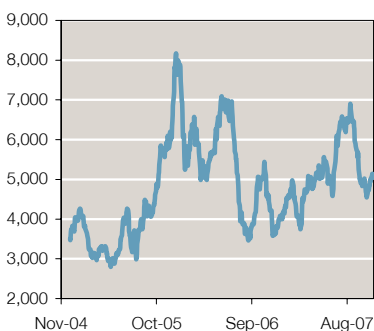
Source: London Metal Exchange

Tin stocks (tonnes)



Source: London Metal Exchange

Tin, LME, contracts volume traded
(Daily, 1-month moving average)



Source: LME

News

- Oct 29th: Malaysia Smelting Corporation formed a joint venture company called Guilin Hinwei Tin Technology with Guangxi Guilin Jinwei Realty and Vertex Metals for tin smelting and refining and tin semis production in Guangxi, China.
- Oct 26th: China's tin production during January-September this year rose 8.7%, to 111,296t, compared to the same period last year.
- Oct 25th: Fighting in the Democratic Republic of Congo's North Kivu province has hit exports of tin concentrate. Societe Amur, the country's largest tin concentrates exporter, said transporting concentrates was difficult as roads were being attacked.
- Oct 14th: The Aluminium Corporation of China (Chalco) acquired the nonferrous metals unit of Liuzhou China Tin Group.

Analysis

- Supply crunch tightens in Q4

The slump in Indonesia's tin exports this year is beginning to have some knock-on effects. In October, Singapore Tin Industries (STI), which operates a tin refinery, cut its production forecast to 7,000t for this year from 18,000t, citing difficulty in procuring the concentrates it needs. STI is a joint venture between China's main producer, Yunnan Tin and the Singaporean company, KJP International. Indonesia's main tin producing region, the Bangka and Belitung islands, have significantly less volumes of export-grade tin held by local smelters than usual. The tight physical market is reflected in the gradual rise of standard grade tin premiums above LME cash prices in Europe since the start of this year; at about \$350/t they have almost doubled since the beginning of 2007.

Outlook

Having averaged \$16,180.43/t in October the price hit a new record of \$17,100/t (LME three-month contract) on 6th November as confusion reigned as to the precise intent of the Indonesian authorities and tin producers concerning future exports from what is the world's second biggest tin producer. LME warehouse stocks have risen about 70% since May this year when they hit a low of less than 8,000t, to above 13,000t now – but this rising trend has not dampened investor enthusiasm, which will not diminish until we have a clearer perspective about Indonesian plans. Despite a rejection by Indonesia's trade ministry of a tin export quota in early November, the market is suspicious that an informal arrangement will be reached whereby the country's tin exports are in fact limited. Clarification of this thorny issue is unlikely to happen in the short term – meaning the current strong prices and/or further upside movements are likely, as suspicion grows that this year's probable 25,000t deficit could be sustained or even widen in 2008. LME 3-month short-term tin: \$16,500/t-\$17,500/t.

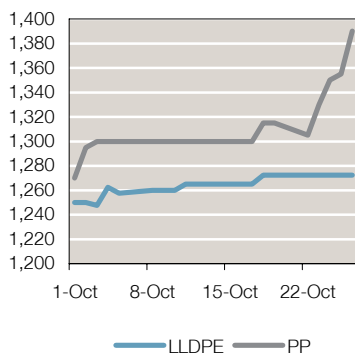
Market data (August unless stated)

Prices (\$/t)	Cash	3-month	15-month	LME stocks	Tonnes	LME Open Interest (contracts)
Average	16,044	16,180	15,840	Sep-07	13,990	Tin
High	16,550	16,700	16,505	Oct-07	13,220	
Low	15,345	15,400	14,730			15,308

Source: London Metal Exchange

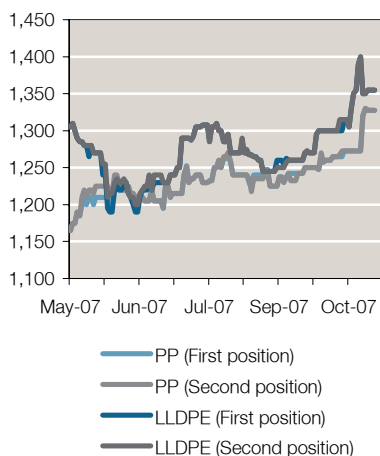
Plastics

Plastics prices, nearest contract, LME (\$/tonne)



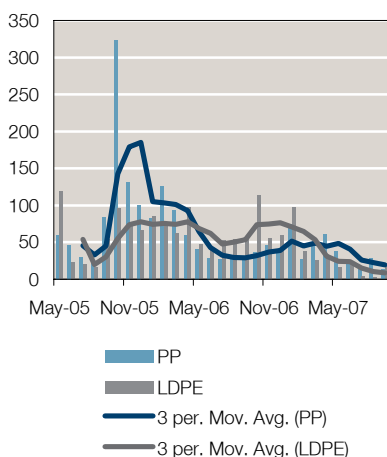
Source: Virtual Metals from LME

Plastics prices, various contracts, LME (\$/tonne)



Source: Virtual Metals from LME

Plastics volume traded, nearest contract, LME (\$/tonne)



Source: LME

News

- Oct 19th: Sumitomo Chemical is expanding its resin production capacity from 7,000t to 9,200t for its Sumikasuper liquid crystal polymer. The product is used in mobile phones, laptops and for various applications in car-making.
- Oct 17th: Total is building a new polypropylene production line at Samsung's Daesan plant in South Korea, as part of a 50/50 joint venture with Samsung; when completed it will have annual capacity of 300,000t.
- Oct 17th: BASF is to make a polyamide mainly constructed from renewable raw material. Called Ultramid Balance, the polyamide will be 60% based on sebacic acid, derived from castor oil.

Analysis

- Stronger growth outlook

Higher oil prices have given fresh impetus for plastics' prices to shift up, and if they stay at such relatively high levels may encourage greater interest in the LME's plastics futures. The LME will start to face some competition however, if the CEO of the Dubai Multi Commodities Centre (DMCC) has his way. He said on 12th November that the DMCC's Gold and Commodities Exchange would definitely launch its rather delayed plastics futures' contracts in January 2008. The three contracts will be regionally focused and split into North-East Asia, South-East Asia and Middle East.

The association of German plastics and rubber machinery producers (the VDMA) revised its growth forecast for 2007 to 7% from a previous estimate of 3%-4%. Elsewhere, in the more buoyant Asian market, several companies are investing more heavily in plastics production. Solvay Solexis's polytetrafluoroethylene (PTFE) micronised powder plant in Changshu, 100km from Shanghai, is expected to come on line early next year. Victrex's new £32m PEEK polymer (a high quality engineering polymer) plant in the UK has been completed and is expected to be fully operational by the end of the year. The company's second plant, it has capacity of 1,450t a year. In India, Reliance Industries is expanding its petrochemicals and polymers business and plans intends to build an ethylene cracker project at its Jamnagar facility, as well as expand its polypropylene capacity from 1.8 Mt/year to 2.7 Mt/year.

Outlook

Plastics' futures prices moved steadily higher in October, propelled to a large extent by the sharp upwards shift in crude oil prices, to above \$90/barrel and with growing expectations that \$100/barrel is just around the corner. On 1st November the PP Global price was \$1,330/t, a \$70/t rise from the start of October. The LL Global cash buyer price rose slightly higher over the same period, by \$90/t, to \$1,320/t. Plastics producers had been pushing for increases in the contract price on some plastics for which LL and PP are feedstocks. With crude oil at historic levels consumers may find it harder to resist price rises in the coming month. LME Global contracts short-term: PP \$1,400/t, LL \$1,290/t.

Market data

Contract	Average prices (September)		Volumes (October)		Open Interest (contracts) (End October)		
	LL (Global)	PP (Global)	LL (Global)	PP (Global)	LL (Global)	PP (Global)	
First position	1,266.93	1,317.05	Daily av.	71.3	55.0	93	94

Source: London Metal Exchange

Indices

Precious and base metal prices

(1999 Avg.=base 100) 31 st October 2007	Current	Change from					
		1 M	1 Yr	5 Yr			
Gold (spot)	283	6% ↑	266	31% ↑	216	149% ↑	113
Silver (spot)	274	5% ↑	261	19% ↑	231	225% ↑	84
Platinum (spot)	380	5% ↑	364	34% ↑	283	147% ↑	154
Palladium (spot)	102	8% ↑	95	17% ↑	87	16% ↑	88
Aluminium (cash)	183	2% ↑	179	-12% ↓	208	90% ↑	96
Aluminium (3m)	183	2% ↑	180	-10% ↓	203	92% ↑	95
Aluminium (15m)	184	2% ↑	180	4% ↑	177	93% ↑	95
Aluminium (27m)	181	2% ↑	177	14% ↑	159	90% ↑	95
Copper (cash)	493	-5% ↓	519	5% ↑	471	423% ↑	94
Copper (3m)	483	-4% ↓	502	4% ↑	463	416% ↑	94
Copper (15m)	444	-1% ↓	448	8% ↑	413	377% ↑	93
Copper (27m)	408	2% ↑	398	13% ↑	362	336% ↑	94
Nickel (cash)	514	0% ↓	516	-6% ↓	545	354% ↑	113
Nickel (3m)	517	-1% ↓	520	-1% ↓	521	366% ↑	111
Nickel (15m)	534	1% ↑	529	23% ↑	433	375% ↑	112
Nickel (27m)	527	2% ↑	514	41% ↑	374	370% ↑	112
Zinc (cash)	260	-9%	284	-35% ↓	399	270% ↑	70
Zinc (3m)	258	-8% ↓	279	-33% ↓	388	267% ↑	70
Zinc (15m)	254	-4%	266	-20% ↓	319	238% ↑	75
Zinc (27m)	248	-1% ↓	249	-2% ↓	253	217% ↑	78
Lead (cash)	734	7% ↑	687	123% ↑	329	783% ↑	83
Lead (3m)	719	8% ↑	665	126% ↑	319	755% ↑	84
Lead (15m)	653	10% ↑	591	142% ↑	270	636% ↑	89
Tin (cash)	309	9% ↑	282	63% ↑	189	293% ↑	79
Tin (3m)	309	9% ↑	284	64% ↑	189	293% ↑	79
Tin (15m)	305	11% ↑	274	67% ↑	183	278% ↑	81

LME base metals stocks

(1999 Avg.=base 100) 31 st October 2007	Current	Change from					
		1 M	1 Yr	5 Yr			
Aluminium	117	-2% ↓	120	35% ↑	87	-29% ↓	166
Copper	22	28% ↑	17	24% ↑	18	-81% ↓	114
Lead	30	78% ↑	17	-13% ↓	34	-78% ↓	136
Nickel	69	14% ↑	61	453% ↑	13	78% ↑	39
Tin	142	-6% ↓	151	9% ↑	131	-53% ↓	301
Zinc	26	27% ↑	21	-27% ↓	36	-88% ↓	220

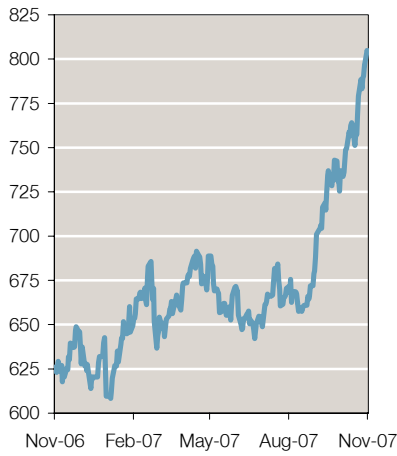
USD exchange rates

(1999 Avg.=base 100) 31 st October 2007	Current	Change from					
		1 M	1 Yr	5 Yr			
European euro	74	-1% ↓	75	-12% ↓	84	-32% ↓	109
Canadian dollar	64	-5% ↓	67	-16% ↓	76	-40% ↓	106
Great British pound	78	-2% ↓	79	-8% ↓	85	-25% ↓	104
Japanese yen	101	0% ↑	100	-1% ↓	102	-7% ↓	109
South African rand	108	-5% ↓	115	-12% ↓	123	-36% ↓	168
Australian dollar	70	-5% ↓	73	-17% ↓	84	-41% ↓	117

Source: Virtual Metals & London Metal Exchange

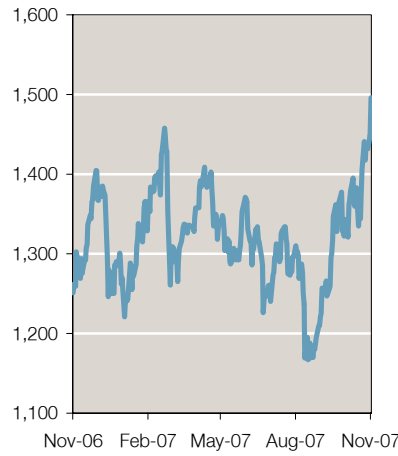
Prices

Gold (\$/oz)



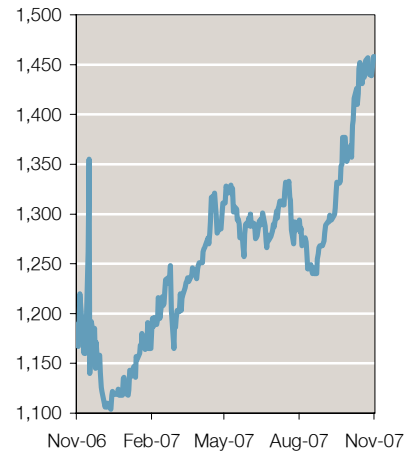
Source: London Bullion Market Association

Silver (cents/oz)



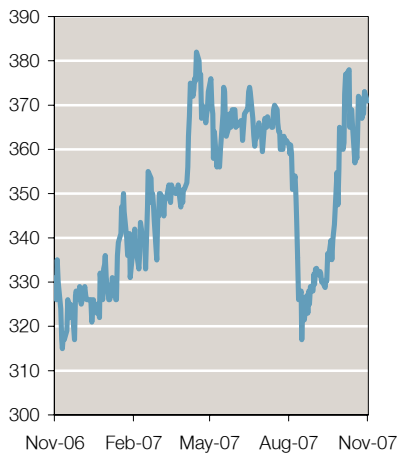
Source: London Bullion Market Association

Platinum (\$/oz)



Source: London Platinum & Palladium Market

Palladium (\$/oz)



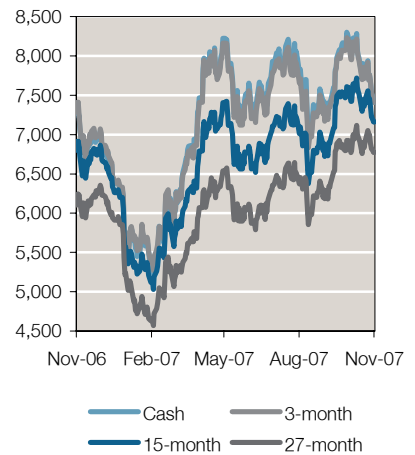
Source: London Platinum & Palladium Market

Aluminium (\$/tonne)



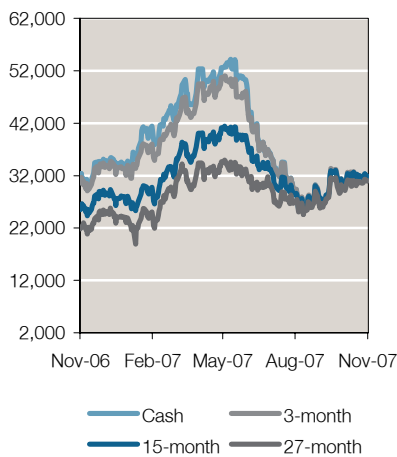
Source: London Metal Exchange

Copper (\$/tonne)



Source: London Metal Exchange

Nickel (\$/tonne)



Source: London Metal Exchange

Lead & zinc (\$/tonne)



Source: London Metal Exchange

Tin (\$/tonne)



Source: London Metal Exchange

Quantitative research

Quantitative Modelling

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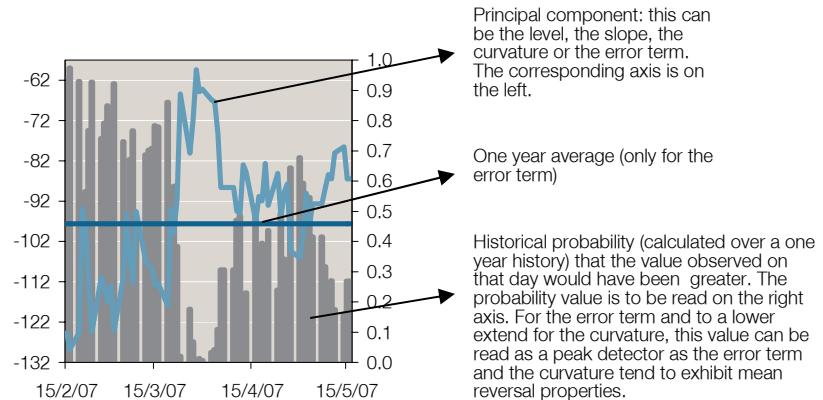
PCA background

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



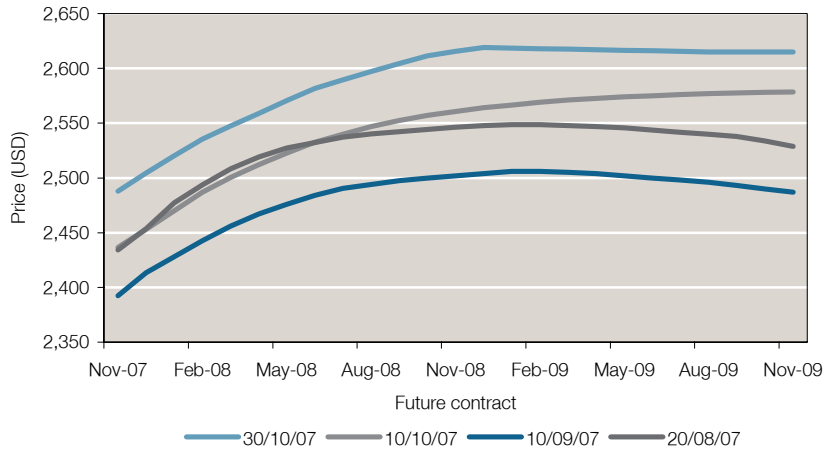
Source: Fortis Modelling

Aluminium Future curve analysis

Fundamental outlook

The global aluminium surplus is likely to rise significantly into 2008, particularly if a US economic slowdown eventuates. China is also expected substantially to increase its output over the next two years, despite official efforts to curtail the energy-hungry aluminium sector.

LME 3-month short-term: \$2,500/t – 2650/t.

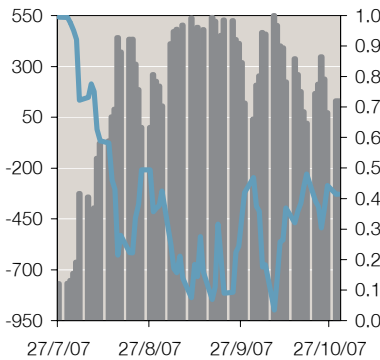


Source: Fortis Modelling, Bloomberg

Principal component analysis

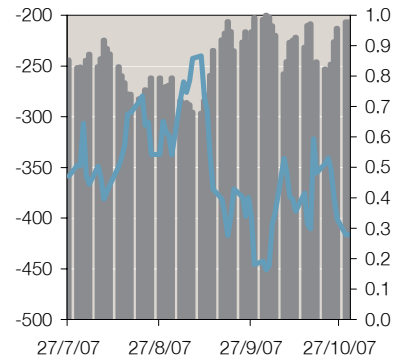
The month of October did not bring any significant change in aluminium's slope component. The future curve's contango remains unchanged. This is caused by an expected decrease in demand or increase in supply for the short to mid-term period (until end of 2008).

Level (t)



Source: Fortis Modelling

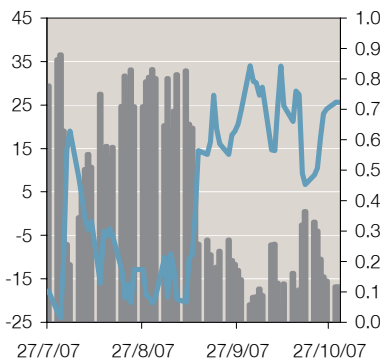
Slope (t)



Source: Fortis Modelling

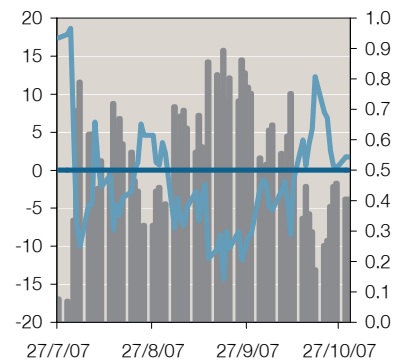
The strong negative bending, which can be seen in the August futures curves, decreased significantly by the end of September, and stabilizing during the month of October.

Curvature (t)



Source: Fortis Modelling

Error (t)



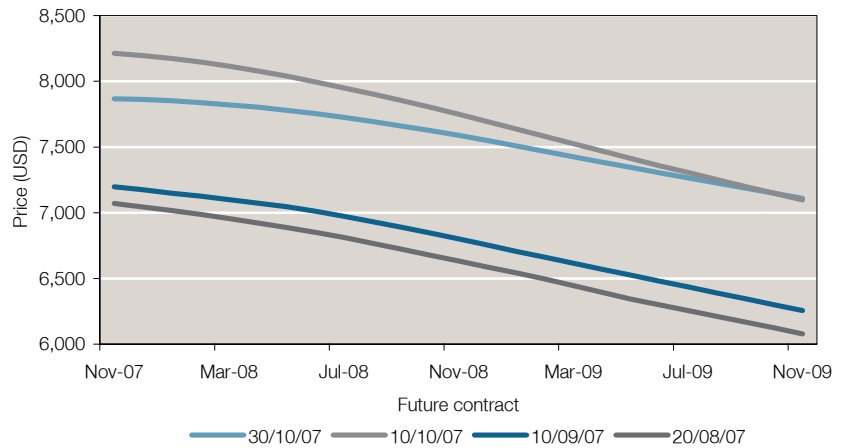
Source: Fortis Modelling

Copper Future curve analysis

Fundamental outlook

Prospects of steadily weakening prices due to increase in stocks, new smelter capacity and an expected US economic slowdown.

LME 3-month short-term: \$6,500/t-\$7,200/t.

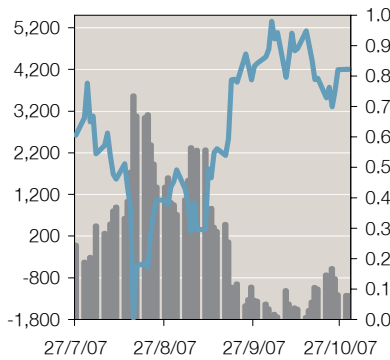


Source: Fortis Modelling, Bloomberg

Principal component analysis

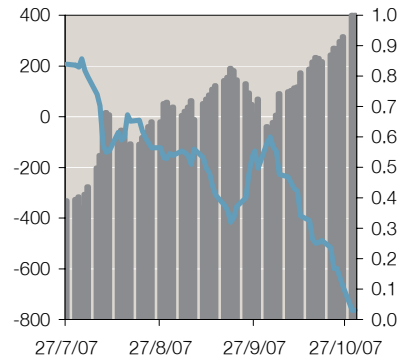
The copper future curve made a strong counter-clockwise rotation. This is shown in the decrease of the slope component, which is at a record low. This decrease in backwardation was initiated in April 2007 when prices were at a record high. This decrease of convenience yield implies an increased short-term supply or decreased short-term demand.

Level (t)



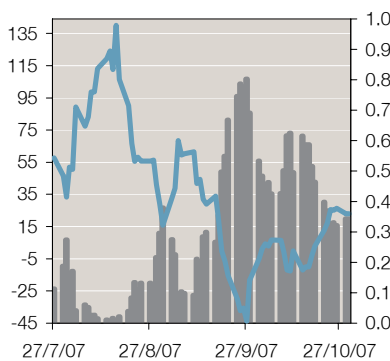
Source: Fortis Modelling

Slope (t)



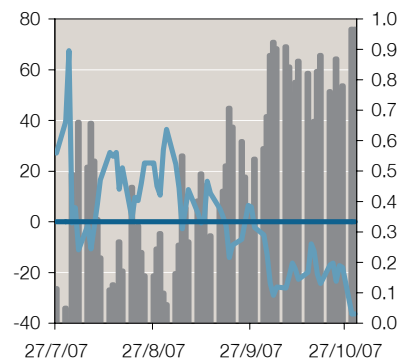
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



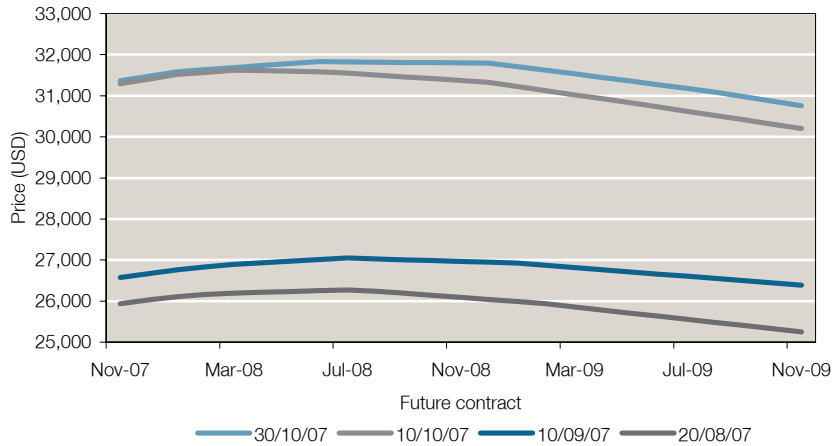
Source: Fortis Modelling

Nickel Future curve analysis

Fundamental outlook

Growing supply is meeting continued strong demand. Given the uncertainty about the rapid increase of refined nickel to meet this strong demand, and strong indications that stainless steel producers are restocking the metal, the nickel price seems well supported at \$30,000/t for the time being.

LME 3-month short-term: \$30,000/t-\$35,000/t.



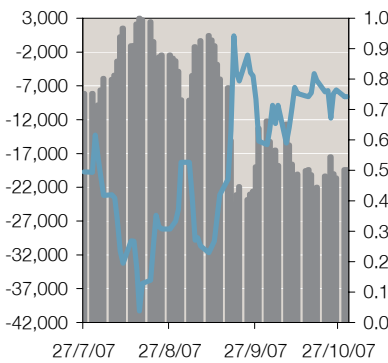
Source: Fortis Modelling, Bloomberg

Principal component analysis

Like copper, nickel's future curve has been flattening for some time (since January 2007). The curve's slope is at a record low.

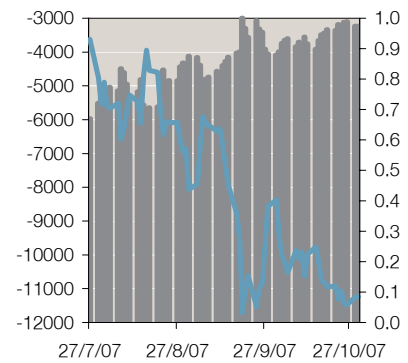
Nickel's curvature shows a higher demand for the mid 2008 contracts. This is caused by an expected decrease in supplies or increase in demand for that period.

Level (t)



Source: Fortis Modelling

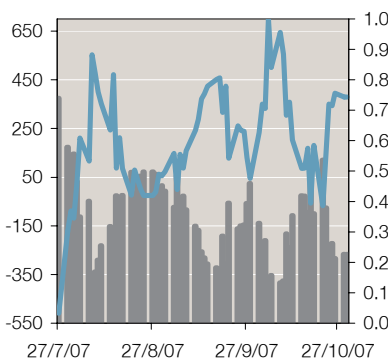
Slope (t)



Source: Fortis Modelling

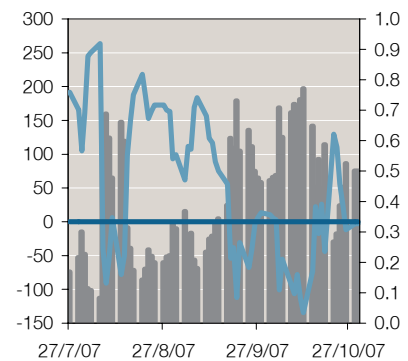
The slope component reveals a decreasing demand for the long-term contracts (2009) whereas the curvature shows growing demand for the mid-term contracts (2008).

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

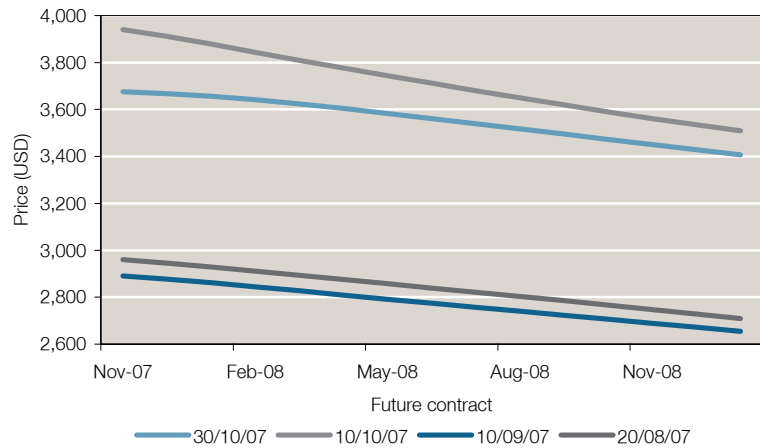
Lead Future curve analysis

Fundamental outlook

The current global deficit is expected to shift towards a more balanced situation in 2008 as various production hiccups are resolved. However, it is too early to tell precisely how the market will respond to what is likely to be continuing lower refined lead exports from China.

LME 3-month short-term: \$3,500/t-\$3,700/t.

Future contract

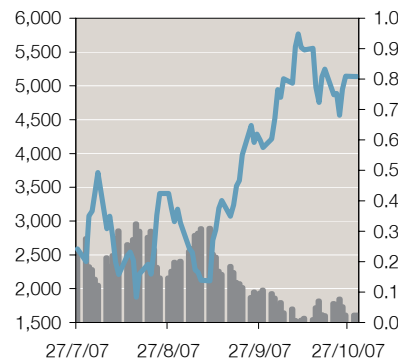


Source: Fortis Modelling, Bloomberg

Principal component analysis

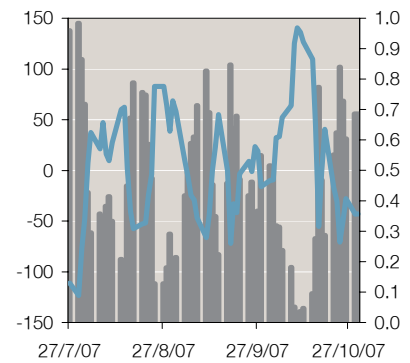
All the variance (99.9%) of the lead curve is explained by the level component. The lead future curve resembles a straight line (like a backwarded gold or silver curve). But straight lines may also offer interesting opportunities. The slope component can be regarded as an error signal. It can be quantified as a sub-diffusive process with a strong mean reverting property. If the slope component is relatively high take a short position on it or vice versa. The slope will revert back towards its historical average position.

Level (t)



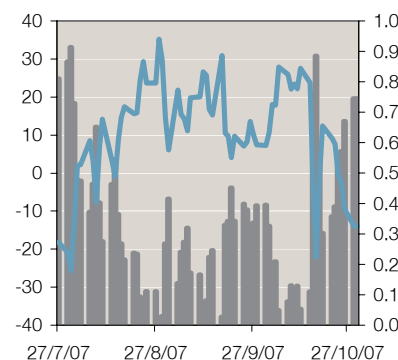
Source: Fortis Modelling

Slope (t)



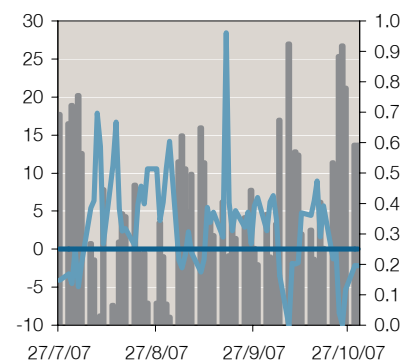
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

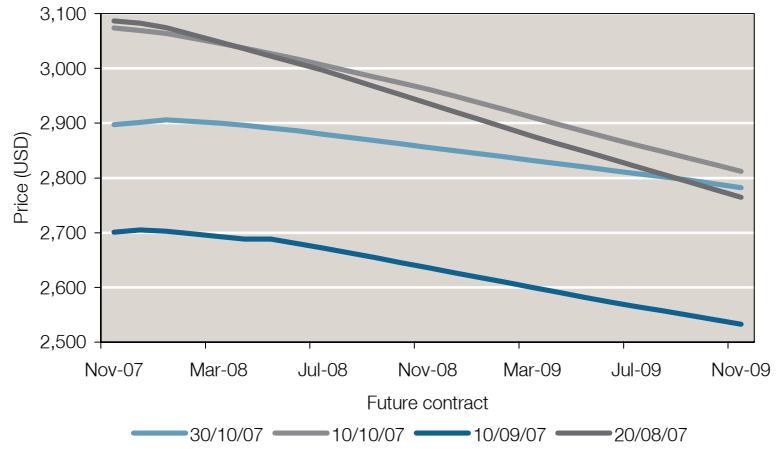
Zinc Forward curve analysis

Fundamental outlook

It's difficult to avoid the view that zinc prices will soften still further, given what is likely to be a growing refined metal global surplus over the rest of the current decade.

LME 3-month short-term: \$2,600/t – \$2,800/t.

Future contract

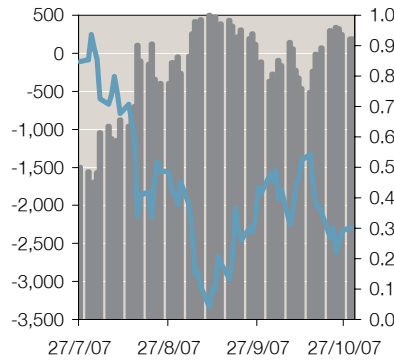


Source: Fortis Modelling, Bloomberg

Principal component analysis

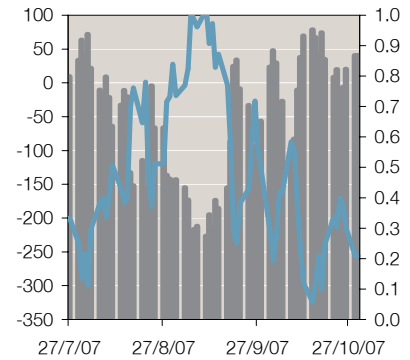
The zinc curve has been flattening for some time. Unlike nickel and copper, zinc's flattening is not a strong momentum driven process. The slope component gyrates wildly, suggesting it is not driven by any obvious change in supply-demand (convenience yield) expectations. The high volatility in zinc's slope may offer trading opportunities.

Level (t)



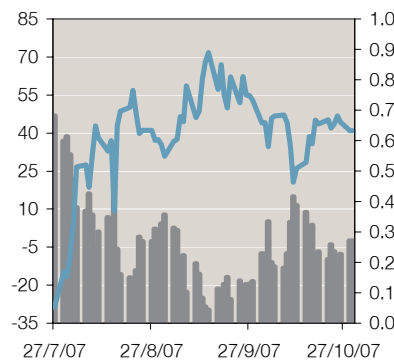
Source: Fortis Modelling

Slope (t)



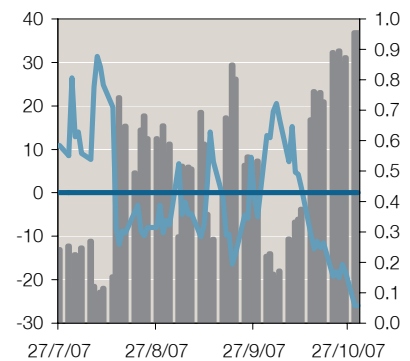
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

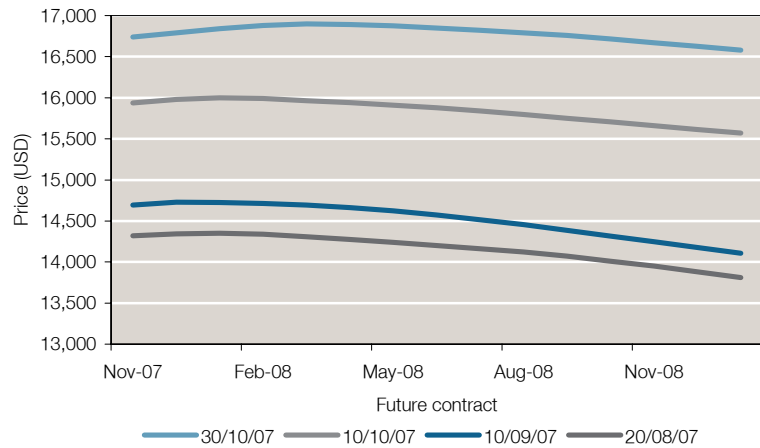
Tin Future curve analysis

Fundamental outlook

There could still be room for upside movements as suspicion grows that current deficits will sustain or even widen. Much hinges on precisely what the Indonesian tin sector will do – and on that issue there isn't much clarity as yet.

LME 3-month short-term: \$16,500/t-\$17,500/t.

Future contract

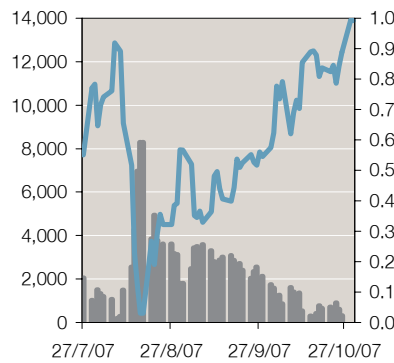


Source: Fortis Modelling, Bloomberg

Principal component analysis

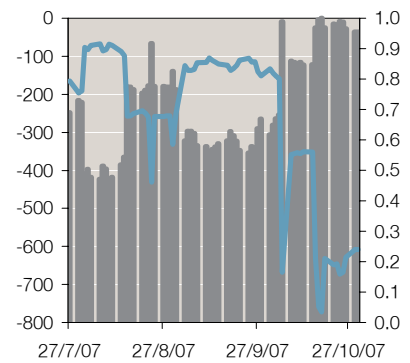
Tin showed remarkable behaviour during the subprime crisis, with strong resilience until the end of July, followed by a large drop towards mid-August due to extremely high correlation as a result of cross-asset risk re-pricing. When the dust settled tin started recovering at steady pace and has been a solid performer since. This peculiar behaviour reveals strong underlying fundamentals and continued speculative interest. The level component tells us the full story.

Level (t)



Source: Fortis Modelling

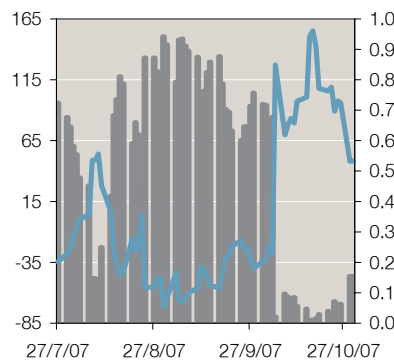
Slope (t)



Source: Fortis Modelling

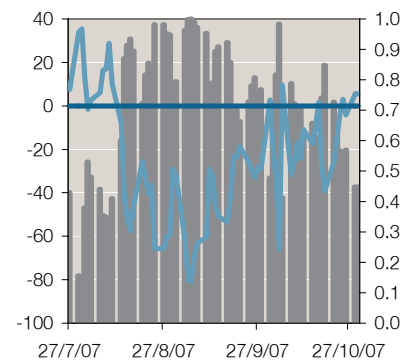
Due to its continued slope decrease, tin's future curve has flattened entirely. Its remaining curvature shows a higher demand for the mid 2008 contracts. This is caused by an expected decrease in supplies or increase in demand for that period.

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

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