

Fortis metals monthly

September 2007



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

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Fortis Metals Monthly is an exclusive precious and base metals research joint venture between Fortis Bank SA/NV and Virtual Metals Research and Consulting.

Metals and plastics – Strategic view

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Introduction

August was by any standards a roller-coaster ride, with base metals buffeted by the fallout from the wider credit crunch. Most recovered by early September but, with US Treasury officials warning that the credit crunch woes were far from over, risk-aversion is likely to dominate in the short-term.

Gold

Gold's traditional safe haven status helped it weather the storm better than most. Both the spot and futures' prices have again breached \$700/oz, boosted largely by Newcrest's buyback of 2.3 Moz of its total 4 Moz hedgebook.

Silver

Silver took a hammering as investors in silver futures pulled back from their over-extended positions. The price has since recovered some lost ground but is likely to remain subdued for the short-term.

Platinum

Platinum prices remain well supported by the growing indication that 2007 could see an overall supply deficit; some major producers will undershoot targets and given continued strong industrial demand we remain convinced that firm prices will be with us for months ahead.

Palladium

Palladium plunged in August, as investors seemingly took note of the unpropitious supply-demand outlook. Industrial demand is set to weaken and there is no shortage of fresh and recycled supply.

Aluminium

Aluminium production continues to grow but metal prices are holding up as increased Chinese export taxes are likely to mean lower primary aluminium exports.

Copper

Copper rallied towards the end of the month, despite signs that Chinese imports may dwindle. But the jury is still out, given continued strong Chinese and Indian economic growth.

Nickel

Towards the end of August nickel prices revived, re-gaining some of their lost ground on talk that stainless steel makers may return to the market.

Lead and zinc

Lead had a much better month than zinc, putting in a stellar performance. Zinc lost some ground but although a surplus looms, zinc demand is holding.

Tin

Tin prices were very volatile in the month, coming under pressure as stocks fell. Producers want to support the price and are already talking about reducing production.

Plastics

Weaker oil prices led to a fall in the price of some plastic contracts, while LME traded volumes remain low.

Forecasts

Price forecasts		End-August	1-month	2-month	3-month	12-month
Gold	\$ per oz	672	680-725	700 (r)	700 (r)	650
Silver	c per oz	11.95	12-13	13 (r)	13 (r)	12 (r)
Platinum	\$ per oz	1,268	1,290	1,350	1,350	1,300
Palladium	\$ per oz	330	330	350 (r)	350 (r)	320 (r)
Aluminium (3-month)	\$ per tonne	2,550.50	2,700	2,600 (r)	2,600	2,400
Copper (3-month)	\$ per tonne	7,505	7,500	7,500	7,500	7,000
Nickel (3-month)	\$ per tonne	30,200	29,000	25,000-30,000 (r)	25,000-30,000 (r)	>30,000
Lead (3-month)	\$ per tonne	3,206	3,400	3,500 (r)	3,800	2,500
Zinc (3-month)	\$ per tonne	3,075	3,000	3,000	3,000	2,800
Tin (3-month)	\$ per tonne	15,650	15,000	14,500	14,500	14,500 (r)
Plastic: LL (Global, September)	\$ per tonne	1,247.50	1,300	1,330	1,350	1,300
Plastic: PP (Global, September)	\$ per tonne	1,245	1,350	1,380	1,425	1,350 (r)
		2-years	3-years	4-years	5-years	6-years
Gold	\$ per oz	600 (r)	575 (r)	550 (r)	550 (r)	500 (r)
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 (r)	1,800 (r)	1,800 (r)
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	2,500	2,500	2,000	2,000	1,900
Tin (3-month)	\$ per tonne	14,000 (r)	13,000 (r)	13,000 (r)	12,000 (r)	10,000 (r)
Plastic: LL (Global, second month)	\$ per tonne	1,250	1,200	1,200	1,200	1,200
Plastic: PP (Global, second month)	\$ per tonne	1,200	1,250	1,250	1,250	1,250

Source: VM Group

(r) = revised from previous month

Analysis

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Lead continues to surprise

2007 will probably now go down as the year in which the dullest of metals – lead – outshone the rest. By the end of August lead prices on the LME were up almost 90% since the start of the year, with only tin and copper registering double-digit gains and the rest in negative territory. Nickel, the star of yesteryear, ended August some 15% lower than at the start of 2007.

Lead's stellar run owes almost everything to a completely unpredictable combination of circumstances, not the least of which has been a plethora of supply-side disruptions. The latest – the shutdown of the Herculaneum smelter operated by the US company Doe Run – helped the price of lead in August rise above that of zinc for the first time in nearly thirty years. By the end of August the zinc and lead three month prices on the LME were neck and neck at \$3,110/t. On the demand side of the equation the growing global appetite for batteries means that lead consumption is steadily rising, mainly in China, the world's biggest producer of refined lead and battery-maker to the world. Meanwhile the rest of the world, which has grown accustomed to taking Chinese refined lead, has had to begin to deal with considerably lower Chinese refined lead exports, thanks to China's decision to impose stern import taxes on the commodity.

Strong demand growth

Latest figures from the International Lead and Zinc Study Group (ILZSG) show that global refined lead usage in 1H 2007 was 4.101 Mt, against 3.985 Mt for the same period in 2006. Production has also been rising, at 4.125 Mt in 1H 2007 against 4.038 Mt for the same period last year, according to the ILZSG, giving a very small, 24,000t surplus for the six months to the end of June this year. There are well-grounded expectations that this small surplus will have been entirely eradicated in the second half of the year, with the refined lead market moving into an overall global deficit, although by how much is impossible to tell at this stage. Adding to strong investor interest in the metal has been the consistently low stock levels on the LME this year; they currently show no signs of rebuilding.

While zinc last year promised to be a hare, lead looked like a very sluggish tortoise. Although the two metals are symbiotically intertwined, with both being dug out from the same mines, the focus has been on getting more zinc into production than lead. In 2008 the prospect is for a rapidly growing surplus of refined zinc; the picture with regard to lead is not as clear. Even though LME stock levels remain relatively low, at 65,000t at the end of August, just two days of global consumption, there may be a lot more zinc being held in independent warehouses.

How long can lead sustain this rally? In the long run, the demand for zinc and its anti-rust properties used in galvanising steel means the price gap that has opened up between the two metals should revert to the status quo. Yet both metals face a much murkier future, given the increasing interest in technological innovation in electric cars. Electric cars do not use lead in their batteries. At the moment the electric car remains at the development stage, with no visible prospect of mass-marketed (i.e affordable) electric cars hitting the road anytime soon. Zinc too is equally vulnerable to an impending revolution in the car market; one way of improving fuel economy is to use less steel, replacing it as much as possible with aluminium or composite fibres. Less steel means less need for rust-proofing zinc. For the time being, given lead's sensitivity to any supply disruption and diminished Chinese exports, it may well extend further its price premium over zinc. A decade from now, both lead and zinc may be looking extremely vulnerable in one of their core markets.

Focus

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On the road to Rio

Given the increasing difficulty of extracting gold from South Africa's deep level mines, some of which are several kilometres deep, the country's home-grown gold producers are scouring the world for resources elsewhere. One of the more tempting regions is Latin America; but while the continent's mineral wealth might be much easier to dig out than back home in South Africa, there are other, less tangible obstacles, such as a resurgence of resource nationalist politics and a long-standing (and well-deserved) reputation for corruption at all government levels. We had an opportunity in August to visit two of AngloGold Ashanti's outposts in South America.

This year the unthinkable might happen – South Africa could cease to be the world's number one gold producer, possibly losing that top slot to China, as South Africa's depleting resources and deep mines prove increasingly too expensive to operate. For a number of years now South Africa's biggest gold mining companies have been looking overseas to augment their local production, and the recovery in the gold price has spurred them on to new pastures, including South America. According to South Africa's Chamber of Mines, South African gold miners raised their capital expenditure for South Africa in 2006 by 61% to Rand 5.9bn. Locating new mines is the relatively easy bit; operating them is arguably a bit trickier – not because the ores are difficult to get at, but because the surrounding context in some of the richest regions is less than ideal. Latin America is increasingly in the spotlight as potentially the place where the world's next big gold ore body might be discovered, and the world's biggest gold producers are beating a path to the continent. Some, such as Barrick, are already well established in South America. Others are relatively new.

AngloGold Ashanti operations in Argentina and Brazil



Source: AngloGold Ashanti Annual Report 2006

For AngloGold Ashanti, its portfolio of gold mines in South America are increasingly important to the group, comprising 11% of the company's 2.68

Moz of production in the six months to the end of June this year. It has two operating mines in Brazil and one in Argentina, as well as ambitions to develop projects in Colombia. Moreover, of the 21 mines AngloGold Ashanti has, spread across 10 different countries, those in Argentina and Brazil are among its lowest cost operations. Its two operations in Brazil, AngloGold Ashanti Brasil Mineração and Serra Grande, produced 241,000 oz in the six months to end-June, while Cerro Vanguardia in Argentina accounted for 48,000 oz. At the mines, AngloGold has successfully managed to replace ore mined with new reserves and continues to do this while adding additional reserves. Nonetheless, mining in South America brings with it some unique issues.

The lay of the land

Top concern for any mining company in Latin America today must be the threat posed by the new wave of resource nationalism that has been sweeping the continent, spearheaded by President Hugo Chávez of Venezuela and, to some extent, supported by other regional political leaders, such as President Evo Morales of Bolivia. As yet, there is no sign of the current administrations in Argentina or Brazil adopting a similar stance. The government of Brazil's President Luiz Inácio Lula da Silva, known as Lula, now in its second term, is generally regarded as pro-business, despite initial concerns when he first came to office, as is that of Nestor Kirchner, Argentina's President. So too is Kirchner's wife, Cristina Fernandez, who is widely tipped to replace him as president in the forthcoming elections in October. Underlying the overt political fear of Brazil and Argentina one day espousing a Chávez-style resource nationalism is the fact that both countries are notoriously corrupt at almost all political levels. This is a fact of life for most of the countries' ordinary citizens; but it is a murky matter for the shareholders of foreign multinationals, worried that the cost of doing business in such places is, perhaps, unnecessarily inflated.

In Brazil, Lula in general appears to have maintained the status quo where business is concerned, and the country's mining and minerals legislation is clear and consistent. On the other hand his support for private enterprise has been a deep disappointment to his party, the Partido dos Trabalhadores or Workers' Party (PT), which announced at the beginning of September that it might consider nominating its own candidate to oppose him if he decided to run again for office at the next presidential elections, scheduled for 2010. The PT has also called for a national referendum to consider re-nationalising Brazil's mining giant, CVRD, which was privatised in 1997. This is unlikely to get far; but it is a timely reminder that Lula's presidency is unpopular among his natural constituency, and that even in Brazil's relatively supportive business environment there are strong tendencies to turn back the clock.

More troublesome for the general reputation of mining in Brazil is the unregulated and frequently environmentally damaging activity of small-scale independent miners, known locally as *garimpeiros*, who are generally indifferent to any pollution they may cause through careless use of mercury. The rising awareness of the importance of protecting the environment has seen considerable conflict in the Amazon region between indigenous Indians, loggers, ranchers and independent miners. There are worries about the impact the mercury used in gold mining will have on the rain forest and on the people living in the local communities. Although many people are pleased about measures to protect the Amazon, some communities in Brazil, those who want to exploit the forest to a greater extent, feel put out.

The case is slightly different in Argentina, which, like Brazil, has a strong, diverse and vociferous political opposition to big multinationals. In Argentina, where mining is not a well established industry, provincial governments have considerable power and authority over what happens inside their own borders, and can and do regularly defy the wishes of the central federal government. Even though the federal government in general backs the responsible development of the mining industry, specific approval for mining projects hangs

on the decision of the country's 23 provincial governments. Some provinces – including Tucumán, Rio Negro and La Rioja – have banned open pit mining. One way in which AngloGold is trying to overcome local opposition to mining is by investing in local community projects around the vicinity of its operations. But it can be a slow process, as Alberto Carlocchia, head of investor relations at the Cerro Vanguardia mine in Argentina, said: “It is a great challenge [educating people about mining]. This is not a mining country. It is a federal country. There is little [central] government can do if provincial governments try to ban mining.”

In Argentina, where a strong left-wing political movement has espoused the cause of environmental protection, the opposition to mining *per se* has become more virulent in the past few years. Its cause has been strengthened by the appointment as Environment Secretary in the federal government of Romina Picolotti, a lawyer and prominent environmentalist campaigner. The activists opposing mining are not concerned simply with the visible scars created by open pit operations, but also the risk of wider pollution from mining and ore processing. In June this year the provincial government of Mendoza, a long-established tourist destination and the country's main wine-producing state, introduced legislation banning the use of any toxic chemicals in any mining activity in the province, although that decision was overturned. In La Rioja, where Barrick was exploring for gold in the province's Famatina mountains, the fierce local opposition to the proposed mine led last year to both the resignation of La Rioja's Governor, Angel Maza and the decision by Barrick to withdraw from its exploration. For AngloGold's local executives, Argentina represents virgin territory, in terms of its relatively unexplored potential and as well as in its understanding of the ways in which mining can be a net benefit to the country. According to Christopher van Tienhoven, general manager at Cerro Vanguardia: “Argentina was late to mine. Mining is more or less in its infant stages.”

AngloGold's ambitions

Anglo clearly has great hopes for its Cerro Vanguardia open pit area, dotted with 22 pits, in Patagonia, in the deep south of Argentina. It is increasing by \$1m its five-year \$20m exploration budget, as it looks to expand production past the current mine life of 2018. Here, as at the other mines, the aim is not just to replace ounces but also to add reserves. Nine of the 22 pits are currently being mined; the intention is to develop a total of 63 open pits. If suitable reserves are proved up, in time, as well as further open-pit operations, there may be an option to develop an underground mine. “Eventually, there could be an underground mine. I just don't want to jump to conclusions,” said AngloGold's international chief operating officer, Roberto Carvalho Silva.

In Brazil, where projects are rather more advanced, the company's Serra Grande mine, which has two underground operations and an open-pit mine, in Minas Gerais province, has a number of brown-field sites which are being explored to see if they could yield new gold resources. Serra Grande is an AngloGold 50-50 joint venture with Kinross Gold and a pre-feasibility study is being carried out at the Palmeiras deposit, which, first indications show, could hold more than 200,000 oz of gold. AngloGold Ashanti Brasil Mineração, also in the Minas Gerais province, includes the Cuiabá mine, the Corrego do Sitio heap leach operation, and the Queiroz processing plant. At its Cuiabá underground mine production will rise to around 300,000 oz this year from 207,000 oz in 2006 as the expansion project is completed. The Cuiabá-Lamego exploration site there may offer future ounces, but a lot of work has yet to be carried out to prove up the resource base. Nevertheless, “it has the potential to be a very big mine,” according to AngloGold's locally based geologist Diego Alonso Costa. Proven and probable reserves at Cuiabá total 2.7 Moz. Work is being carried out to assess whether Lamego is part of the same deposit as Cuiabá, which lies 6 kilometres away. Production costs are rising; at Cuiabá they will climb to about \$220/oz ounce this year from \$185/oz in 2006. Costs per ounce of gold produced

rose to \$249/oz in Q2 2007 from \$207/oz in Q1. The rising costs are almost entirely down to the strength of the Brazilian Real against the dollar. Carvalho Silva said the company should maintain margins at least at the levels seen last year at its Brasil Mineração operations, where costs per ounce of gold in the first six months of this year were \$229/oz. "The appreciation of the Real is a factor that puts internal pressure on costs but it is not so bad that we will see flat profit compared to 2006," Carvalho Silva said.

The potential of Colombia

As well as its brown-field explorations in Argentina and Brazil, AngloGold Ashanti has a significant exploration budget for the rest of South America. Top of the list at the moment is Colombia, where the company has identified two key prospects; Gramalote and La Colosa. Work carried out so far suggests that these deposits may be of the scale that AngloGold would consider developing. AngloGold Ashanti, as one of the world's three biggest gold miners, along with Barrick and Newmont, typically searches for new gold resources that offer around 2 Moz of reserves and it prefers deposits that can support a mine producing 200,000 oz or more a year. Leonardo de Souza, a mineral research manager at AngloGold Ashanti, said the Gramalote project could hold an inferred resource of around 2 Moz. According to Carvalho Silva, "we are the first kids on the block. Colombia is a good gold frontier... We are confident we can find a good one there. We can see the government there is quite effective." He dismissed political risk factors, suggesting that if you want to find decent deposits as a mining company you have to be willing to take a certain amount of risk when looking for new resources and reserves. This year, about 18% of the company's exploration budget of \$86m is earmarked for Colombia.

AngloGold is stepping up exploration in Colombia at a time when measures introduced by President Alvaro Uribe have improved security; the number of kidnappings, a criminal phenomenon particularly associated with South America, are down, and the country's previously ghastly high murder rate is also declining. However, guerrillas and paramilitary groups are still present in many parts outside of the nation's bigger cities, including in the province of Antioquia, where AngloGold is searching for gold.

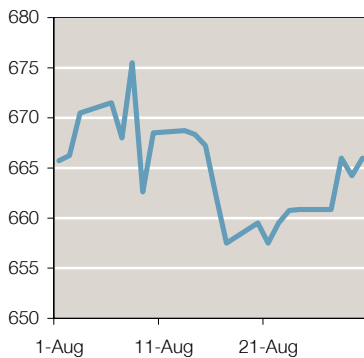
Maybe the risks are worth it

For AngloGold, the threat of a ban on mining in Argentina and elsewhere in South America is discounted as a problem that, in the long-term, will be satisfactorily resolved. Still, it is something the company will have to bear in mind if it adds new mines or exploration sites in Argentina as it moves to reduce dependence on its ever-deeper shafts in South Africa. The search for future ounces is also clearly taking the company to countries that present much higher risk environments than the worries presented in Argentina or Brazil. And even if the company does make big finds in Colombia, or its brown field exploration work in Brazil yields a nice surprise, it will be some time before the South American contribution to group production rises much above the 11% seen today.

Nonetheless, it is a region that offers growth opportunities. In general, mining in South America is not fraught with the safety concerns that hang over the mineshafts in South Africa, where some mines are several kilometres deep. Although an increasing number of mining companies are active in South America, there is – as yet – still not the intense competition for resources seen in well-developed mining regions like Australia. And, ultimately, a mining company has only two choices – find and dig the ore out, or quietly leave the stage.

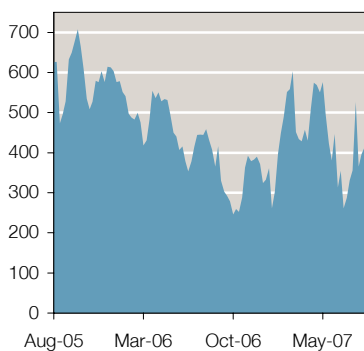
Gold

Gold price (\$/oz)



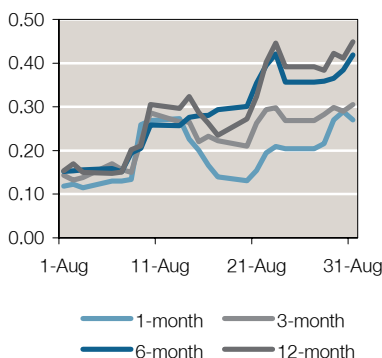
Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: VM Group

Gold lease rates over past month (%/year)



Source: Reuters Ecowin

News

- Sept 10th: Newcrest, the Australian producer, confirmed it had bought back 2.3 Moz of its hedge book and intended to close the remaining 1.7 Moz over the next 12 months.
- Sept 3rd: South Africa's gold production in Q2 this fiscal year fell 7.5% against the same period last year, according to the Chamber of Mines. Output in the three months to end-June was 63.4t.
- Aug 30th: Chinese gold production rose 15% to 145t in the first seven months of this year, its fastest pace in a decade.
- Aug 27th: Harmony said fiscal Q4 production fell 9% to 527,141 oz. Its CEO, Bernard Swanepoel, resigned earlier in the month.
- Aug 22nd: South Africa's biggest trade union said it will recommend a pay offer to its members, ending the possibility of a strike that could have shut down most production.
- Aug. 3rd: Newmont reported a Q2 loss of \$2.06bn as it cancelled hedging contracts and said gold sales for the period fell 9.8% to 1.25 Moz.

Analysis

- Gold gets above \$700/oz

Is gold a safe haven in times of financial strife or not? The initial signs as the sub-prime crisis shocked the world's financial markets were not positive - gold fell \$20/oz to hit a low of \$657.50/oz on 17th August. Yet by early September it had made a remarkable recovery, fixing on 6th September at \$688.15/oz, while on Comex the same day the December futures' contract traded as high as \$707/oz before closing at \$704.60/oz.

This doesn't necessarily mean it is a safe haven – stock markets also recovered most of their losses in that time period. However, compared with other metals, particularly silver and palladium, gold has outperformed. Now with a sustained period of high oil prices threatening to stoke inflation and the possibility of a cut in the benchmark interest rate in the US, the metal may be poised to climb still further in coming months. The continued slump in South African production will give a psychological boost to the bullish-inclined – total South African output may reach 252t this year, fractionally higher than Chinese production; but 2007 could be a watershed year, in which South Africa loses to China its position as the world's biggest gold producer.

Outlook

There are a lot of factors in favour of a higher gold price right now, ranging from signs of strong physical buying from Turkey, India and the Middle East to the rapid decline in South Africa's supply. The greatest of all, however, is the growing chance that the US Federal Reserve will before the end of the year cut its main interest rate and thus help push the dollar lower against other currencies. That would boost gold's attraction as an investment and add impetus to physical buying. Short-term London daily pm fix: \$680/oz-\$725/oz.

Market data (August unless stated)

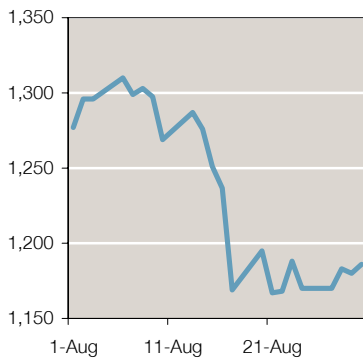
Prices	US\$/oz	Euro/oz	Rand/kg	ETF investment	Tonnes holdings	Monthly change	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	665	488	153,889	US (2)	527.28	19.66	Average	0.18	0.22	0.27	0.28	1-month	12.40
High	676	497	158,792	UK	87.99	(6.17)	High	0.27	0.30	0.42	0.45	3-month	13.65
Low	658	483	151,124	Aus	11.30	0.23	Low	0.12	0.13	0.15	0.15	6-month	14.50
				S.Africa	11.10	2.09						12-month	15.05
				Swiss	22.44	1.05							
				India (2)	3.42	(0.10)							

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

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

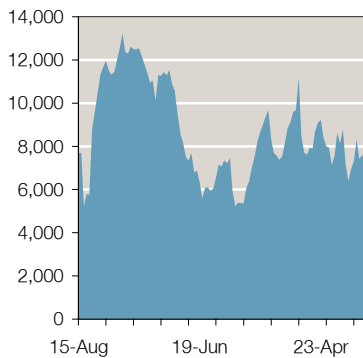
Silver

Silver price (cents/oz)



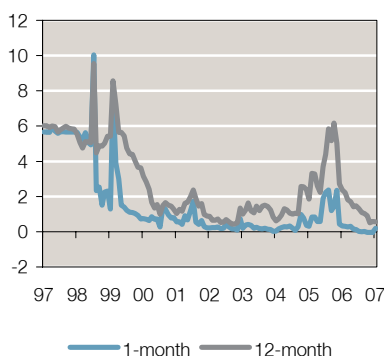
Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: Comex

Silver lease rates (%/year)



Source: Reuters Ecowin

News

- Aug 31st: Mexican silver output in June rose 24.8% to 225,580 kg compared with the same month a year earlier.
- Aug 21st: Poland's KGHM raised its forecast for the amount of silver it expects to produce this year to 1,148t from an earlier estimate of 1,125t.
- Aug 15th: Hochschild's first silver mine in Argentina, the San José operation, cost \$94.1m, a fifth more than expected, because of construction delays.
- Aug 8th: Coeur d'Alène, the largest US silver producer, said its Q2 production fell 5.6% to 3 Moz.
- Aug 3rd: Silver Wheaton said its Q2 sales fell 20% to 3.1 Moz.

Analysis

- Silver bounces around

Silver, like most commodities, was a casualty of the global equity and debt market fallout in August, and plunged to a ten-month low as investors liquidated assets to raise cash. Based on the London fix the precious metal's price fell 7.6% in August, in line with slumps in stock and bond prices. The fall came even as major producers in North America announced declines in quarterly production – but these relatively marginal shortfalls need to be set against an overall background of a massive surplus. Silver investors on Comex fled the scene in the wake of the credit crunch storm. In the week up to the end of 28th August, total silver investment on Comex dropped by 1,576t, taking total investment to its lowest level in more than a year. On the other hand investors in the silver ETF stayed cool; in the same week total ETF holdings stayed unchanged at 4,405t – almost as large as total Comex non-commercial net longs in both futures and options. The silver price started August at \$12.77/oz, slumped to a low of \$11.67/oz, and staggered back to \$11.95/oz by the end of August; but by the end of the first week of September all those losses had been reversed and the metal was significantly back above \$12/oz, registering an 11% gain on the August low. The US Federal Reserve's decision to cut its discount rate by 50 basis points (in a bid to calm markets) certainly helped, coincidentally, silver's recovery. But what the credit crunch mayhem tells us of most significance in relation to silver is the apparent willingness of silver ETF investors to hang in for the long term – and that is very price supportive for the time being.

Outlook

The silver price in September is likely to be almost entirely dependent on the movement of the dollar. If the Fed does cut its key rate, as it might, the dollar should weaken and the silver price should react positively. While silver futures showed what might be considered an entirely normal response to the mild financial panic of August – reduce unnecessary exposures – the significance of what they do is being progressively offset by the behaviour of ETF investors, many of whom may be holding on for what they imagine should be a much higher price. They could be disappointed; but they may take a while to be convinced of that. Short-term London daily fix: \$12/oz-\$13/oz.

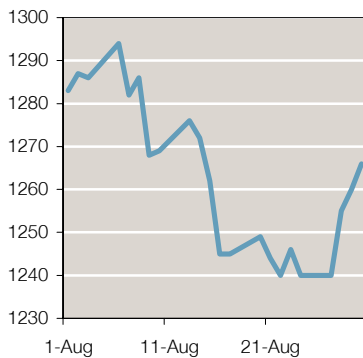
Market data (August unless stated)

Prices	c/oz	E/oz	p/oz	Imports	kg	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	1240.4	911.0	617.1	USA (Jun)	451	Average	0.07	0.19	0.35	0.49	1-month	24.00
High	1310.0	949.8	645.0	Japan (Jul)	330	High	0.21	0.30	0.42	0.59	3-month	24.50
Low	1167.0	855.3	580.8	China (Jul)	436	Low	(0.05)	0.10	0.27	0.34	6-month	24.75
											12-month	25.00

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

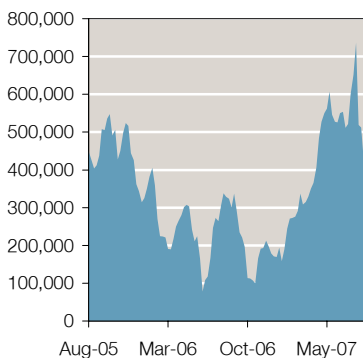
Platinum

Platinum price (\$/oz)



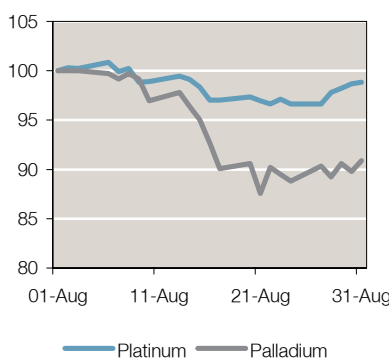
Source: London Platinum & Palladium Market

Nymex: Non-commercial net position (ounces)



Source: Nymex

Platinum v Palladium price since Aug 1st (=100)



Source: VM Group

News

- Aug 30th: Impala Platinum said its annual production rose 9.8% to a record 2.03 Moz and forecast a further rise in output in the year ending June 30th 2008.
- Aug 29th: Lonmin said a strike over problems associated with a new payroll system at its main operations in South Africa had cost it between 25,000 oz-30,000 oz of platinum production.
- Aug 8th: Anglo Platinum, the world's biggest platinum producer, averted a strike by agreeing to raise pay by between 8.5% and 10% for most of its workers.
- Aug 8th: Aquarius Platinum said the withdrawal of an engineering contractor would delay the completion of an expansion at its Mimosa mine in Zimbabwe to December. The company had planned to lift production by 15% this year.
- Aug. 7th: Xstrata bid just over \$1bn for Eland Platinum in South Africa.

Analysis

- Strike threat fizzles, Lonmin falters

The platinum price rode the August market turbulence with relative ease, and the metal's 1.7% fall during the month pales into insignificance when compared with the slide in the prices of both silver and palladium. This reflects the metal's positive supply and demand fundamentals, and it is those, more than speculative investment, that have driven its price gains over the past few years. The price was buoyed in August by news of yet more production cuts at the world's third-largest producer, Lonmin. The strike at Lonmin means the company may miss earlier production targets by 120,000 oz. There may be further disruptions on the way. Smaller South African unions, such as Solidarity, which mainly represents technicians, also appear to believe the company has fallen short of promises in what it claimed was a ground-breaking long-term wage agreement only two years ago. A labour court case between the National Union of Mineworkers, which says its represents 26,000 of the company's employees, and Lonmin will begin this month (September).

Outlook

The platinum price looks well supported and if the supply-side problems worsen and demand holds up then it could rise sharply before the end of this year. Impala thinks the global platinum deficit will come in at an overall 200,000 oz in 2007, and that could prove conservative. Lonmin's disruption follows an earlier warning from Anglo Platinum that its own production will fall short of its initial target this calendar year by as much as 300,000 oz. David Brown, Impala's CEO, forecasts the market will remain "very strong" and supply "tight" in coming months.

But it's currently a very uncertain outlook – any sign of economic slowdown will knock platinum's industrial demand base. For now the outlook remains for very strong prices. London daily pm fix short-term: \$1,290/oz.

Market data (August unless stated)

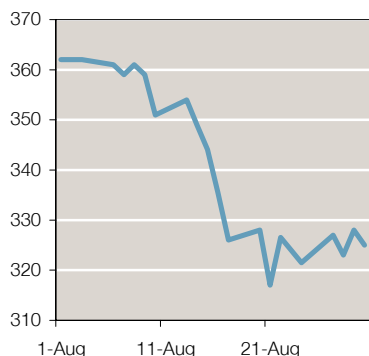
Prices	US\$/oz	Lease rates	1m				3m				Trade (kg)	Imports	Exports	ETF offtake (oz)		Option volatility (end month, %)
			1m	3m	6m	12m	Holdings	Change								
Average	1,263	Average	1.5	2.2	2.4	2.6	USA (June)	5,760	5,110	UK*	24,406	(3,940)	1-month	15.5		
High	1,294	High	1.8	2.3	2.9	3.2	Japan (July)	5,353	2,495	Swiss	32,624	1,552	3-month	17.5		
Low	1,240	Low	1.3	2.1	2.2	2.3	Hong Kong (Jun)	1,712	178				6-month	20.5		
							Switzerland (Aug)	3,718	4,467				12-month	23.5		
							China (Jul)	2,143	0							

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

* Includes 'basket' ETF

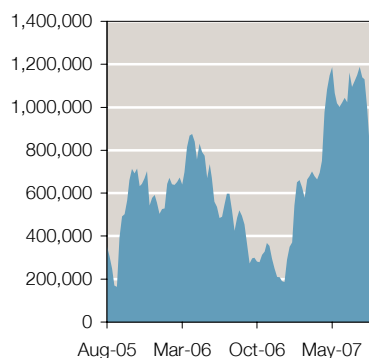
Palladium

Palladium price (\$/oz)



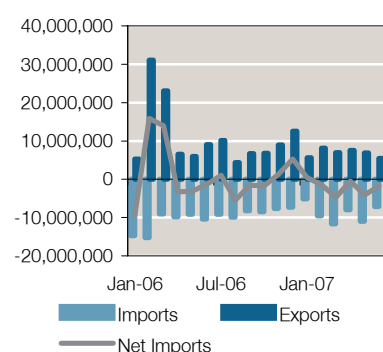
Source: London Platinum & Palladium Market

Nymex: Non-commercial net position (ounces)



Source: Nymex

USA trade in palladium, grammes



Source: Tradestats

News

- Aug 31st: Stillwater Mining paid \$2.6m to settle a lawsuit, after it was sued by shareholders over the accuracy of ore reserves and financial statements.
- Aug. 30th: Impala Platinum said its annual production of palladium in the 12 months ended June 30th rose 12.6% to 1.11 Moz.
- Aug8th: The Canadian producer North American Palladium said it remains on course to produce 290,000 oz this year.
- Aug 6th: Stillwater reported Q2 output fell 10% to 133,100 oz of platinum group metals and the company cut its full-year production estimate to 585,000 oz from a previous 645,000 oz.

Analysis

- Palladium gets a kicking

Palladium prices fell sharply in August, but probably still remain rather higher than the fundamental supply-demand outlook would suggest sensible. By the week ending 28th August total net investment (on Nymex and Tocom) was down more than 78,000 oz on the week at around 1 Moz – against some 1.6 Moz in July, as speculators dumped their long positions. Both palladium ETFs also saw their holdings decline. During August palladium posted an 8.9% decline, its biggest monthly fall since December 2004. The marked volatility in equity and bond prices during the month has raised concerns both about risky assets and about global economic growth, and, with that, the possibility of a much more serious slowdown in car sales and consequently reduced demand for palladium. David Brown, CEO of Impala Platinum, which annually produces more than 1 Moz of the metal as a by-product of platinum production, spoke of palladium as being the very poor cousin of the metals Impala mined. In its annual results statement Impala said the palladium market showed “substantial supply surplus” while, in contrast, Brown forecast “very strong” platinum demand. We cannot disagree with that.

Outlook

Any takers for palladium? The metal averaged \$340.60/oz in August and slumped as low as \$317/oz; arguably, it was remarkably positive for the metal that it did not go under \$300/oz during a month when commodities fell distinctly – if briefly – out of favour. Nevertheless the market remains awash with palladium. Palladium investors’ hopes are to a large extent riding on the likelihood of a substantial rise in the platinum price, which would intensify the pressure on auto-catalyst producers to switch more into cheaper palladium to the cost of platinum – thereby paradoxically supporting the palladium price. This is already happening – but so too is R&D into lower loadings of all pgms; and that will damage palladium’s industrial offtake as well as platinum’s. With about 1 Moz of net longs still being held in palladium futures, someone out there feels very confident; but why? London daily pm fix short-term: \$330/oz.

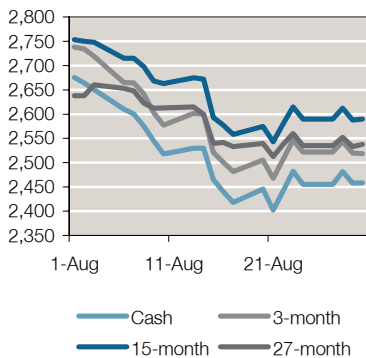
Market data (August unless stated)

Prices	US\$/oz	Lease rates	1m				Trades (kg)	Imports	Exports	ETF offtake (oz)		Option volatility (end month, %)		
			1m	3m	6m	12m				Holdings	Change			
Average	340.6	Average	0.37	0.36	0.43	0.23	USA (June)	7,157	5,417	UK	29,899	(9,593)	1-month	18.0
High	362.0	High	0.53	0.47	0.49	0.35	Japan (July)	341	950	Swiss	217,616	0	3-month	20.5
Low	317.0	Low	0.20	0.23	0.37	0.06	Hong Kong (Jun)	2,477	448				6-month	23.0
							Switzerland (Aug)	3,499	3,728				12-month	27.0
							China (Jul)	1,343	0				24-month	29.5

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

Aluminium

Aluminium price (\$/tonne)



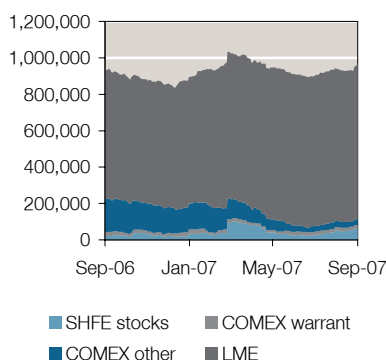
Source: London Metal Exchange

Aluminium stocks (tonnes)



Source: London Metal Exchange

Global exchange stocks (tonnes)



Source: Reuters Ecowin

News

- Aug 29th: United Company Rusal plans to lift its aluminium output by 65% within five years, which would imply annual primary metal production of 6.6 Mt by 2012.
- Aug 28th: Total stocks of aluminium at Western world smelters (excluding finished end-products) rose to 2.841 Mt at the end of July, compared with 2.798 Mt the previous month, said the International Aluminium Institute (IAI).
- Aug 27th: China's production of aluminium products is expected to exceed 10 Mt this year. The country produced 5.943 Mt of aluminium products in the first seven months of 2007, according to the China Nonferrous Metals Industry Association.
- Aug 16th: Russia will suspend a 10% import tariff on unalloyed aluminium for nine months from mid-September.
- Aug 13th: India's Bharat Aluminium aims to triple its aluminium output to more than 1 Mt in three years to meet growing domestic demand.

Analysis

- Production keeps on rising

Aluminium producers must be hoping for a record demand year in 2008, or maybe they just believe that they will be the last man standing – why else are they so keen on expanding capacity at such a fast pace? China's aluminium output continues to defy government efforts to inhibit the sector's (energy-gobbling) growth. According to data from the IAI, total global production in July, including China, was 3.176 Mt up from a (revised) 3.069 Mt in June. Strip out the Chinese increase and production was actually unchanged from June. China's primary aluminium production is rising, but its high export duty on primary metal has clearly failed to winnow down the ambitions of its smelters; all that is happening is that Chinese aluminium producers are now shovelling out an export flood of aluminium products. Other producers – notably the enlarged Rusal – are also busily preparing capacity expansions, and Norway's Norsk Hydro announced on 6th September plans to invest some \$2bn over 2008-2009 to expand its upstream aluminium business, which will face very stiff competition from Chinese products. Norsk's CEO, Eivind Reiten, is confident that the demand growth is there – he sees demand growth running at 4%-4.5% a year for the time being, with two-thirds of that coming from China. He may be right; but China's own smelters will increasingly satisfy that growing appetite.

Outlook

Aluminium suffered less of a thrashing in the wake of the August credit mess than other base metals – but only because speculative investors had previously been relatively less interested in the metal in the first place. It has also failed to recover. The bigger picture remains one of imminent large-scale supply expansions, which should serve to cap prices at around current levels. LME 3-month short-term: \$2,700/t.

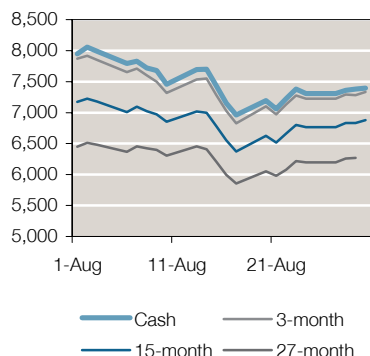
Market data (August unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Tonnes	Prod (kt)	June	July	LME Open Interest (contracts)	
Average	2,512	2,577	2,639	2,580	Jul-07	839,200	Europe	718	746	Aluminium	623,251
High	2,675	2,738	2,753	2,660	Aug-07	839,625	Americas	671	699		
Low	2,402	2,468	2,543	2,513			Asia	306	315		
							China	1,034	1,073		
							Other	339	337		
							Total	3,068	3,170		

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

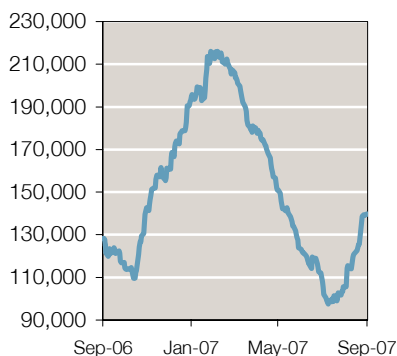
Copper

Copper price (\$/tonne)



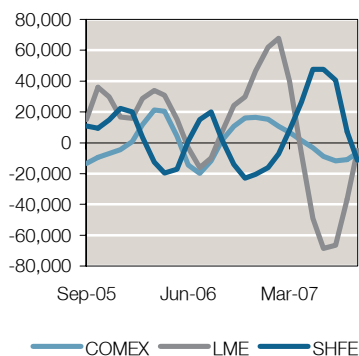
Source: London Metal Exchange

Copper stocks (tonnes)



Source: London Metal Exchange

Copper stocks, SHFE (tonnes)



Source: Reuters Ecowin

News

- Aug 31st: Mexican copper output rose 49.8% in June, to 28,869t, against the same month a year earlier.
- Aug 29th: Chile's copper production fell 1.5% in July against the same month in 2006, to 453,724t. Total output in the seven months until end-July rose 3.9% (year-on-year) to 3.194 Mt.
- Aug 23rd: The International Copper Study Group (ICSG) said US copper consumption fell 3% in the five months of 2007, on top of a 6% decline throughout 2006.
- Aug 10th: China's copper imports (including semi-finished products) in July fell 2.7% to 206,830t, against 212,471t in June, according to official Customs data.

Analysis

- Copper hangs in there

Even after the bashing it sustained in August, copper prices on the LME are still up about 15% since the start of the year. Given all the negative signals in recent weeks – the August mayhem, conflicting macro-economic data from the US, moves by China's authorities to further tighten credit – copper has shown remarkable resilience. The copper price ended August strongly and so far into September it has stayed comfortably above \$7,000/t (LME 3-month). To some extent this is a justified response to strong evidence that the global refined copper market has been (and will remain this year) in deficit. Latest figures from the International Copper Study Group (ICSG) hold that, on a seasonally-adjusted basis, there was a world deficit of 135,000t in the first five months of 2007, compared with a surplus of 153,000t in the same period of last year. Producers certainly remain bullish. KGHM, the Polish metals' producer, has now revised upwards its expectations for the average copper price in 2007 from \$5,700/t previously to \$6,950/t. What is happening in China remains key to the copper market, and the opacity of available data makes it almost impossible to grasp. The ICSG estimates that Chinese apparent consumption (calculated by balancing refined production against net imports and set against local reported stock changes) rose by 37% year-on-year during January-May 2007. In China, both refined output and net imports have surged in 1H 2007, although reported stock levels have not shifted much. We remain convinced that much of China's net imports so far this year have gone into rebuilding both consumer and also strategic stocks. It is only logical that the government's State Reserve Bureau, relatively but not totally impervious to commercial considerations, and tight-lipped about its activities, is replenishing its inventories to at least the level it was at before it started selling last year.

Outlook

Copper has done well to stay above \$7,000/t in the recent unsettled environment. Supply-side disruptions are still in the air, and investors still relish the prospects of a substantial deficit. They may come back in force if the US economy avoids further deterioration, but unavoidable uncertainties over China's ongoing net imports muddy the picture somewhat. LME 3-month short-term: \$7,500/t.

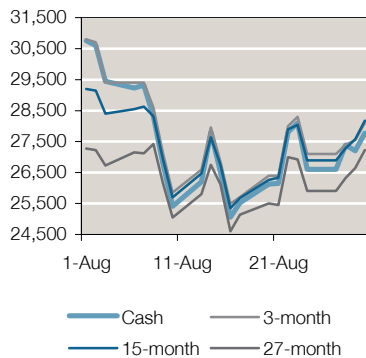
Market data (August unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Tonnes	LME Open Interest (contracts)
Average	7,501	7,382	6,861	6,268	Jul-07	103,475	Copper 234,317
High	8,055	7,910	7,225	6,515	Aug-07	139,100	
Low	6,960	6,825	6,375	5,855			

Source: London Metal Exchange

Nickel

Nickel price (\$/tonne)



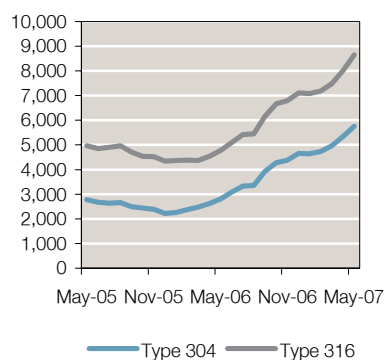
Source: London Metal Exchange

Nickel stocks (tonnes)



Source: London Metal Exchange

Stainless Steel prices (\$/tonne)



Source: Reuters Ecowin

News

- Aug. 30th: Eramet cut its forecast nickel production for 2007 to 63,000t, against a previous estimate of 62,000t.
- Aug 23rd: Sumitomo said that, together with partners, it would spend \$3.3bn developing the world's biggest nickel mine at Ambatovy in Madagascar. Sumitomo has a 27.5% stake in the project.
- Aug 17th: Norilsk said that, following its takeover of LionOre, it may quadruple output from the Nkomati mine in South Africa and build a refinery.
- Aug 16th: Barrick and Xstrata will complete a joint study for a new nickel mine in Tanzania by the end of 2008.
- Aug 10th: Eramet resumed nickel shipments from New Caledonia, two weeks after a fire damaged a conveyor belt.
- Aug 7th: Low-grade nickel ore shipments from the Philippines to China almost doubled to 981,104t in July against the previous month.

Analysis

- Steel-makers like the lower price

During the early part of the month nickel continued plunging, falling on 16th August to \$24,800/t, its lowest since August last year and a far cry from May's record \$51,800/t. Nickel producers are, however, very comfortable with prices back under \$30,000/t and so too are stainless steel producers. Finland's Talvivaara said in August that at these levels steel producers are willing to start buying nickel again, after months of holding off because of high prices. Interestingly, Talvivaara also considers that the nickel price may easily shoot back up to \$40,000/t within months – and that view may prompt a renewed burst of stainless steel producer buying. Talvivaara – 20% owned by stainless steelmaker Outokumpu – may have a much better insight into nickel's prospects than others. LME stocks have certainly recovered strongly and by the end of August were above 24,000t, their highest month-end level since April 2006. This is still very low by historic standards but the pace of LME inventory re-building has been impressive; on 31st July the LME warehouses had just 13,980t in stock.

Outlook

Nickel dropped more than 5% in August and is down almost 18% since the start of the year. The collapse, however, may be at an end; all those stainless steel producers who have done their best to stay on the sidelines will be taking advantage and start re-stocking, making hay while the sun shines. Still, our view is that a hasty return to the heady heights of May is unlikely, not least because some of the biggest stainless producers – South Korea's Posco for instance – are planning output cuts in September, due to weaker demand and high producer stocks. Stocks of hot-rolled stainless steel in South Korean warehouses more than doubled to 24,900 tonnes in July against the same month last year, according to the Korea Iron & Steel Association, while sales dropped 50% in July (year-on-year) to 65,991t. Longer-term we believe nickel prices will again nudge \$40,000/t, before new mine supply begins to catch up, but there is little prospect of that happening before the end of 2007. LME 3-month short term: \$29,000/t.

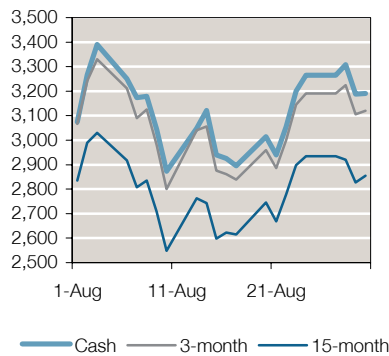
Market data (August unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Tonnes	LME Open Interest (contracts)
Average	27,487	27,680	27,371	26,337	Jul-07	14,412	Nickel 54,174
High	30,760	30,750	29,200	27,425	Aug-07	24,324	
Low	25,055	25,490	25,350	24,600			

Source: London Metal Exchange

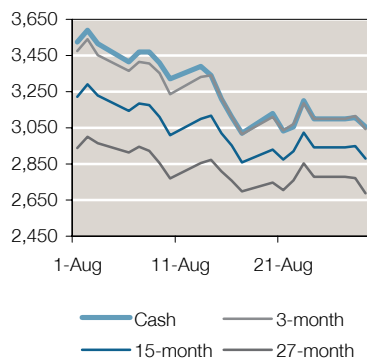
Lead and zinc

Lead price (\$/tonne)



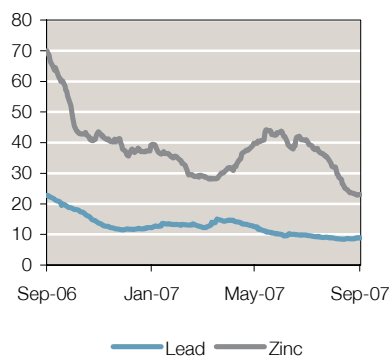
Source: London Metal Exchange

Zinc price (\$/tonne)



Source: London Metal Exchange

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



Source: VM Group from LME

News

- Sept 5th: Doe Run Resources, the world's second-largest lead refiner, re-started its Herculaneum lead smelter in Missouri.
- Aug 22nd: Global refined zinc use rose to 5.659 Mt in 1H 2007 compared with 5.408 Mt in the same period in 2006, according to the International Lead and Zinc Study Group (ILZSG). Global use of refined lead in 1H 2007 was 4.101 Mt against 3.985 Mt a year earlier. The ILZSG's data estimated a world refined lead surplus of 24,000t between January-June this year (against an estimated 53,000t surplus for the same period in 2006), and a refined zinc surplus of 31,000t, compared to a 226,000t deficit for the same period last year.
- Aug 22nd: China's July exports of refined lead extended their downtrend, falling 43.3 % from June.
- Aug 13th: Kazakhstan's zinc production fell 0.2% to 212,827t during 1H 2007 compared to the same period last year.

Analysis

- China holds the cards

The zinc and lead markets currently remain under the spell of Chinese data. While China's exports of refined zinc climbed 72.3% to 24,198t in July (after rising nearly 28% in June, and 76.4% in the first seven months of this year compared to the same period in 2006), its lead exports continue to plunge. China exported 15,525t of refined lead in July, 37.7% lower than the same month in 2006, and this followed a similar (36.3%) fall in June, when the central authorities imposed a 10% export tax. In the first seven months of 2007 the country's refined lead exports fell 48.3%, to 173,141t. We expect this decline to continue – not least because domestic Chinese spot prices for refined lead are currently about \$400/t higher than the available export price – but at a slowing rate. The prospects for zinc remain discouraging for speculative investors – plentiful new mine supply is on the horizon. Apex Silver's San Cristobal mine in Bolivia, currently the world's biggest new silver-zinc-lead mining project, is scheduled to start producing this quarter; once fully operational it will be producing some 180,000t of zinc annually. From a variety of different sources almost 1 Mt of additional refined zinc may come into the market in 2008. Total global production of zinc is expected to be around 11 Mt this year.

Outlook

With LME lead stocks at their lowest level since March 1990 by the end of August and China's exports drying up, lead prices remain well supported by supply-demand fundamentals. By 6th September lead prices (LME 3-month) were still more than 75% higher than at the start of 2007 which, given the miserable performance so far this year of other base metals, is quite remarkable. LME zinc stocks have also been falling, but the prospect of a bulging surplus into 2008 continues to deter unwary investors. While lead slipped slightly below \$3,000/t in early September, further drops in Chinese exports will spur speculative buying. LME 3-month short term: zinc \$3,000/t; lead \$3,400/t.

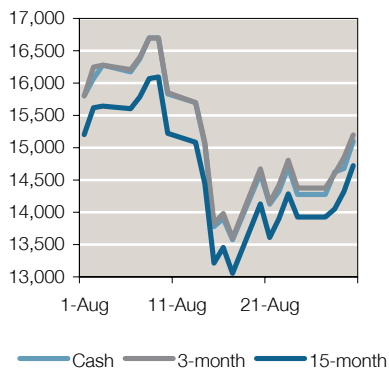
Market data (August unless stated)

Prices (\$/t)	Cash	Cash	3-month	3-month	LME stocks	LME Open Interest (contracts)			
	Lead	Zinc	Lead	Zinc		Lead	Zinc		
Average	3,119	3,254	3,061	3,228	Jul-07	37,050	66,225	Lead	66,049
High	3,390	3,590	3,330	3,540	Aug-07	25,200	65,375	Zinc	149,325
Low	2,873	3,019	2,800	3,010					

Source: London Metal Exchange

Tin

Tin price (\$/tonne)



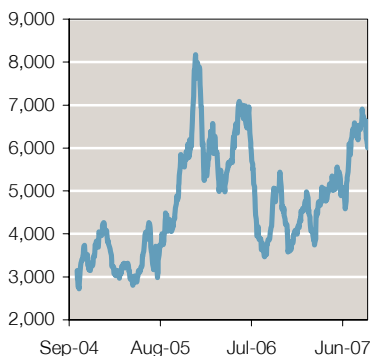
Source: London Metal Exchange

Tin stocks (tonnes)



Source: London Metal Exchange

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



Source: LME

News

- Aug 30th: Indonesia's biggest tin producer, PT Timah, said the country may have total refined tin production of 80,000t in 2007, undershooting a previous estimate by 10%. PT Timah plans to produce at least 48,000t of tin this year but said it will cut output by 40% in 2H 2007 to support prices.
- Aug 29th: Bolivia sent soldiers to guard its Huanuni mine because of thefts of metal and ores, officially estimated to be equivalent to \$2.5m a month.
- Aug 24th: Van Dieman mines said its first tin and sapphire mine will start production in Tasmania at the end of 2007, eventually producing 9,700t of tin annually.
- Aug 15th: China's tin production rose 7.7% to 86,034t in the first seven months of the year compared to the same period in 2006.
- Aug 7th: Yunnan Tin, the world's biggest tin producing company, said its 1H 2007 production of metals (including tin and lead) rose 23% (against the same period in 2006) to 49,397t.

Analysis

- Rising LME stocks may end rally

While LME tin prices set yet another record in August, they ended the month 4.8% down as rising stocks brought more certainty to a market that has been plagued by concerns of disruptions. LME stocks ended August at 14,975t, their highest at month-end since March last year, having risen to as high as 16,065t on 24th August. Still, with the metal slumping to below \$15,000/t by 6th September (against its 7th August record of \$17,050/t), Indonesia's producers are keen to prevent further price collapse. The state-owned PT Timah, Indonesia's biggest producer, plans to slash output in the 2H 2007 and said it won't sell on the spot market until prices rise. It also plans to hold talks this month with the Indonesian government to try to establish an informal tin cartel, fixing export quotas to maintain strong prices, probably at \$15,000/t and above. If the Indonesian tin cartel does get off the ground then the outlook is for tin prices remaining much stronger for longer. The world's biggest producer, China, is currently operating at full capacity, and the tin-mining sector of the third major producer, Bolivia, is currently in turmoil, due to clashes between state and private sector mine-workers. Long term the threat to tin comes from plastics and aluminium; at \$15,000/t packaging producers currently reliant on tin will have strong incentives to move away from the metal. Tin has another big market, in tin-silver alloys substituting for lead in electronics applications; but this sector can't hope to absorb the volumes of tin used in packaging. We see tin prices remaining at historically high levels for some time to come if the cartel is effective, but in the long term eventually falling back as packaging demand declines.

Outlook

Indonesia's informal tin cartel – if it comes off – could work, as the authorities have shown a willingness to dispense rough justice to illegal miners and smelters. Longer term, however, it may prove to be counter-productive. LME 3-month short term: \$15,000/t.

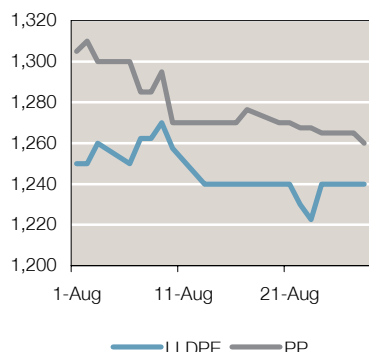
Market data (August unless stated)

Prices (\$/t)	Cash	3-month	15-month	LME stocks	Tonnes	LME Open Interest (contracts)
Average	15,120	15,173	14,608	Jul-07	13,680	Tin
High	16,700	16,700	16,095	Aug-07	14,790	
Low	13,575	13,600	13,055			15,737

Source: London Metal Exchange

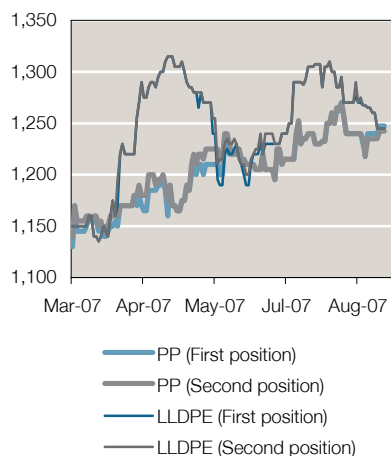
Plastics

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



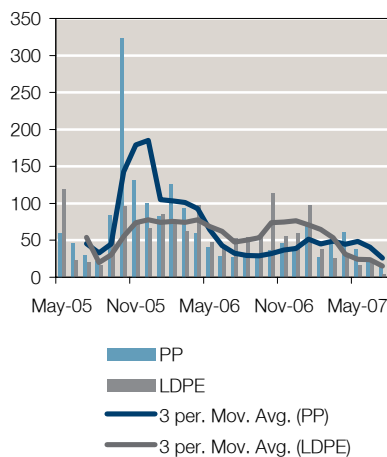
Source Virtual Metals from LME

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



Source: Virtual Metals from LME

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



Source: LME

News

- Aug 28th: Indorama, a Thailand-based polyester maker, will build its new PET polymer plant in Alabama in the US. The plant will produce 425,000t/year and will be the biggest in the country.
- Aug 23rd: DuPont Engineering Polymers has expanded its polyamide compounding capacity at its production site in Ulsan, South Korea, by 20,000t/year.
- Aug 21st: Russia's rubber and plastic products sector has increased its output by 21.5% since the start of 2007; its polypropylene output rose 67% in January to July compared to the same seven months last year. Polyethylene output increased by 17.4% and polystyrene was up by 11.1%.
- Aug 9th: Sumitomo Chemical plans to open a polypropylene compounding plant in North America and may consider buying a polypropylene business in Europe as it seeks to add polypropylene to its product range.

Analysis

- Rising LME stocks may end rally

The plastics industry like many others is positioning itself to benefit from the industrialisation and sustained economic boom in China. Global chemical company Degussa has announced an expansion of its R&D centre in Shanghai, opening new technical centre for its high performance polymer business unit. In August, too, Finnish plastics company Perlos' major stakeholders G W Sohlberg sold its 24.9% stake to Taiwanese company Lite-On Technology (LOT). Perlos has 16% of the world mobile phone casing market.

Volumes traded in the LME plastics contracts remained weak, and none of the eight regional LME plastic contracts saw any dramatic movement in August. The most highly traded contract was PP Global, with volume of 381 lots, while LL Global trades amounted to just 93 lots.

Outlook

Oil prices slipped in August but rebounded at the end of the month as the market began to anticipate that Opec would not significantly alter its production quota in the near future. As a result, four of the LME's plastics' contracts lost ground, two held steady and two showed only marginal gains. Taking the cash buyer price as of 31st July and comparing it with the same contract price from 31st August, PN North America and LE Europe moved up, LL Global and LN North America held steady, while PA Asia showed the greatest decline, falling \$46 month on month, while, with a drop of \$15, PE Europe softened the least. As ever, movements in the oil price will drive changes in the plastic contract prices, and with oil currently trading firmly above \$70/barrel plastics' prices will generally remain firm. LME Global contracts, short-term: PP \$1,350/t, LL \$1,300/t.

Market data (August unless stated)

Contract	Average prices		Volumes		Open Interest (contracts) (End August)		
	LLDPE	PP	LLDPE	PP	LLDPE	PP	
First position	1,245.21	1,276.20	Daily av.	69.2	10.1	31	122

Source: London Metal Exchange

Indices

Precious and base metal prices

(1999 Avg.=base 100) 31 st August 2007	Current	Change from					
		1 M	1 Yr	5 Yr			
Gold (spot)	241	1% ↑	239	8% ↑	224	117% ↑	111
Silver (spot)	229	-8% ↓	248	-5% ↓	241	163% ↑	87
Platinum (spot)	335	-2% ↓	341	2%	329	131% ↑	145
Palladium (spot)	91	-10% ↓	101	-3% ↓	94	1% ↑	90
Aluminium (cash)	183	-8% ↓	198	2% ↑	179	93% ↑	95
Aluminium (3m)	184	-8% ↓	199	2% ↑	180	94% ↑	95
Aluminium (15m)	183	-5% ↓	193	10% ↑	167	91% ↑	96
Aluminium (27m)	176	-3% ↓	182	13% ↑	155	83% ↑	96
Copper (cash)	482	-7% ↓	519	-1% ↓	486	412% ↑	94
Copper (3m)	468	-6% ↓	499	-1% ↓	474	400% ↑	94
Copper (15m)	419	-5% ↓	439	1% ↑	416	350% ↑	93
Copper (27m)	373	-4% ↓	387	3% ↑	364	300% ↑	93
Nickel (cash)	503	-4% ↓	525	-4% ↓	524	350% ↑	112
Nickel (3m)	496	-4% ↓	519	9% ↑	455	348% ↑	111
Nickel (15m)	508	0%	510	33% ↑	381	355% ↑	112
Nickel (27m)	499	3% ↑	487	53% ↑	326	350% ↑	111
Zinc (cash)	285	-14% ↓	334	-8% ↓	309	311% ↑	69
Zinc (3m)	282	-13% ↓	324	-8% ↓	305	300% ↑	70
Zinc (15m)	264	-13% ↓	303	-2% ↓	271	252% ↑	75
Zinc (27m)	246	-11% ↓	277	7% ↑	229	216% ↑	78
Lead (cash)	654	5% ↑	621	169% ↑	243	676% ↑	84
Lead (3m)	629	4% ↑	608	159% ↑	243	640% ↑	85
Lead (15m)	551	0%	553	148% ↑	222	527% ↑	88
Tin (cash)	287	-6% ↓	305	70% ↑	168	304% ↑	71
Tin (3m)	289	-5% ↓	305	73% ↑	167	305% ↑	71
Tin (15m)	280	-5% ↓	295	67% ↑	168	279% ↑	74

LME base metals stocks

(1999 Avg.=base 100) 31 st August 2007	Current	Change from					
		1 M	1 Yr	5 Yr			
Aluminium	107	0%	107	17% ↑	91	-35% ↓	166
Copper	18	34% ↑	14	11% ↑	17	-84% ↓	119
Lead	19	-32% ↓	27	-68% ↓	58	-87% ↓	142
Nickel	45	69% ↑	27	354% ↑	10	12% ↑	40
Tin	159	8% ↑	147	26% ↑	127	-58% ↓	382
Zinc	22	-1% ↓	22	-62% ↓	58	-90% ↓	213

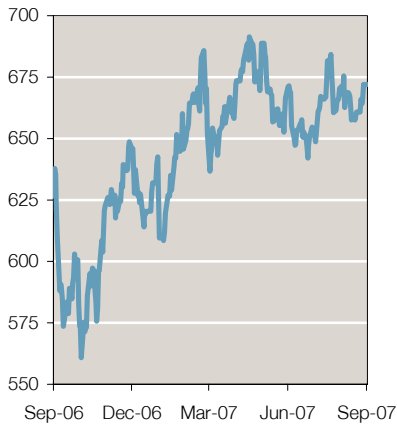
USD exchange rates

(1999 Avg.=base 100) 31 st August 2007	Current	Change from					
		1 M	1 Yr	5 Yr			
European euro	79	0%	78	-6% ↓	84	-28% ↓	109
Canadian dollar	71	-1% ↓	72	-4% ↓	74	-33% ↓	106
Great British pound	81	1% ↑	80	-6% ↓	85	-24% ↓	105
Japanese yen	101	-2% ↓	104	-1% ↓	103	-3% ↓	105
South African rand	119	0%	120	-1% ↓	120	-31% ↓	173
Australian dollar	79	4% ↑	76	-7% ↓	85	-33% ↓	119

Source: Virtual Metals & London Metal Exchange

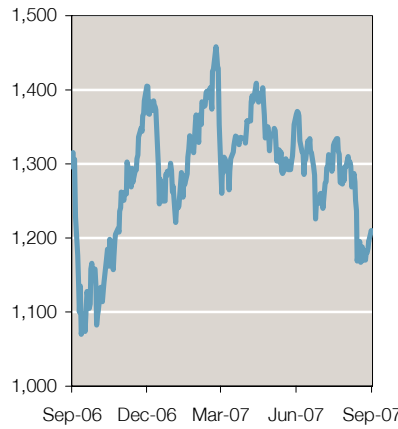
Prices

Gold (\$/oz)



Source: London Bullion Market Association

Silver (cents/oz)



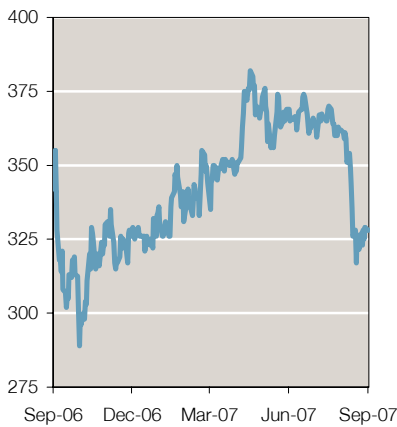
Source: London Bullion Market Association

Platinum (\$/oz)



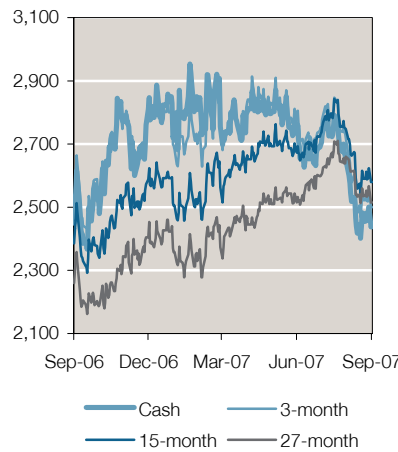
Source: London Platinum & Palladium Market

Palladium (\$/oz)



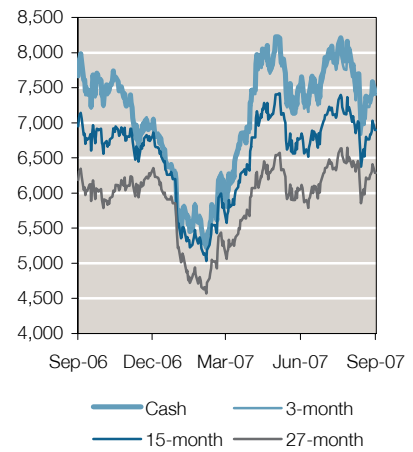
Source: London Platinum & Palladium Market

Aluminium (\$/tonne)



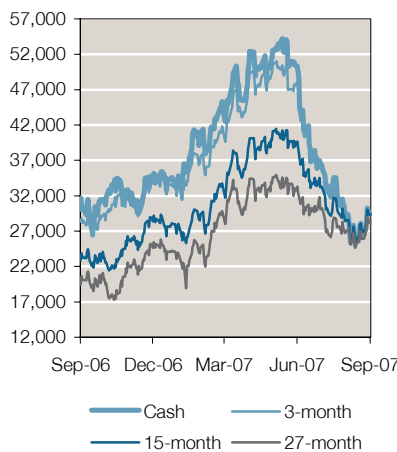
Source: London Metal Exchange

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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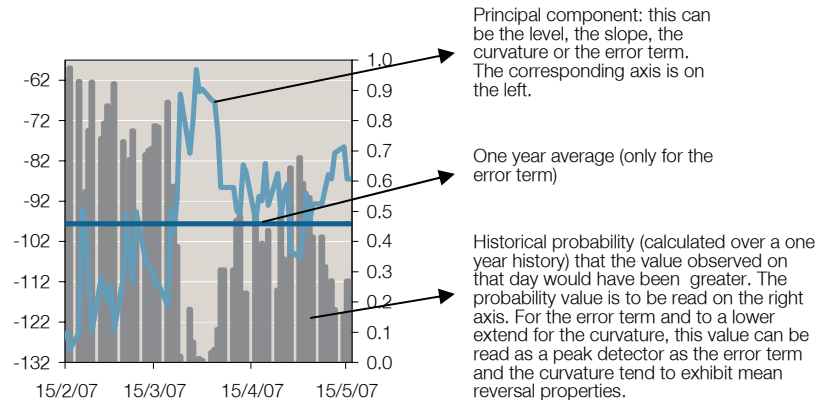
PCA background

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

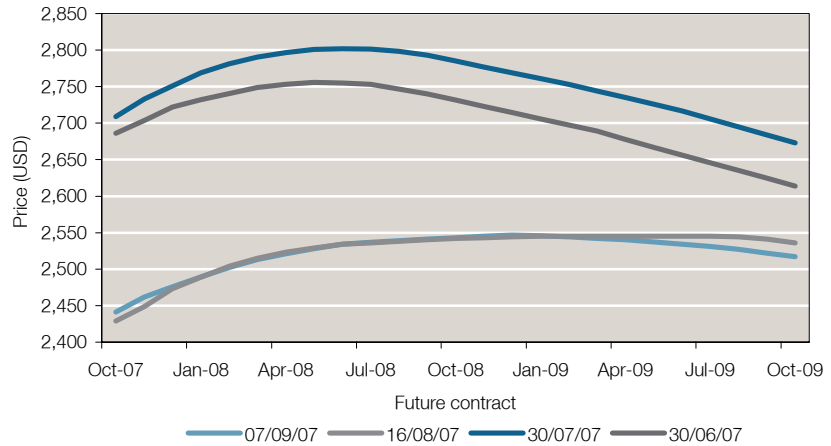
Future contract

Fundamental outlook

Some quite distinctive dynamics were observed in aluminium's future curve movements during the past months.

First there is a significant parallel shift downward quantified by the decrease in level. The level component is mainly driven by the spot price, which decreased sharply from July 20th until August 16th driven by the current risk repricing.

More specific however is the continued counterclockwise rotation of the curve quantified by a remarkable decrease in slope. The slope component is mainly driven by the convenience yield of the metal. The curve flipped from backwardation to contango over the past two months as a price reaction to rising production.



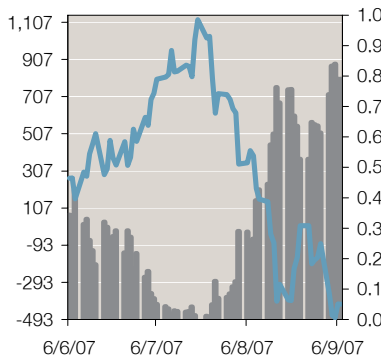
Source: Fortis Modelling, Bloomberg

Principal component analysis

Slope and level are at a historic low. Historically speaking, there is a chance of 90% for the level and almost 100% for the slope to increase. Both components are however driven by fundamental economic outlook drawn down by the current risk aversion and rising aluminium production.

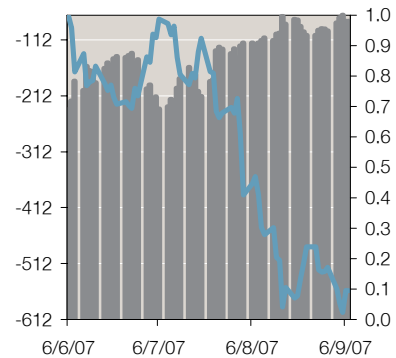
If the risk of overproduction decreases or there is a boost in demand a position should be taken on the slope (long shorter maturities, short longer maturities).

Level (t)



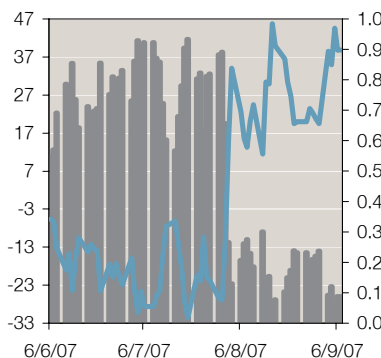
Source: Fortis Modelling

Slope (t)



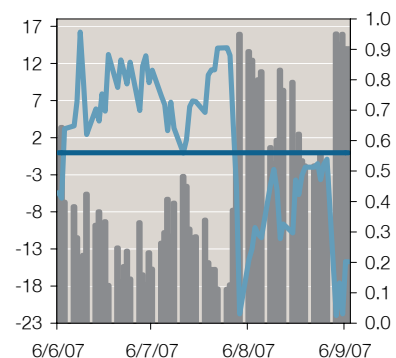
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

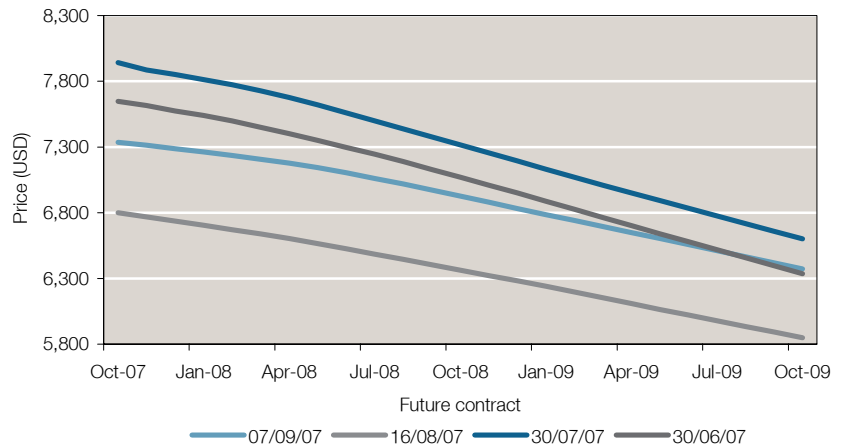
The curvature has been statistically high now for some time. There is a downward pressure on price in the short and very long maturities. There is no fundamental reason why this strong curvature should hold in the long term.

Copper Future curve analysis

Fundamental outlook

Just like all metals copper prices dropped steeply during the days before August 16th. Driven by strong fundamentals however it managed to recover during the last weeks of August.

Future contract

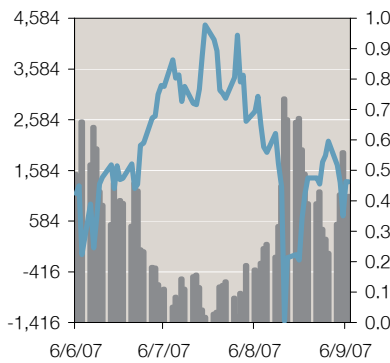


Source: Fortis Modelling, Bloomberg

Principal component analysis

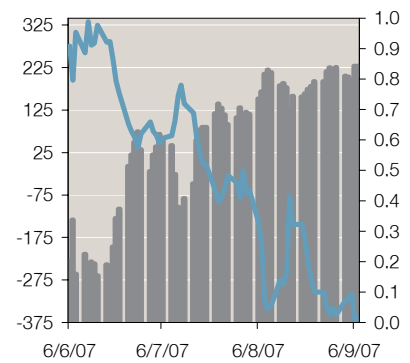
Round August 16th the copper futures curve was on a rollercoaster. Level dropped sharply in synchrony with spot prices. More remarkable however is the peak in slope and curvature showing intense rotation and bending during a one-week period only. This clearly shows the market stress. It is interesting to see how the copper market continues to stay high until July 31st. By then cds spreads reached a historic high (>460bps for the Itraxx Crossover, doubled during the month of July), equities had started to decline sharply and market implied volatilities showed unseen risk aversion. After that it could not hold. The decline until August 16th was triggered across all asset classes.

Level (t)



Source: Fortis Modelling

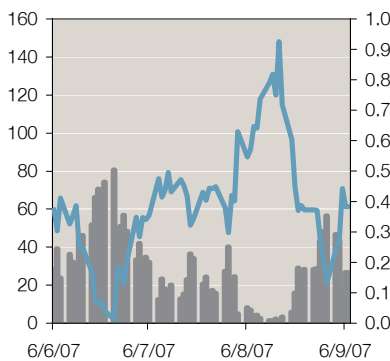
Slope (t)



Source: Fortis Modelling

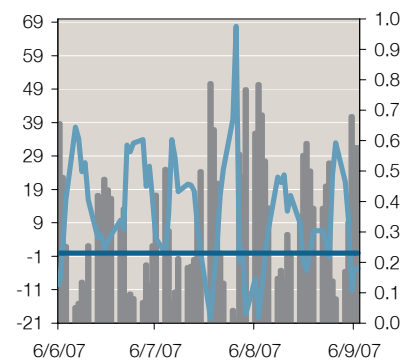
Copper however showed a remarkable resilience. Hence, it should not be seen as a surprise that copper prices recovered quickly after the correlation clustering across asset classes dissolved.

Curvature (t)



Source: Fortis Modelling

Error (t)



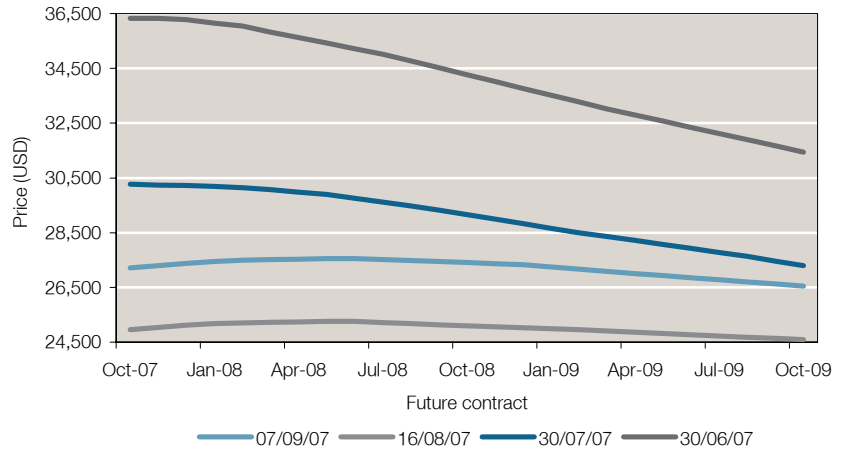
Source: Fortis Modelling

Nickel Future curve analysis

Fundamental outlook

Nickel prices continued to fall until August 16th. This can be seen in the level decrease and curve flattening.

Future contract

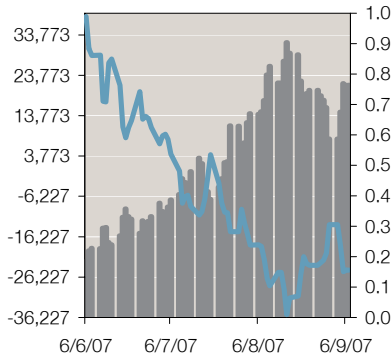


Source: Fortis Modelling, Bloomberg

Principal component analysis

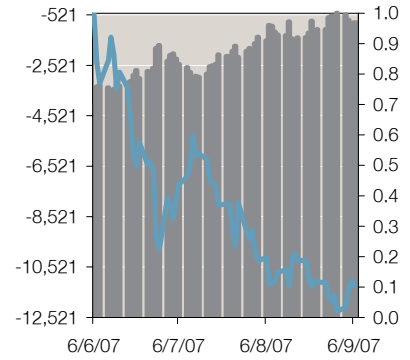
The drop in three-month drop nickel prices is denting while the level is recovering and the slope stabilizes.

Level (t)



Source: Fortis Modelling

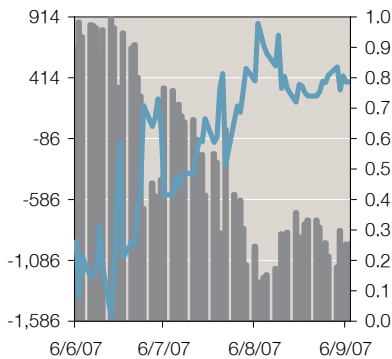
Slope (t)



Source: Fortis Modelling

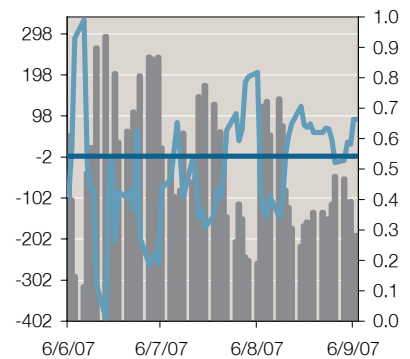
Curvature is strong with the highest futures prices in the mid-term range.

Curvature (t)



Source: Fortis Modelling

Error (t)



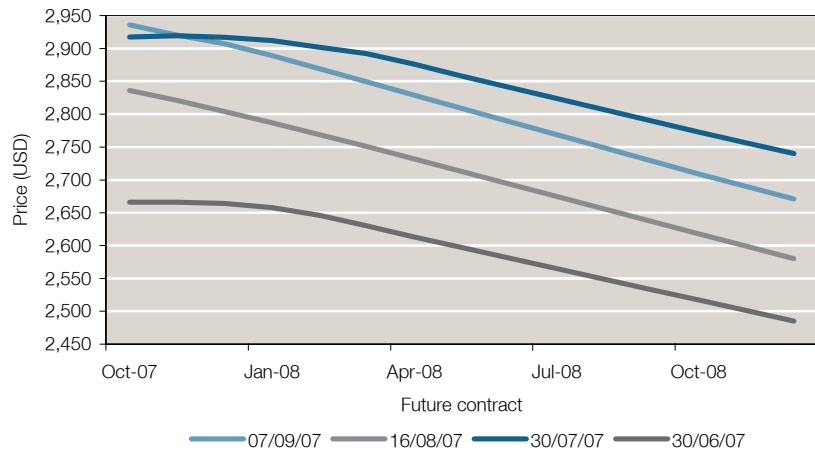
Source: Fortis Modelling

Lead Future curve analysis

Fundamental outlook

All that glitters is not gold. Well supported by strong supply-demand fundamentals, lead performed extremely well during the recent months. The small dent that was seen at the shorter maturities during the months of June and July has gone. The lead future curve resembles a straight line with a constant convenience yield over all maturities.

Future contract

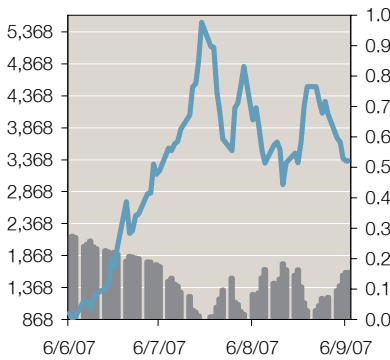


Source: Fortis Modelling, Bloomberg

Principal component analysis

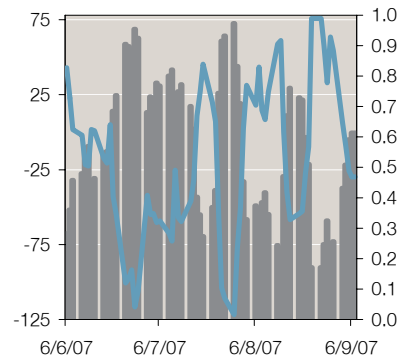
Lead's variance is for 99.9% driven by the level. Hence, it is difficult to draw any sound conclusion from the other principal components. Level probability of going up is currently at 50%. So, historically speaking, lead prices can go either way.

Level (t)



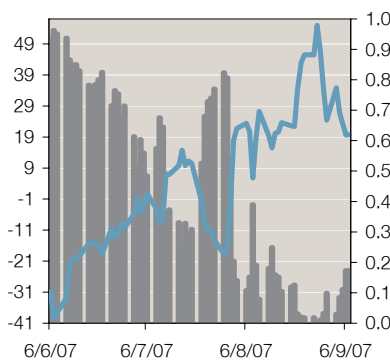
Source: Fortis Modelling

Slope (t)



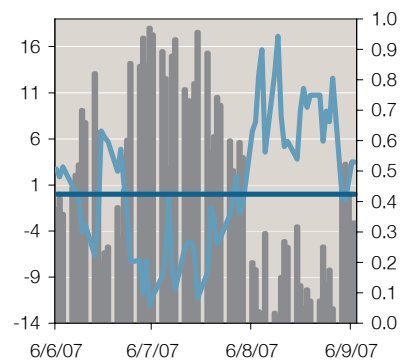
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



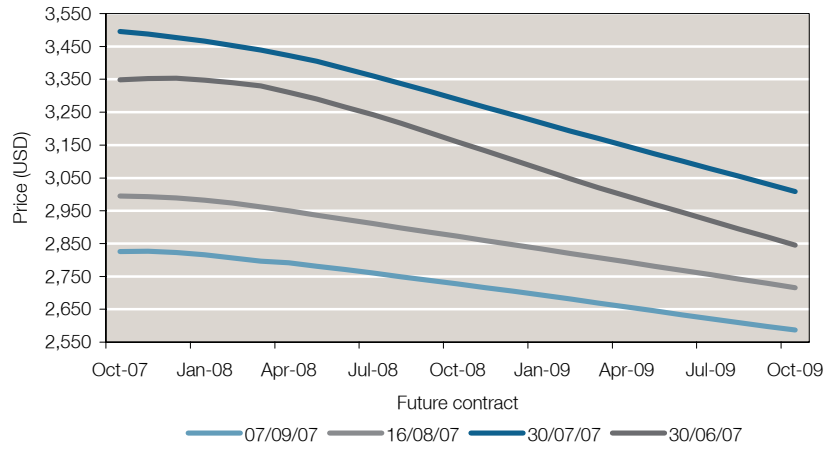
Source: Fortis Modelling

Zinc Forward curve analysis

Fundamental outlook

Zinc prices have been falling since July 24th. Risk repricing has accelerated this process up to August 16th.

Future contract

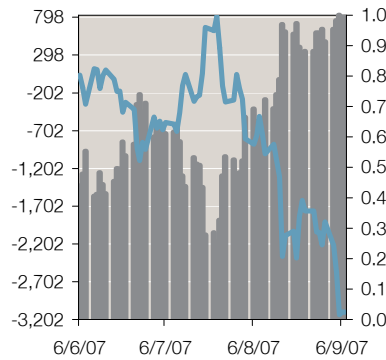


Source: Fortis Modelling, Bloomberg

Principal component analysis

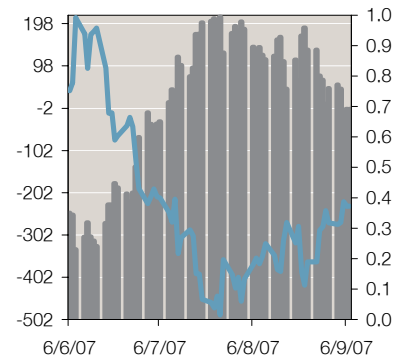
After a strong flattening up to the end of July, the zinc curve slope has stabilized during the month of August driven by more positive supply-demand fundamentals. Prices however keep declining as can be seen in the level component.

Level (t)



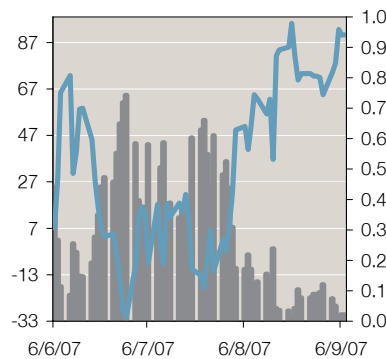
Source: Fortis Modelling

Slope (t)



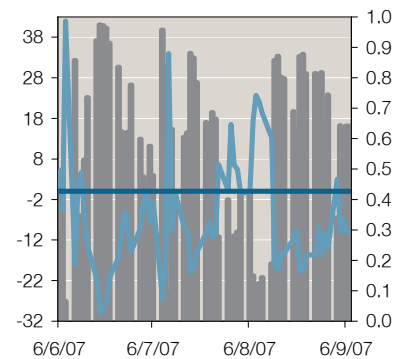
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



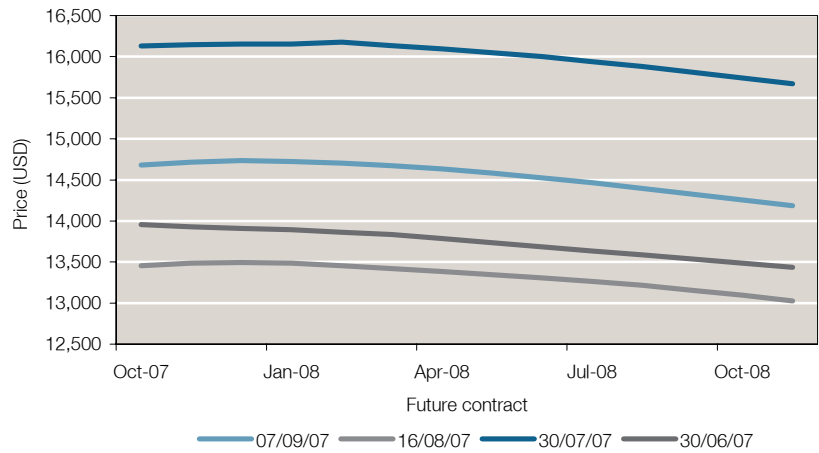
Source: Fortis Modelling

Tin Future curve analysis

Fundamental outlook

Even more than copper, tin prices resisted the downward pull triggered by exploding market implied volatility and credit spreads until the beginning of August. After that correlation amongst asset classes caused all prices to collapse until August 16th. It is interesting to see that assets that resisted the negative market sentiment longer (just like copper and tin) recovered faster.

Future contract

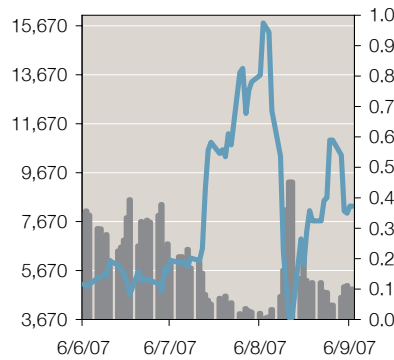


Source: Fortis Modelling, Bloomberg

Principal component analysis

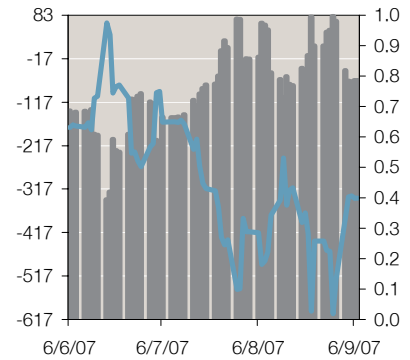
Note that 99.8% of the variance of Tin is driven by the level component. Hence, it is difficult to draw any sound conclusion from the other principal components.

Level (t)



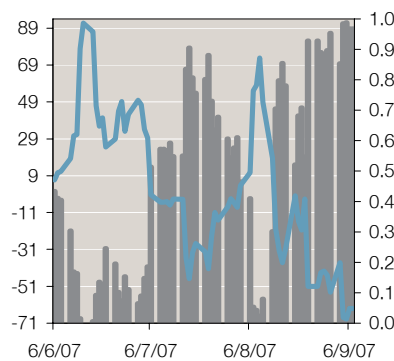
Source: Fortis Modelling

Slope (t)



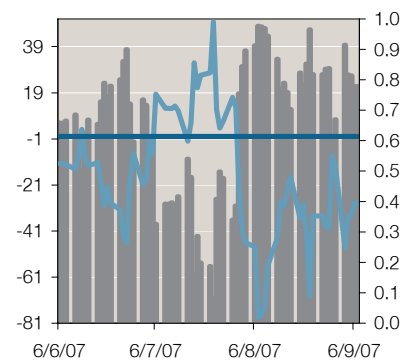
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

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VM Group is a commodities research consultancy. The VM Group, which through its subsidiary Virtual Metals covers precious and base metals, comprises a uniquely skilled team, highly experienced in the analysis of the fundamentals of commodities and their geopolitical impact and contexts.

VM Group work excels in macro-economic analysis, the generation of supply and demand scenarios, costs analysis, derivative research and price forecasting. Confidentiality, experience and independence are key elements of such advisory roles. Our aim is to assist those in need of external expertise, as well as those who wish to supplement their own in-house resources. With our extensive international contacts, we are able to broaden our services through links with experienced associates in related fields worldwide.

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