Merchant Banking

INVESTMENT RESEARCH

# Fortis metals monthly

July 2008

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


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Fortis Metals Monthly is an exclusive precious and base metals research joint venture between Fortis Bank SA/NV and VM Group.

# Metals and plastics – Strategic view

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## Introduction

With crude oil prices so high, dangers are building up in the global economy – inflation is the most obvious right now but it is only a matter of time before this feeds into lower consumer spending, via firming interest rates, a protracted credit squeeze, and higher unemployment. The European Central Bank's move in early July to lift eurozone interest rates to the highest in seven years (now at 4.25%) may not be the last, and expectations are mounting that the US Federal Reserve will soon signal a return to rate increases. All of which will curb demand for metals – except perhaps gold, which could see very strong rises if investors get really spooked about the possibility of inflation getting a firm grip, although higher US interest rates ought to strengthen the dollar, which would be negative for gold.

## Gold

Gold's fantastic finish in June took prices to levels not seen since April. Much of it was to do with the dollar, but inflationary pressures are also helping. Gold typically does well in economic turbulence – and central bankers seem united in their conviction that tough times lie ahead.

## Silver

It was no surprise that silver was again dragged higher by gold. This pattern is now well established but a slowing global economy will take a heavier toll on it than the yellow metal.

## Platinum

Platinum remains solidly supported by the risk of another supply crunch from South Africa. Against that, the very high premium of diesel versus gasoline in most western markets will deter car buyers from purchasing diesel-engine vehicles, and that will slow autocatalyst offtake.

## Palladium

The market continues to price palladium higher on the view that the metal's years of excess supply are coming to a rapid end. The data is inconclusive and is likely to remain so for some time to come. Demand is at risk from a global slowdown, but where platinum loses in autocatalysts, palladium will benefit as more drivers reconsider the merits of gasoline-engines.

## Aluminium

China's electricity supply problems worsened considerably in early July and 12 provinces (out of 22) are now rationing power. It emerged on $10^{th}$ July that 20 of China's biggest aluminium smelters agreed to cut primary metal production in July by as much as 10%, which pushed the LME price to a fresh record. Kaiser Aluminium's decision to start charging new customers a sliding-scale electricity surcharge on fabricated aluminium products is a real sign of the times. Higher energy costs are hurting all metals' producers, but aluminium is most exposed.

## Copper

The price has remained remarkably strong despite growing evidence that China's refined copper imports are very sluggish indeed. In the very long term copper no doubt has a strong demand profile, but right now there is little fundamental support for such elevated prices.

## Nickel

BHP Billiton sprung a surprise in June by bringing forward a planned maintenance shutdown of a smelter and refinery. This propped up the sagging price and reminded everyone of nickel's continuing fragile supply-side picture.

## Lead and zinc

The speculative bubble in lead has well and truly popped, while in zinc the expanding global supply is dragging the price ever lower. Further weakness ahead is likely for both metals.

## Tin

We may now have a clearer picture as to the intentions of Indonesia regarding its tin export policy. On the other hand the plethora of contradictory signals that have emerged from that country regarding its tin industry have left the market dizzy. All that can be said for certain is that so far this year Indonesian exports have been very low, and China's demand very strong – this may be the story for the rest of the year; in which case the price should hold above $20,000/t, although slower economic growth might rock that.

## Steel

The LME's newest contracts have yet to gather momentum; volumes remain relatively low but at least they have been launched into a buoyant market, with long-term world demand likely to grow substantially, and input costs (iron ore and coking coal) soaring.

## Plastics

Plastics are nakedly exposed to the high crude oil price; prices are soaring and this will accelerate the drift towards more production heading to Asia.

## Forecasts

### Price forecasts

| | | End-June | 1-month | 2-month | 3-month | 12-month |
|---|---|---|---|---|---|---|
| **Gold** | $ per oz | 930.25 | 880-960 | 880-960 (r) | 880-960 (r) | 900 |
| **Silver** | $ per oz | 17.65 | 17-18.50 | 17-19 (r) | 17-19 (r) | 17.50 |
| **Platinum** | $ per oz | 2,064 | 1,950-2,220 | 2,200-2,400 | 2,000-2,400 | 2,200 |
| **Palladium** | $ per oz | 467 | 440-480 | 450-490 (r) | 450-490 (r) | 450-490 (r) |
| **Aluminium (3-month)** | $ per tonne | 3,122 | 3,000-3,700 | 3,000-3,700 (r) | 3,500-4,000 (r) | 3,500 (r) |
| **Copper (3-month)** | $ per tonne | 8,585 | 7,800-8,400 | 7,500-8,000 (r) | 7,500-8,000 | 7,500 |
| **Nickel (3-month)** | $ per tonne | 21,825 | 20,000-23,000 | 20,000-23,000 | 20,000-23,000 | 20,000 |
| **Lead (3-month)** | $ per tonne | 1,765 | 1,800-2,200 | 1,800-2,200 (r) | 1800 (r) | 1,500 (r) |
| **Zinc (3-month)** | $ per tonne | 1,912 | 1,700-1,900 | 1,600-1,800 (r) | 1,650 (r) | 1,500 (r) |
| **Tin (3-month)** | $ per tonne | 23,400 | 20,000-23,000 | 21,000-25,000 | 21,000-25,000 | 20,000 |
| **Plastic: LL (Global)** | $ per tonne | 1,680 | 1,750-1,800 | 1,800 (r) | 1,800 (r) | 1,800 (r) |
| **Plastic: PP (Global)** | $ per tonne | 1,890 | 1,900-1,950 | 2,000 (r) | 2,000 (r) | 2,000 (r) |
| **Steel: (3-month) Med** | $ per tonne | 1,200 | 1,2 50-1,300 | 1,250-1,300 (r) | 1,250-1,450 (r) | 1,400 (r) |
| **Steel: (3-month) Asia** | $ per tonne | 1,110 | 1,050-1,200 | 1,150-1,200 (r) | 1,250-1,450 (r) | 1,350 (r) |

| | | Average/2009 | Average/2010 | Average/2011 | Average/2012 | Average/2013 |
|---|---|---|---|---|---|---|
| **Gold** | $ per oz | 890 | 800 | 650 | 600 | 500 |
| **Silver** | $ per oz | 18 | 15 | 13 | 13 | 10 |
| **Platinum** | $ per oz | 2,000 (r) | 1,700 | 1,700 | 1,500 | 1,300 |
| **Palladium** | $ per oz | 450 | 500 (r) | 400 | 400 | 300 |
| **Aluminium (3-month)** | $ per tonne | 3,500 (r) | 3,800 (r) | 3,800 (r) | 3,500 (r) | 3,500 (r) |
| **Copper (3-month)** | $ per tonne | 7,000 (r) | 5,000 | 5,000 | 5,000 | 4,000 |
| **Nickel (3-month)** | $ per tonne | 20,000 | 20,000 | 18,000 (r) | 18,000 (r) | 16,000 (r) |
| **Lead (3-month)** | $ per tonne | 1,250 (r) | 1,200 (r) | 1,150 (r) | 1,200 (r) | 1,200 (r) |
| **Zinc (3-month)** | $ per tonne | 1,300 (r) | 1,300 (r) | 1,700 (r) | 1,700 (r) | 2,300 (r) |
| **Tin (3-month)** | $ per tonne | 20,000 | 13,000 | 13,000 | 12,000 | 10,000 |
| **Plastic: LL (Global)** | $ per tonne | 1,400 | 1,200 | 1,200 | 1,200 | 1,200 |
| **Plastic: PP (Global)** | $ per tonne | 1,400 | 1,250 | 1,250 | 1,250 | 1,250 |
| **Steel: (3-month) Med** | $ per tonne | 1,400 | 1,400 (r) | 1,500 (r) | 1,500 (r) | 1,400 (r) |
| **Steel: (3-month) Asia** | $ per tonne | 1,350 | 1,300 (r) | 1,400 (r) | 1,400 (r) | 1,400 (r) |

*Source: VM Group* *[r] = revised from previous month*

## Market Update

### Prices and stock levels

| Prices (July 8th) | | Most recent price | Average over past 12 M | High | Low | Price 1 week ago | WoW (%) | Price 1 month ago | MoM (%) | Price 12 months ago | YoY (%) | Average 2007 | Average 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gold** | $/oz | 916.8 | 827.4 | 1,011.3 | 657.5 | 919.5 | **0** | 890.5 | **3** | 661.3 | **39** | 696.5 | 604.0 |
| **Silver** | $/oz | 17.85 | 15.51 | 20.92 | 11.67 | 17.4 | **3** | 17.2 | **4** | 12.7 | **40** | 13.4 | 11.6 |
| **Platinum** | $/oz | 1,990 | 1,671 | 2,273 | 1,240 | 2,053.0 | **(3)** | 2,050.0 | **(3)** | 1,303.0 | **53** | 1,304.7 | 1,141.9 |
| **Palladium** | $/oz | 448.0 | 399.7 | 582.0 | 320.0 | 467.0 | **(4)** | 429.0 | **4** | 368.0 | **22** | 354.7 | 320.4 |
| **Aluminium** | $/tonne | 3,233 | 2,724 | 3,233 | 2,376 | 3,102.5 | **4** | 2,944.0 | **10** | 2,820.0 | **15** | 2,662.0 | 2,593.4 |
| **Copper** | $/tonne | 8,410 | 7,732 | 8,812 | 6,340 | 8,500.0 | **(1)** | 7,986.0 | **5** | 7,940.0 | **6** | 7,095.9 | 6,670.6 |
| **Lead** | $/tonne | 1,582 | 2,851 | 3,880 | 1,565 | 1,820.0 | **(13)** | 1,955.0 | **(19)** | 2,931.0 | **(46)** | 2,557.9 | 1,281.6 |
| **Nickel** | $/tonne | 20,615 | 28,421 | 34,810 | 20,615 | 21,850.0 | **(6)** | 22,825.0 | **(10)** | 34,810.0 | **(41)** | 36,217.1 | 23,265.6 |
| **Tin** | $/tonne | 23,275 | 18,168 | 25,500 | 13,600 | 23,305.0 | **0** | 22,400.0 | **4** | 14,210.0 | **64** | 14,532.3 | 8,765.8 |
| **Zinc** | $/tonne | 1,801 | 2,578 | 3,752 | 1,763 | 1,945.0 | **(7)** | 1,966.0 | **(8)** | 3,460.0 | **(48)** | 3,243.2 | 3,252.4 |
| **PP** | $/tonne | 1,815 | 1,422 | 1,930 | 1,240 | 1,815.0 | **0** | 1,675.0 | **8** | 1,290.0 | **41** | 1,220.2 | 1,176.4 |
| **LL** | $/tonne | 1,710 | 1,396 | 1,710 | 1,215 | 1,710.0 | **0** | 1,595.0 | **7** | 1,215.0 | **41** | 1,254.9 | 1,213.2 |

| LME Stocks (July 8th) | | Most recent stocks | Average over past 12 M | High | Low | Stocks 1 week ago | WoW (%) | Stocks 1 month ago | MoM (%) | Stocks 12 months ago | YoY (%) | Average 2007 | Average 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Aluminium** | Tonnes | 1,087,075 | 955,574 | 1,094,150 | 826,725 | 1,091,925 | **(0.4)** | 1,069,275 | **2** | 827,800 | **31** | 842,573 | 723,253 |
| **Copper** | Tonnes | 122,075 | 141,806 | 201,000 | 97,550 | 122,475 | **(0.3)** | 121,150 | **1** | 100,375 | **22** | 158,899 | 119,593 |
| **Lead** | Tonnes | 100,975 | 47,318 | 101,900 | 20,850 | 100,475 | **0.5** | 72,600 | **39** | 43,050 | **135** | 37,218 | 76,115 |
| **Nickel** | Tonnes | 46,968 | 40,279 | 52,308 | 9,954 | 46,860 | **0.2** | 47,304 | **(1)** | 9,954 | **372** | 18,110 | 17,324 |
| **Tin** | Tonnes | 6,460 | 11,232 | 16,065 | 6,460 | 6,815 | **(5.2)** | 7,650 | **(16)** | 12,045 | **(46)** | 11,891 | 13,187 |
| **Zinc** | Tonnes | 152,250 | 99,205 | 154,025 | 58,100 | 152,975 | **(0.5)** | 143,250 | **6** | 70,350 | **116** | 81,377 | 218,452 |

*Source: VM Group*

# Analysis

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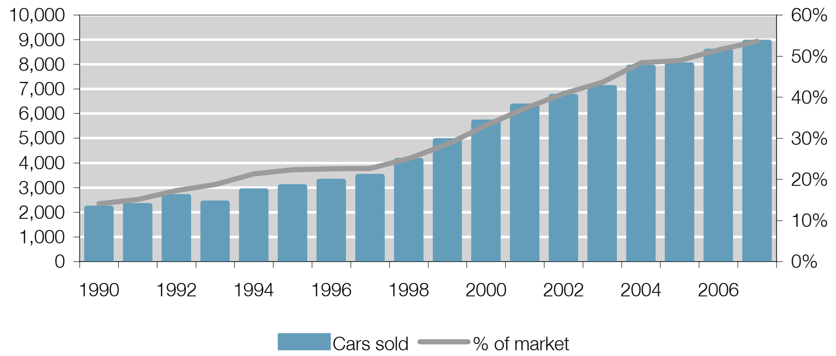
## High crude oil prices threaten platinum

*One of the great advantages platinum has enjoyed over the last decade compared with palladium is the trend away from gasoline-powered cars to those using diesel. This trend has been most evident in Europe, but drivers in other countries such as South Korea have been increasingly tempted by the advantages of diesel engine cars. Until recently, diesel engine vehicles could only use platinum-based catalysts, which boosted demand, but reduced platinum's price elasticity. The price gap between platinum and palladium has encouraged autocatalyst producers to squeeze the amount of platinum they use and raise the volume of palladium where possible. Today, some diesel engine cars can use some palladium. But a bigger threat to this important industrial demand for platinum is that diesel's main selling point – its greater fuel efficiency over gasoline – has been substantially eroded by the higher retail cost of diesel compared with gasoline.*

Long derided as smoky, noisy and sluggish, the diesel-powered passenger vehicle nevertheless became one of the great motoring success stories of the 1990s and this decade. In the European Union, which is the world's second largest car market (after the US), sales of diesel fuelled vehicles rose from just over 2m units in 1990 to about 8.6m in 2007. That represented an increase from 14% of the new car market in the EU to 53.3%. Some countries, such as France, today have a diesel share of more than 70%. Europe has become diesel's most successful market by far, but it is not alone; in South Korea, diesel vehicles account for more than half of new car sales.

**Europe's diesel revolution (thousand vehicles)**




*Source: VM Group*

What was behind the success of diesel? Largely it was a matter of improved engine technology. Diesel cars become just as attractive as gasoline models in aesthetic terms – the noise and noxious emissions that had discouraged buyers three decades ago became a thing of the past. They became much more competitive in terms of performance, too, although gasoline cars are still noticeably quieter on start-up. But although these factors were a necessary condition, the real incentive to buy diesel over gasoline was money. Diesel was both cheaper than gasoline, and gave greater fuel economy.

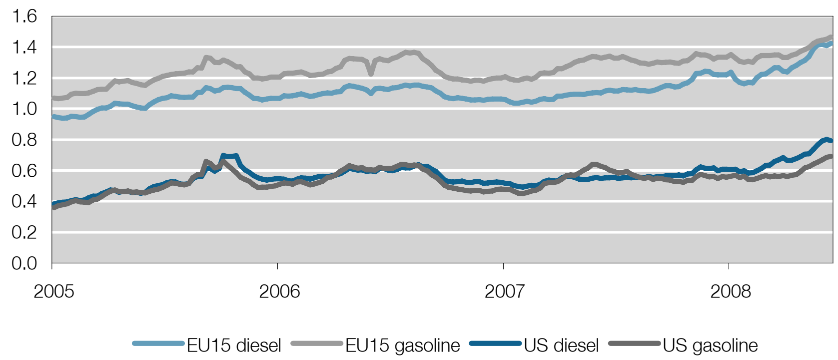
That diesel was cheaper than gasoline was partly because the wholesale price tended to be cheaper – diesel needs less refining – but usually more because the tax was less onerous. Most of the pump price for car fuels in European countries is taxation, and differences in the regulations can be large. As diesel is traditionally the fuel of farmers, buses and industry, in many countries it was given preferential treatment in the form of a lower tax take by government. At the start of 1996, when the diesel revolution was heating up in the EU, a litre of diesel (including tax) was 8% cheaper than gasoline in the UK, 23% lower in Italy, 27% in Belgium, 32% in France and the Netherlands, and 33% in

Germany. Those differentials varied with taxation change and world prices, but between 2000-2006, when diesel registrations leapt again, on average diesel was 15% cheaper than gasoline in Italy, 18% cheaper in Germany, 19% in France, 24% in Belgium, and 28% in the Netherlands, although in the UK it was 3% more expensive, but still much cheaper than gasoline for farmers and bus companies.

Coupled with generally cheaper fuel was diesel's greater fuel economy. This is partly a function of diesel fuel simply containing more oil, and also because of a greater efficiency in converting it into energy. A modern diesel with *comparable* performance to a gasoline-powered car typically consumes about 25% to 35% less fuel for a given distance. So it was considerably cheaper to run a diesel engine car than a gasoline one. Offsetting this, however, was a higher purchase cost. Typically a diesel engine car would cost 5%-10% more, which would add another €1,000-€2,000 onto the price of a €20,000 car.

The fuel economy and offsetting higher purchase costs hold true to this day, but the price of diesel has been converging on that of gasoline. The reason for this has been that there has been strong growth in diesel demand, not just in Europe for cars but in China and other emerging markets for heating and industry. The available refining capacity has not kept up, and so diesel has become more expensive than gasoline at the wholesale level. When the differential taxes are taken into consideration diesel can still be cheaper, but in all countries the gap has narrowed. By mid-June this year, diesel was 11% more expensive than gasoline in the UK, where taxes are much the same, and the same as gasoline in Italy, with a discount of 2% in Germany, 3% in France, 10% in Belgium and 13% in the Netherlands.

**Price of fuel in EU15 and US in €/litre**




*Source: Reuters Ecowin*

To put some numbers on this, imagine a VW Golf 2.0 turbo-diesel that currently retails for around €23,218. It is equivalent in performance to the VW Gold 1.4 gasoline engine vehicle, which is priced at €22,012. The fuel consumption of the diesel is 5.4 litres per 100km (51.4 miles per gallon), 24% less than the gasoline car, which consumes 7.1 litres per 100km (39.8 mpg). An average driver who does 15,000km/year and achieves this average fuel economy will therefore use 2,113 litres of diesel or 2,778 litres of gasoline. The cost of fuel varies (and of course so does the relative economy of cars) at different times. The average price per litre of diesel in Italy, France, Belgium, the Netherlands and Germany (the countries listed above where diesel is considerably cheaper than gasoline) was in 1996 €0.58/litre, in 2000 €0.78/litre, and in 2005 €0.92/litre. Today it is €1.46/litre. Gasoline on the same dates was €0.82/litre, €1.01/litre, €1.08/litre and €1.56/litre.

The table below shows the cost of buying fuel at these prices over time. The saving from using diesel rather than gasoline has stayed reasonably constant in euro terms, at over €1,000 a year, as the declining price advantage of diesel is offset by the rising cost of any fuel. This saving per year would soon pay back the extra cost of the vehicle, and so (at least on these grounds) there is no reason to believe the diesel revolution in these countries will end anytime soon. There have been murmurings in the European Commission about ending the preferential tax for diesel fuel, by 2014, and this would change matters, making it more similar to the UK. There, diesel trades at a €0.16/litre premium over gasoline, and the saving from running a diesel has fallen from €1,029 in 2000 to just €649 today. However, again due to rising prices of all fuel, this saving has risen from 2005, when it was €542, and higher relative diesel prices and thus lower savings compared with gasoline vehicles has not stopped diesel cars taking market share in the UK.

**Fuel savings in EU5 from diesel cars**

| | Start 1996 | Start 2000 | Start 2005 | June 16th 2008 |
|---|---|---|---|---|
| Price diesel (€/litre) | 0.58 | 0.78 | 0.92 | 1.46 |
| Price gasoline (€/litre) | 0.82 | 1.01 | 1.08 | 1.56 |
| Cost of 2,113 litres of diesel (€) | 1,222 | 1,653 | 1,952 | 3,095 |
| Cost of 2,778 litres of gasoline (€) | 2,283 | 2,794 | 2,996 | 4,326 |
| Diesel saving | 1,061 | 1,141 | 1,043 | 1,231 |
| Cheaper than gasoline (%) | (46) | (41) | (35) | (28) |

*Source: VM Group*

## Things are different in the US

The US is the world's largest carmaker, although it is slowing sharply at present. America has long been the Holy Grail for European and Japanese diesel car manufacturers. At present the penetration of diesel light-vehicles (cars and SUVs) in the US passenger vehicle market is small, not more than 3%, and limited to bigger types of engine. Previous attempts to introduce diesel models foundered on customer dislike, but with the technological advances in recent years and the introduction of low-sulphur fuel in 2006, which allowed diesels to meet stringent emissions legislation, and only recently in California, New York and other states which used even tougher standards (so-called '50 state diesels'). Another problem has been that the undoubted advantage of diesels – the greater fuel economy – has mattered less in a country where fuel has been much cheaper than in Europe due to lower taxation, and also where diesel has enjoyed no tax advantages. Today fuel prices are much higher across the board, but particularly so for diesel, which trades at between 10% and 20% more than gasoline, at the equivalent of €0.8/litre compared with €0.70/litre for gasoline.

The following table shows the fuel savings associated with using the same diesel VW Golf in the US (a hypothetical example, as the product isn't sold there), and assuming it returns the same fuel consumption, but increases the annual mileage to 15,000 miles, to take account of US driving habits. As can be seen, although diesels still save money, the amount (€396) is much smaller than in Europe, and therefore it would take longer to recoup the higher initial purchase price. On the other hand, with fuel bills rising, any saving might be considered better than none.

**Fuel savings in US from diesel cars in €/litre**

| | Start 1996 | Start 2000 | Start 2005 | June 16th 2008 |
|---|---|---|---|---|
| Price diesel | 0.24 | 0.35 | 0.41 | 0.80 |
| Price gasoline | 0.22 | 0.34 | 0.38 | 0.70 |
| Cost of 3,423 litres of diesel | 807 | 1,183 | 1,413 | 2,752 |
| Cost of 4,500 litres of gasoline | 1,001 | 1,511 | 1,702 | 3,148 |
| Diesel saving | 194 | 328 | 289 | 396 |
| Cheaper than gasoline (%) | (19) | (22) | (17) | (13) |

*Source: VM Group*

### Impact on PGMs

Although palladium has made some inroads into platinum's dominance of diesel engine catalysts, it is still the case that more diesels essentially mean more platinum in catalysts as opposed to palladium. While the diesel revolution in the EU is unlikely to slam into reverse gear, if the diesel price remains consistently much higher than that of gasoline then EU drivers will progressively shift away from diesel engine vehicles. The ratio of sales between diesel and gasoline engine cars of course has implications for the relative prices of the two metals. The diesel revolution in Europe has certainly been helped in the past by generally cheaper fuel – although this is not a necessary condition, as seen from the UK market, where diesel typically has been very similarly priced to gasoline and yet diesel vehicle sales have soared – but that may soon no longer be true.

So the convergence of diesel and gasoline prices in most markets, and the rise of diesel above gasoline in markets where taxation is more equal, is likely to have an impact. However, as we have shown, diesel's greater fuel economy means it remains a significantly cheaper option over the medium-term, and is likely to remain so, even if taxation is made more equal and its price premium continues to grow. Thus European diesel growth might slow, but is unlikely to be reversed. The US however is a different story. Diesel's price disadvantage there is likely to be enough to continue to deter US consumers from buying a diesel-engine vehicle, particularly given that US vehicle manufacturers appear to have decided that the gasoline-hybrid route is the preferable one for the very long-term. The long awaited 'diesel revolution' in the US looks like being postponed yet again. That will be a big disappointment for platinum producers and investors.

# Focus

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## Poor performance for most metals in Q2 2008

*Metals had a relatively poor second quarter, with most losing ground. This is in contrast to other commodities, some of which had a storming Q2. Is a slowing global economy beginning to feed through into metals, and what are the prospects for the rest of the year?*

The recent long-sustained boom in metals prices ground to a halt in Q2 2008, with many of those featured in this report registering substantial falls against Q1. The following table shows the performance in Q1, Q2 and 2008 so far.

**Precious and base metals performance: Q2 2008**

| | Precious Metals LBMA London PM, Fixing, USD | | | | Base Metals 3 Month Forward, LME, Ask, USD | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gold $/ounce | Silver c/ounce | Platinum $/ounce | Palladium $/ounce | Copper $/tonne | Nickel $/tonne | Aluminium $/tonne | Lead $/tonne | Zinc $/tonne | Tin $/tonne | Steel $/tonne | Steel $/tonne |
| Start 08 price | 846.75 | 14.93 | 1541 | 371 | 6706 | 26725 | 2413 | 2580 | 2404 | 16245 | 1000 | 990.5 |
| Price end Q1 | 933.5 | 17.99 | 2040 | 445 | 8410 | 30200 | 2987 | 2805 | 2332 | 20575 | 1000 | 990.5 |
| Price end Q2 | 930.25 | 1765 | 2064 | 467 | 8585 | 21825 | 3122 | 1765 | 1912 | 23400 | 1200 | 1110 |
| Change over Q1 | 10% | 20% | 32% | 20% | 25% | 13% | 24% | 9% | (3%) | 27% | 0% | 0% |
| Change over Q2 | 0% | 9711% | 1% | 5% | 2% | (28%) | 5% | (37%) | (18%) | 14% | 20% | 12% |
| Change over year | 10% | 11722% | 34% | 26% | 28% | (18%) | 29% | (32%) | (20%) | 44% | 20% | 12% |

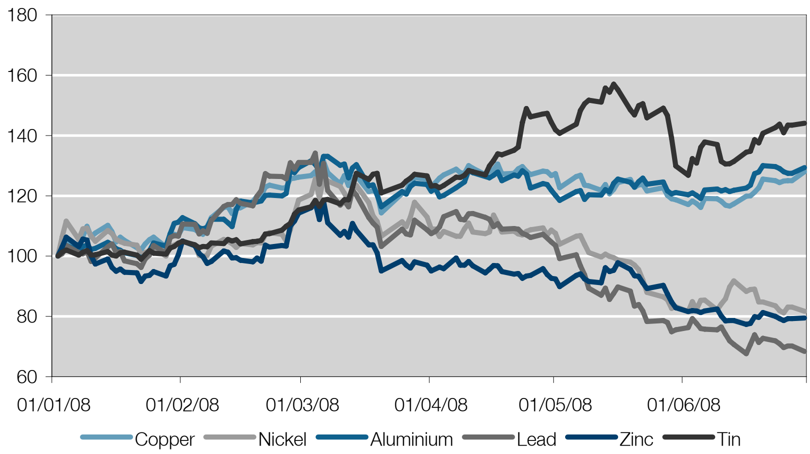
*Source: VMG*

These stark details reveal a few surprises – some of the performances seem quite counter-intuitive. Why did aluminium do so well, when global stocks are ample and in all probability there will be a world surplus of primary aluminium of around 300,000t this year? Why did gold fail to stride yet further ahead, when signs of inflation taking root became much more marked? How has lead collapsed so completely when Chinese refined lead exports are still half what they were a year ago?

Some metals did pretty much as we expected. **Tin** was by far the best performing metal in Q2 2008, with the price of the LME 3-month contract rising by more than 13% over the quarter, adding to a 27% increase in the first quarter. With tin there are clear reasons underlying its strength – the very tight supply-demand fundamentals have remained in place with expectations already built-in that 2009 is shaping up to be even tighter. The world's biggest tin producer, China, remains a large net importer having last year been a significant net exporter. The probability is that Indonesia, the world's second biggest tin producer, will export something less than 100,000t this year, a far cry from its peak export level of more than 140,000t just a couple of years ago. The third biggest tin producer, Bolivia, remains embroiled in a messy political struggle and its mineworkers are deeply split between state-sponsored unions and independent entities. Tin's vulnerabilities lie in two main areas: at this price the tin plating sector will see greater market share taken by competing, cheaper plastics and aluminium, while slowing consumer spending on all manner of electronic goods will dent demand for tin in its important new role as the main ingredient in electronics soldering.

**Palladium's** relative strength (up 4% in the quarter) compared to **platinum** (up just 1%) comes as a surprise. Neither of these gains were huge but both are moderately impressive, given both metals have been trading at what were already quite elevated prices, having seen gains of 20% and 32% respectively in Q1 2008. That palladium outpaced platinum in Q2 stems from a last-minute rally that appears to have been based on comments from a senior figure from Norilsk that Russian state stockpiles of palladium might disappear in 1-5 years. This was interpreted as being a moderately bullish signal, although given the very wide timeframe not much weight ought to be placed on it.

**Base metals prices (start 2008 = 100)**



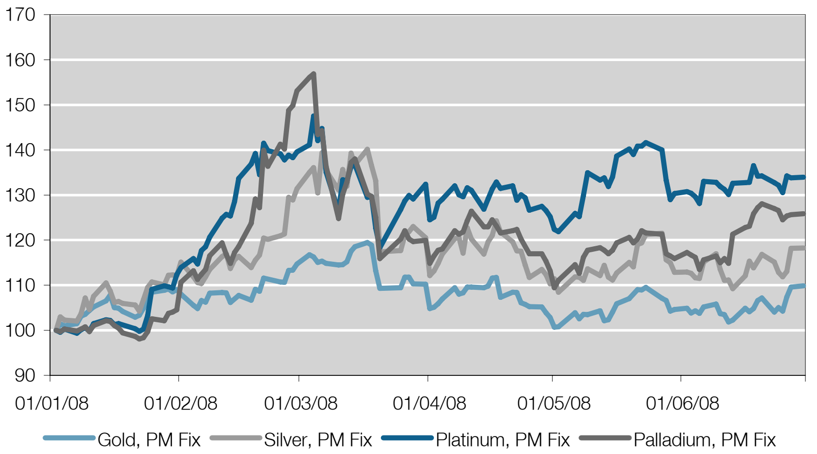

*Source: VMG*

Platinum will continue to remain well supported for the rest of this year, thanks essentially to the ongoing difficulties facing pgm producers in South Africa. Looking forward, both metals are at risk of a sharp downturn in the global economy – they are heavily dependent on automobile sales and jewellery demand, neither of which is recession-proof. So long as South Africa's state-run electricity provider, Eskom, continues to run the risk of being unable to meet strongly growing power demand then platinum prices will remain very strong. Even with a magic wand suddenly securing the financing Eskom says it needs to build new power stations, some $45bn, the long-term outlook for electricity supply in South Africa remains bleak, at least for the next five years.

Next came **aluminium** and **copper**, with the 3-month LME aluminium price adding 3% during Q2, whilst the same contract in copper put on 2%. This follows on from gains of 24% and 25% in Q1 2008. It is remarkable how similarly these two leading base metals have moved so far this year (see chart below). They are not normally this closely correlated; the most obvious deduction is that speculative investors are trading both of them on the fluctuating views as to prospects for the world economy, being the two metals most closely associated with the health of the economy, as well as the two most liquid contracts on the LME. Given this similarity in price movement, metal-specific factors perhaps are less pertinent than normally is the case. In purely supply-demand terms both have quite different prospects. For copper, the extent to which Chinese demand is holding up – is decoupled from demand in western markets – remains of key importance, while for aluminium the rising cost of energy continues to be concerning. There are still some strongly bullish speculative positions held on the LME in copper and this is helping to keep the price very firm. LME warehouse copper stocks remain very low by historic standards and certainly over the long-term Asian refined copper demand will continue to be strong, so perhaps this investment stance will prove correct, but there have been some very discouraging signals regarding Chinese refined copper imports in the past quarter. We still expect (assuming oil prices remain high) that, in percentage terms, aluminium will outperform copper in 2H 2008, with copper sliding as demand weakens in all markets. Certainly that's what the forward curve suggests (see chart), with aluminium in contango and copper in steep backwardation.

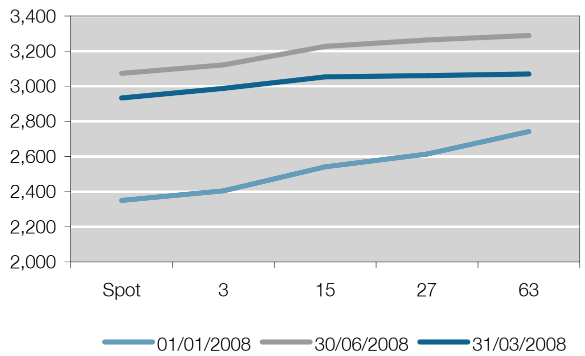
No other metal gained in price during the quarter, except for **steel**, but we regard that as an exceptional case, given that it has traded on the LME for such a short time and it is therefore difficult to put much weight on just one three-month trading period. **Gold** and **silver** were virtually flat, a much better performance than could have been expected. Just a few days before the end of Q2, on 25th June, gold and silver respectively were 5.4% and 7.2% down on the quarter. The late rally was based on the usual suspect – a collapsing dollar, which came after the Federal Reserve appeared to be backing away from imminent interest rate hikes. This was all the more potent as, up to that point, there was some expectation that the dollar's long decline could be over. Whether or not that is the case will to a great extent determine the price movement of both gold and silver in 2H 08.

**Precious metals prices (start 2008 = 100)**



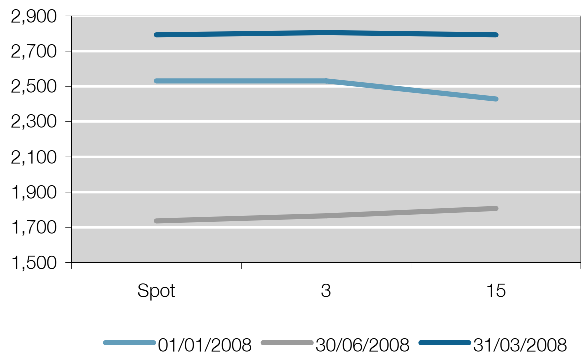

*Source: VMG*

**Aluminium forward curve ($/tonne)**



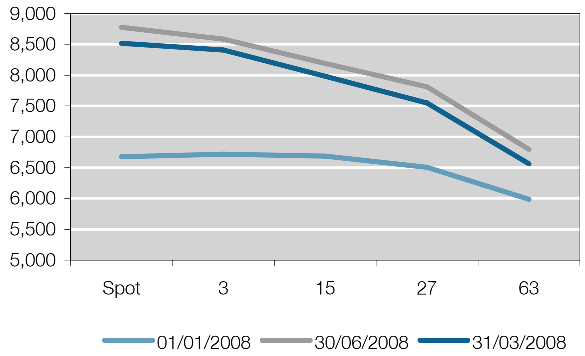

*Source: Reuters Ecowin*

**Lead forward curve ($/tonne)**



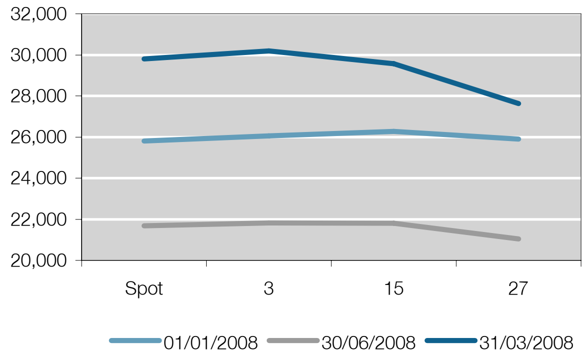

*Source: Reuters Ecowin*

**Copper forward curve ($/tonne)**



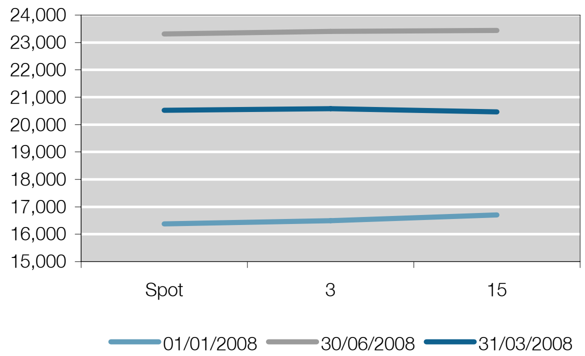

*Source: Reuters Ecowin*

**Nickel forward curve ($/tonne)**




*Source: Reuters Ecowin*

Tin forward curve ($/oz)




*Source: Reuters Ecowin*

Zinc forward curve ($/oz)


*Source: Reuters Ecowin*

And what of the worst performers? **Zinc** shed 22%, **nickel** 27% and **lead,** 37%. This means that they are now trading lower than they were at the start of 2008. In each case there are solid fundamental supply-demand factors that can be attributed as the reason why they have slipped so badly. As for zinc, the inescapable fact is that an array of new zinc mine projects are about to enter into production, at a time when the global position this year is looking like heading towards a substantial surplus of anything between 200,000t-300,000t, with that being even bigger in 2009. Zinc mining companies that are either ramping up production or about to start-up new projects took the decision to do so two years or more ago, when the price was very much higher than today. There is little incentive for any of them to postpone these plans right now, as even at today's very humbled zinc price as many as 90% of them remain comfortably profitable. Ultimately this suggests to us that the price will have to fall below $1,500/t before some of this planned new production is mothballed. As always in a fight for survival everyone thinks the other guy will collapse first – there will be a strong resistance, understandably, for zinc miners to take pre-emptive action to reduce the flow of zinc concentrates, a flow that by this time next year might become an avalanche. Eventually this will again correct itself, but not perhaps before several years of pain have been experienced. This supply-side difficulty for zinc is compounded by the rapidly slowing market for new car sales in the US, Japan and the EU.

Lead too has little to look forward to. It's now clear in retrospect that much of the rapid move towards $4,000/t late last year was due to over-exuberant speculative investment. In late 2007 the picture looked very different from today. Chinese refined lead exports collapsed by half, there were serious supply problems for Australian producers, the Chinese market for electric bicycles (using substantial amounts of lead in lead-acid batteries) – all this tempted some investors to dive into lead futures on the LME. In the rush to buy, lead's very unattractive characteristics – which had led to it being banned in electronic soldering for most consumer goods in EU markets – were all but forgotten, along with the fact that lead is almost infinitely recyclable. The very high crude oil price also provides a poor long-term outlook for lead. As well as creating some dismal background macro-economic circumstances for consumer demand – translating into lower car sales and thus lower demand for lead-acid batteries – this fresh crude oil crisis is likely to spark much greater interest in years to come in alternative forms of road transport, initially the hybrid gasoline-electric passenger car, and later in the form of all-electric cars, neither of which have any need for lead. Another spike higher can never be ruled out but it will require some very significant supply-side problems before such a spike could again be justified in fundamental terms. As with zinc, lead prices should continue softening in the final half of the year.

Nickel may yet surprise. Its fate is much more in the balance as, on the one hand, the darkening macro-economic climate will certainly see consumers put off whatever purchases they can, and white goods and domestic appliances – consumer items that usually have some stainless steel about them – tend to suffer badly in economic downturns. On the other hand, current nickel production remains subject to quasi *force majeure* incidents such as was seen in late June with BHP's decision to suspend operations at a smelter and refinery in Australia. Moreover, rising energy and other costs for mining are bound to have drastically inflated costs at the handful of large new nickel projects that are still at an early stage of development. Several of these projects have been dogged by spiralling costs long before the recent crude oil price surge. Nickel remains a relatively small market, around 1.4 Mt/year. We currently see very little scope for nickel to slip much lower than where it is today – and we await with interest any updates from the mining giants as to new cost projections for their major nickel projects. We may yet see a very tight supply-demand situation for nickel this year, and several years to come. When the current economic gloom lifts, we could see nickel prices soar once again.

## How does this stack up with other commodities?

The poor price performance of most metals in Q2 2008 contrasts with that of most other commodities, which had a very strong quarter.

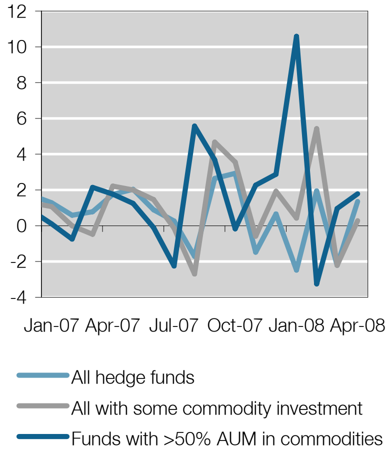
**Percentage changes in settlement price of selected commodities, Q1, Q2 and 2008**

| | | | Change over Q1 | Change over Q2 | Change over year |
|---|---|---|---|---|---|
| Light Crude | Nymex (2-position) | $/Barrel | 2 | 39 | 42 |
| Brent | ICE (2-position) | $/Barrel | 6 | 36 | 44 |
| Cocoa | ICE Futures US (2-Position) | $/tonne | 12 | 35 | 52 |
| Gas Oil | ICE Futures (2-position) | $/tonne | 13 | 33 | 50 |
| Natural Gas | Nymex, Henry Hub Futures (2-position) | $/MMBtu | 29 | 32 | 71 |
| Soybeans | CBOT (2-position) | c/bushel | (3) | 32 | 28 |
| Cocoa (robusta) | LIFFE (2-position) | £/tonne | 21 | 30 | 57 |
| Natural Gas | ICE Futures (2-position) | £/MBTU | 14 | 29 | 47 |
| Corn | CBOT (2-position) | c/bushel | 23 | 27 | 56 |
| Steel | LME (3 month MED contract) | $/tonne | 0 | 20 | 20 |
| Coffee (arabica) | ICE Futures US (2-position) | c/pound | (5) | 18 | 12 |
| Tin | LME (3 month contract) | $/tonne | 27 | 14 | 44 |
| Steel | LME (3 month Far East contract) | $/tonne | 0 | 12 | 12 |
| Coffee, (robusta) | LIFFE (2-position) | $/tonne | 18 | 8 | 28 |
| Sugar | ICE Futures US (2-position) | c/pound | 10 | 8 | 19 |
| Palladium | LPPM London PM fix | $/ounce | 20 | 5 | 26 |
| Aluminium | LME (3 month contract) | $/tonne | 24 | 5 | 29 |
| Cotton | ICE Futures US (2-position) | c/pound | 3 | 4 | 7 |
| Copper | LME (3 month contract) | $/tonne | 25 | 2 | 28 |
| Platinum | LPPM London PM fix | $/ounce | 32 | 1 | 34 |
| Gold | LBMA London PM fix | $/ounce | 10 | 0 | 10 |
| Silver | LBMA London fix | $/ounce | 20 | (2) | 18 |
| Wheat | CBOT (2-position) | c/bushel | 2 | (8) | (7) |
| Zinc | LME (3 month contract) | $/tonne | (3) | (18) | (20) |
| Nickel | LME (3 month contract) | $/tonne | 13 | (28) | (18) |
| Lead | LME (3 month contract) | $/tonne | 9 | (37) | (32) |

*Source: Reuters Ecowin*

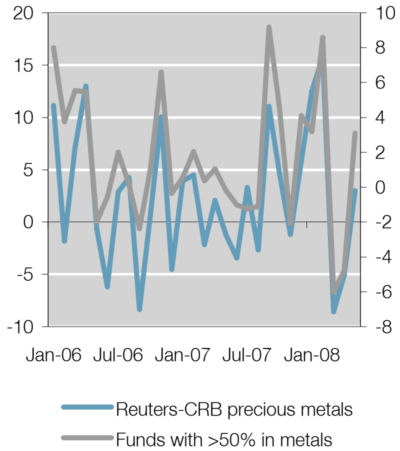
# Hedge funds activity

**Hedge fund returns by commodity weighting (% monthly)**




*Source: VM Group from Barclay Hedge Fund Database*

**Hedge fund returns in metals (% monthly)**




*Source: VM Group from Barclay Hedge Fund Database*

## News

- June 26th: The House of Representatives voted 402 to 19 to approve legislation directing the Commodity Futures Trading Commission (CFTC) to "curb immediately" what was termed "excessive speculation" in energy markets. The bill has to go to the Senate before it becomes law; it is not known what the CFTC's first action in pursuit of this goal will be, although it has previously promised by September 15th to outline to Congress new measures that will at the least increase oversight.
- June 19th: Greater regulation of pension funds investment in commodities was proposed by independent Senator Joe Lieberman, the Chairman of the Homeland Security and Governmental Affairs Committee. Senator Lieberman announced that he (along with Senator Susan Collins) was drafting three legislative proposals to be discussed at a June 24th meeting of Lieberman's committee. If implemented these would have a drastic impact on commodity investment. In order of what Lieberman terms 'aggressiveness', first is a suggestion to prohibit private and public pension funds with more than $500m in assets from making investments in agricultural and energy commodities traded on a US exchange, foreign exchange or over-the-counter. Second, the CFTC would have the right to set limits on the market share that speculators can hold in any one commodity. The third plank of the proposals would close the 'swaps loophole', the fact that individual speculator limits can be exceeded by swap dealers (who tend to be acting on behalf of investment funds linked to commodity indices). The Senator said he hoped to introduce bipartisan legislation in early July based on one of the three options, depending on the response from the public and legislators.

## Analysis

- Metals funds recover in May, tracking CRB closely

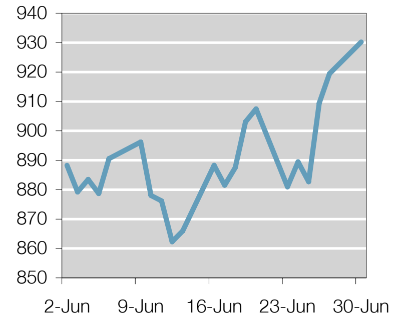
Those hedge funds in the database we analyse which have more than 50% of their investment weighting in the metals sector managed a strong recovery during May, having dropped almost 5% in April. The funds' recovery was in line with that of the CRB precious metals index, and the correlation between fund performance and this index has grown more apparent in recent months. Metals funds in May returned an average of 3.09%, outperforming agricultural-biased funds, which returned just 0.49%, and energy-dominated funds, which returned 2.56%. Metals funds also fared better than our aggregate of funds with some commodity exposure, which returned 1.85%. Given gold's sterling performance in June it is likely that another good month has been seen in metals-weighted funds.

## Outlook

**US politicians are most anxious about speculative investment in energy, as higher energy prices most obviously affect voters. The Commodity Futures Trading Commission (CFTC) said in June it will send to Congress a report by mid-September on the role commodity index funds have played in the spiralling energy prices. This report is likely to displease the more anti-speculative members of Congress as it will probably be unable to identify a 'smoking gun'. But the CFTC will nevertheless need to be seen to be on the case somehow. Ironically, this wave of hostility towards speculative investment in energy futures may result in some shift of asset allocation away from energy commodities and into others, as big funds decide to shun the unwelcome attention being given the energy in favour of other, lower-profile commodities.**

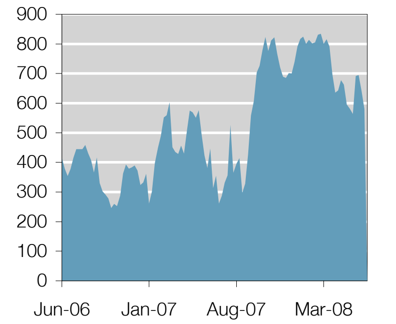
# Gold

**Gold price ($/oz)**



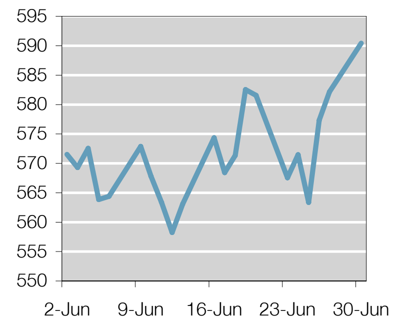

*Source: London Bullion Market Association*

**Comex: non-commercial net position (tonnes)**




*Source: VM Group*

**Gold price in euro/oz**




*Source: Reuters Ecowin*

## News

- July 3rd: The Australian miner Newcrest said it had finally closed out its hedge book, buying more than 4 Moz in the process, at an average cost of A$868/oz ($834.7/oz).
- July 1st: The ECB said it had sold 30t of gold, taking its total sales during the current Central Bank Gold Agreement year to 72t; it added that no more would be sold in the current year, which concludes at the end of September.
- June 26th: China's gold production during January-May was 105.6t, up 6.8% year-on-year.
- June 23rd: Australia's gold output in the financial year ending 30th June was estimated to be 231t, according to the Australian Bureau of Agricultural and Economic Resources (Abare), down 7% from the 249t in the same period of 2006-2007.

## Analysis

- Inflation fears drive gold higher

It takes very little to see gold make a comeback these days. The trouble (for gold investors) is that there are too many times it *needs* to make a comeback. But the one in June was impressive. After slipping from an opening London pm fix of $888.25/oz to a low of $862.25/oz on 12th June, the price traded in a small but volatile range for the next two weeks. Then, in the wake of a Federal Reserve meeting that left US interest rates unchanged, the price soared and on 26th June, broke through $900/oz, finishing the month at more than $930/oz. What was behind this remarkable increase? Essentially a renewed bout of dollar weakness – the US currency plunged from a peak of $1.538/€1 on 13th June to $1.575/€1 by 27th June. Although no one was surprised by the Fed's decision, its explanation as to why it left rates unchanged dampened market expectations of rate rises in the near future. Low interest rates spell a weak dollar and stronger gold. In € terms, gold's performance was less impressive, although it still rose. Another positive for gold continues to be weak central bank sales. We estimate sales within the Central Bank Gold Agreement (CBGA) in the nine months to June 2008 have been about 297t. If this pace is maintained for the last three months of this CBGA year, total sales will be under 400t, far short of the 500t limit.

## Outlook

**With crude oil nudging $150/barrel and the European Central Bank raising interest rates to combat inflation, it can only be a matter of time before the US Federal Reserve decides to raise interest rates. Its fear, naturally, relates to – did the market over-react to the Fed's statement? Probably, if inflation continues to rise it will need to raise rates, and as such we expect further gains for gold on the back of a weaker dollar could be hard going. Excluding the dollar's impact, gold should benefit from constrained supply. Short-term London PM Fix: $880/oz-$960/oz.**

**Market data (June unless stated)**

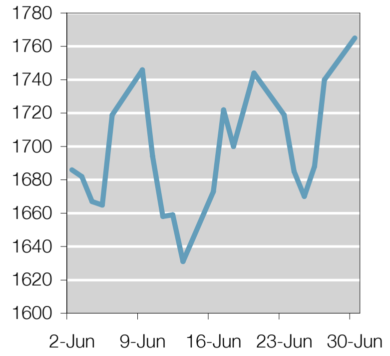
| Prices | $/oz | €/oz | Rand/kg | ETF investment | Tonnes holdings | Monthly change | Lease rates | 1m | 3m | 6m | 12m | Option volatility (end month, %) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average | 887 | 570 | 226,453 | US (2) | 705.4 | 46.4 | Average | 0.18 | 0.31 | 0.47 | 0.53 | 1-month | 24.50 |
| High | 920 | 583 | 233,396 | UK (2) | 155.7 | 5.5 | High | 0.22 | 0.34 | 0.53 | 0.62 | 3-month | 26.50 |
| Low | 862 | 558 | 219,222 | Aus | 10.9 | (10.0) | Low | 0.13 | 0.26 | 0.41 | 0.44 | 6-month | 27.40 |
| | | | | S. Africa | 28.1 | - | | | | | | 12-month | 28.10 |
| | | | | Swiss | 38.0 | 0.7 | | | | | | 24-month | 28.20 |
| | | | | India (4) | 4.6 | 0.3 | | | | | | | |
| | | | | German | 7.2 | (0.2) | | | | | | | |
| | | | | Turkish | 1.3 | - | | | | | | | |

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

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

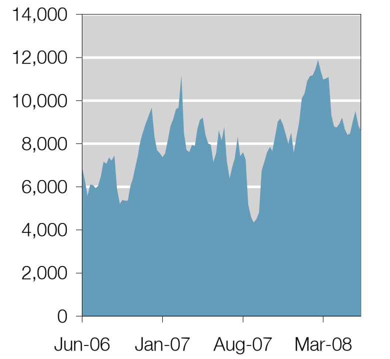
# Silver

**Silver price ($/oz)**



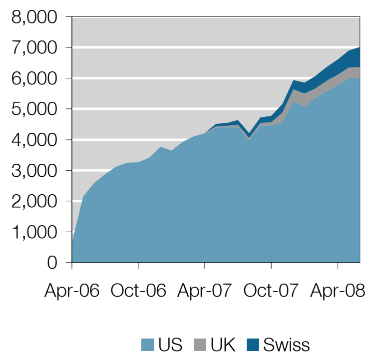

*Source: London Bullion Market Association*

**Nymex: non-commercial net position (ounces)**




*Source: Comex*

**Silver ETF holdings (tonnes)**




*Source: VM Group*

## News

- July 3rd: Polymetal, Russia's biggest silver miner, reported a net loss of $05m for 2007, against a net profit of $61.7m in 2006. The company attributed the loss to higher costs, lower ore grades, and the impact of a (now-expired) hedging arrangement. The company said it would not enter any new hedging arrangements.
- June 25th: Silver Eagle's pre-feasibility study for its Miguel Auza Mine in Mexico has found probable reserves of 1.95 Mt, with a grade of 137g/t of silver (plus some gold, lead and zinc). At full output the mine is expected to produce 900,000 oz of silver a year.
- June 18th: The first pouring of silver doré from the mammoth San Bartolomé mine in Bolivia was reported by Coeur d'Alene. The mine, which according to the company has reserves of some 153 Moz, is expected to produce 6 Moz this year and 9 Moz in 2009, which will be its first full year of production.
- June 10th: Coeur d'Alene, the US-based primary silver producer, announced that its Palmarejo project in Mexico would add 28% to its silver output next year, taking it to 23.6 Moz.

## Analysis

- Silver follows gold higher

As with gold silver enjoyed a late rally on the back of a weaker dollar and turmoil in the equity markets, although its gains were slightly less than its sister metal as one would expect given its greater status as more of an industrial metal. There's no shortage of confidence among silver investors. In the ETFs they continued in June to add to their holdings, although the market-leading Barclays Global Investors (BGI) product had one of its quieter months – adding just 28.2t compared with an average of more than 200t/month in the last three months. However the ZKB Swiss ETF added 104t, taking its holdings to 655.5t.

## Outlook

**Where would the silver price be without its loyal hordes of investors? On purely fundamental supply-demand terms, silver is already beyond its reasonable value. New mine supply growth is running faster than for many years, while offtake in the photographic and jewellery sectors is limp. Speculative investors on Comex and in the physically-backed ETFs are now crucial to the silver market. Any weakening of sentiment among the investment community could see the price topple quite fast. At the same time it must be added that the silver-gold link in price movements is currently firmly established – so if gold does much better on the back of inflationary panic, then silver will, too.**

**Short-term London pm fix: $17/oz-$19/oz.**

**Market data (June unless stated)**

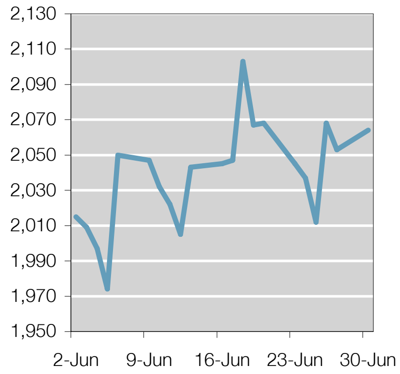
| Prices | $/oz | e/oz | p/oz | Lease rates | 1m | 3m | 6m | 12m | | Imports | Exports | ETF offtake (tonnes) | Holdings | Change | Option volatility (end month, %) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average | 16.94 | 10.88 | 8.61 | Average | (0.31) | (0.06) | 0.18 | 0.40 | USA (Apr) | 140,541 | 140,798 | US | 6,002 | 13 | 1-month | 34.25 |
| High | 17.46 | 11.18 | 8.84 | High | (0.22) | (0.01) | 0.30 | 0.63 | Japan (Apr) | 487,598 | 679,475 | UK* | 345 | (8) | 3-month | 34.75 |
| Low | 16.31 | 10.61 | 8.38 | Low | (0.38) | (0.10) | 0.09 | 0.28 | China (May) | 487,629 | 211,919 | Swiss | 675 | 120 | 6-month | 35.00 |
| | | | | | | | | | | | | | | | 12-month | 35.00 |
| | | | | | | | | | | | | | | | 24-month | 35.00 |

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

** Includes 'basket' ETF*

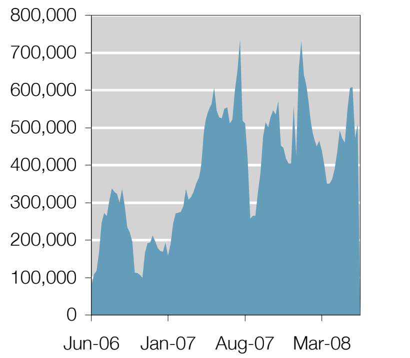
# Platinum

**Platinum price ($/oz)**



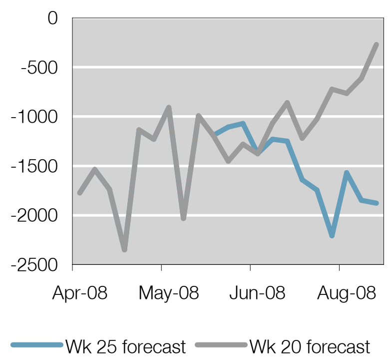

*Source: London Platinum & Palladium Market*

**Nymex: non-commercial net position (ounces)**




*Source: Reuters Ecowin*

**Eskom's operational deficit (MW)**




*Source: VM Group from Eskom*

## News

- June 30th: Lonmin was forced to shut down its Number One furnace for at least a week following a water leak. The problem apparently derives from the corrosive nature of the high-chromite UG2 ore being processed. Another, one-month shutdown is scheduled for the end of the year. These shutdowns may reduce the 775,000 oz platinum sales target Lonmin has set for the 2008 financial year.
- June 26th: Eastern Platinum intends to raise production of platinum group metals (pgms) from 128,500 oz in 2008 to 530,000 oz by 2012. The company said it was acquiring its own power generating capacity to avoid problems with the national electricity grid run by Eskom.
- June 19th: Eskom received regulatory approval to increase South Africa's power prices by between 13.3%-27.5% this year, against the 53% it requested.

## Analysis

- Supply and demand jostle for importance

Platinum failed to share palladium's price spurt in June, partly because continuing concerns over supply shortfalls tripped up against emerging worries over demand growth, in particular concerning the obvious disadvantage diesel-engine vehicles now have compared to gasoline-engines. Diesel everywhere is now at a significant price premium to gasoline and, if this takes root, diesel passenger car sales will steadily fall, to the detriment of (platinum-enriched) diesel autocatalysts. The supply-side worries stemming from South Africa's electricity supplier, Eskom, have taken a back seat amid the swirl of much bigger macro-economic concerns, but they have not disappeared. Now that winter has arrived, unscheduled power cuts have again been hitting domestic consumers in Johannesburg, indicating that power supply is tight. Eskom has so far muddled through, although their forecasts about available spare capacity have worsened significantly since a month ago. A power-supply crunch now seems inescapable sometime early in August. Even if that is avoided the medium-term outlook looks increasingly grim. South Africa's public enterprises minister Alex Erwin said the country could "face a very, very severe energy crisis in one to two years" if Eskom fails to raise sufficient funds for urgently needed new investment.

## Outlook

**More mining companies are likely to follow Eastern Platinum in installing their own (diesel-fuelled) power generators. This will add to companies' capital costs and may pose them a fresh set of problems, given the very high (and possibly permanently higher) cost of crude oil. South Africa's umbrella trade union organisation, Cosatu, has called for a general strike on 6th August, in protest against job cuts that are linked to the power crisis. Platinum is again looking comfortable above $2,000/oz, supported by incremental new investment demand, especially in the ETFs. London daily pm fix short-term: $1,950-$2,200/oz.**

**Market data (June unless stated)**

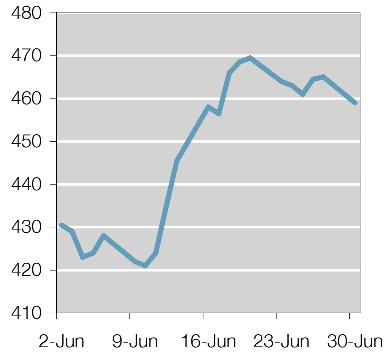
| Prices | $/oz | Lease rates | 1m | 3m | 6m | 12m | Trade (kg) | Imports | Exports | ETF offtake (oz) | *ETF Securities | ZKB | Option volatility (end month, %) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average | 2,038 | Average | 2.0 | 3.0 | 3.9 | 4.7 | USA (Apr) | 430 | 319 | May | 380,222 | 53,049 | 1-month | 37.50 |
| High | 2,103 | High | 2.5 | 3.4 | 4.7 | 5.4 | Japan (Apr) | 5,342 | 2,498 | June | 407,783 | 62,694 | 3-month | 41.50 |
| Low | 1,974 | Low | 1.7 | 2.8 | 3.6 | 4.1 | Switzerland (May) | 5,265 | 2,252 | | | | 6-month | 40.75 |
| | | | | | | | China (Apr) | 2,465 | 9 | | | | 12-month | 40.75 |
| | | | | | | | | | | | | | 24-month | 40.50 |

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

**ETF Securities includes platinum held in 'basket' ETF*

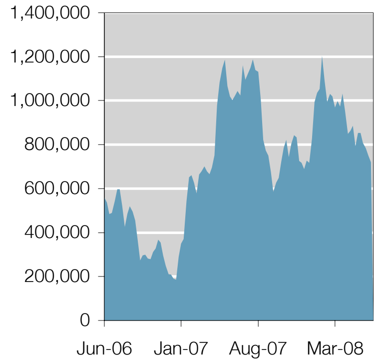
# Palladium

**Palladium price ($/oz)**



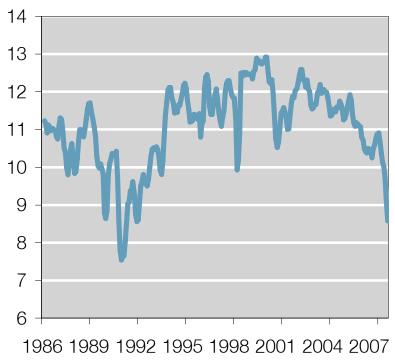

*Source: London Platinum & Palladium Market*

**Nymex: non-commercial net position (ounces)**




*Source: Reuters Ecowin*

**US production light vehicles: (million/year)**




*Source: Reuters Ecowin*

## News

- June 12th: Anton Berlin, head of Norilsk Nickel's department for analysis and development, said Russian state palladium stockpiles could be gone within five years and possibly as soon as within a year, if sales continue at current rates.

## Analysis

- Surprise gains

Palladium was much stronger than platinum in June, closing at $467/oz, up more than 8% from its May close of $431.50/oz. Platinum barely managed to crawl up from $2,008/oz to $2,064/oz, an increase of just 2.7%. Why should palladium have done so much better? The timing of the Norilsk comments regarding Russian state stockpiles gives the game away. On 11th June the price fixed at $421/oz, its lowest since early May. By 13th June it was trading at $445.50/oz and climbing, hitting $469.5/oz on 20th June, as some investors belatedly caught up with the possibility that the days of large Russian stocks might indeed be numbered. It's debatable how newsworthy the Norilsk statement was, especially if one does not focus on the lower end of the estimate for the amount of time until stock depletion occurs. A short while ago the most common market estimate of Russian state stocks was 6 Moz. Given that sales of Russian stocks have been running at more than 1 Moz a year in recent years, that would fit into the range given. In part the Norilsk comment probably focused the mind of investors on palladium supply; that there is not quite the abundance there once was would have been reinforced by May's Swiss trade data, which showed net imports of raw palladium to be just 0.371t, compared with an average in 2008 of 0.882t. With exports still at a robust 2.54t, this means the 'implied' stockpile in Zurich (which is privately owned) continues to decline, although it is still well over 200t. On the demand side, the major factor is going to be car sales. The developed markets of Europe and Japan are essentially flat, whilst US sales in the first five months of 2008 have been 6.2m, down from 6.8m in the same period of 2007. Sales of 'light trucks', SUVs and pickups, which tend to have larger catalysts, but which also are more likely to be diesel engines and hence platinum based, are down even further. US new light vehicle sales – cars and trucks – dropped by 8.5% in June compared to the same month of 2007, at 13.6m units on an annualised basis, the weakest month since August 1993. The automotive market research specialist, J.D Power, now expects car sales in 17 western European markets will decline this year by 4% (to 14.21m units) and by 1.3% in 2009. China's market continues to grow, with sales of sedans totalling 1.81m in January to April, up from 1.53m in the same four months of 2007, although this does not compensate for the lost US sales.

## Outlook

**Prices should subside as demand worries overwhelm hopes of shrinking stocks. Short-term London pm fix: $440/oz-$480/oz.**

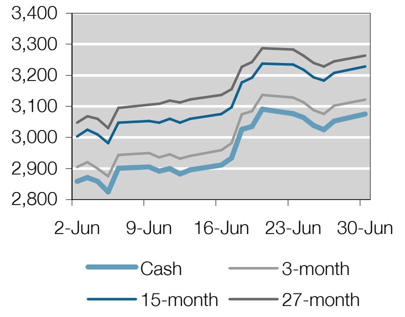
**Market data (June unless stated)**

| Prices | $/oz | Lease rates | 1m | 3m | 6m | 12m | Trade (kg) | Imports | Exports | ETF offtake (oz) | *ETF Securities | ZKB | Option volatility (end month, %) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average | 446.5 | Average | 0.08 | 0.35 | 0.57 | 0.71 | USA (Apr) | 716 | 723 | Apr | 218,202 | 372,948 | 1-month | 35.00 |
| High | 469.5 | High | 0.18 | 0.51 | 0.76 | 1.04 | Japan (Apr) | 212 | 1,171 | May | 237,982 | 382,593 | 3-month | 37.00 |
| Low | 421.0 | Low | (0.05) | 0.19 | 0.38 | 0.25 | Switzerland (May) | 414 | 2,979 | June | 259,555 | 382,593 | 6-month | 37.00 |
| | | | | | | | China (May) | 1,821 | 0 | | | | 12-month | 37.00 |
| | | | | | | | | | | | | | 24-month | 36.75 |

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

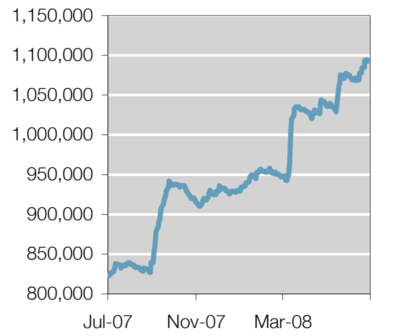
# Aluminium

**LME aluminium price ($/tonne)**



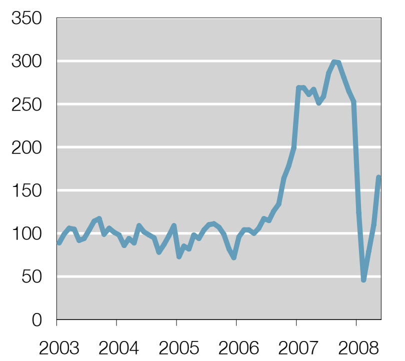

*Source: Reuters Ecowin*

**LME aluminium stocks (tonnes)**




*Source: Reuters Ecowin*

**China primary aluminium production, change year-on-year (000 tonnes)**




*Source: Reuters Ecowin*

## News

- June 30th: The US aluminium producer Kaiser Aluminium said as from 1st July it will impose an energy surcharge on all new orders for fabricated products, to reduce its exposure to rising energy costs. The surcharge, based on a calculation from indices provided by the US Department of Energy, will be updated monthly. The initial charge will range from $79.34/t to $103.59/t, depending on product grades.
- June 20th: The Ghanaian government took total control of the Volta Aluminium Company, VALCO, after buying Alcoa's 10% share for $2m. The smelter, with a capacity of 200,000t/y, has been closed since March 2007 because of power shortages. The government plans to reopen it, eventually integrating it with a bauxite mine and alumina refinery.

## Analysis

- China's power woes push price to record in July

Aluminium prices have strengthened again, the benchmark 3-month contract on the LME hitting a new record of $3,380/t on 10th July, on news that 20 of China's biggest producers had been forced to curtail output as widespread power rationing was imposed. The ball started rolling on 1st July, when China raised electricity tariffs by some 4.7%. This will help the country's electricity generators – several of which have suspended some of their operations this year, as they have been unable to balance their books with relatively low and capped electricity tariffs – to return to full operations. But it is evidently making life much tougher for the country's aluminium producers – about a third of the cost of producing aluminium is electricity. China, the world's biggest aluminium producer, has been a net importer of primary aluminium for some months, which has also kept prices relatively strong, despite ample global exchange stocks and a global surplus of primary aluminium likely to be around 300,000t this year. Other producers are not immune from the impact of expensive electricity. Alcoa suspended 50% (120,000t/year) of its production at its smelter at Rockdale, Texas. The problem – as ever, with aluminium – is security of low-term reliable and price-competitive electricity supply.

## Outlook

**The news from China was extremely bullish but it's not yet clear how long the voluntary concerted production cut will last – probably not long, if prices climb much higher. If the cutback lasts a year that could remove some 750,000t of aluminium from the world market, enough to wipe out twice this year's expected surplus. There is no immediate supply tightness: LME stocks have doubled since late 2005 and now are well above 1 Mt. Chinese production capacity is still growing strongly and could reach 15 Mt in 2008, 3 Mt higher year-on-year. But certainly the Chinese news injects a real shot in the arm for those inclined to bullishness. Short-term LME 3-month price: $3,000/t-$3,700/t.**

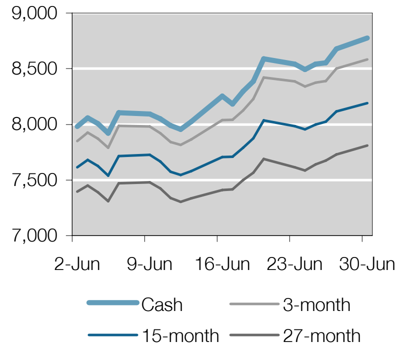
**Market data (June unless stated)**

| Prices ($/t) | Cash | 3-month | 15-month | 27-month | LME stocks | Tonnes | Prod (kt) | Mar | Apr | LME Open Interest (contracts) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Average | 2,957 | 3,006 | 3,113 | 3,164 | May | 1,075,775 | Europe | 770 | 770 | Aluminium | 687,174 |
| High | 3,090 | 3,137 | 3,238 | 3,287 | June | 1,093,175 | Americas | 702 | 702 | | |
| Low | 2,825 | 2,875 | 2,982 | 3,030 | | | Asia | 320 | 320 | | |
| | | | | | | | China | 1,101 | 1,101 | | |
| | | | | | | | Other | 326 | 326 | | |
| | | | | | | | Total | 3,219 | 3,219 | | |

*Source: London Metal Exchange, except production: International Aluminium Association*

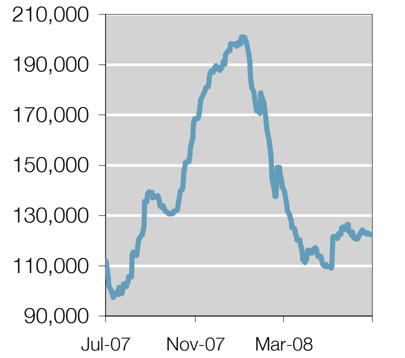
# Copper

**LME copper price ($/tonne)**



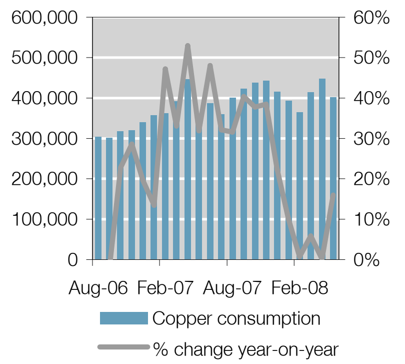

*Source: Reuters Ecowin*

**LME copper stocks (tonnes)**




*Source: Reuters Ecowin*

**Implied Chinese copper consumption (tonnes)**




*Source: VM Group from Reuters Ecowin*

## News

- July 3rd: Support crumbled for an indefinite strike called by mining unions in Peru, in support of demands for better pensions and an increase in the national threshold for profit-sharing plans. The supposedly indefinite strike began on 30th June.
- June 30th: Chile's total production between January-May was 2.9% lower year-on-year, at fractionally more than 2.284 Mt.
- June 18th: Korea Resources Corporation (Kores), a state-run South Korean company, signed a deal with Bolivia to invest about $210m in reviving a copper mine in Bolivia in the Corocoro area.

## Analysis

- Supply side worries but Chinese imports falling

Two of Peru's most important copper mines, Southern Copper and Cerro Verde, were initially affected by the strike that kicked off at the end of June. The two mines account for 35% of the country's copper output. Operations at both were previously closed for more than 10 days in June, by local protest actions against what the workers regard as government foot-dragging on various demands. This latest strike action looks like it is weakening, but the government of President Alan Garcia is now very unpopular and sporadic, niggling industrial action is likely to drag on in the months ahead. To some extent this supply-side support for copper is being offset by evidence of shrinking Chinese demand for refined metal. Reports from China suggest that some importers who booked shipments to arrive in July and August have been trying to cancel and/or delay the shipments. While the LME price has risen about 30% so far this year, the Shanghai Futures Exchange price has risen by less than half that. LME copper prices by late June were around $1,000/t higher than the copper price within China, even including Chinese VAT, and this is deterring imports of refined metal. Some local Chinese traders consider that more than 50,000t of imported refined copper is currently sitting in bonded warehouses in Shanghai – owners of the metal are reluctant to take possession of the metal because they will incur VAT charges and then have to sell it at prices much lower than the benchmark LME price. Expectations therefore are that China's refined copper imports in June and July will be significantly lower than those for May, which were 94,196t, 26% lower than April and the lowest since August 2007.

## Outlook

**Electronic trading on the LME saw the 3-month copper price hit a fresh record on 2nd July, of $8,940/t. Yet so far this year China's refined copper imports and semi-finished products are down almost 13% against 1H 2007. Sure there are some supply side worries over Chilean production and possible strikes in Peru, and exchange stocks remain low by historic standards. But western world demand is flat. Yet prices nudge record levels. This has the making of a speculative investment bubble. If Chinese demand does not pick up after the Olympic Games are over, it will be increasingly difficult to justify this elevated price. LME 3-month short-term: $7,800/t-$8,400/t.**

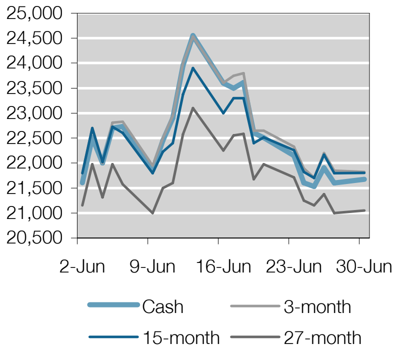
**Market data (June unless stated)**

| Prices ($/t) | Cash | 3-month | 15-month | 27-month | LME stocks | Tonnes | LME Open Interest (contracts) | |
|---|---|---|---|---|---|---|---|---|
| Average | 8,261 | 8,106 | 7,793 | 7,502 | May | 123,950 | Copper | 245,274 |
| High | 8,776 | 8,585 | 8,190 | 7,810 | June | 122,350 | | |
| Low | 7,921 | 7,789 | 7,540 | 7,305 | | | | |

*Source: London Metal Exchange*

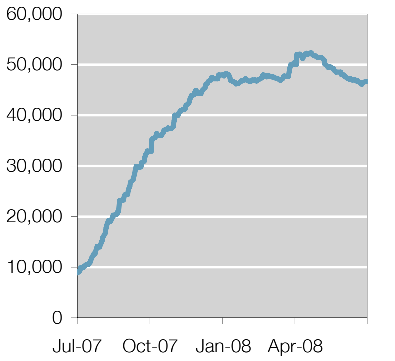
# Nickel

**LME nickel price ($/tonne)**



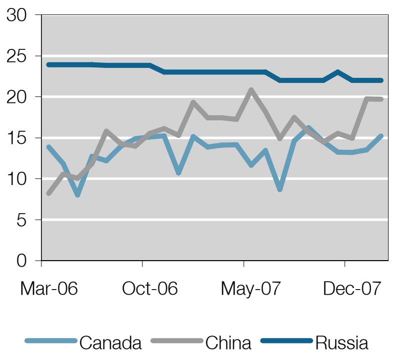

*Source: Reuters Ecowin*

**LME nickel stocks (tonnes)**




*Source: Reuters Ecowin*

**Monthly refined nickel production (000 Mt)**




*Source: INSG*

## News

- July 3rd: Bertrand Madelin, managing director of Eramet's nickel division, said he thought that as much as 8.5 Mt of nickel ore – equivalent to 100,000t of refined metal once processed – is sitting in warehouses in Chinese ports, as Chinese nickel refiners are unable to produce the metal profitably.
- July 2nd: The International Stainless Steel Forum said that Q1 2008 stainless steel production globally rose 6.5% to 7.36 Mt when compared to Q4 2007; Q1 2007 world production was 7.58 Mt, the highest ever quarterly figure.
- June 24th: Norilsk Nickel International, the division in charge of the Russian giant's operations in Finland, South Africa, Botswana and Johannesburg, appointed Ralph Havenstein as its new CEO. Until August 2007 he was CEO of Anglo Platinum.

## Analysis

- Price halts slide on Australian supply hiccup

Nickel prices – which had been on the slide in May – got a surprise boost in June, when BHP Billiton announced on 12th June it was shutting operations at its Kalgoorlie, Australia, smelter and refinery for about four months, as it brought forward by a year planned repair work to a furnace. The company's Kwinana refinery, which takes feed from Kalgoorlie, will also be out of action. BHP estimated that sales of nickel from its operations in Western Australia could be reduced by as much as 28,000t in the year to June 2009, which would be some 2% of annual world production. The timing of the move was interesting, as nickel prices had been on a steep decline and threatened to slip below $20,000/t (against the peak in May last year of $51,000/t). The response of the market was immediate; the price quickly climbed to $24,750/t and ended the week at $24,000/t. The significance of this is that we had expected the global refined nickel market – which has annual supply of about 1.4 Mt – to return to a moderate surplus of about 70,000t in the course of 2008. This is now open to doubt. However, the kind of over-enthusiastic speculative investment seen a year ago is less likely today. Demand for nickel for many low-grade forms of stainless steel has a price cap of around $25,000/t, thanks to the ability of Chinese stainless steel manufacturers to switch to using nickel pig iron. Below $25,000/t, nickel is quite competitive but with nickel pig iron at anything above that price, it becomes diminishingly competitive. It must be added however that the Chinese authorities are keen to curtail the production of nickel pig iron because it is an extremely polluting process, a heavy energy user, and not regarded as a core industrial necessity. Production of nickel pig iron in China is also being hit – along with other metal producing processes – by much higher prices for electricity, which are being raised by provincial governments in order to encourage power generators to produce more electricity.

## Outlook

**What was always going to be a tight supply-demand balance in 2008 got tighter in June. Stainless steel producers are currently well supplied and certainly macro-economic conditions right now are discouraging, but this is a metal that, in the long term, is not going to be abundantly available. LME 3-month short-term:**

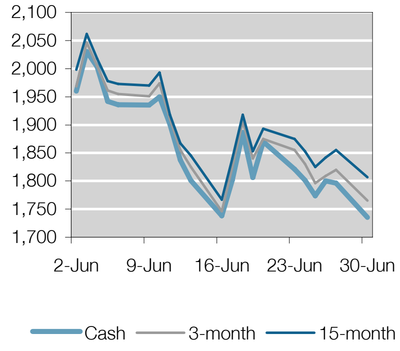
**Market data (June unless stated)**

| Prices ($/t) | Cash | 3-month | 15-month | 27-month | LME stocks | Tonnes | LME Open Interest (contracts) | |
|---|---|---|---|---|---|---|---|---|
| Average | 22,549 | 22,654 | 22,458 | 21,730 | May | 47,994 | Nickel | 72,225 |
| High | 24,550 | 24,530 | 23,900 | 23,100 | June | 46,692 | | |
| Low | 21,530 | 21,700 | 21,700 | 21,000 | | | | |

*Source: London Metal Exchange*

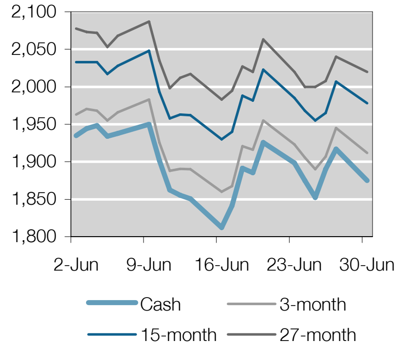
# Lead and zinc

**LME lead price ($/tonne)**



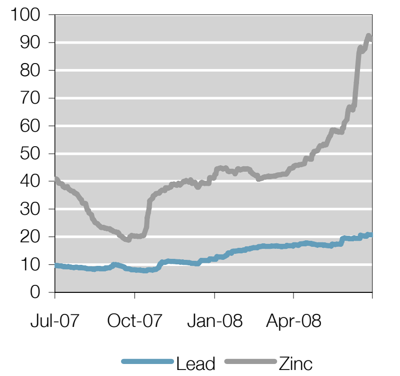

*Source: Reuters Ecowin*

**LME zinc price ($/tonne)**




*Source: Reuters Ecowin*

**LME stocks (Jan. 1st 2004 = 100)**




*Source: VM Group from LME*

## News

- June 30th: CBH Resources, the Australian mining company, reported increased production for both lead and zinc from its Endeavour Mine. Lead output for the quarter to the end of June rose by 35%, zinc by 24% compared to the same quarter of 2007 – which would mean total zinc output to 13,720t and lead to 6,120t. CBH said in June it would reduce the Endeavour workforce by more than a third, a cost cutting move in the face of declining zinc prices.
- June 16th: The latest estimates from the International Lead and Zinc Study Group (ILZSG) placed the global zinc market in a 78,000t surplus in the first four months of 2008, while the lead market was in deficit by 8,000t.

## Analysis

- Lead and zinc pulled higher on China power problems

The plunge in lead prices has been dramatic – so far this year the 3-month contract on the LME has lost almost 40% and it is difficult to see what will prevent the metal slipping below $1,500/t in the near future. LME warehouse stocks have been rising almost daily in recent weeks and by 4th July were again above 100,000t, the highest for more than two years and more than twice what they were in January, when the average 3-month price was $2,599/t. Zinc meanwhile has also been slipping fast, trading at $1,750/t on 4th July, - back where it was in December 2005. Despite this bleak scenario both metals clawed back some lost ground (lead more than 10%, zinc almost 7%) on 10th July as worries over China's power supply – which saw aluminium rocket ahead – took hold. A number of zinc mines are now facing strenuous cost pressures and the announcement by CBH that it is cutting its workforce will probably be just the first of many more to come from other mines. China's refined zinc production is still steaming ahead; the country's output in the first five months of 2008 rose 4.1% compared to the same period last year, to a total of 1.55 Mt – despite the curbing of production in and around Sichuan province following the earthquake earlier this year. The earthquake is unlikely to have cut China's refined zinc output by much more than 50,000t this year, which is a drop in the ocean.

## Outlook

**It's now evident that the zinc market is facing a serious and possibly chronic concentrates' surplus this year and for several years to come. While not all of this new mine supply might make its way into actual metal, the large volumes of zinc concentrates swilling around for the next couple of years will serve to deter speculators from trying to push zinc metal prices higher – particularly when new car sales in the world's leading economic powerhouses of the US and EU are tumbling, and this vital demand source for zinc (to galvanise steel and prevent rusting) is therefore shrinking. LME zinc warehouse stocks are around 150,000t – not a huge figure in itself but the trend is noteworthy – and this is twice the level of a year ago. As for lead, despite Chinese exports remaining very low, the bounce back on 10th July looks equally fragile. LME 3-month short-term, lead: $1,800/t-$2,200/t, zinc: $1,700/t-$1,900/t.**

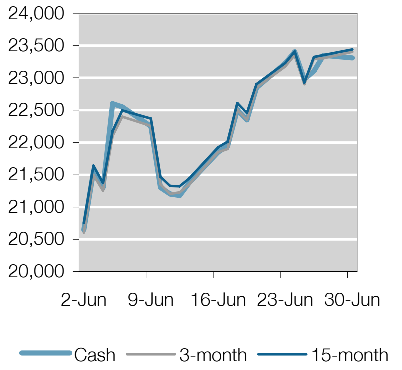
**Market data (June unless stated)**

| Prices ($/t) | Cash Lead | Cash Zinc | 3-month Lead | 3-month Zinc | LME stocks | Lead | Zinc | LME Open Interest (contracts) | |
|---|---|---|---|---|---|---|---|---|---|
| Average | 1,863 | 1,894 | 1,882 | 1,924 | May | 67,300 | 144,850 | Lead | 76,103 |
| High | 2,031 | 1,950 | 2,047 | 1,983 | June | 100,350 | 153,200 | Zinc | 198,699 |
| Low | 1,736 | 1,812 | 1,746 | 1,860 | | | | | |

*Source: London Metal Exchange*

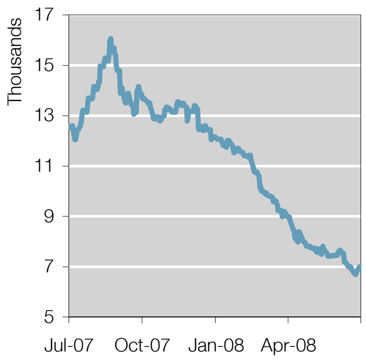
# Tin

**LME tin price ($/tonne)**



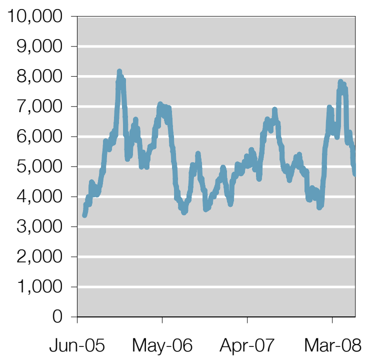

*Source: Reuters Ecowin*

**LME tin stocks (tonnes)**




*Source: Reuters Ecowin*

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




*Source: Reuters Ecowin*

## News

- June 12th: The director of coal and minerals at Indonesia's Ministry of Mining and Energy said that from 2009 a tin production quota of a maximum 100,000t/year will be imposed, aimed at reducing further environmental damage on the Bangka-Belitung islands off the coast of Sumatra.

## Analysis

- Price holds up amid general slump

Indonesia's tin exports remained very low in June, totalling around 5,461t of refined metal, about 50% lower than the same month last year and almost 1,700t lower than April's exports. The country's trade ministry estimated that total exports from the world's second-biggest producer in 1H 2008 were slightly more than 46,321t. The latest official pronouncement from Indonesia regarding plans for its tin industry seems more precise than previous ones. In the recent past other government officials and tin industry executives have said that quotas (either production or export) would be imposed in order to maintain a floor price of $15,000/t (LME prices). The impact of this latest quota announcement is likely to be fairly muted in the short-term, as tin prices have already risen very sharply, essentially because the world's biggest tin producer – China – has been a net importer since late 2007 which, given it has issued export licenses permitting 33,000t of tin to be shipped out in 2008, hints at the current powerful level of Chinese tin consumption. Indonesian production is struggling to get back to its peak production (in 2005) of 140,000t; its exports in 2006 were 118,555t and last year considerably less, under 100,000t. But in the long term matters look different. Global tin demand has been rising as a consequence of tin's relatively new use in electronics' soldering (substituting for lead), which now accounts for almost 50% of consumption, and China dominates global production of electronic consumer products. This sector may be one of the main victims of any serious global economic slowdown and that would impact tin consumption. But with tin demand now running at about 350,000t/year there is a strong possibility of a global refined tin deficit this year of some 10,000t, which may widen in 2009. Thus, if Indonesia really is serious about its 100,000t/year production quota, we see scope for even higher prices ahead, barring a catastrophic slowdown in consumer demand for electronic goods. Prices going even higher than today may possibly tempt some Chinese producers to return to exporting, but local Chinese demand is so strong that domestic Chinese and international prices are likely to rise in tandem.

## Outlook

**China's tin exports remain at a pitifully low level compared to last year, totalling just 386t between January-May against 13,606t during the same period of 2007. Tin prices in China are currently keeping step with LME prices, and with the additional 10% export tax there's no incentive for Chinese smelters to ship metal overseas. We are still in a bull phase for tin although consumer spending on electronics may become weaker. LME 3-month short-term: $20,000/t-$23,000/t.**

**Market data (June unless stated)**

| Prices ($/t) | Cash | 3-month | 15-month | LME stocks | Tonnes | LME Open Interest (contracts) | |
|---|---|---|---|---|---|---|---|
| Average | 22,229 | 22,196 | 22,283 | May | 7,445 | Tin | 18,586 |
| High | 23,400 | 23,400 | 23,440 | June | 6,995 | | |
| Low | 20,650 | 20,605 | 20,750 | | | | |

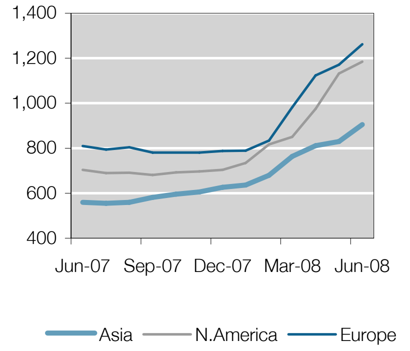
*Source: London Metal Exchange*

# Steel

## News

- July 10th: China imported 230 Mt of iron ore in 1H 2008, 22.5% higher than the same period of 2007.
- July 3rd: BHP Billiton received partial clearance from anti-trust agencies in the US in its hostile bid for Rio Tinto.
- June 25th: The heads of the steel companies Nucor and ArcelorMittal criticised plans by the New York Mercantile Exchange (Nymex) to launch steel futures trading later this year. The CEO of Nucor, Dan DiMicco, said: "We're not in favour of futures. We're not in favour of any of that because it promotes what I believe to be unethical and illegal activity."

**Composite steel prices ($/tonne)**



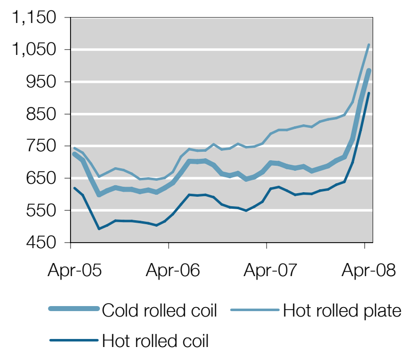

*Source: MEPs, Reuters Ecowin*

## Analysis

- Australia's iron ore producers get their deal

There was only ever one likely outcome to the protracted negotiations between the two giants of Australian iron ore production, Rio Tinto and BHP Billiton, and the Chinese steel industry, and by the first week of July the fresh deals – covering the annual contract year starting 1st April – had been signed. By the end of June, Rio Tinto secured a price rise of up to 96.5% over 2007 with its Chinese and Japanese customers. Talks between the Chinese and BHP took a little longer to settle, but by 4th July BHP was able to announce that it too had obtained a 96.5% increase for iron ore lumps and a 79.88% increase for fines from China's Baosteel, and that it would extend the same terms to its other customers in Asia. While this is a good deal for the iron ore suppliers, it is less so for the Chinese and other Asian steel producers; they will try to pass on the price increases to their own customers but that will reduce their competitiveness with their North American and European counterparts. This is now the sixth successive year that iron ore prices have gone up, and prices in the annual contract round have now risen by seven times since 2000. Vale agreed to a 65%-71% rise in February, but Rio and BHP had argued that soaring freight rates made Australian ore much cheaper relative to Brazilian grades. The rare divergence in Australian and Brazilian deals comes at a time when BHP is also pushing to price more of its iron ore on the basis of spot market prices, irking customers such as Baosteel, Nippon Steel Corp and South Korea's POSCO, which are already fuming over its plans to buy Rio and gain more sway over resource supplies.

**Steel products, world prices ($/tonne)**

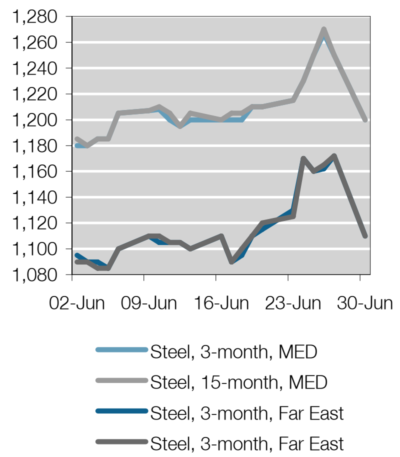



*Source: MEPs, Reuters Ecowin*
*Note: "World" is average of Asia, N.America, and Europe*

## Outlook

**Steel billet prices have risen by some 40% since the LME launched its steel contracts in February. Trading volumes are not exactly soaring as yet, but at least the strong demand for steel in emerging economies in Asia and the Middle East are providing a fair wind for the new contracts. What will be interesting to watch out for is precisely how the gathering consensus of the need for an iron ore derivative takes shape over the coming months. The torturous China-Australia negotiations this year have sharpened calls for a more transparent price benchmarking mechanism and it must surely come. LME short-term Med: $1,150/t-$1,300/t, Far East: $1,050/t-$1,200/t.**

**LME steel prices ($/tonne)**




*Source: Reuters Ecowin*

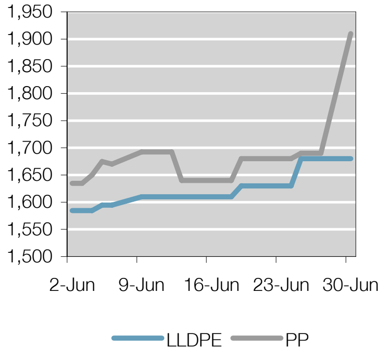
**Market data (June unless stated)**

| Prices ($/t) | Asia Composite | N.America Composite | Europe Composite | World Composite | LME Open Interest (contracts) | Med | Far East |
|---|---|---|---|---|---|---|---|
| Apr-08 | 811 | 975 | 1,123 | 970 | Steel | 224 | 137 |
| May-08 | 830 | 1,131 | 1,170 | 1,044 | | | |
| Jun-08 | 905 | 1,184 | 1,262 | 1,117 | | | |

*Source: MEPs: Reuters Ecowin*

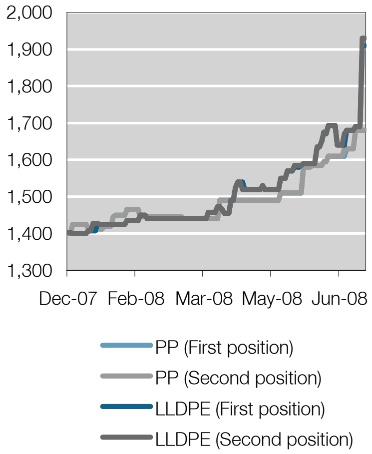
# Plastics

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



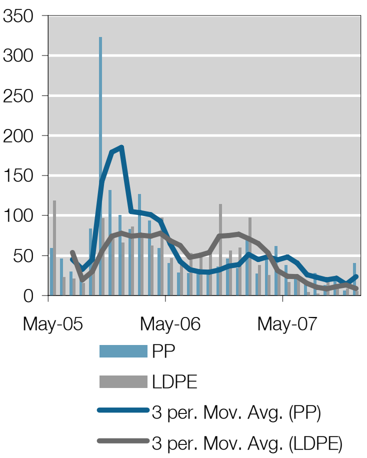

*Source: Reuters Ecowin*

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




*Source: Reuters Ecowin*

**Plastics volume traded on LME**




*Source: VM Group*

## News

- June 24th: Dow Chemical, one of the world's largest plastics manufacturers, announced another round of price increases from 1st July. The increases, up to 25%, come only a month after Dow raised prices by up to 20%. The company blames soaring energy costs.
- June 19th: C.T.Lee, Chairman of Formosa Plastics, the Taiwanese polyvinyl chloride maker, said that the petrochemical industry will see a downturn from 2009 as weaker demand will come up against sharply higher supply from China and the Middle East.
- June 17th: BASF, the German chemical firm, announced a new round of price increases for acrylic acids and acrylic esters, used in the production of super-absorbent polymers.
- June 2nd: Polyone, a maker of specialist polymers, announced price rises of up to 20% on rising fuel costs.

## Analysis

- Prices follow surging crude oil

Most of what you need to know about the plastics market is summed up by just a few words – crude oil is nudging $150/barrel. Germany's VCI, the industry association that speaks for the country's chemicals' industry, expects tougher times ahead. Ulrich Lehner said on 3rd July: "We expect to feel the impact of extremely high commodity and oil prices, the strong euro and the US economic downturn more strongly in the months ahead than we have so far."

Some plastics manufacturers are treading a similar path to other heavy oil users – one that hopes that biofuels will provide a solution to record high oil prices. Dow Chemical, the US giant, is investing $500m in a 350,000t/y polyethylene factory in Brazil, which will use 8 Mt of sugarcane as its energy source. It plans to have the plant, built with Brazilian ethanol producer, Crystalsev, operating by 2011. Braskem, a Brazilian petrochemical firm, plans a 200,000t/y plant also using sugarcane. Although there are some clear environmental benefits in using biofuels in the manufacture of plastics, particularly Brazilian sugarcane, the end product will be much the same, and the trend raises similar issues to using biofuels to provide fuel, namely – what will the impact be on food prices, and given the volumes of feedstock that are required, can it ever provide more than a token replacement for crude oil? More likely, in our view, is that the trend for plastics manufacturing to migrate to where oil is cheap, namely the Middle East, will continue. This trend is already well established, and seems unstoppable if oil prices remain at these levels for much longer.

## Outlook

**It's all about oil at the moment, and plastics prices are likely to continue rising as firms continue to pass on costs. The longer-term outlook is less clear given slowing demand in western markets and the potential for slower growth in the developing economies. Short-term outlook: PP and LL global, $1,600/t-$1,750/t.**

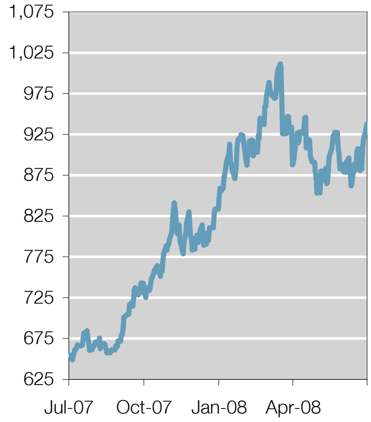
**Market data (June unless stated)**

| Average prices | | | Volumes (June) | | | Open Interest (contracts) (End June) | |
|---|---|---|---|---|---|---|---|
| Contract | Global LLDPE | Global PP | | All LLDPE | All PP | All LL contracts | All PP contracts |
| First position | 1,622.14 | 1,680.71 | Daily av. | 20.00 | 4.00 | 21 | 42 |

*Source: Reuters Ecowin*

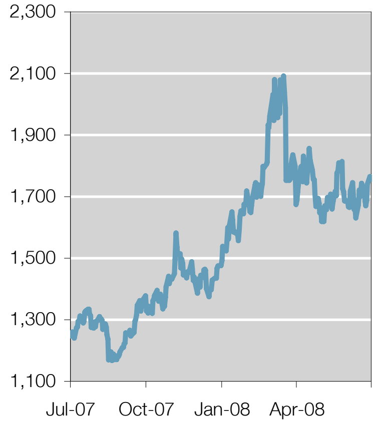
# Prices

**Gold ($/oz)**




*Source: London Bullion Market Association*

**Silver (c/oz)**

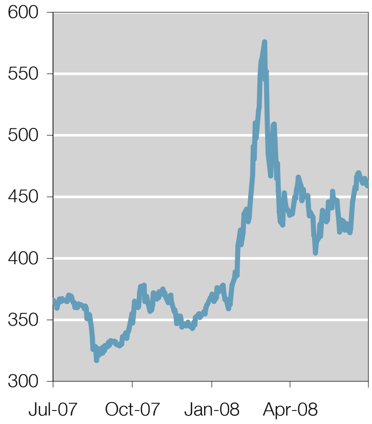



*Source: London Bullion Market Association*

**Platinum ($/oz)**

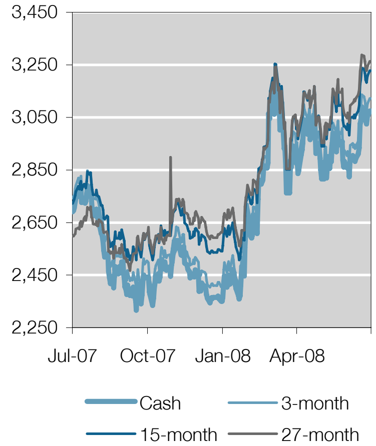

*Source: London Platinum & Palladium Market*

**Palladium ($/oz)**



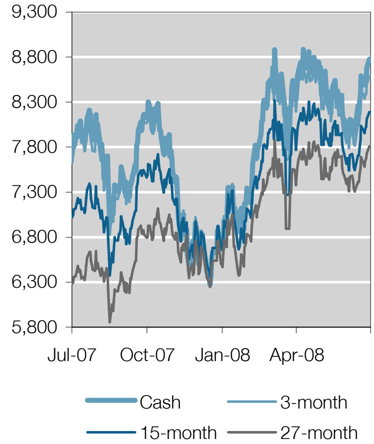

*Source: London Platinum & Palladium Market*

**Aluminium ($/tonne)**



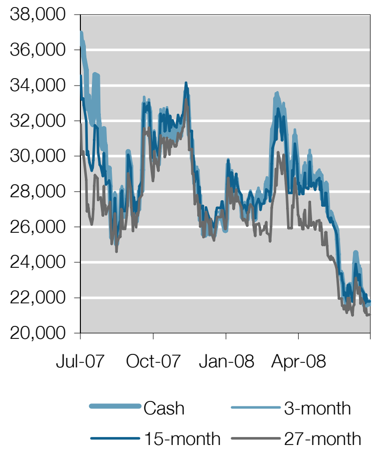

*Source: London Metal Exchange*

**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 team**
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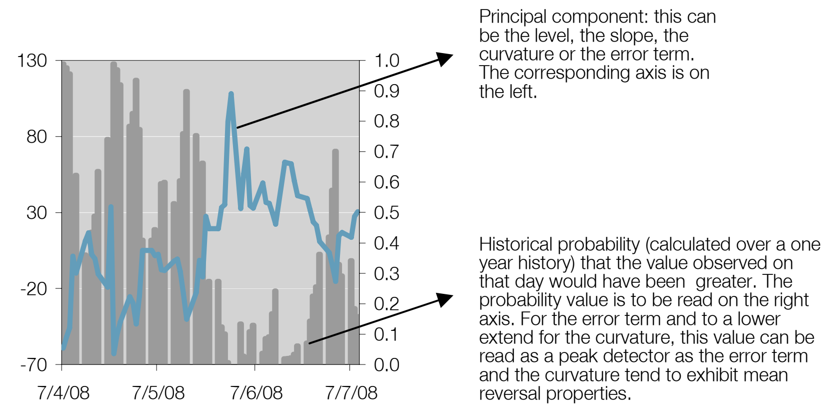
## PCA background

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*

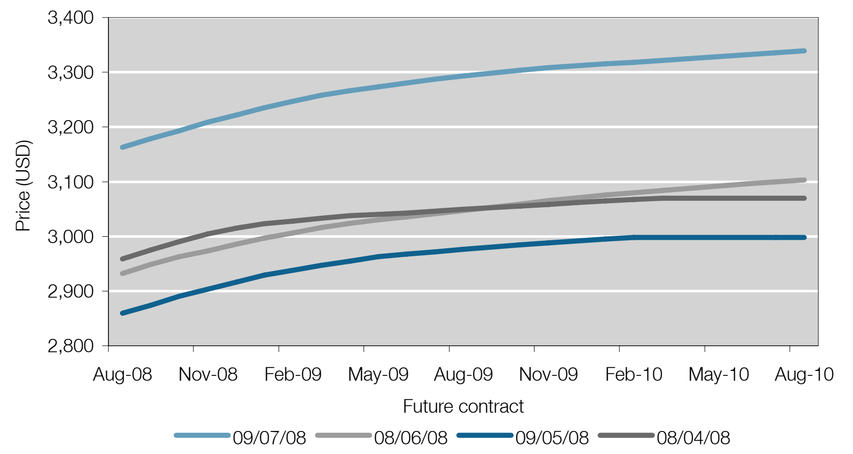
# Aluminium
## Future curve analysis

**Fundamental outlook**

News that China's top 20 aluminium producers are taking concerted action to cut output, in the face of widespread power rationing, pushed the LME's 3-month contract into fresh record territory. It's impossible to tell how long this cutback will last – perhaps only for as long as China needs to show to the world that it can stage the Olympic Games without running the risk of embarrassing power cuts. But if the supply endured for 12 months then as much as 750,000t of primary aluminium which had been expected will not be produced – and that's a very bullish prospect. And China's power problems will not be solved very quickly.

LME 3-month short-term: $3,000/t-$3,700/t.

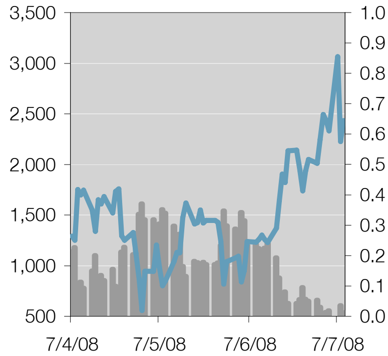
### Future contract




*Source: Fortis Modelling, Bloomberg*

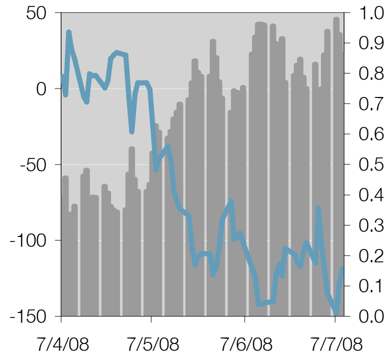
### Principal component analysis (arbitrary units)

**Level (t) – 98% of curve variance**



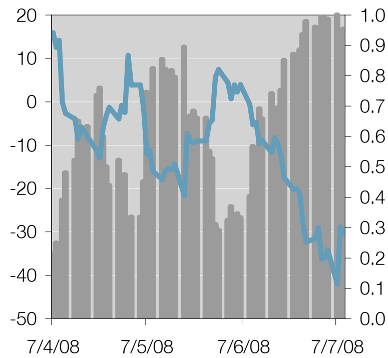

*Source: Fortis Modelling*

**Slope (t) – 2% of curve variance**



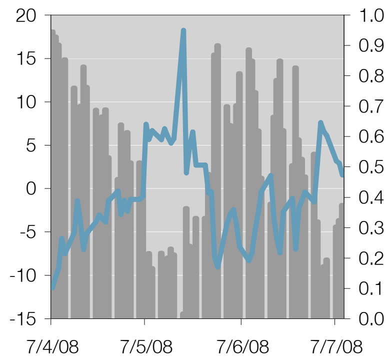

*Source: Fortis Modelling*

**Curvature (t) – 0.03% of curve variance**




*Source: Fortis Modelling*

**Error (t) – 0.01% of curve variance**




*Source: Fortis Modelling*

# Copper

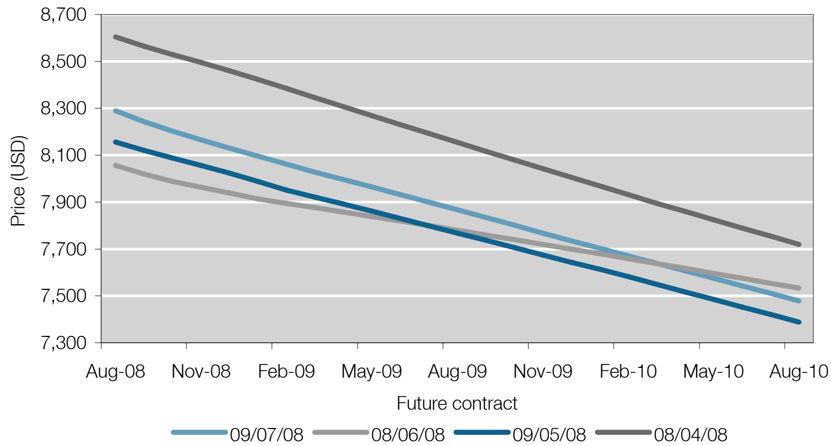
## Future curve analysis

**Fundamental outlook**

June saw yet another recorded traded price for the LME 3-month copper contract, but the only real support for this bullish outlook is all on the supply-side. Exchange stocks remain low by historic standards; Chile's national output is marginally down year-on-year so far in 2008; and there are persistent rumbles in the background about possible strikes in Peru. Against that must be set growing new mine production and expansions of existing mines, flat demand in the western world, and Chinese import demand which in 1H 2008 has been about 13% lower than the same time last year. July and August are traditionally slow in terms of Chinese copper consumption – but if the country's import demand for refined copper and semi-finished products does not pick up significantly in Q4 2008 then the current elevated price ought to tumble.

LME 3-month short-term: $7,800/t-$8,400/t.

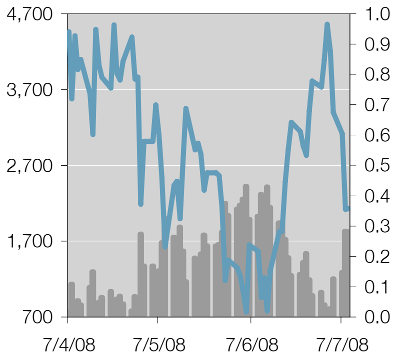
### Future contract




*Source: Fortis Modelling, Bloomberg*

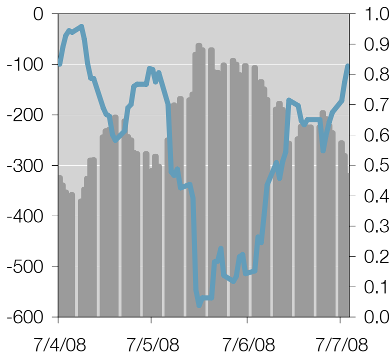
## Principal component analysis (arbitrary units)

### Level (t) – 95% of curve variance



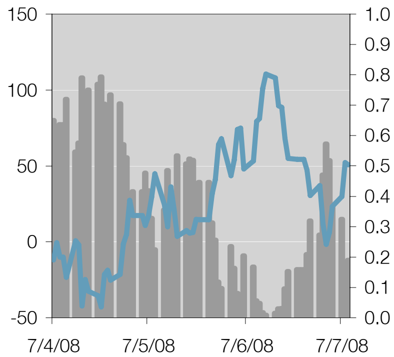

*Source: Fortis Modelling*

### Slope (t) – 4.7% of curve variance



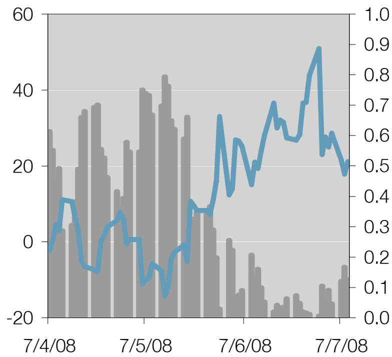

*Source: Fortis Modelling*

### Curvature (t) – 0.04% of curve variance




*Source: Fortis Modelling*

### Error (t) – 0.01% of curve variance



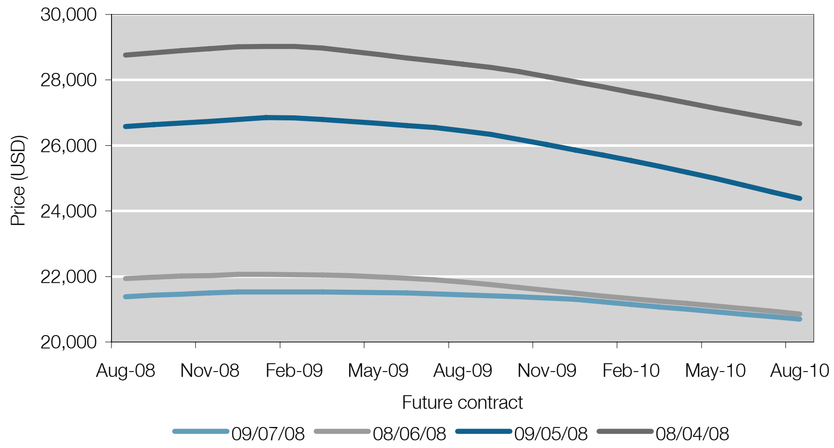

*Source: Fortis Modelling*

# Nickel
## Future curve analysis

**Fundamental outlook**
Nickel prices had been on the slide until mid-June, when BHP Billiton announced it was shutting operations at its Kalgoorlie, Australia, smelter and refinery for about four months, as it brought forward by a year planned repair work to a furnace. The company's Kwinana refinery, which takes feed from Kalgoorlie, will also be out of action. BHP estimated that sales of nickel from its operations in Western Australia could be reduced by as much as 28,000t in the year to June 2009, which would be some 2% of annual world production. This injected some fresh life into an otherwise lacklustre feel. Longer-term there must be some serious questions about major new mine projects actually coming into being, as mining costs are soaring. For the rest of this year the market may be narrowly poised between a small deficit or small surplus.

LME 3-month short-term: \$20,000/t-\$23,000/t.

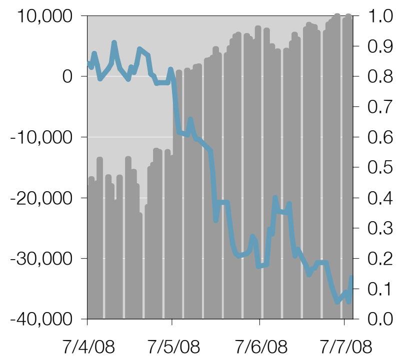
### Future contract




*Source: Fortis Modelling, Bloomberg*

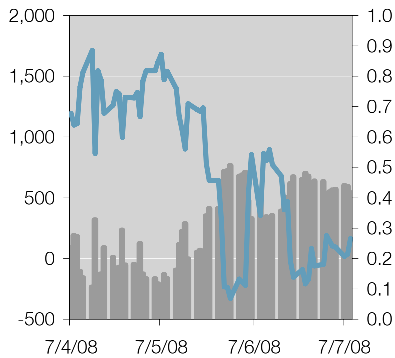
## Principal component analysis (arbitrary units)

### Level (t) – 97% of curve variance



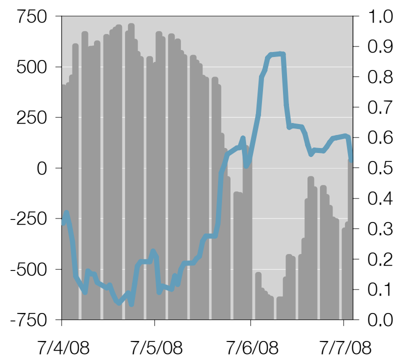

*Source: Fortis Modelling*

### Slope (t) – 3.1% of curve variance



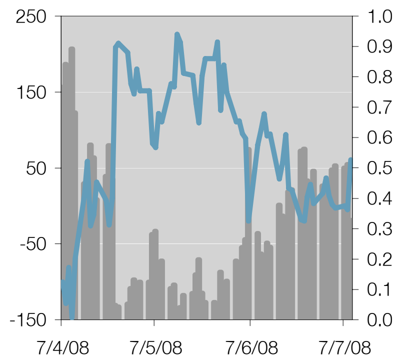

*Source: Fortis Modelling*

### Curvature (t) – 0.07% of curve variance




*Source: Fortis Modelling*

### Error (t) – 0.01% of curve variance




*Source: Fortis Modelling*

# Lead

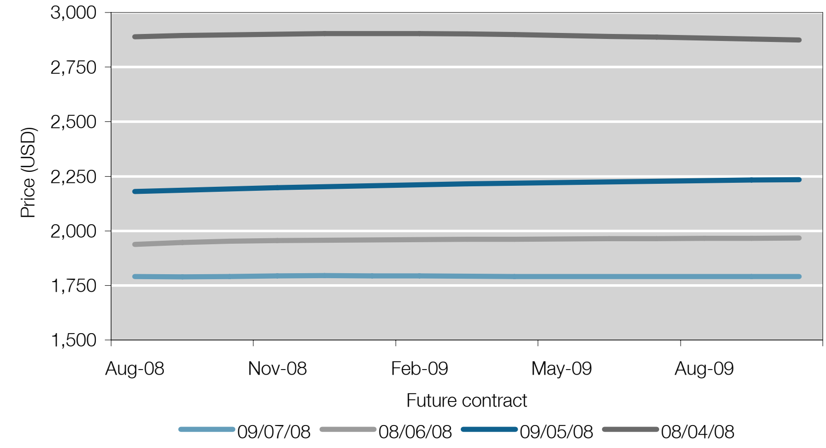
## Future curve analysis

**Fundamental outlook**

The plunge in lead prices has been dramatic – so far this year the 3-month contract on the LME has lost almost 40% and it is difficult to see what will prevent the metal slipping below $1,500/t in the near future. LME warehouse stocks have been rising almost daily in recent weeks and by 4th July were again above 100,000t, the highest for more than two years and more than twice what they were in January, when the average 3-month price was $2,599/t.

LME 3-month short-term: $1,800/t-$2,200/t.

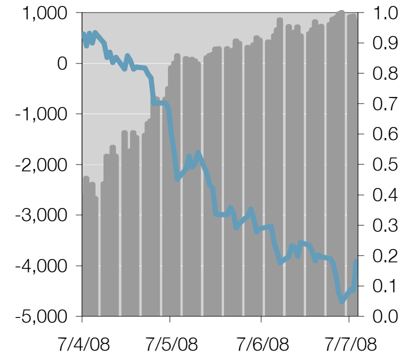
### Future contract




*Source: Fortis Modelling, Bloomberg*

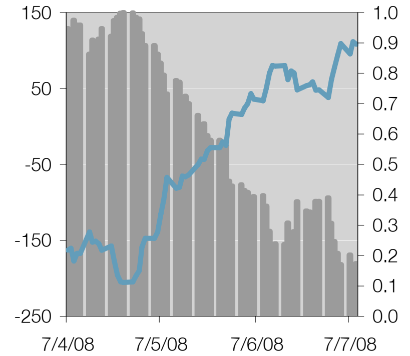
## Principal component analysis (arbitrary units)

### Level (t) – 99.3% of curve variance



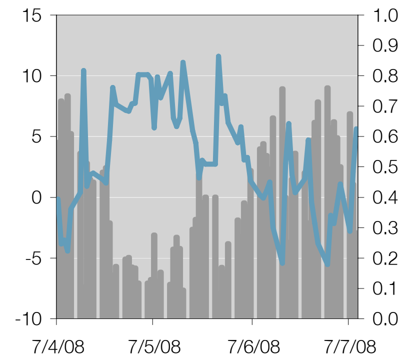

*Source: Fortis Modelling*

### Slope (t) – 0.7% of curve variance



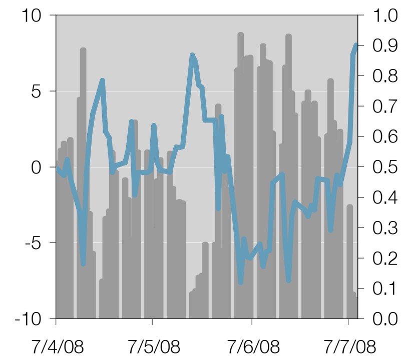

*Source: Fortis Modelling*

### Curvature (t) – 0.01% of curve variance




*Source: Fortis Modelling*

### Error (t) – 0.00% of curve variance



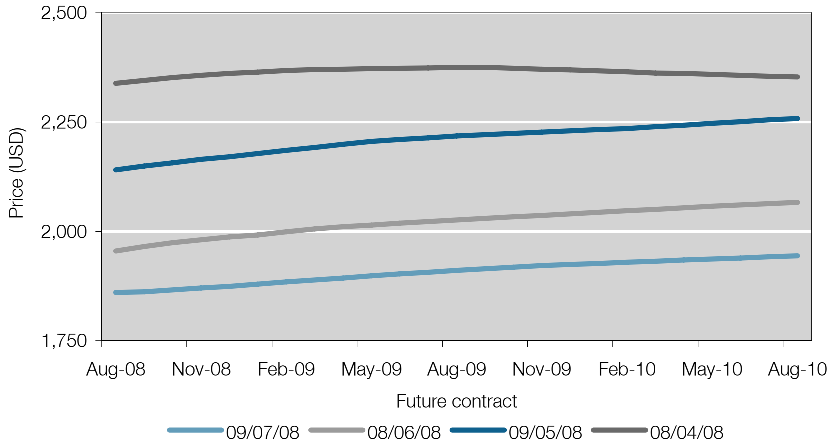

*Source: Fortis Modelling*

# Zinc
## Forward curve analysis

**Fundamental outlook**
It's now evident that the zinc market is facing a serious and possibly chronic concentrates' surplus this year and for several years to come. While not all of this new mine supply might make its way into actual metal, the large volumes of zinc concentrates swilling around for the next couple of years will serve to deter speculators from trying to push zinc metal prices higher – particularly when new car sales in the world's leading economic powerhouses of the US and EU are tumbling, and this vital demand source for zinc (to galvanise steel and prevent rusting) is therefore shrinking.

LME 3-month short-term: $1,700/t-$1,900/t.

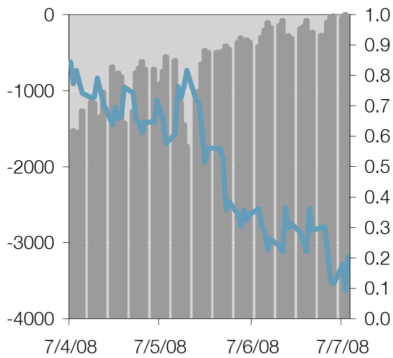
### Future contract




*Source: Fortis Modelling, Bloomberg*

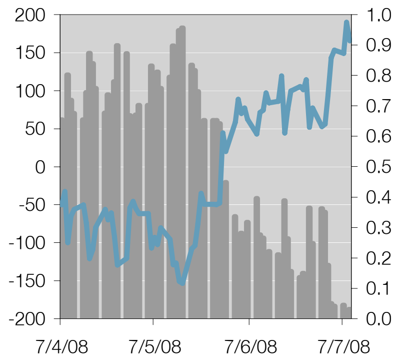
### Principal component analysis (arbitrary units)

**Level (t) – 99.4% of curve variance**



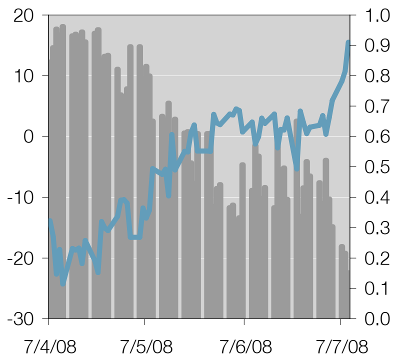

*Source: Fortis Modelling*

**Slope (t) – 0.6% of curve variance**



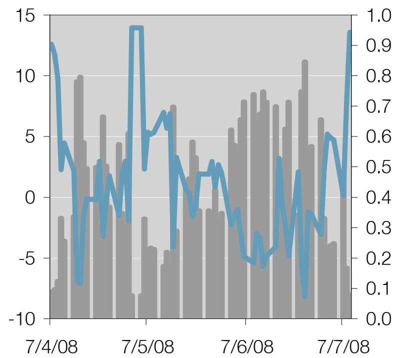

*Source: Fortis Modelling*

**Curvature (t) – 0.01% of curve variance**




*Source: Fortis Modelling*

**Error (t) – 0.00% of curve variance**



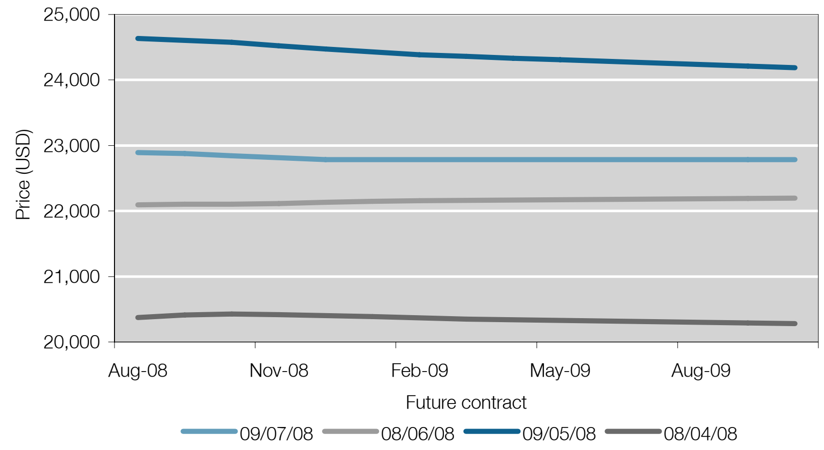

*Source: Fortis Modelling*

# Tin
## Future curve analysis

**Fundamental outlook**
If Indonesia really is serious about its 100,000t/year production quota, we see scope for even higher prices ahead, barring a catastrophic slowdown in consumer demand for electronic goods. Prices going even higher than today may possibly tempt some Chinese producers to return to exporting, but local Chinese demand is so strong that domestic Chinese and international prices are likely to rise in tandem. We are still in a bullish period for tin.

LME 3-month short-term: $20,000/t-$23,000/t.

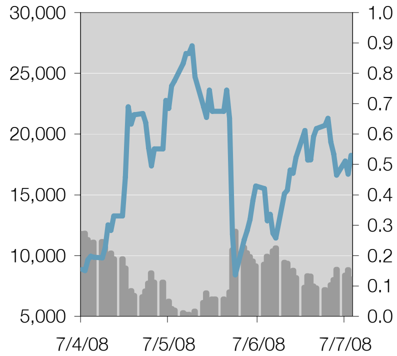
**Future contract**




*Source: Fortis Modelling, Bloomberg*

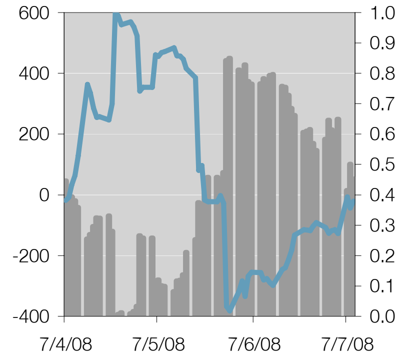
## Principal component analysis (arbitrary units)

**Level (t) – 99.9% of curve variance**



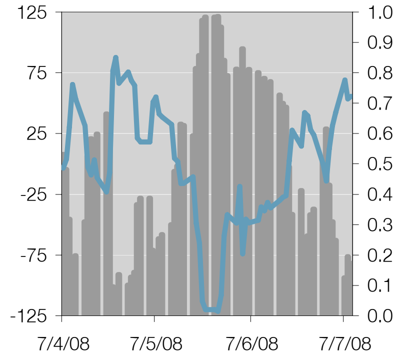

*Source: Fortis Modelling*

**Slope (t) – 0.1% of curve variance**



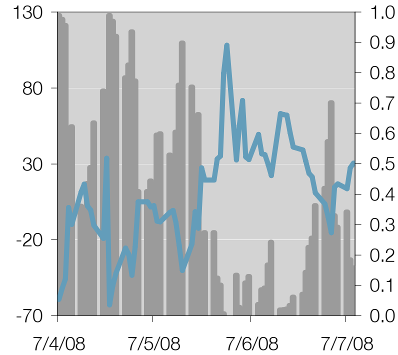

*Source: Fortis Modelling*

**Curvature (t) – 0.00% of curve variance**




*Source: Fortis Modelling*

**Error (t) – 0.00% of curve variance**




*Source: Fortis Modelling*

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Virtual Metals comprises a uniquely skilled team, with a collective 50 years' experience in the precious metals markets and all that this implies – a plethora of market contacts and personal networks of long-standing trust and wisdom. Our clients include world-class mining companies, for whom Virtual Metals specialises in proprietary research covering gold, silver and the platinum group metals.

Apart from the mining industry, Virtual Metals has as clients refiners, bullion banks, equity brokers, trading houses and other institutions. Clients in all segments of the mining and metals industries select Virtual Metals for independent outsourced value and experience without adding to corporate overhead.

The Virtual Metals team 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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