

Fortis Asian metals monthly

November 2007



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

VM Group

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

Contents

Strategic view	3
Analysis	5
Focus	8
Gold	11
Silver	12
Aluminium	13
Copper	14
Lead	15
Zinc	16
Steel	17
Prices	18
Quantitative research	19
Disclaimer and copyright	25
About VM Group	26
Fortis commodities contact list	27

Strategic view

Analysts

Gary Mead

Tel: +44 20 7487 3600

Email: gary@vmgroup.co.uk

Matthew Turner

Tel: +44 20 7487 3600

Email: matthew@vmgroup.co.uk

Introduction

US industrial output is slowing – falling by 0.5% in October, much worse than general expectations – following a 0.2% rise in September, and this is bad news for base metals demand globally. The key automotive sector in the US is shaping up for 2008 to represent its worst year in a decade for new car sales. It's too early to say that this indicates a new trend or simply an over-reaction to the continuing fall-out from the US-led sub-prime lending problems and subsequent credit squeeze. But it gives another reason to expect a further cut in US Federal Reserve interest rates before the end of the year – which should see further dollar weakness and a recovery in the gold price to \$850/oz.

Gold

Gold has risen well above \$800/oz since our last report and despite a correction in November we still anticipate a significant charge higher before the end of 2007, prompted by a probable further cut in US interest rates and a continuation of dollar weakness.

Silver

Silver investment has been very strong and is likely to continue to trace gold's movements.

Aluminium

Another quiet month for aluminium in October, although November saw the LME price clamber a little higher. We are anticipating a global surplus of primary metal of around 300,000t this year and anticipate this rising still further next year.

Copper

As the lead base metal, copper is bound to reflect overall economic sentiment. Unsurprisingly, therefore, it had a tough ride in November. With the probability of a return to a small global physical surplus in 2008 running headlong into a slowing US economy, there is little scope for investment enthusiasm right now.

Lead

Investors had a bout of nerves in the first half of November when lead prices failed to shift radically higher towards \$4,000/t. A slowing global economy and fewer new cars sold in the US and EU would negatively impact lead demand – but counterbalancing that remains the outlook for continued lower than trend refined lead exports from China in 2008. Barring a serious economic slowdown affecting Asia, we feel prices will trade above \$3,000/t in Q1 2008.

Zinc

Planned changes to the fiscal regime affecting China's refined metal exports – which may come into effect at the start of 2008 – could dislodge current expectations of a return to global surplus next year. Conditions are being laid for a degree of price volatility in 1H 2008.

Steel

Major producers have announced price rises for some of their basic steel products, reflecting their higher costs, but a slowing global economy could mean they find it difficult to push through these increases.

Forecasts

Price forecasts, LME						
		End-October	1-month	2-month	3-month	12-month
Gold	\$ per oz	789.50	790-850 (r)	780	800	700
Silver	c per oz	14.32	13.50-14.50 (r)	14	15	12
Aluminium (3-month)	\$ per tonne	2,537	2,200-2,500	2,300	2,300	2,400
Copper (3-month)	\$ per tonne	7,760	6,700-7,400 (r)	7,000 (r)	7,000 (r)	7,000
Lead (3-month)	\$ per tonne	3,666	2,800-3,200 (r)	2,500 (r)	2,500 (r)	2,000 (r)
Zinc (3-month)	\$ per tonne	2,821	2,000-2,400 (r)	2,200 (r)	2,200 (r)	2,500
		2-years	3-years	4-years	5-years	6-years
Gold	\$ per oz	600	575	550	550	500
Silver	c per oz	11	10	10	9	9
Aluminium (3-month)	\$ per tonne	2,000	2,000	1,800	1,800	1,800
Copper (3-month)	\$ per tonne	6,000	6,000	5,000	5,000	4,000
Lead (3-month)	\$ per tonne	1,500	1,500	1,300	1,200	1,000
Zinc (3-month)	\$ per tonne	2,500	2,500	2,000	2,000	1,900

Source: Virtual Metals:

(r) revised estimates from previous report.

Analysis

Analyst

Matthew Turner

Tel: +44 20 7487 3600

Email: matthew@vmgroup.co.uk

Commodity Indices: rebalancing in 2008

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

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

Some explanations and context

Impact of S&P GSCI JAN 2008 re-weighting

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

Source: VM Group calculations from published data and methodologies

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

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

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

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

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

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

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

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

² Another source of information is the Commitment of Traders report from the CFTC; this gives the amount of contracts held by Index Trackers.

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

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

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

The following table does this for the Dow-Jones AIG index. The first column shows the size of the contracts in metals that the DJ-AIG invests in. The second column shows the 2007 target weighting. The third shows the commodity price at the start of the year and the fourth the price on 12th November 2007.⁵ The fifth shows our estimate of what weighting the commodities now *actually* have in the index, given their price movements. For example, zinc has fallen in price from \$3,735/t at the start of the year to \$2,637/t on 12th November. Its *actual* weight has therefore fallen to 1.56%, from 2.8% at the start of the year. The next column shows the new 2008 *target* weights. This is 3.0% for zinc, hence an increase from its 2007 target weight and a large 1.4 percentage points higher than its current actual weight – this required change is shown in the next column.

The final four columns show our estimate of the extent of the rebalancing that will be needed, if the prices as of 12th November prevail on 7th January, and assuming the AUM of the index is then \$45bn. In zinc then, for example, 252,000t will need to be bought to return it to a 3.03% weighting by value. Again, using % of open interest as a guide to the importance of each move, the major gainers are copper (up 7.1%)⁶ and zinc (up 4.1%), but all the metals in the index will be gainers.

Impact of DJ-AIG re-weighting

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

Source: VM Group calculations from published data and methodologies

⁵ There is no significance to the date of 12th November other than that was the final date we updated our calculations.

⁶ Note that the % of open interest (Comex) for copper is misleading as copper also trades (and in greater volume) on the LME.

Focus

Analysts

Gary Mead

Tel: +44 20 7487 3600

Email: gary@vmgroup.co.uk

Matthew Turner

Tel: +44 20 7487 3600

Email: matthew@vmgroup.co.uk

Zinc looks miserable – for now

Zinc has been the worst performer on both the London Metal Exchange and the Shanghai Futures Exchange so far this year – down by more than 45% on the former and some 37% on the latter since the start of the year. In one sense this is perhaps simply a correction of the over-enthusiastic 122% rise in the zinc price on the LME in 2006, a soaring increase that was bettered only by nickel, which rose by 147% that year. What's the explanation of this abrupt reversal for zinc?

The prime mover behind the rapid slump in zinc prices in London and Shanghai in November has been in some quarters mistakenly attributed to a signal from the Chinese authorities at the start of the month that they are considering changing the tax regime affecting the country's refined zinc exports. Now under consideration is a cancellation of the 5% value added tax export rebate on the standard form of zinc traded on the London Metal Exchange (LME) and the Shanghai Futures Exchange (SHFE), the so-called #0 grade, which has a purity of at least 99.995%. This would in effect mean an increase in the export tax on #0 zinc from China to 17%, as the value-added tax levied currently on such exports is 17%, minus the 5% rebate. Also under consideration is the imposition of an export tax on this grade of between 5%-10%. These changes, if they go ahead, could take effect as soon as 1st January 2008. The move would bring this grade of refined zinc exports into line with other, less commonly used grades of zinc exports from China, and thus is widely expected to happen, even though it will evoke complaints from Chinese zinc producers.

This fresh tax regime – which we are confident will happen – would replicate what the Chinese authorities did with the country's refined lead exports from 1st June this year, when they imposed a 10% export tax on such exports. Shortly after that the international lead price began to soar, partly on the (correct) expectation that China's refined lead exports would nosedive as a consequence, and partly on there being plenty of risk-appetite from some investors willing to take aggressively long positions in lead futures on the LME. So we have an apparent paradox: higher tax rates on exported lead induced a soaring lead price, on the expectation of lowered Chinese lead exports; yet Chinese taxes on exported zinc (which should also mean lower refined zinc exports from China, going forward) have been met with a price fall. What's going on?

From optimism to gloom in four months

In reality, there is no paradox. For one thing, the world looked a very different, much more cheerful place in June. Then in August the US housing market sub-prime lending fiasco began to unravel. These kinds of calamities rarely make themselves fully apparent at the outset – rather like icebergs they often conceal much of their biggest threat where it cannot easily be detected. Since then, large global banks have fired CEOs, disclosed enforced billion dollar write-offs, and credit markets have tightened sharply. The crude oil price has approached fresh all-time highs, the dollar looks sicker than Lazarus, nothing has improved in the Middle East's hotspots – and the considerable risk-appetite that was out there in June is ebbing away and will not be reinvigorated until there is clear evidence that the US is not rapidly sliding towards recession. Prospects for economic growth in the US, the EU and Japan are, suddenly, looking much less optimistic than just four months back. The risk-appetite of mid-2007 has slammed into reverse gear; risk-aversion is now the name of the game for many investors.

The evidence for this is that it was not only zinc prices that took a beating in November – lead has seen much of the earlier speculative investment interest demolished, while copper, regarded as a leading indicator of economic growth prospects, has also been humbled (despite an earthquake in Chile which temporarily disrupted output). Zinc prices have fallen sharply in November (they have been trending lower for much of this year anyway) not in response to planned export tax changes from China, but because investors now (rightly) fear

an economic slowdown in several key industrial markets – which will swiftly translate into slowing demand for the main base metals, zinc included.

This changed macro-economic sentiment makes it much more difficult to anticipate what will happen to the global zinc supply-demand balance next year; when the Chinese authorities imposed the export tax on refined lead it was rather easier to posit that this would be regarded by the market as yet another price-supportive move, along with a number of supply-side problems affecting lead concentrate output in Australia. The reason why the Chinese authorities will make it more costly for the country's zinc producers to export their product has little to do with zinc *per se*. Rather it is in keeping with China's gradualist approach to managing the development of its overall economy. Beijing's central economic planners have in the past used similar fiscal tinkering to try to rein-in the explosive growth in the country's aluminium production capacity, as well as that of lead, and once China's rapidly-growing domestic copper refining sector grows sufficiently big to meet internal demand for refined copper and becomes a net exporter of the metal, we can envisage the same happening to copper exports. Outside China, the country can appear as though its industrial growth and base metal production is growing at an ungovernable pace, rather like multiplying bacteria; yet that would be to forget that, above all, China is still a *centrally* managed economy, and that the Chinese authorities are determined to ensure that the energy-hungry production of base metals does not pose a long-term threat to meeting future growth in electricity demand. And if China's zinc producers are indeed intent on expanding smelting capacity, then from an economic planning viewpoint it makes little sense to produce for an export market, when domestic demand is currently strong.

The implications for supply-demand

The main implication of the changed export tax regime for zinc will be similar to what happened in lead – exports will drop, but by how much and how rapidly is impossible to foresee right now. The market has been trying to work out for a year precisely what the current trend regarding China's zinc position might be – is it returning to being a net importer of refined metal or moving towards being a net exporter? The signs so far are contradictory. According to official Chinese data, between January-September this year China imported 104,729t of refined zinc, more than 56% down on imports for the same period of 2006. At the same time it exported 248,233t, almost 44% higher year-on-year, implying net exports of 143,504t. This rising level of net exports (and production – 19% higher during January-September, year-on-year, at 2.696 Mt) is what has caught the Chinese authorities' attention – they want to damp down this rapid growth in domestic zinc smelting capacity before it grows so large that any fiscal adjustments might be too little, too late, as, arguably, happened with the country's aluminium producing industry, which this year is likely to account for some 40% of global production. But data from September confuses the overall picture – that month, China's exports of refined zinc were officially 12,325t, 44% lower than in August and 18.5% lower than September 2006.

What is certain is that the reverberations of any change to the Chinese fiscal regime concerning zinc exports will be felt in the global market, and pretty quickly in Q1 2008. This year the global refined zinc market will probably be in a relatively small deficit, about 45,000t. Prospects for 2008 have so far been showing a very different outlook for a swing back to a relatively substantial surplus of between 250,000t-500,000t. That potential surplus could however easily tip back into deficit if China's exports slump. The most difficult question – and one that may contain the seeds of very weak refined zinc prices over the longer term – perhaps concerns not refined metal but zinc concentrates, the raw material smelted into metal. Currently the global market outside China is facing a healthy surplus of zinc concentrates for 2007, in excess of 700,000t, and this surplus will inevitably widen in 2008 as new lead-zinc-silver mines that have been under development come increasingly on-stream; the biggest of these mines, San Cristobal in Bolivia, has now begun shipping ore, and will add about

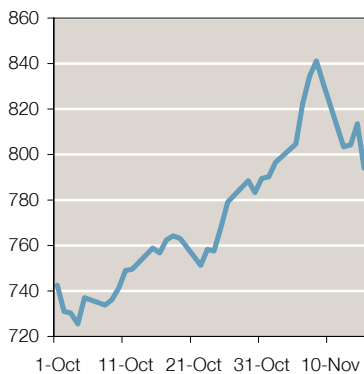
500,000t of ore/year in its first five years of production, including enough ore for production of some 200,000t of zinc. The problem is that, outside of China and India, there has been very little expansion of zinc smelting capacity in recent years. More ore is being churned out but not even China's rapidly growing zinc smelting sector will be able to cope with what will probably be an extra 2 Mt of ore being produced annually between now and 2010.

2008 – could be volatile

The most likely impact of the imminent change to the fiscal regime concerning exports of Chinese refined zinc is that China will probably import less zinc concentrates, as its exports of the metal drop and its smelters require lower levels of imported concentrates. This would mean a substantial build-up in zinc concentrates in the world market outside China and a probable collapse in zinc concentrates prices. But, and here's the real paradox, the world outside China would find itself not facing (as now seems to be the case) a healthy surplus of refined zinc, but a much more tightly balanced market and perhaps even a deficit. We might see on the horizon some new smelting capacity being considered outside China, which would ease the very large concentrate surplus now ahead, but that is unlikely as the zinc price has been too volatile in the past three years to enable a clear view about what the investment return might be. Furthermore, any new zinc smelting capacity would take years to come on-stream – not quickly enough to prevent a substantial, growing build-up of zinc concentrates. At the moment zinc is at a crossroads: turn one direction and we get a sense of we've been here before, in the mid-1990s, when zinc prices collapsed; turn another direction and next year's surplus might evaporate. All in all, the zinc market will face yet another volatile year in 2008.

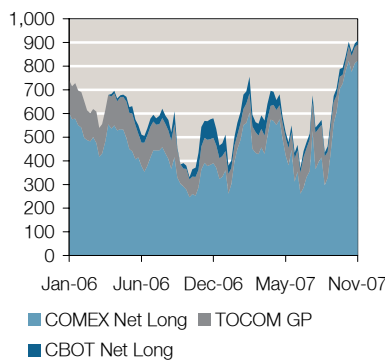
Gold

Gold price (\$/oz)



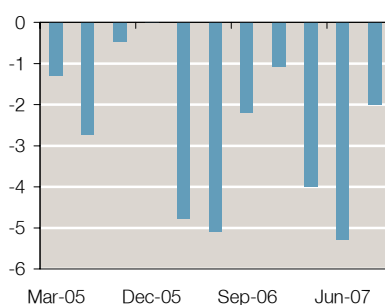
Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: Virtual Metals

Quarterly gold dehedging (Moz)



Source: VM Group, Haliburton, Mitsui Precious Metals

Market data (October unless stated)

Prices	US\$/oz	Yuan/kg	Yen/gr	ETF inv.	Holdings	Monthly change	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	750	180,963	2,796	US (2)	649.85	21.79	Average	0.21	0.32	0.35	0.37	1-month	20.10
High	779	187,817	2,864	UK	108.65	7.22	High	0.27	0.38	0.39	0.45	3-month	19.30
Low	726	175,082	2,716	Aus	15.06	0.77	Low	0.15	0.26	0.26	0.26	6-month	18.90
				S. Africa	18.33	0.61						12-month	18.60
				Swiss	22.44	0.49						24-month	18.45
				India (2)	3.41	-							

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

News

- Nov 20th: Mali's National Department of Geology and Mines said the country's gold output this year will fall almost 12% to 55t, due to lower output from existing mines and delays in start-ups of new projects.
- Oct 31st: Newmont Mining was the last in a line of gold producers to report quarterly results. For Newmont, Q3 profits rose to \$397m. Gold Fields previously in October reported net income over the same period fell 19% to R428.6m, while Barrick's quarterly profit fell 15% to \$345m.

Analysis

- \$800/oz proves slippery

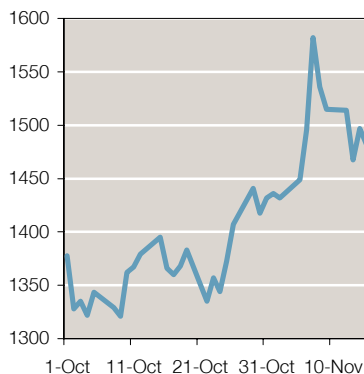
Investors on Comex and in the gold ETFs as of the week ending 30th October were long more than 1,676t of gold – the gold ETFs are perhaps more important right now than Comex because they are long about half of that, almost 850t of physically-held gold. By the week ending 13th November, that had dropped only slightly, to 1,636t. The weak US currency – and the probability that it will go down even further as the Federal Reserve maintains its policy of benign indifference to the dollar's fate – is the key factor in spot gold prices breaking through the psychologically important \$800/oz barrier. If we see another interest rate cut soon then \$900/oz could be with us before we can bat an eyelid. This may eventually take its toll of physical demand in the key markets, although the strengthening of the rupee is helping Indian buyers. Global jewellery market demand so far this year has been strong; Turkey's imports are up 24% in the first nine months of this year compared to 2006, at 192t, as much as the total for all of last year, according to the Istanbul Gold Exchange. Central banks participating in the European Gold Agreement have got off to a cracking start of the latest EGA year, its fourth, which started at the beginning of October. In the first five weeks of this new EGA year the eurosystem central banks sold 41.4t, a much faster rate of selling than seen in the last three months, and, if there are more sales from the Swiss National Bank, the EGA signatories will be surprisingly on course to sell the maximum 500t permitted in the current EGA year.

Outlook

The gold spot price finally broke through \$800/oz at the start of November, hard on the heels of the latest US interest rate cut. There is a very strong likelihood of yet another small (25 basis points) cut by the Federal Reserve in US interest rates before the end of 2007; the mere thought of that was enough to drag the dollar down and see gold zip up close to \$850/oz in the first week of November, although it has since slumped below \$800/oz. The banking sector crisis in the US is reverberating across many sectors and this, together with the historic high nominal price for crude oil, spells a very strong mid term outlook for gold. At the same time, the sheer size of the futures' longs in gold right now would suggest some correction might be on the cards – were it not for crumbling investor confidence in other assets. Short-term London daily pm fix: \$790/oz-\$850/oz.

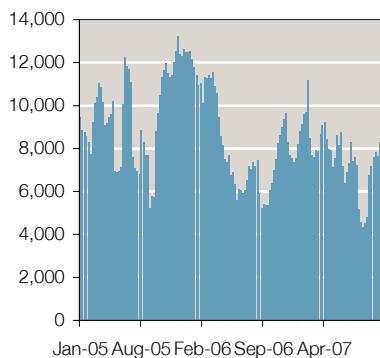
Silver

Silver price (cents/oz)



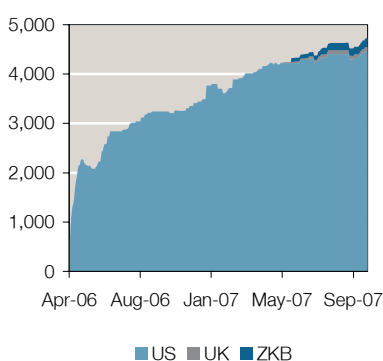
Source: London Bullion Market Association

Comex: Non-commercial net position (tonnes)



Source: Comex

Silver ETF offtake (tonnes)



Source: Reuters Ecowin

News

- Nov 2nd: Coeur d'Alene reported Q3 profits down 80% at \$3.6m, compared to the same quarter of 2006. During the period, the company's silver production fell 19% to 2.7 Moz. Total silver production for the first nine months of 2007 was 8.3 Moz, against 9.4 Moz for the same period last year.
- Oct 31st: Mexico's silver output was up 3% in August compared to the same month a year earlier, at more than 5.615 Moz.
- Oct 22nd: Apex Silver delivered its first shipments of concentrates from its San Cristobal silver mine in Bolivia.

Analysis

- Russian output stumbles

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

Outlook

When gold does well, silver climbs too. Such was the case at the start of November, with gold first breaching \$800/oz and then climbing further just a few days later. This rise in the bullion price – mostly related to the crumbling US currency – helped drag silver to its highest in 28 years, above \$15/oz. The last prominent peak was May 2006, when it hit a 25-year high of \$15.17/oz. Silver investors can't quite make up their minds over the price trend – in the week ending 6th November large and small speculators in futures on Comex added to their net long positions by almost 19 Moz, yet the succeeding week large speculators turned extremely negative, cutting their net longs by 14.25 Moz, although the small speculators put on another 12.58 Moz. The disconnect between the underlying physical situation – a substantial global surplus – and the futures' price is sharper than ever before, but that probably won't deter fresh investors joining the party. Short-term London daily fix: \$13.50/oz-\$14.50/oz.

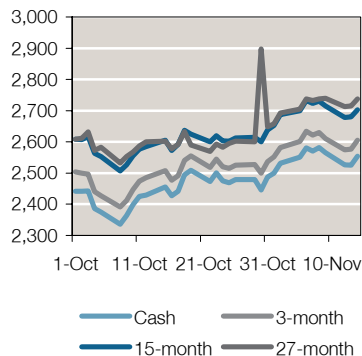
Market data (October unless stated)

Prices	c/oz	Yuan/kg	Yen/gr	Imports	kg	Lease rates	1m	3m	6m	12m	Option volatility (end month, %)	
Average	1,357.6	3,277	51	USA (Jul)	545,543	Average	(0.16)	0.07	0.21	0.33	1-month	28.25
High	1,407.0	3,392	53	Japan (Aug)	323,710	High	(0.04)	0.12	0.28	0.43	3-month	28.75
Low	1,321.0	3,190	49	China (Aug)	585,237	Low	(0.32)	(0.01)	0.13	0.18	6-month	29.00
											12-month	29.50

Source: Prices: London Bullion Market Association, Others: Virtual Metals.

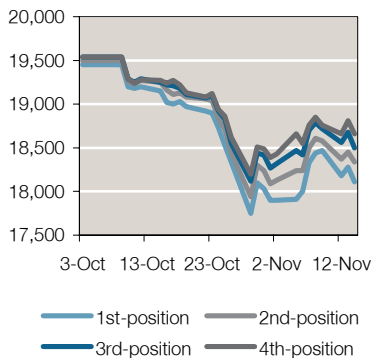
Aluminium

Aluminium price (\$/tonne)



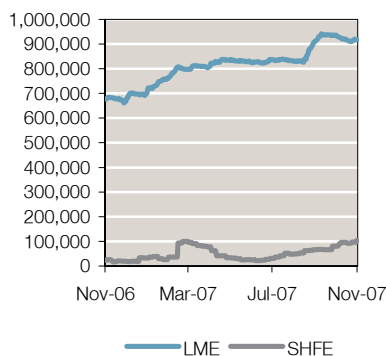
Source: London Metal Exchange

Aluminium price, SHFE (yuan/tonne)



Source: Reuters Ecowin

Aluminium stocks (tonnes)



Source: London Metal Exchange

News

- Nov 14th: The president of Chalco (the Aluminium Corporation of China) said he was “worried” about BHP Billiton’s \$140bn all-share bid for Rio Tinto, which Rio has rejected.
- Nov 8th: Chalco plans to build its alumina refinery capacity to reach 13 Mt/year by 2010 and to expand its primary aluminium refining capacity to 5 Mt by the same year, against expected primary aluminium output this year above 2.7 Mt.
- Oct 25th: China’s exports of primary aluminium in the nine months to the end of September fell 79% to 142,763t compared to the same period last year.
- Oct 18th: UC Rusal is considering building a new smelter on the island of Sakhalin.

Analysis

- Price firms marginally

The International Aluminium Institute (IAI) reported that total world primary aluminium production in October (excluding China) was 2.134 Mt compared with 2.057 Mt in for the same month last year; once China’s output was factored in, the total rose to 3.27 Mt in October versus 3.176 Mt in October 2006. This rising trajectory for aluminium output looks likely to extend into 2008, when Chinese production alone is expected to increase by more than 20%, from about 12.5 Mt this year to more than 15 Mt. That, however, may not be enough to meet growing Chinese demand and by 2009 it may be a net importer of aluminium. However, new production capacity is growing strongly to meet this rising demand. BHP Billiton and the Democratic Republic of Congo are planning to co-operate to build an 800,000t/year smelter. This comes as state-owned Emirates Aluminium (EMAL) is contemplating construction of a new 1.4 Mt/year plant, which would be the world’s largest smelter, in Abu Dhabi. A small surplus is expected next year with a tightening in supply seen in 2009. Higher energy costs are going to constrain some producer expansions, and there are reports that the Chinese authorities are readying yet further measures to curtail the country’s energy-hungry smelting industry.

Outlook

Aluminium prices were becalmed in October – on the LME the three-month contract kicked off at \$2,503/t but by 14th November had moved up fractionally, closing at \$2,605/t, partly encouraged by LME stock movements (falling from 937,400t at the start of October to 917,900t by 15th November). While higher power costs are likely to take a further toll on production in the EU and North America and also China, other major producers, notably Russia and the Middle East, should be cushioned to some extent and are rapidly building considerable additional capacity. We see this year’s global surplus (around 300,000t) rising significantly into 2008, particularly if a US economic slowdown eventuates. LME 3-month short-term: \$2,200/t - \$2,500/t.

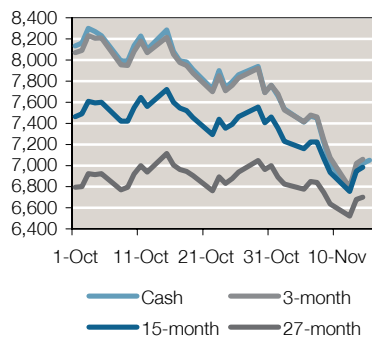
Market data (October unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	Stocks (tonnes)	LME	SHFE	Prod (kt)	Aug	Sep	LME Open Interest (contracts)	Interest
Average	2,498	2,553	2,653	2,658	Sep-07	937,400	62,011	Europe	752	752	Aluminium	642,607
High	2,530	2,582	2,687	2,693	Oct-07	918,250	66,739	Americas	701	682		
Low	2,550	2,601	2,700	2,705	Sep-07	937,400	62,011	Asia	316	307		
								China	1,111	1,119		
								Other	351	239		
								Total	3,231	3,099		

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

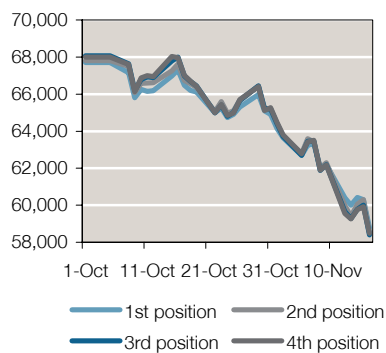
Copper

Copper price (\$/tonne)



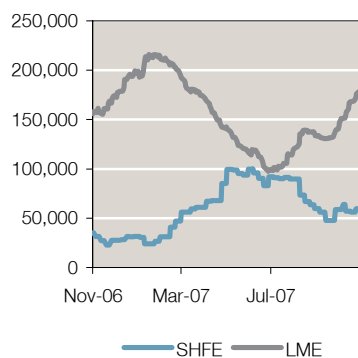
Source: London Metal Exchange

Copper price, SHFE (Yuan/tonne)



Source: Reuters Ecowin

Copper stocks (tonnes)



Source: London Metal Exchange

News

- Nov 16th: The copper market was 258,000t in deficit during January-August, according to the latest (seasonally adjusted) estimate by the International Copper Study Group (ICSG), against a surplus of 38,000t in the same period of 2006.
- Nov 15th: China's total copper imports in October were 4.4% lower against the previous month at 118,548t.
- Oct 31st: Chile's Antofagasta reported its Q3 production fell 5.2% to 100,600t, against 106,100t in Q2. Earlier in the month the state-owned Chilean producer Codelco said its copper output would be about 1.6 Mt in 2008, excluding metal from its El Abra mine. Total Chilean copper production in the first nine months of 2007 was just over 4.1 Mt, almost 6% higher than for the same period of 2006.

Analysis

- Price softens on US economic storm clouds

The prospect of substantial increased production of refined copper in China – despite Chinese consumption growing at about 9% this year to more than 4 Mt, with domestic production at least 600,000t less than that – will act as a brake on the copper price in 2008, along with what is rapidly turning into a slowing US economy. China's National Bureau of Statistics reported the country's refined copper production grew by more than 16% between January-September this year, and, on an annualised basis, is running at 3.738 Mt as of September. According to the Chinese state-owned research group Antaiki, China may have a surplus of 360,000t of refined copper in 2007. The ICSG's latest global supply-demand estimate posited a chunky global deficit for the first seven months of this year but the deficit is shrinking. The ICSG estimates that, overall, 2007 will see the global refined copper balance return to a 110,000t surplus, rising to 250,000t in 2008. Inevitably this estimate takes little or no account of the background woes in the US economy, which will dent demand. Some copper producers are optimistic that strongly growing Asian economies, China especially, will be able to take up any slack if that of the US falters. To which at this stage the only response is – it all depends on just how uncomfortable the US economy gets.

Outlook

Copper prices were on the slide for much of October and the first half of November, the LME three-month price dropping from \$8,070/t on 1st October, to as low as \$6,690/t in early trading on 20th November. This price decline partly reflected a trickling increase in LME stocks, up 48,800t between the same dates, but mostly from speculative investors closing out risks. With Chinese copper production roaring ahead and the country's imports on a downward trend, the prospects ought to be for continued weakness in the price, at least until a clearer picture emerges concerning prospects for the American economy – and the longer trend for Chinese imports and domestic production of refined metal. LME 3-month short-term: \$6,700/t - \$7,400/t.

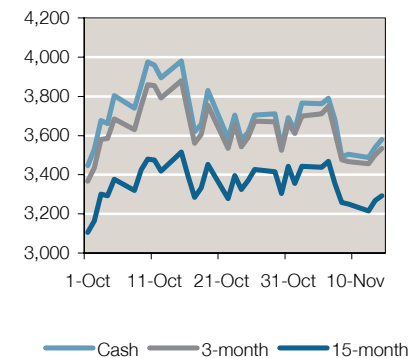
Market data (October unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	Stocks (tonnes)	Contracts			LME Open Interest (contracts)		
						LME	SHFE	SHFE traded (average)			
Average	7,661	7,675	7,355	6,890	Sep-07	130,675	66,793	Sep-07	80,600	Copper	238,417
High	7,535	7,526	7,230	6,825	Oct-07	167,000	47,791	Oct-07	78,770		
Low	7,412	7,415	7,160	6,775							

Source: London Metal Exchange

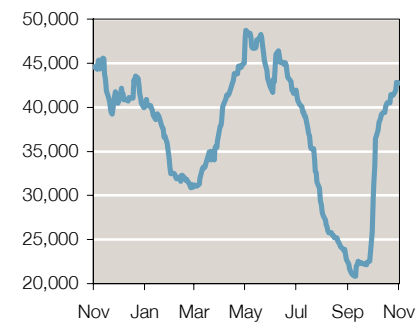
Lead

Lead price (\$/tonne)



Source: Reuters Ecowin

LME stocks (tonnes)



Source: Virtual Metals from LME

News

- Oct 29th: Korea Zinc, the world's largest zinc refiner, raised its lead output in Q3 by 24.8%, to 42,271t, against the same period last year.
- Oct 23rd: Global refined lead consumption was 5.515 Mt in the first eight months of 2007, against 5.282 Mt a year earlier, according to the International Lead and Zinc Study Group (ILZSG). Refined lead production rose to 5.431mt from 5.224 Mt in the same period.

Analysis

- Price loses speculative support

The ILZSG's latest figures estimate that there was a global deficit of 89,000t of refined lead in the first three quarters of 2007, a shortage of 13,000t more than during the same period in 2006. Total refined lead production was up by 208,000t (at 6.097 Mt) over the first nine months of this year compared to the first three quarters of 2006, but consumption also rose strongly – to 6.186 Mt, 221,000t higher than January-September 2006. The ILZSG estimates there will be a shift towards a more balanced situation in 2008, as various production hiccups are resolved. This might be too optimistic, as the world's biggest refined lead producer, China, has dramatically slowed its exports this year after the imposition of a 10% export tax – in September its refined lead exports fell to 5,436t, down 81.4% from September 2006. Lead imports also fell, to 1,532t, a drop of 30.6% from August and 41.8% lower than September 2006.

Outlook

Lead's failure to get to \$4,000/t, plus the darkening gloom surrounding prospects for global economic growth, saw some speculative money cut and run in the first two weeks of November. The LME three-month price shed 7% in just the two trading days of 16th and 19th November, probably as a consequence of one large speculative investment – which held 90% of the LME's live lead warrants as of 15th November but had slimmed that down to below 90% on the 16th – deciding to unwind at least some of that position. Despite that, it's clear that the global refined lead deficit is still widening and is likely to amount to >100,000t by the end of 2007. The global stocks/consumption ratio is currently about 2.5 weeks against three weeks this time last year. The slump in the lead price in mid-November therefore to some extent reflects, we would argue, the degree to which investment interest drove the price artificially higher earlier this year.

Against this steep correction must be set the distinct possibility that 2008 could see continued high prices, given that Chinese lead smelters are already talking about interrupting their output of refined lead next year, rather than pay very high international prices for imported lead concentrates. China imports about 40% of its lead concentrates, the price of which has risen in line with those of refined lead. This could see Chinese refined lead exports fall even further below previous trends and thus provide further encouragement to investors. LME three-month short term: \$2,800/t-\$3,200/t.

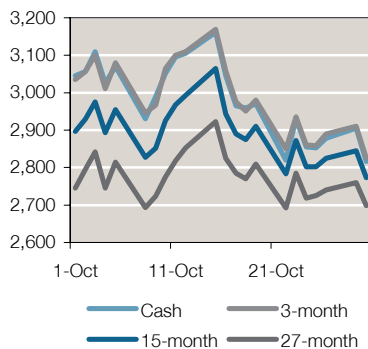
Market data (October unless stated)

Prices (\$/t)	Cash	3-month	15-month	LME stocks	Lead	LME Open Interest (contracts)
Average	3,626	3,611	3,355	Sep-07	33,675	Lead 68,616
High	3,765	3,700	3,443	Oct-07	42,475	
Low	3,762	3,711	3,438			

Source: London Metal Exchange

Zinc

Zinc price (\$/tonne)



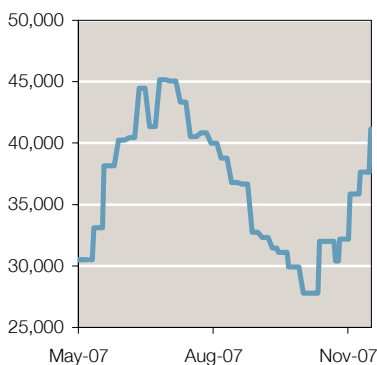
Source: London Metal Exchange

LME stocks (tonnes)



Source: Reuters Ecowin

SHFE stocks (tonnes)



Source: Reuters Ecowin

News

- Nov 20th: Zinc futures price fell by 6% on the Shanghai futures exchange, their maximum permitted daily limit, for the second day running, as investors took fright at signs of a growing domestic over-supply. The International Lead and Zinc Study Group reported its latest estimate of the global balance for refined zinc during January-August this year, putting the market in a 46,000t deficit, against a 373,000t deficit for the same period of 2006.
- Oct 29th: Korea Zinc, the world's largest zinc refiner, raised its lead output in Q3 by 24.8%, to 42,271t, against the same period last year.
- Oct 26th: China's refined zinc production rose by 16% in September compared to August; in the first nine months of this year its total refined zinc output rose 19% to 2.7 Mt, against the same period last year.
- Oct 25th: The Australian miner Zinifex said its zinc production rose 13% in the quarter up to the end of September compared to the same period a year ago.

Analysis

- 2008 – refined metal surplus?

The ILZSG is currently expecting a swing back into surplus for the global refined zinc market in 2008, to the tune of some 250,000t. On current supply-demand projections it is quite feasible that in 2009 that surplus should rise still further, to the region of 500,000t. Unsurprisingly, zinc prices have been coming under strong pressure and by 2nd November had fallen to \$2,655/t on the LME (three-month contract settlement price), from where they shed a further \$175/t in intra-day trading on 19th November. Continued conflicting trade signals from China make it difficult to detect a genuine trend line – China switched back to being a net importer of zinc in September, the first time since May. Its exports of refined zinc in September fell to 12,325t, down 44% from August and a decline of 18.5% from the same month in 2006. Imports more than doubled compared with August, to 13,029t, but were down 2.1% from August 2006.

Outlook

Zinc prices tumbled in mid-November and the question for zinc right now is to what extent the prospect of a growing global surplus for the next two years has already been priced in. It's likely that zinc will sink further before finding a solid floor. The real difficulty (as the Focus section outlines) is in knowing what China's export level of refined metal might be in 2008. Right now zinc prices are looking very fragile, but that is largely a reflection of an overall darkening picture for macro-economic growth. By this time next year the current prospect for a return to surplus in refined zinc could have changed entirely – and the impossibility of predicting that right now could see some heightened price volatility in the months ahead. LME 3-month short-term: \$2,000/t-\$2,400/t.

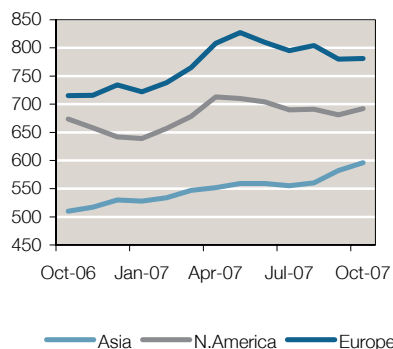
Market data (October unless stated)

Prices (\$/t)	Cash	3-month	15-month	27-month	LME stocks	Zinc	LME Open Interest (contracts)
Average	2,732	2,746	2,718	2,665	Sep-07	60,850	Zinc 161,442
High	2,785	2,747	2,708	2,638	Oct-07	77,075	
Low	2,731	2,734	2,690	2,630			

Source: London Metal Exchange

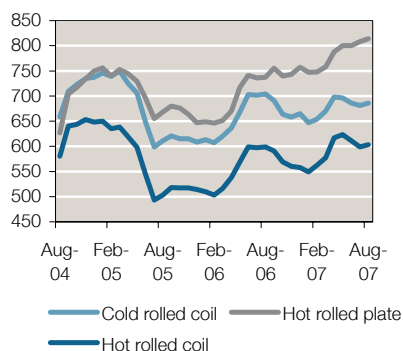
Steel

Composite steel price (\$/tonne)



Source: London Metal Exchange

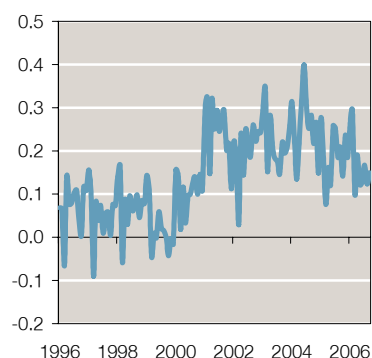
Steel products, world prices (\$/tonne)



Source: MEPS, Reuters Ecowin

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

World steel production, yoy growth (%)



Source: Reuters Ecowin

News

- Nov 20th: China's Baosteel said it would increase its steel product prices by as much as 8% in Q1 2008.
- Nov 19th: ArcelorMittal indicated confidence in the market for the year ahead by saying it would push through another \$40/t price increase (following a \$20/t rise in Q4 2007) in Q1/Q2 2008 for its flat steel products in North America and the EU. The company cited continued strong demand, low consumer stocks and higher energy costs as underlying its move.
- Nov 6th: Saudi Basic Industries Corporation (Sabic), the world's biggest chemical company, said it plans to increase its steel production at its Hadeed steel subsidiary by 22.6% to 6.5 Mt/year by 2010.
- Oct 29th: The Dubai Gold and Commodities Exchange (DGCX) launched its rebar futures contract; each contract is for 10t of grade W460 rebar of 12 metres.
- Oct 29th: The European Confederation of Iron and Steel Industries (Eurofer) filed two complaints against Asian steel exporters with the European Commission, asking the EC to impose duties against imports of cold-rolled flat products from China, South Korea and Taiwan, and of hot dipped metallic coated products from China.

Analysis

- Iron ore prices could curb China's steel growth

China's inexorable expansion of its steel industry may begin to run out of steam, not because of falling demand, but because higher iron prices next year could put some of the country's smaller, older and less efficient mills out of business. Its steel production capacity has more than doubled, to 530 Mt/year, since 2003, but its steel sector is very fragmented, making negotiations with the world's biggest iron ore producers, a handful of which control some 75% of iron ore supply, difficult. Iron ore prices are likely to rise by some 25% in the new contract year, which starts in April 2008, having already risen 180% in the past decade. Any successful merger between BHP Billiton and Rio Tinto would be likely to exacerbate this, as the merged company would command 27% of the world market for iron ore. Japan's Iron and Steel Federation said on 19th November that it was considering asking the country's anti-trust agency to lobby against the possible Billiton/Rio tie-up as it would, in the words of Hajime Bada, president of JFE Steel Corporation, "create a huge Gulliver and would impede a healthy market price mechanism." Additional pressure on demand for iron ore will also grow from Brazil, whose crude steel output during January-September this year rose 10% year-on-year to 25 Mt.

Outlook

Steel demand has been growing strongly according to the International Iron and Steel Institute (IISI), by 6.8% in 2007, year-on-year, to 1.2bn tonnes. The IISI believes this rate of growth will sustain through 2008, maintained by continued rapid infrastructure development in the so-called BRIC group (Brazil, Russia, India, China). However, a US economic slowdown could spill over into other markets, including steel demand.

Market data (October unless stated)

Prices (\$/t)	Asia Composite	N. America Composite	Europe Composite	World Composite
Aug-07	560	691	804	685.00
Sep-07	582	681	780	681.00
Oct-07	596	692	781	690.00

Source: MEPS: VM Group

Prices

Gold (\$/oz)



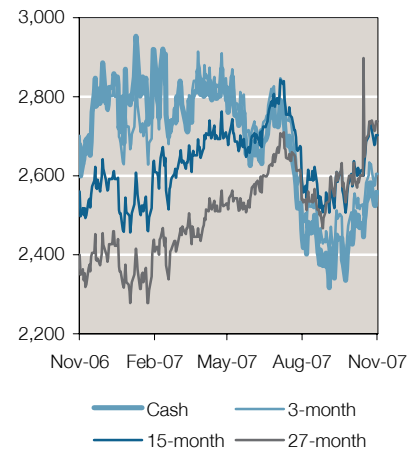
Source: London Bullion Market Association

Silver (cents/oz)



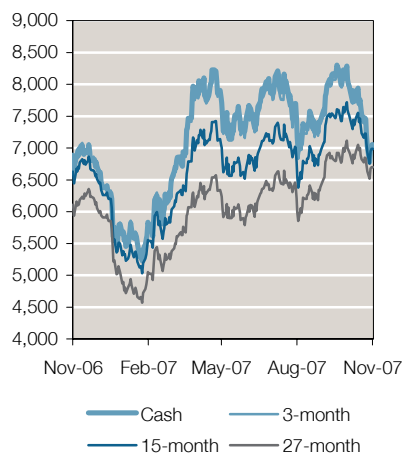
Source: London Bullion Market Association

Aluminium (\$/tonne)



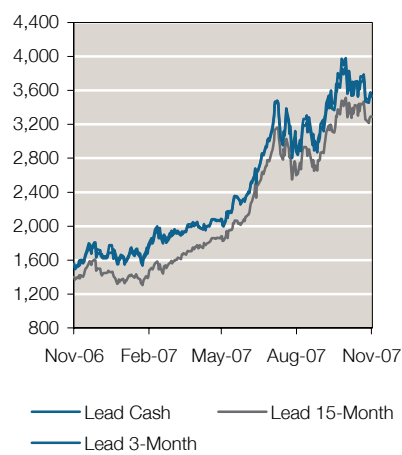
Source: London Metal Exchange

Copper (\$/tonne)



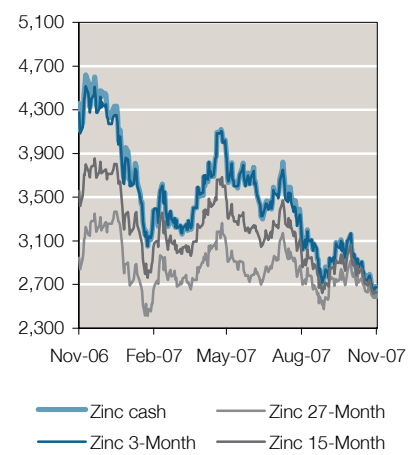
Source: London Metal Exchange

Lead (\$/tonne)



Source: London Metal Exchange

Zinc (\$/tonne)



Source: London Metal Exchange

Quantitative research

Quantitative Modelling team

Peter Cauwels

Tel: +32 265 47 90

Email: peter.cauwels@fortis.com

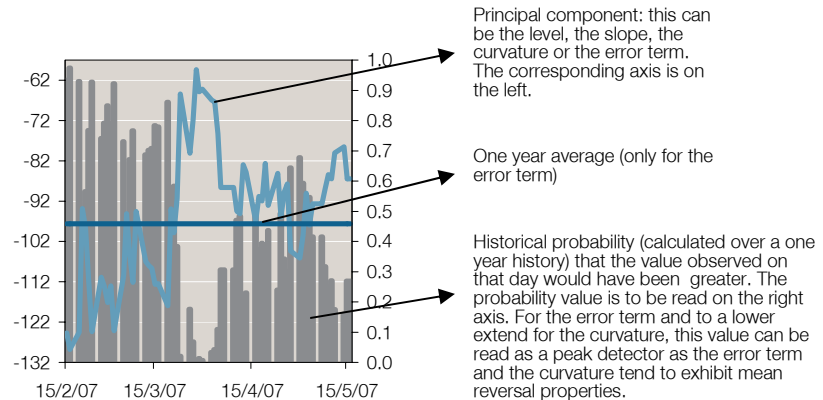
PCA background

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

Provided charts

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

Demonstration of PCA graph



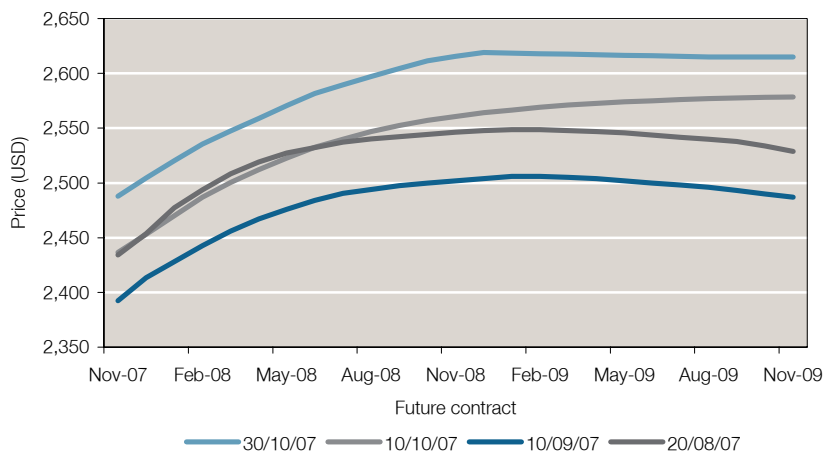
Source: Fortis Modelling

Aluminium Future curve analysis

Fundamental outlook

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

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

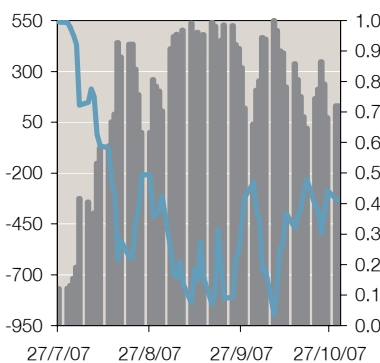


Source: Fortis Modelling, Bloomberg

Principal component analysis

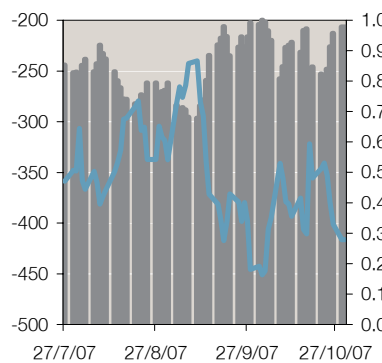
The month of October did not bring any significant change in aluminium's slope component. The future curve's contango remains unchanged. This is caused by an expected decrease in demand or increase in supply for the short to mid-term period (until end of 2008).

Level (t)



Source: Fortis Modelling

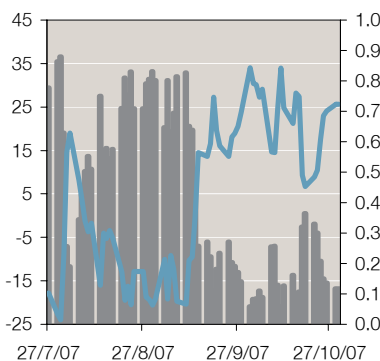
Slope (t)



Source: Fortis Modelling

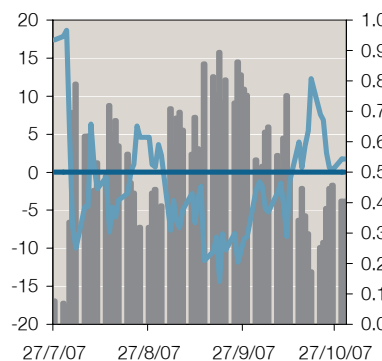
The strong negative bending, which can be seen in the August futures curves, decreased significantly by the end of September, and stabilizing during the month of October.

Curvature (t)



Source: Fortis Modelling

Error (t)



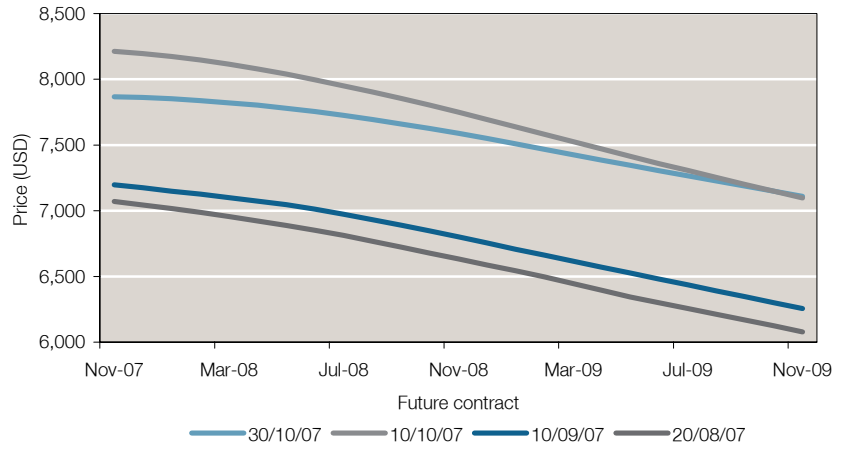
Source: Fortis Modelling

Copper Future curve analysis

Fundamental outlook

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

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

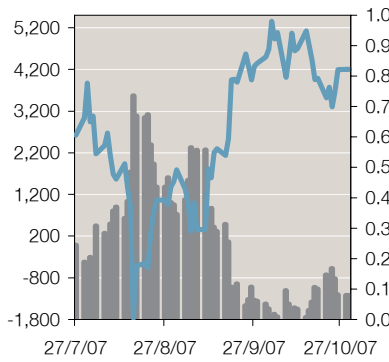


Source: Fortis Modelling, Bloomberg

Principal component analysis

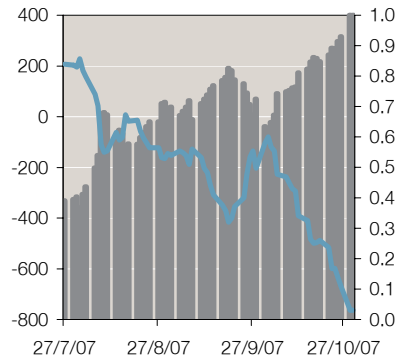
The copper future curve made a strong counter-clockwise rotation. This is shown in the decrease of the slope component, which is at a record low. This decrease in backwardation was initiated in April 2007 when prices were at a record high. This decrease of convenience yield implies an increased short-term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

Level (t)



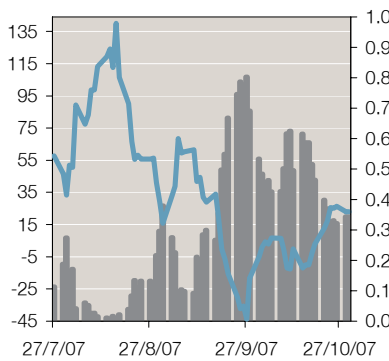
Source: Fortis Modelling

Slope (t)



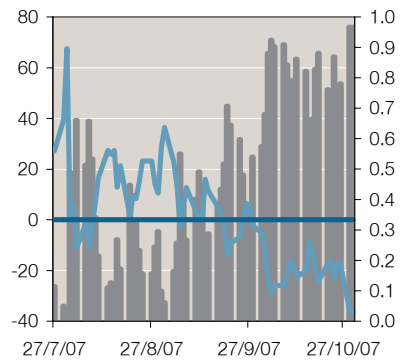
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

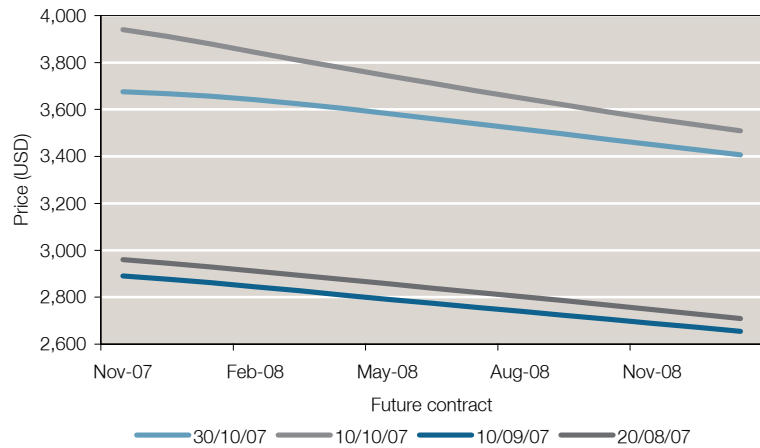
Lead Future curve analysis

Fundamental outlook

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

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

Future contract

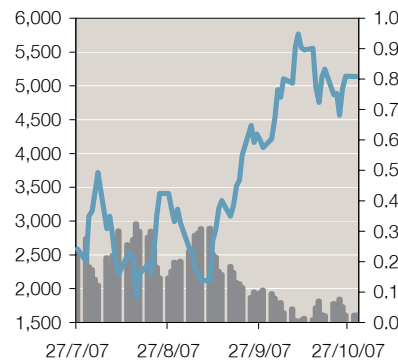


Source: Fortis Modelling, Bloomberg

Principal component analysis

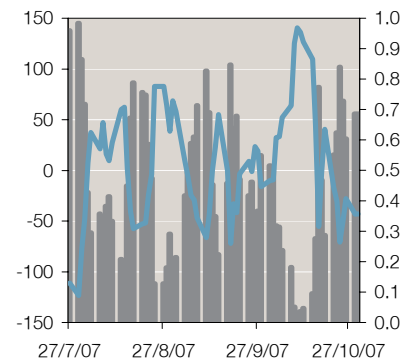
All the variance (99.9%) of the lead curve is explained by the level component. The lead future curve resembles a straight line (like a backwarded gold or silver curve). But straight lines may also offer interesting opportunities. The slope component can be regarded as an error signal. It can be quantified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

Level (t)



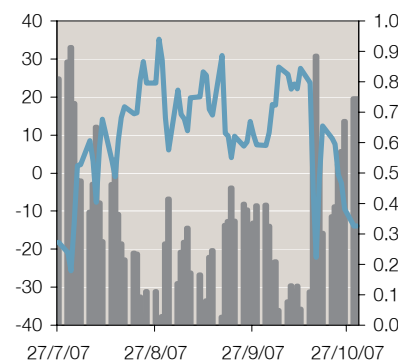
Source: Fortis Modelling

Slope (t)



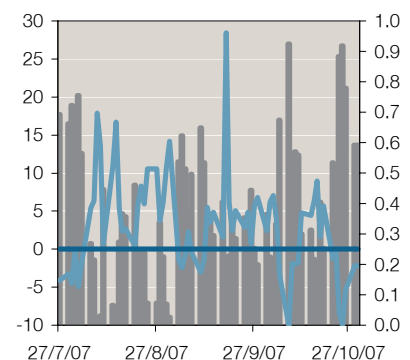
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

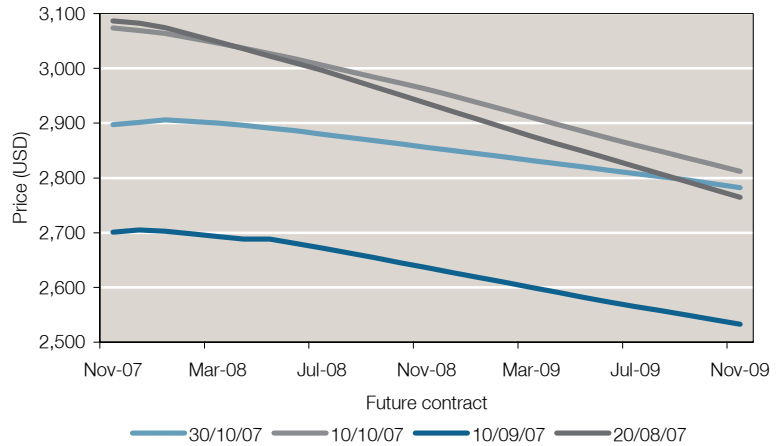
Zinc Forward curve analysis

Fundamental outlook

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

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

Future contract

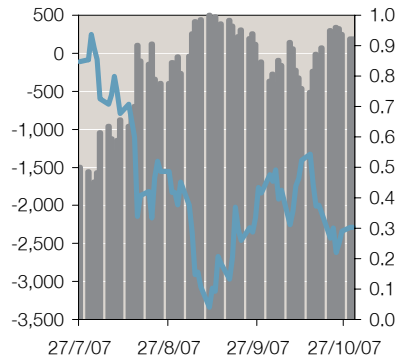


Source: Fortis Modelling, Bloomberg

Principal component analysis

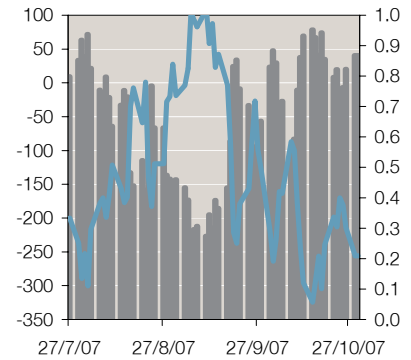
The zinc curve has been flattening for some time. Unlike nickel and copper, zinc's flattening is not a strong momentum driven process. The slope component gyrates wildly, suggesting it is not driven by any obvious change in supply-demand (convenience yield) expectations. The high volatility in zinc's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

Level (t)



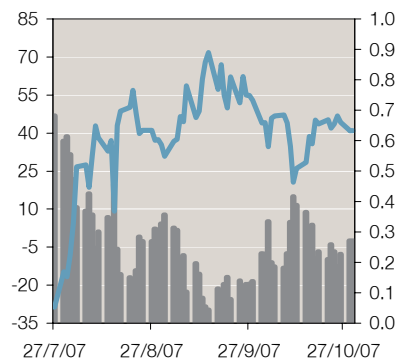
Source: Fortis Modelling

Slope (t)



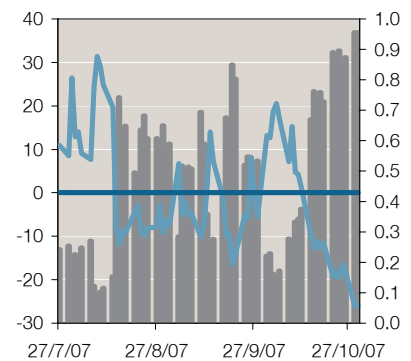
Source: Fortis Modelling

Curvature (t)



Source: Fortis Modelling

Error (t)



Source: Fortis Modelling

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About VM Group

VM Group

85 Albany Street
London NW1 4BT

Tel: +44 20 7487 3600

Fax: +44 (0)870 051 2261

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Global Markets Sales Contacts

Johan Beckers +32 2 565 98 93
(Global Head Sales & Marketing Group)

Investment Products Sales

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

Institutionals

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

Retail and Private Banking

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

Equities Sales

Institutionals

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

Fixed Income/New Issues

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

Structured Products

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

Interest Rate Derivatives

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

Forex Derivatives

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

Equity Derivatives

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

Credit Derivatives Structuring

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

Structured Product Services

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

Sales Treasury Products

Serge van Loenhout (European Head Sales Treasury) +32 2 565 60 81

Corporate

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

Financial Institutions

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

Mid-Caps

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

Sales Treasury Products - United States

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

Automated Trade and Service Desk

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

Energy & Environmental Markets

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

Global Markets Research Contacts

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

Economic Research

Guy Verberne (Head) +31 20 535 73 25

The Netherlands

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

Spain

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

Strategy

Françoise Bernard (Head) +32 2 565 83 02
Frédéric Atlan (Fixed Income) +33 1 55 67 72 81/+32 2 565 86 06
Arnaud Bornet (Forex & Money Markets Quant) +32 2 565 63 27
Lucian Briciu (Forex & Money Markets) +32 2 565 68 99
Frank Claus (Fixed Income) +32 2 312 16 81
Alexandre Dieudonné (Forex & Money Markets) +32 2 565 69 67
Philippe Gijssels (Equities) +32 2 565 16 37
Sébastien Gillis (Fixed Income) +32 2 228 69 47
Helios Padilla Mayer, Ph.D. (Commodities) +32 2 312 13 85
Bart Robenek (Forex & Money Markets) +32 2 312 08 31
Joseph Tan, CFA (Asian Markets) +65 62 16 38 84

Technical Analysis

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

Modelling

Peter Cauwels, Ph.D. (Head) +32 2 565 47 90
Philippe Brimmel +32 2 565 40 29
Stéphane Couteaux +32 2 312 10 30
Alain Cram +32 2 565 60 52
Dries Stragier +32 2 565 60 86
Herman van der Sluis +31 20 535 72 98
Amjed Younis +32 2 565 31 00

Credit Research

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

Credit Bonds

Benoit Felho (Banks/Insurance) +33 1 55 67 72 95
Christine Passieux (Banks) +33 1 55 67 72 87
Karine Petitjean (Consumer Non-Cyclical) +33 1 55 67 72 88
Bertrand Rocher (Automotive) +33 1 55 67 72 84
Olga Zubkova (Building & Basics/Utilities & Energy) +33 1 55 67 72 80

Structured Finance

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

Equity Research

Marc Pauwels (Head) +31 20 527 13 55

Benelux

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

France

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

Spain

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

US

David Garrett (Biotech) +1 212 340 54 94
Patrick Moriarty, Ph.D. (Biotech) +1 212 340 54 97
Biju Perincheril (Energy) +1 212 340 54 76

Retail Banking and Private Banking Research

Koen Van de Steene (Head/Healthcare) +32 2 565 86 14
Laurent Bailly (Technology/Consumer Cyclical) +32 2 565 44 05
Christel Bosch (Energy/Industrials/Utilities) +32 2 565 82 34
Rudy De Groot (Financials) +32 2 312 03 43
Bart Ingels (Basic Materials/Consumer Non-Cyclicals) +32 2 565 44 07
Geert Ruysschaert (Co-ordinator Top-Down/Telecom/Media) +32 2 565 19 58
Alain Servais (Editor) +32 2 228 92 30
Kristof Wauters (Fixed Income/Forex) +32 2 565 51 35

Economic, Fixed Income, Forex & Money Markets Research
www.merchantbanking.fortis.com/forpro
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Fortis Bank S.A./N.V.

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

Fortis Bank Nederland N.V.

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

Fortis Banque Luxembourg

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

Fortis Bank, Succursale en France

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

Fortis Bank Germany

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

Fortis Bank Hong Kong

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

Fortis Bank Italy

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

Fortis Bank Norway

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

Fortis Bank Polska S.A.

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

Fortis Bank Portugal

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

Fortis Bank Singapore

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

Fortis Bank S.A., Sucursal en España

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

Fortis Bank Turkey

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

Fortis Bank UK

5 Aldermanbury Square,
London EC2V 7HR
United Kingdom
Tel: +44 203 296 80 09

Fortis Bank USA

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

Fortis Securities LLC

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

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