

ABN AMRO Metals Monthly

Investment Research by VM Group December 2010

- Precious metals
- Base metals
- Steel

Price forecasts

		13 Dec	1-month	2-month	3-month	12-month
Gold	\$/oz	1,375	1,400-1,450	1,450	1,485	1,375
Silver	\$/oz	28.79	29.00-32.00	31.00	31.00	27.00
Platinum	\$/oz	1,673	1,700-1,800	1,750	1,750	1,700
Palladium	\$/oz	737	700-800	800	815	750
Aluminium (3-month)	\$/tonne	2,325	2,250-2,450	2,425	2,350	2,300
Copper (3-month)	\$/tonne	9,069	8,900-9,300	9,100	9,100	8,500
Lead (3-month)	\$/tonne	2,415	2,200-2,400	2,300	2,340	2,500
Nickel (3-month)	\$/tonne	23,755	22,000-26,000	23,500	22,750	24,570
Tin (3-month)	\$/tonne	26,300	25,000-27,500	27,500	28,500	29,500
Zinc (3-month)	\$/tonne	2,288	2,250-2,450	2,450	2,450	2,600
Steel: (3-month) Med	\$/tonne	525	525-560	550	560	610
		2010 av	2011 av	2012 av	2013 av	2014 av
Gold	\$/oz	1,225	1,459	1,165	921	900
Silver	\$/oz	20.13	29.63	23.00	17.18	17.00
Platinum	\$/oz	1,609	1,709	1,883	2,058	1,950
Palladium	\$/oz	525	778	750	746	600
Aluminium (3-month)	\$/tonne	2,176	2,281	2,496	2,667	2,900
Copper (3-month)	\$/tonne	7,537	8,833	8,879	8,896	7,950
Lead (3-month)	\$/tonne	2,190	2,316	2,142	2,171	2,200
Nickel (3-month)	\$/tonne	21,844	23,625	26,875	30,667	31,525
Tin (3-month)	\$/tonne	20,401	26,523	20,542	18,167	19,326
Zinc (3-month)	\$/tonne	2,187	2,348	3,408	3,671	3,200
Steel: (3-month) Med	\$/tonne	480	575	700	800	900

Source: VM Group

italics denote revision from previous month

The Metals Monthly is produced as part of a joint venture between ABN AMRO Bank N.V. and VM Group

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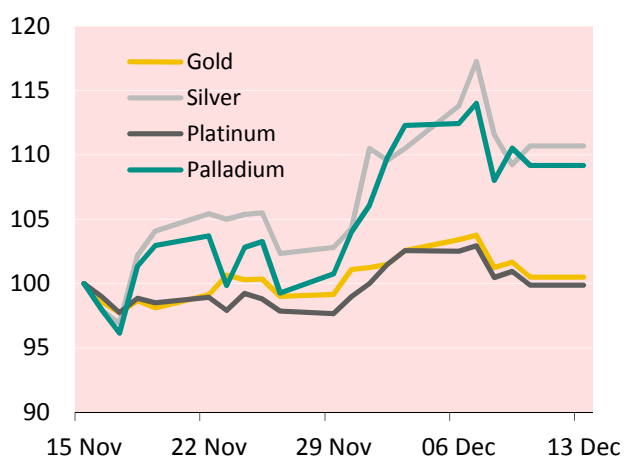
Prices and stocks

Historical prices & base metal stocks

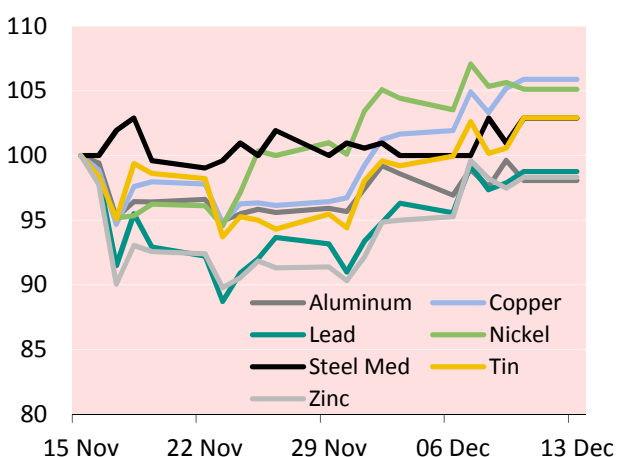
Prices		13 Dec 2010	Past 12 months				1 week ago	WoW (%)	1 month ago	MoM (%)	12 months ago	YoY (%)	Av. 2009	Av. 2008
			Average	High	Low									
Gold	\$/oz	1,375	1,210	1,421	1,058	1,420	(3.2%)	1,391	(1.1%)	1,124	22.4%	1,420	1,206	
Silver	\$/oz	28.79	19.55	30.50	15.14	30.5	(5.6%)	27.5	4.6%	17.2	67.5%	30.50	19.38	
Platinum	\$/oz	1,673	1,595	1,786	1,399	1,724	(3.0%)	1,768	(5.4%)	1,436	16.5%	1,724	1,591	
Palladium	\$/oz	737	507	770	356	770	(4.2%)	714	3.2%	365	102.2%	770	501	
Aluminium	\$/tonne	2,325	2,193	2,482	1,858	2,346	(0.9%)	2,459	(5.4%)	2,284	1.8%	2,346	2,191	
Copper	\$/tonne	9,069	7,446	9,069	6,125	8,986	0.9%	8,720	4.0%	6,925	31.0%	8,986	7,414	
Lead	\$/tonne	2,415	2,168	2,620	1,581	2,427	(0.5%)	2,600	(7.1%)	2,315	4.3%	2,427	2,167	
Nickel	\$/tonne	23,755	21,567	27,595	16,750	24,200	(1.8%)	24,500	(3.0%)	16,750	41.8%	24,200	21,453	
Tin	\$/tonne	26,300	19,915	27,350	15,000	26,225	0.3%	26,900	(2.2%)	15,225	72.7%	26,225	19,750	
Zinc	\$/tonne	2,288	2,196	2,660	1,618	2,318	(1.3%)	2,538	(9.9%)	2,319	(1.3%)	2,318	2,196	
Steel (Med)	\$/tonne	525	480	620	400	520	1.0%	520	1.0%	410	28.0%	520	478	

LME Stocks		13 Dec 2010	Past 12 months				1 week ago	WoW (%)	1 month ago	MoM (%)	12 months ago	YoY (%)	Av. 2009	Av. 2008
			Average	High	Low									
Aluminium	Tonnes	4,274,025	4,471,117	4,640,750	4,252,125	4,281,425	(0.2%)	4,255,175	0.4%	4,605,600	(7.2%)	4,318,100	4,517,104	
Copper	Tonnes	348,625	452,392	555,075	348,625	350,250	(0.5%)	362,950	(3.9%)	470,800	(26.0%)	371,500	459,718	
Lead	Tonnes	204,375	181,525	205,450	140,925	203,450	0.5%	202,975	0.7%	140,925	45.0%	197,875	170,231	
Nickel	Tonnes	131,184	138,419	166,476	115,668	131,592	(0.3%)	130,116	0.8%	145,926	(10.1%)	124,176	138,937	
Tin	Tonnes	15,345	19,506	27,905	12,150	15,665	(2.0%)	13,595	12.9%	26,230	(41.5%)	12,465	21,598	
Zinc	Tonnes	630,725	578,056	634,800	456,475	632,175	(0.2%)	631,750	(0.2%)	457,125	38.0%	609,275	547,321	

London PM fix precious metal prices, over past month: re-based to 100



LME 3-month base metal and steel prices, over past month: re-based to 100



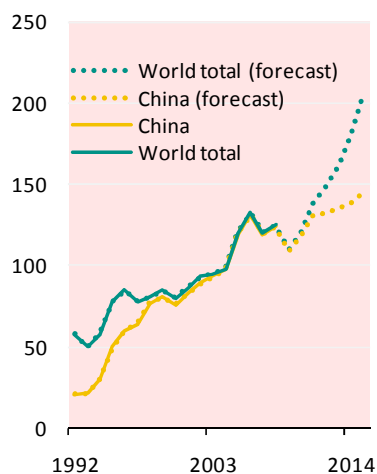
Source: VM Group

Feature: rare earth supply – a cause for concern?

Rare earth element (REE) supply has come into focus over the past few months on concerns that China's ability, or willingness, to meet international demand ahead will fall short, forcing prices to rise much higher. Since China accounts for about 95% of global REE supply these fears appear well placed; the recent debacle with Japan, where China apparently halted REE shipments over a territory dispute and claims that it may lower REE export quotas for the sixth year running in 2011, has merely heightened tensions.

The 17 elements classified as REE are crucial in a number of speciality uses such as disk drives, high-powered permanent magnets, catalytic converters and batteries, among many other niche uses. Demand has therefore grown rapidly as the digital age has increasingly become miniaturised, and environmental concerns have given way to innovative technological solutions that require the physical properties only found in certain REEs. Although dubbed 'rare', many REEs are more abundant than the likes of silver or even copper in some cases, but economically mineable concentrations are scarce. REEs are sub-divided into scandium, yttrium and the lanthanides (the latter being split between the light lanthanides, which include cerium and neodymium, and heavy lanthanides, including dysprosium and terbium). Total Chinese REE reserves are especially abundant in the rare heavy lanthanides (ion absorption deposits in southern China), which contain an estimated 80% of the world's heavy REE resources. China also has extremely large quantities of light lanthanides.

Chinese/ world production of REE, 1992-2015 (2009-2015 forecast), 000 tonnes



Source: WMSD, VM Group

China rare earth export quota history, 2006-2011

Year	Quota, t	Change %
2005	65,609	0.0%
2006	61,821	(5.8%)
2007	59,643	(3.5%)
2008	56,939	(4.5%)
2009	50,145	(11.9%)
2010	30,259	(39.7%)
2011	<30,259	(?)

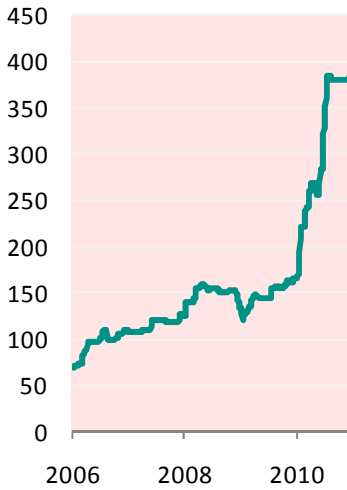
Source: IMCOA

Most recent price (Dec 2010) in yuan/\$ and principal use of the 17 rare earth elements

Classification	Type	Metal oxides	Price, yuan (spec)	Price \$	Principal uses
Transition		Scandium	11,500/kg (>99.5%)	1,730/kg	Aluminium alloy: aerospace
Transition		Yttrium	48,500/t (>99.999%)	7,290/t	Phosphors, ceramics, lasers
Lanthanides	Light	Lanthanum	29,000/t (>99%)	4,360/t	Re-chargeable batteries
Lanthanides	Light	Cerium	31,500/t (>99%)	4,730/t	Batteries, catalysts, glass polishing
Lanthanides	Light	Praseodymium	226,000/t (>99%)	33,950/t	Magnets, glass colourant
Lanthanides	Light	Neodymium	246,000/t (>99%)	36,960/t	Magnets, lasers, glass
Lanthanides	Light	Promethium*	-	-	Nuclear batteries
Lanthanides	Light	Samarium	20,000/t (>99.9%)	3,000/t	Magnets, lasers, lighting
Lanthanides	Heavy	Europium	2,995/kg (>99%)	450/kg	TV colour phosphors: red
Lanthanides	Heavy	Gadolinium	69,000/t (>99%)	10,370/t	Superconductors, magnets
Lanthanides	Heavy	Terbium	2,750/kg (>99.9%)	415/kg	Phosphors: green, fluorescent lamps
Lanthanides	Heavy	Dysprosium	1,388/kg (>99%)	210/kg	Magnets, lasers
Lanthanides	Heavy	Holmium	255/kg (>99.5%)	40/kg	Lasers
Lanthanides	Heavy	Erbium	335/kg (>99%)	50/kg	Lasers, vanadium steel
Lanthanides	Heavy	Thulium	5,600/kg (99.99%)	840/kg	X-ray source, ceramics
Lanthanides	Heavy	Ytterbium	165/kg (>99.99%)	25/kg	Infrared lasers, high refractive glass
Lanthanides	Heavy	Lutetium	1,700/kg (>99.9%)	255/kg	Catalyst, PET scanners

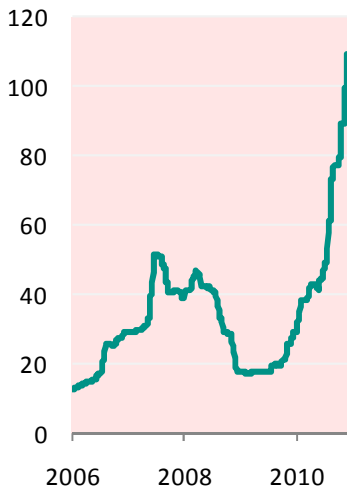
Source: VM Group from various sources, *Promethium is unstable and occurs in nature in minute concentrations. No market price is available

Dysprosium metal (99% min) FOB China, \$/kg



Source: Asian Metal

Neodymium metal (99% min) FOB China, \$/kg



Source: Asian Metal

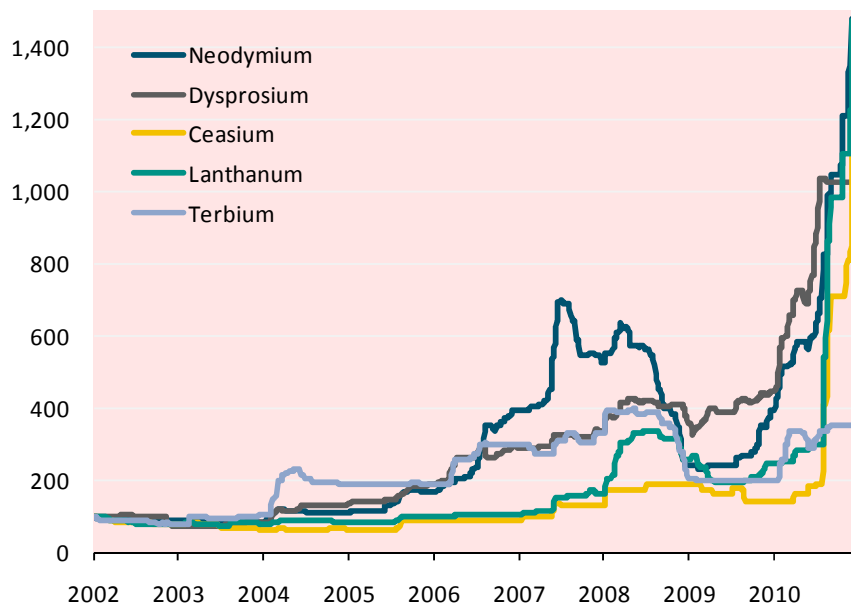
World REE reserves, 000t

China	36,000
CIS	19,000
US	13,000
Australia	5,400
India	3,100
Brazil	48
Malaysia	30
RoW	22,000

Source: BGS

From 1950 to the 1980s the US, India, South Africa and Brazil were the world's largest REE producers, but as China entered the fray in the 1980s it undersold competitors and tipped the market into surplus. Global prices thus fell and many mines in the US and elsewhere were idled, as consumers came to rely on cheap Chinese supply. However in the past few years REE prices have started to rise, in line with new technology. In the period 2006 to mid-2008, prices for many REEs hit new all-time highs, with the likes of neodymium up more than three-fold in 2006-2007. The onset of the global financial crisis saw prices collapse on reduced demand, but in the past 18 months they have gone stellar, rising by as much as seven-fold, in the case of lanthanum and neodymium, by December 2010.

Selected Chinese rare earth metal prices (99% min, FOB China), \$/kg



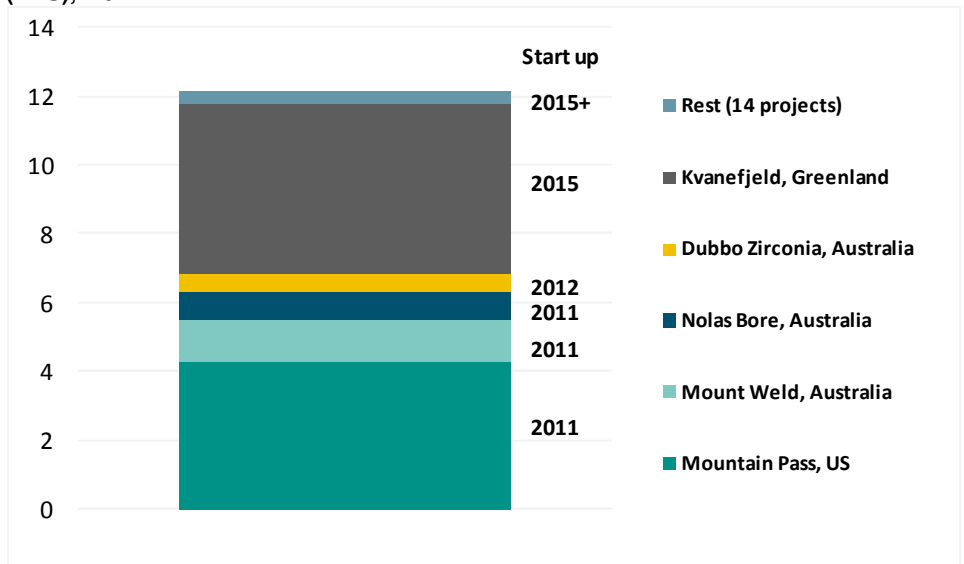
Source: Asian Metal

Since REE market prices are not terminally traded, they are difficult for speculative investors to get involved with. The rising trend in prices seen over the past five/six years is wholly attributable to fundamentals. With such a dominant position in global REE supply and aspirations to become a major player in the increasingly miniaturised and environmentally conscious world, Chinese REE demand in particular has soared. At the same time, and perhaps politically driven, the environmental impact of its REE mines has come under much closer scrutiny. As a consequence, Beijing has not only reduced the REE export quota volumes by an average annual rate of 13% over the past six years but also imposed mandatory REE production caps and, more important, has become more aggressive in its approach in dealing with illegal REE mines.

In 2010 China's REE production was officially capped at 89,200t, up 8.4% year-on-year. In prior years total Chinese REE production was 20,000t-30,000t higher than the official production cap, due in part to supply from illegal mines. It is this *additional* REE supply that is threatened, some of which happens to yield the more valuable and therefore sought after heavy rare earth elements.

The international supply response has in theory been good, but in practice is several years away from plugging the gap left by lowered Chinese REE exports. Molycorp Minerals' Mountain Pass mine in California, once the largest single REE producer in the world, is projected to reopen in 2011, having closed in 2002. Other significant sites under development include the Australian Lynas Corp's Mount Weld project, Alkane Resources' Dubbo Zirconia project and Arafura Resources' Nolans Bore project. These were originally planned to start producing in 2011, late 2011 and 2012, respectively, but we expect delays. In Canada, Great Western Minerals' Hoidas Lake project and Avalon Rare Metals' Thor Lake project are at feasibility stage, while various projects in Vietnam and the US are also being explored for potential development. Another potential medium to long term REE supply source is from scrap electronics, where advances in recycling technology in Japan might eventually see a total of about 300,000t of REE recouped – but that is years away.

Global rare earth projects start up schedule and estimated rare earth oxide reserves (LHS), Mt



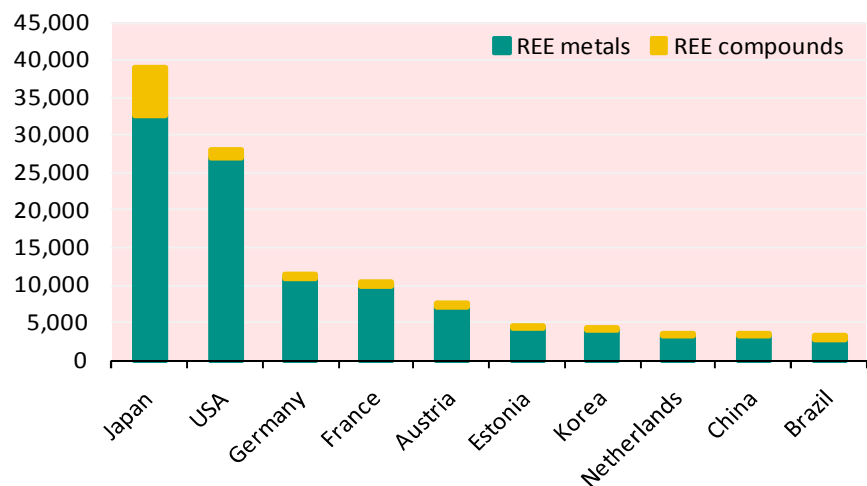
Source: VM Group from various sources

Many REE consumers in Japan and elsewhere have, or are planning to, set up offtake deals with miners and governments to secure future supply, with Sumitomo in talks with Molycorp, and Toyota planning to build an REE processing facility in India. Also, with governments now directly lending weight to

securing future REE supply – in part as a result of their importance in sensitive military technology – we expect the supply response to be vigorous, yet insufficient to keep up with short to medium term demand, if Chinese production and exports remain tight.

In early October 2010 the US House of Representatives passed the Rare Earths and Critical Materials Revitalisation Act of 2010, aimed at supporting the discovery and development of REE domestically. The aim of the bill was to re-establish the US as a leading producer of REEs and to make it self-sufficient. This was summed up by the author of the Bill, Kathy Dahlkemper: “We need to act now to begin the process of creating our own supply of rare earth materials so the US is never dependent on China for crucial components for our national security.” One obvious concern for the US government as a result of possible REE supply disruption is the risk to its defence programme.

Major importers of rare earth compounds and metals in 2008, tonnes



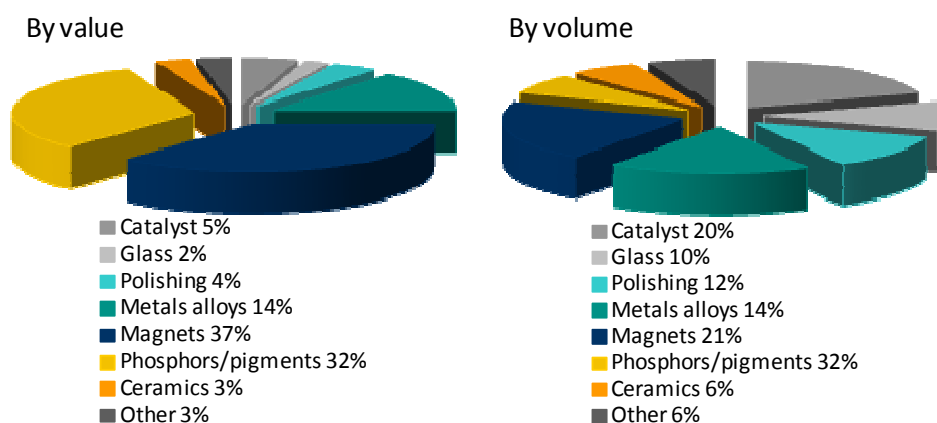
Source: UN

Another concern is the possibility of losing market share in the environmental technology industry to China and other potential competitors. The US is also hotly pursuing its ambition of achieving energy independence and crucial to this is promoting alternative sources of power generation – where the likes of neodymium, for example, is critical in the manufacture of permanent magnets used in wind turbines. Given that many REE applications are highly specific, and substitutes are either inferior or unavailable, the stance adopted by the US government is understandable. So too is that of Japan, which is the world’s largest REE importer and stands to lose more from Chinese supply bottlenecks than perhaps any other nation. This has forced the Japanese government and

private enterprises to seek alternate REE supply sources.

The problem with the international supply response is that bringing on new REE mines will not necessarily prevent market deficits in certain REEs¹. For example, mines in southern China have an abundance of the heavier REEs, yet many of the projects being developed or restarted outside of China are overweight in light REEs, meaning that as a whole, total REE production may increase in the medium-term, but the absolute supply of heavy REEs will lag that of the lighter REEs. It is this that is worrying some governments and consumers, and why international REE exploration results are now being scrutinised for heavy REE content in every drill result.

Consumption of rare earth oxides in 2008 by end use



Source: Industrial Mineral Company of Australia

The real issue in restarting or bringing on new supply is one of economics. Many of the mines on schedule to start production in the next few years may produce large volumes of REE, but the portion of the more sought after REEs will be overshadowed by the portion of light REEs that may not find a buyer, or at the very least are less valuable. It is only a matter of time before deposits with greater abundance of heavy REEs are discovered, but in the interim we expect to see even higher prices for the more sought after REEs as market deficits (ex China) deepen.

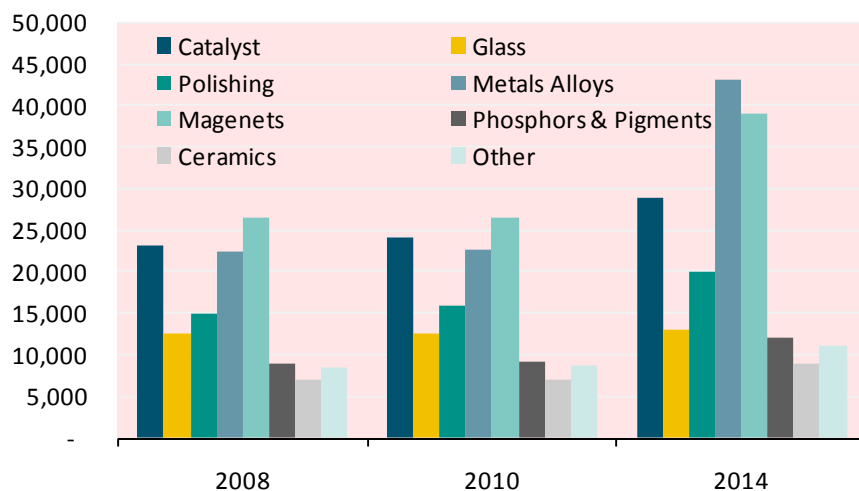
The simple truth is that the world has become ever more dependent on REEs for their respective properties in a range of applications. Catalysts make up about 20% of total REE demand, according to the Industrial Mineral Company of Australia, but only 5% of total market value. With inroads being made in tightening vehicle emissions, demand for cerium is rising, while fluid cracking

¹ For further on this, see the British Geological Survey, November 2010

catalysts used in oil refining has seen lanthanum consumption climb.

Another function of REEs is in phosphors and pigments, which make up 7% of REE consumption by volume but 32% by total value. There are various industrial uses in this sub-sector, not least of which is that of TV technology, where cerium is used to polish the glass substrate and the properties of europium, while yttrium and cerium are utilised for colour. REEs also confer special properties when alloyed with other metals, such as heat resistance when yttrium, cerium or lanthanum is added in certain compositions.

Consumption of rare earths in 2008, 2010 and 2014 (forecast) by end use, tonnes



Source: USGS, VM Group

Permanent magnets use neodymium and small quantities of dysprosium for temperature resistance, which are crucial in wind turbine technology as well as in hard drives for computers and DVD/blue-ray players, as well as in low/zero emission vehicles. The expected growth in hybrid and full electric vehicles outside of China is especially worrying, considering the looming medium-term deficit in certain REEs.

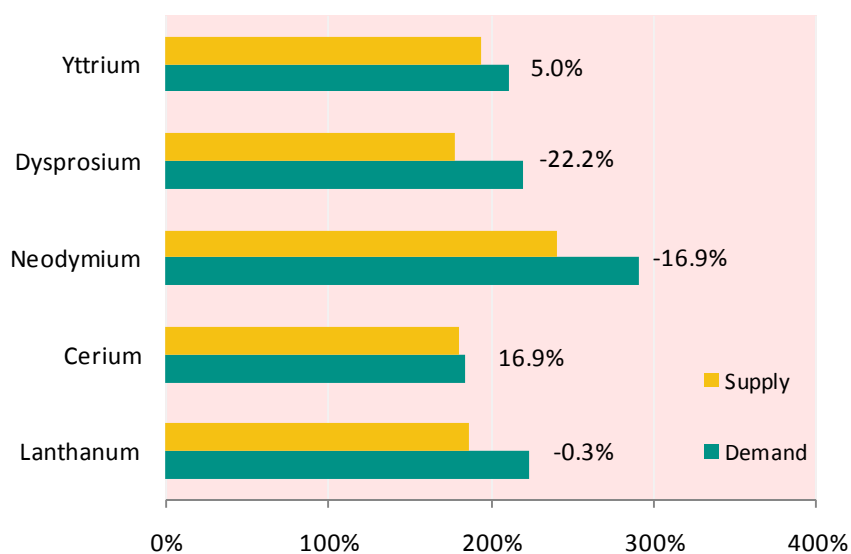
Supply crunch

Taken as a whole, REE supply is likely to grow as various mines outside of China restart or commence production for the first time. This is part of the international supply response to China's apparent shift from raw REE exporter to exporter of downstream REE containing products. Since China supplies about 95% of the world's REE supply, the international response is unlikely to make an impact for several years. In the interim China will be politically obliged to export raw REE, but it will not do so in such volumes as previous years. With the increasing trend towards production and demand for miniaturised electronic

gadgets, the drive towards cleaner vehicle emissions, as well as the ongoing implementation of alternative methods of power generation worldwide, REE demand will grow fast. Of the 17 REEs, we highlight neodymium and dysprosium deficits as being particularly acute in the short to medium term, and the deficit in the latter will continue for several years owing to its rarity. Terbium and lanthanum could also face market deficits due to rising use.

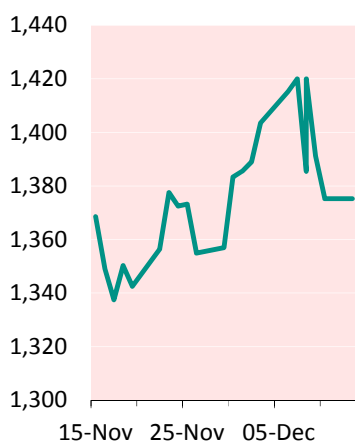
Prices for certain REEs such as neodymium and terbium will likely continue to increase on heightened demand; once the supply response kicks in prices will fall, not least because China might decide to release larger volumes of REE to the international market, suppressing prices, and putting pressure on new start ups. It is in their interest to do so, to gain a bigger slice of the various markets where REE are crucial.

Estimated growth in supply and demand in the period 2009-2014 for selected REE (Our forecast market balance in 2014 is expressed as percentage of total supply, negative=deficit)



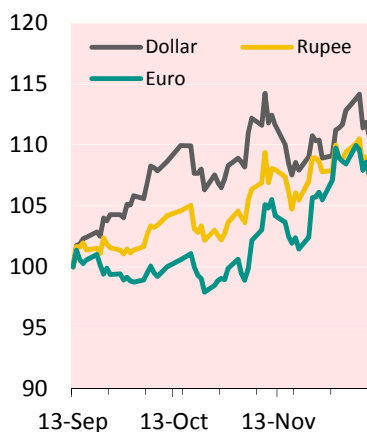
Source: VM Group

Gold, London PM fix, \$/oz



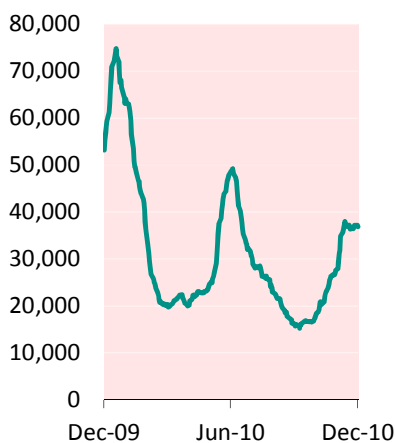
Source: LBMA, VM Group

Gold price in various currencies, three months ago = 100



Source: LBMA, VM Group

Shanghai Gold Exchange, lots/day (average past 22 days)

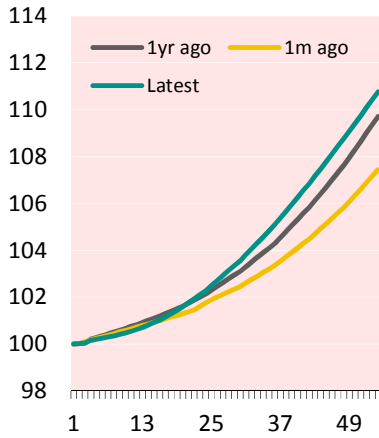


Source: VM Group, SHFE

Gold

- The gold price enjoyed yet another surge at the start of December, amid concerns over the rolling debt crisis in Europe and weak employment figures in the US. Herman van Rompuy, the president of the European Union, said the eurozone emergency bailout fund could be expanded “if needed” but the trillion-dollar facility was enough for now. His remarks did little to convince investors that Eurozone leaders will be able to prevent the debt crisis from spreading to Spain and Portugal.
- The rising gold price was given a further boost after the chairman of the US Federal Reserve, Ben Bernanke, painted a bleak outlook for the US employment situation during an interview with the TV programme 60 Minutes on 5 December. Bernanke said: “at the rate we’re going, it could be four, five years before we are back to a more normal unemployment rate.” Two days after the interview the gold price shot up to an all-time high of \$1,420/oz in London. The price has now appreciated 26% thus far in 2010. Since 18 March 2009, the day that the Fed announced it would engage in a money printing campaign, the gold price has soared 60%.
- The fact that it has not gone higher is simply a result of looming deflation, still the largest threat to the US economy. Consumer price inflation is registering multi-decade lows, while unemployment rates are sitting just under 10%.
- The strength of investment demand is reflected, albeit at a slowing pace, in the rise of ETF holdings. Since mid-November ETF inflows have risen by 1% to 64.9 Moz, just short of its record high of 65.1 Moz. The US ETFs led the advance, increasing by 7% over the same time period, while the SPDR and Swiss products all inched higher. The Comex net long position has also moved up since mid-November, albeit by a modest 0.5%. Why total ETF holdings and Comex investment are not at record levels while the gold price has surged to set daily records at times is puzzling; it implies there may be more some large buyers that are not being captured in CFTC and/or ETF data.
- Central banks are perhaps one explanation, but data released by the IMF lags two months behind and it will therefore not be clear if any major purchases have been made until January 2011. Central banks have largely been net buyers since July 2009. Dehedging can be discounted since AngloGold Ashanti was the last gold major to unwind its book a few months ago, so this leaves potential Chinese buyers or elevated activity on the OTC market.
- The US dollar cannot be singled out as the root cause of the latest gold rally either, since it is no weaker than a month ago and the gold:dollar correlation is moving ever closer to positive territory. Nor is it necessarily concerns over eurozone debt levels, although the gold:dollar correlation does imply an element of risk aversion. So while the gold price remains strong, we are a little concerned that if a correction comes it may not be signalled before the event. This gold rally appears very much sentiment based and investment demand in all regions and in

Gold forward curve (Comex), 1st position = 100, various dates



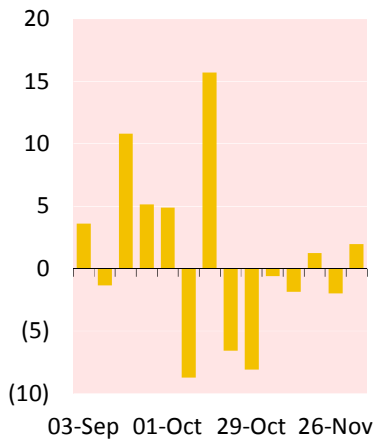
Source: LBMA, VM Group

most currencies is very strong. Any change to this current status quo could therefore see a sharp correction.

Short-term outlook

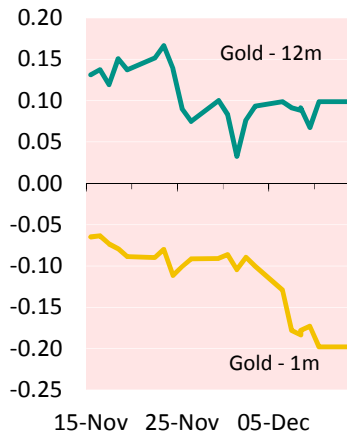
Although we have concerns that the current rally appears to be a momentum driven bubble, it may well continue through 2011. As long as the US Federal Reserve is engaged in efforts to stimulate the US economy with rock bottom interest rates and quantitative easing programmes, gold will find favour among investors. Eurozone debt default is another cause of concern for wary investors, while Chinese investment demand is also growing strongly but quietly in the background. Gold will rise for the tenth consecutive year this year and probably in 2011, too, to break new records. Short-term London PM fix: \$1,400/oz-\$1,450/oz.

Gold ETF offtake, tonnes



Source: VM Group

Lease rates, 1m and 12m, % per annum



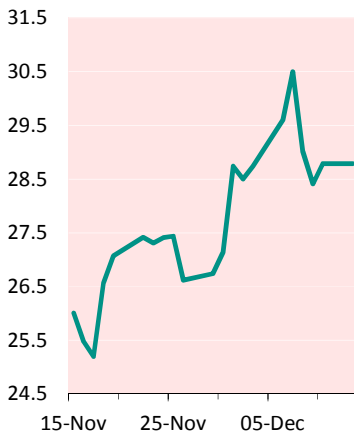
Source: VM Group

Gold supply & demand balance, tonnes

	2008	2009	2010f
Supply			
Mine supply	2,347	2,465	2,495
Scrap recycling	1,185	1,408	1,339
Hedging	33	74	65
Central Bank sales	310	397	161
Total supply	3,875	4,330	4,059
Demand			
Jewellery fabrication	1,976	1,672	1,424
Legal tender coins	225	234	296
Electronics	422	375	356
Other end uses	313	297	275
ETFs	320	576	563
Central Bank purchases	215	437	223
Dehedging	373	321	105
Total demand	3,842	3,912	3,241
Residual	33	432	818

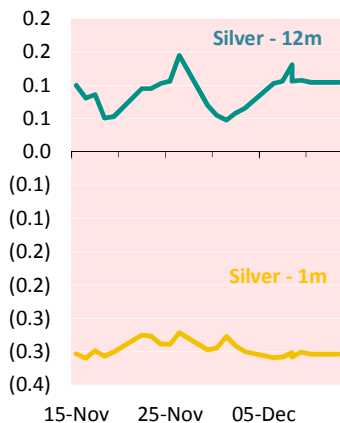
Source: VM Group

Silver, London fix, \$/oz



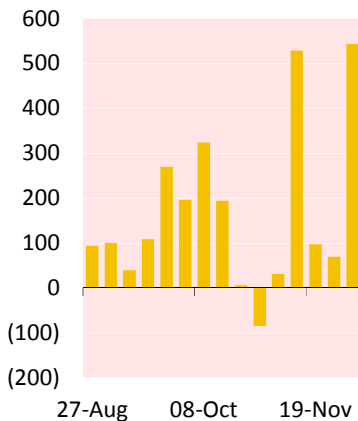
Source: LBMA, VM Group

Lease rates, 1m and 12m, % per annum



Source: LBMA, VM Group

Silver ETF offtake, weekly, tonnes



Source: VM Group, ETF providers

Silver

- Silver rose above \$30/oz for the first time in 30 years, as concerns over falling currencies increased investment demand for safe haven assets. The record was set on 7 December in London as the euro and the dollar slumped amid nervousness over the European debt crisis, and comments from Ben Bernanke, Federal Reserve governor, that the US central bank could increase the size of its quantitative easing programme.
- Silver is also benefiting from a strong recovery in industrial activity, particularly in China, where industrial production from January to October grew 16% versus the same period in 2009. All this rapid growth has resulted in a 37% y-on-y increase in Chinese imports of silver in Q3 10. Silver is one of the main components used in the manufacture of the leading type of solar panels and with China's determination to cut its energy use, the grey metal will continue benefiting. Silver has been one of the best-performing commodities in 2010, with prices rising by 69% year-to-date compared to gold's 26%. As a result, the gold:silver price ratio has fallen steadily this year, hitting a four-year low of 46 on 7 December, seven points below the 40-year average.
- The rise in investment demand is reflected in the surge of coin sales. In the month of November, 4.2m silver eagles were purchased by US mint dealers, topping the previous record of 3.69m set in December 1986. ETF inflows have also risen sharply in November, with global holdings growing by 5% to a record high of 477 Moz. This advance was led by the US ETFs, which shot up by 17% to an all-time high of 14.8 Moz. US iShares, the largest silver ETF, rose to 347 Moz, just 0.3% short of its record high.

Short-term outlook

Rising industrial activity in Asia and growing debt concerns in Europe are playing into silver's strengths. As long as these conditions persist we expect the precious/industrial metal to prosper. Prices are forecast to average above \$30/oz in December and continue rising after the New Year. Short-term London fix: \$29.00/oz-\$32.00/oz.

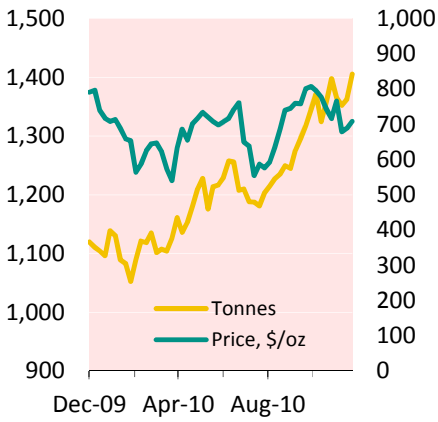
Silver supply & demand balance, tonnes

	2008	2009e	2010f
Supply			
Mine supply	21,398	22,058	22,793
Recycling	12,951	12,752	11,978
Government	500	500	250
Total supply	34,849	35,310	35,021
Demand			
Jewellery and Silverware	7,784	7,068	6,971
Industrial	4,327	3,553	3,259
Investment	6,600	6,260	6,385
Total demand	28,512	28,517	27,805
Residual	6,337	6,794	7,216

Source: VM Group

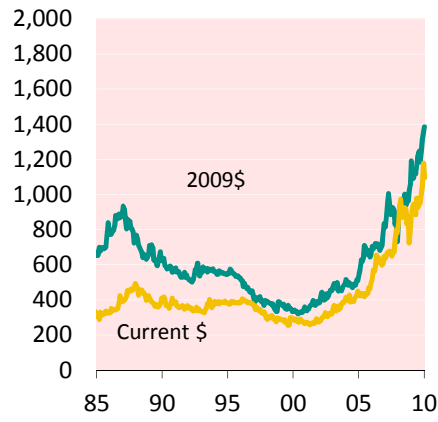
Gold and silver data

Gold CFTC net long position & price



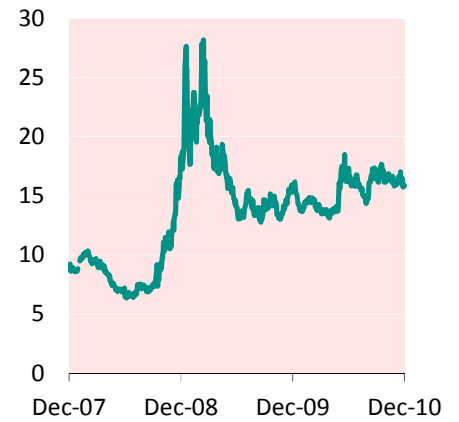
Source: VM Group, CFTC

Gold in current \$/oz and 2009 \$/oz



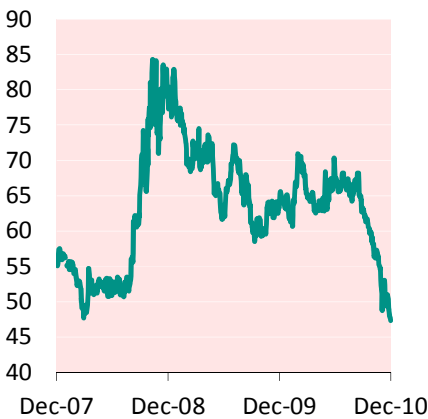
Source: VM Group

Gold/oil ratio, past 3 years



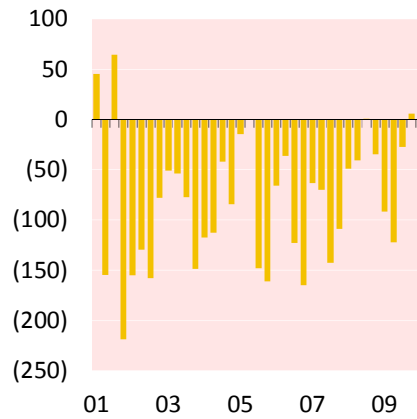
Source: VM Group

Gold/silver ratio, past 3 years



Source: VM Group

Gold dehedging, tonnes/quarter



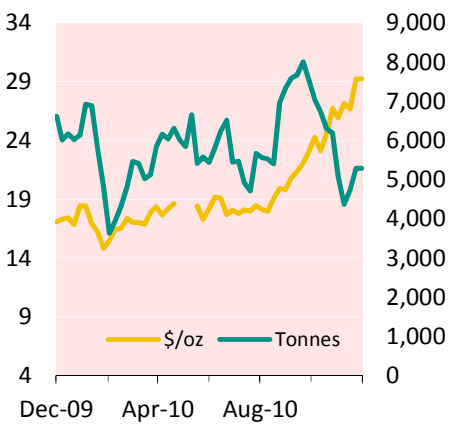
Source: VM Group

Central bank gold data, October 2010

Country/institution	Tonnes
IMF	(19.52)
Others	(0.13)
Total sales	(19.66)
Russia	19.16
Others	0.82
Total purchases	19.98
Net change	0.33
IMF	(19.52)

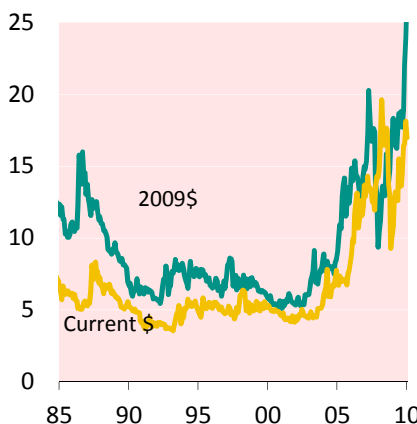
Source: IMF, International Financial Statistics & national country websites. Not all country changes shown

Silver CFTC net long position & \$/oz



Source: VM Group, CFTC

Silver in current \$/oz and 2009 \$/oz



Source: VM Group

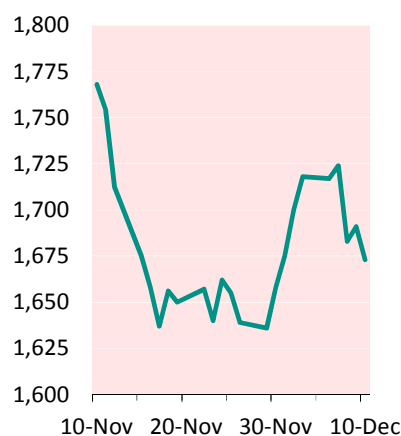
Silver/copper ratio, past 3 years



Source: VM Group

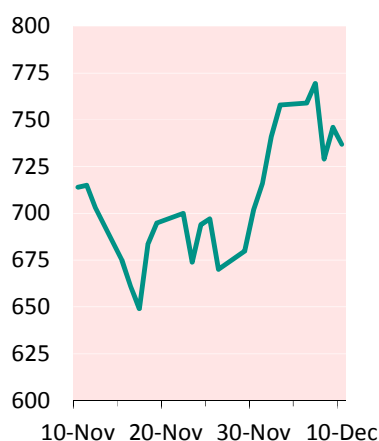
Platinum and palladium

Platinum price, PM fix, \$/oz



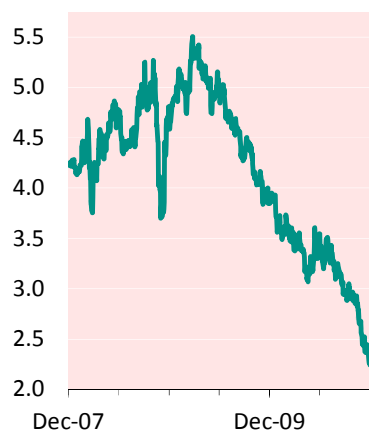
Source: LPPM, VM Group

Palladium price, PM fix, \$/oz



Source: LPPM, VM Group

Platinum/palladium price ratio



Source: VM Group

November was another solid month for palladium. Prices rose by 9% to finish the month on \$702/oz. Demand for the metal has strengthened on the back of higher car sales, particularly in China, and a rise in speculative investment. Platinum on the other hand failed to match the performance of the other precious metals. Prices retreated by 3% to \$1,658/oz in November, the first monthly fall since June 2010.

Platinum is an expensive safe haven investment in comparison to its rivals. This is shown by the platinum:palladium ratio, which is as high as 2.3 despite palladium's incredible performance this year. Industrial demand for platinum, largely driven by the diesel engine automobile industry, has been struggling in recent months. Car sales in Europe, one of platinum's largest industrial markets, shrunk by 4% in October to 1.06m units. In contrast, palladium demand is booming thanks to China's motor industry, which is dominated by gasoline-fuelled cars. Chinese car sales rose to 10.96m units in the period January to October, up 34% y-on-y. As a result, monthly palladium imports into China in 2010 have averaged 85,600oz, up 28% on last year.

Palladium ETF holdings have enjoyed another record breaking month, reflecting the surge in investment demand amid concerns over the European debt crisis and further QE programmes in the US. Total holdings rose to 2.02 Moz on 3 December, hitting an all-time high for the fourth consecutive week. The advance was led by the US ETFs, which grew by 13% since the start of November. However, high palladium prices have led to a bout of profit taking on Nymex, which brought down the net long position to 1.60 Moz, its lowest level since September 2010.

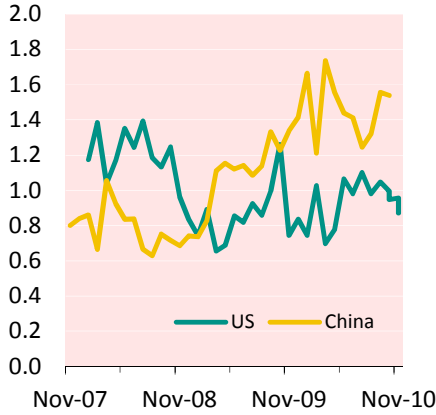
Relative weakness in platinum investment demand is shown by the 1% decline in ETF holdings since mid-November. On Nymex, a build-up of shorts has reduced the net long position by 22% over the same period.

Short-term outlook

As industrial demand for palladium continues to outperform that for platinum, we expect the platinum:palladium price ratio to narrow further over the coming months. The rolling debt crisis in Europe will restrict the growth of car sales in the region, which will impact platinum demand more than that for palladium. Meanwhile, China's preference for the use of gasoline-based cars will strongly support palladium growth in the future. However, as palladium becomes more expensive, we expect investment demand for platinum to gradually recover. Short-term London PM fix: platinum: \$1,700/oz-\$1,800/oz, palladium: \$700/oz-\$800/oz

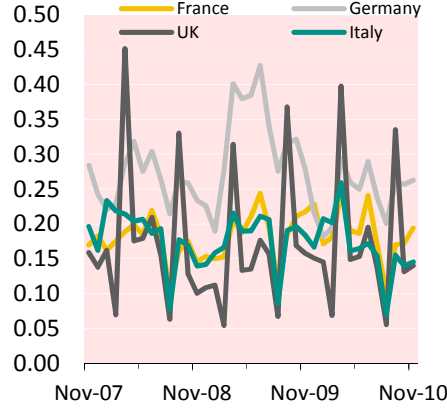
PGMs data

US & China car* monthly sales, million units



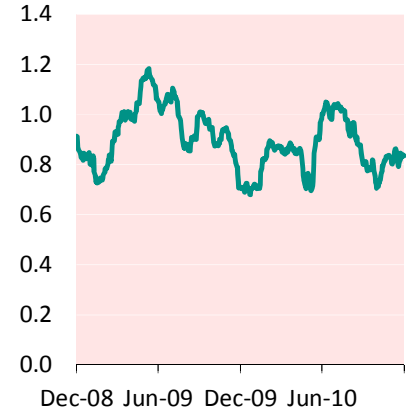
Source: VM Group, national data. * China includes commercial vehicles.

Top four European car markets sales, monthly, million units



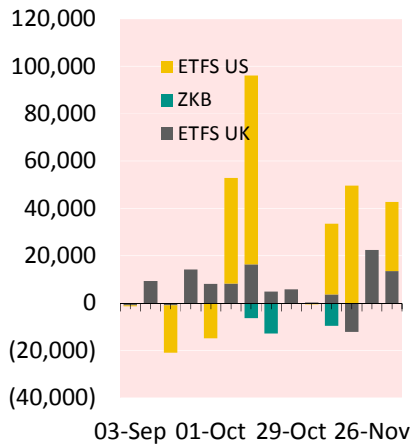
Source: VM Group, national data

Platinum turnover on the SGE, rolling 3m average, annualised, oz



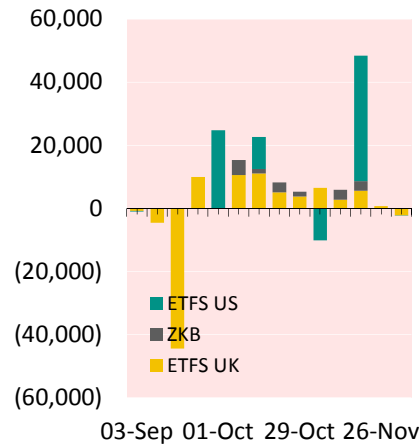
Source: VM Group, SGE

Palladium ETFs weekly offtake, oz



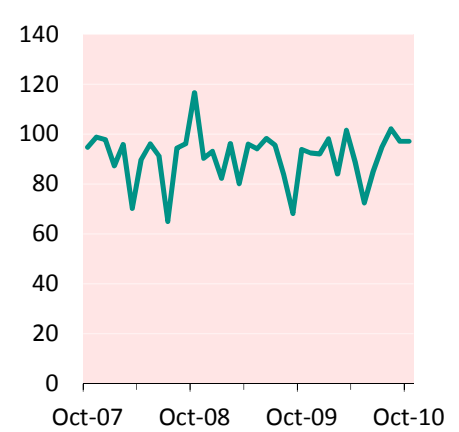
Source: VM Group, company data

Platinum ETFs weekly offtake, oz



Source: VM Group, company data

South Africa PGM output, 2005=100



Source: VM Group, SSA

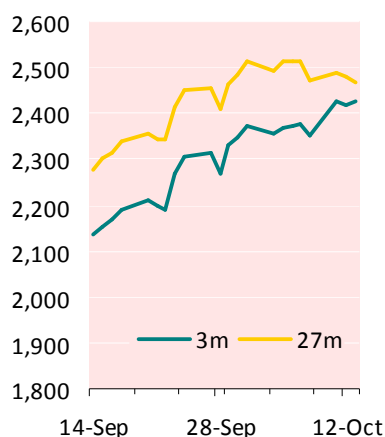
Platinum supply & demand balance, 000 oz

	2008	2009e	2010f
Supply			
Mine supply	5,964	6,020	6,160
Scrap recycling	1,457	1,450	1,518
Total supply	7,421	7,470	7,678
Demand			
Autocatalysts	3,538.0	2,700.0	3,100.0
Jewellery	1,710.0	2,500.0	2,150.0
Other industrial	1,813	1,571	1,505
Total demand	7,061	6,771	6,755
Residual	360	699	922
<i>Stock movements</i>			
ETF inflows	102	380	633

Palladium supply & demand balance, 000 oz

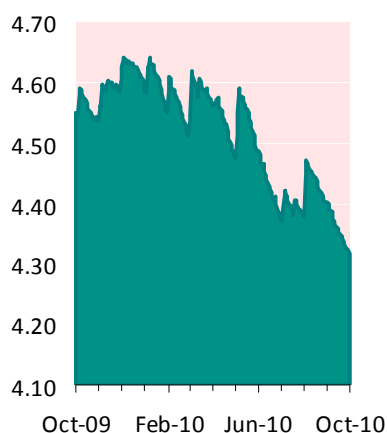
	2008	2009e	2010f
Supply			
Mine supply	6,345	6,390	6,480
Scrap recycling	1,392	1,356	1,558
Total supply	7,737	7,746	8,038
Demand			
Autocatalysts	4,411	4,000	4,600
Jewellery	1,022	1,075	1,110
Other industrial	2,218	2,093	2,111
Total demand	7,561	7,168	7,821
Residual	86	578	217
<i>Stock movements</i>			
ETF inflows	280	502	1,124
Russian stock sales	1,000	1,000	850
Unknown/implied investment	705	1,076	(57)

Aluminium price, LME, \$/tonne



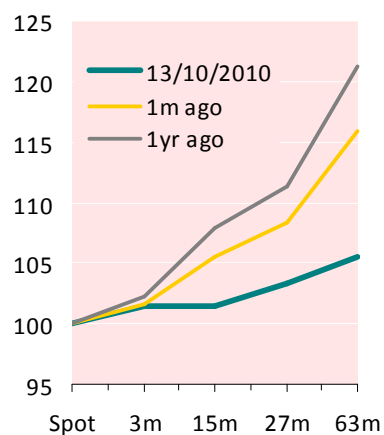
Source: LME, VM Group

Aluminium stocks, LME, Mt



Source: LME, VM Group

Aluminium forward curve, LME, various dates, spot price = 100



Source: LME, VM Group

Aluminium

Aluminium's price performance relative to the other base metals since October 2010 has been a fair indicator of its weak underlying fundamentals. The LME three-month price as at 10 December has increased by just ~1% from the start of the month, but is down 3% from the beginning of November and remains 6% off its seven-month high of \$2,485/t on 9 November. By contrast, copper is up 9% from the start of November, and all base metals except nickel are up by more than 2%. It is not that aluminium exchange stocks are signalling weak demand – they have edged down since August – but perceptions are that the unallocated stockpiles are vast, and have seen little or no outflow. The uncertainty in unallocated stock volumes, and the 6 Mt of visible stocks, leaves little doubt that the aluminium market will show a sizeable overhang in the medium-term, unlike many of the other base metals. The planned physically backed ETFs may therefore struggle to find sufficient investor interest.

One positive is reduced Chinese output. In the past three months to November 2010, China's annualised rates of aluminium production were 14.2-14.3 Mt/year. This in contrast to the >16 Mt/year output levels in the period March-July, which demonstrates the impact of government enforced smelter closures in the past few months to meet a five-year energy efficiency target. With production reduced, the Chinese aluminium market is bound to have tightened, but this is not shown in the exports of aluminium products. In the first ten months of 2010 China exported a net 1.28 Mt of aluminium products, from just 0.09 Mt in the same period in 2009. October's net exports of aluminium products was 0.15 Mt – the highest this year, except for August. This signals a market still very much in surplus. Importantly, we expect the enforced aluminium production capacity cuts to ease in the New Year, and, with this easing, a ramp up in Chinese aluminium output, especially should the aluminium price remain at >\$2,200/t.

Short-term outlook

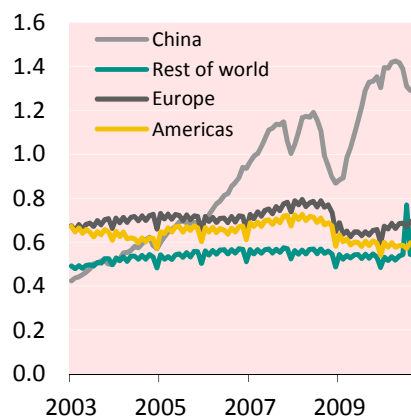
The aluminium market looks no better than it did a year ago – perhaps worse. Physically backed ETFs may make some inroads, but the easing in the nearby contango on the LME threatens to open the flood gates of metal locked in term financing deals. Short-term LME three-month aluminium price: \$2,250/t-\$2,450/t.

Chinese aluminium and alumina prices, yuan/t

	13 December 2010	Current	YoY % chg	Last mth	YoY % chg
SHFE spot price		15,990	2%	16,490	4%
SHFE three-month price		16,300	2%	16,865	8%
SHFE six-month price		16,790	2%	17,345	-94%
SHFE stocks, tonnes		485,420	78%	488,790	81%
Chinese aluminium ingots (99.7%min)		15,955	2%	16,595	12%
Chalco alumina prices		2,900	9%	2,900	9%
Chinese alumina (Australian import)		3,125	15%	2,955	6%

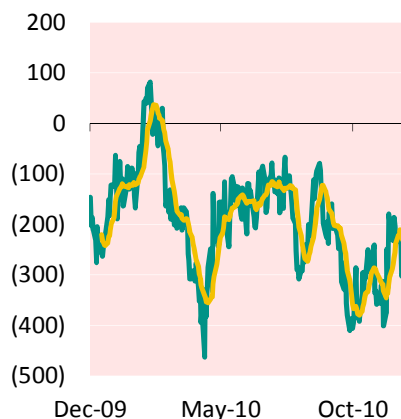
Aluminium data

Aluminium output by region, monthly, Mt



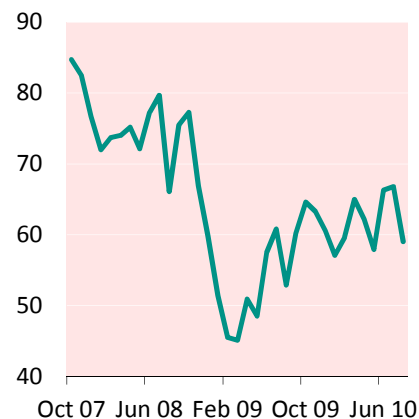
Source: IAI, VM Group

SHFE/LME price differential, \$/t



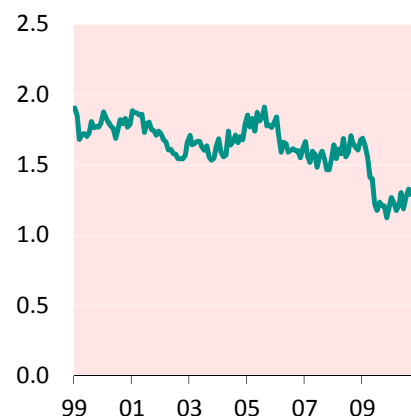
Source: SHFE, LME, VM Group

Japanese domestic shipments of extruded products, 000t



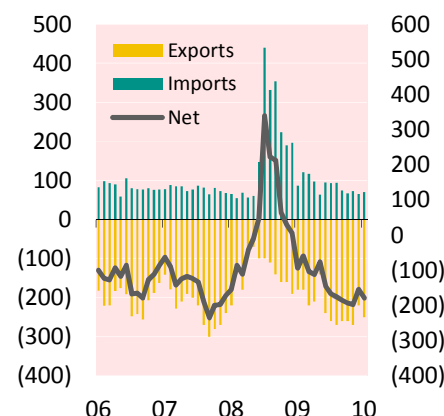
Source: Japan Aluminium Association

Unwrought aluminium producer stocks, Mt



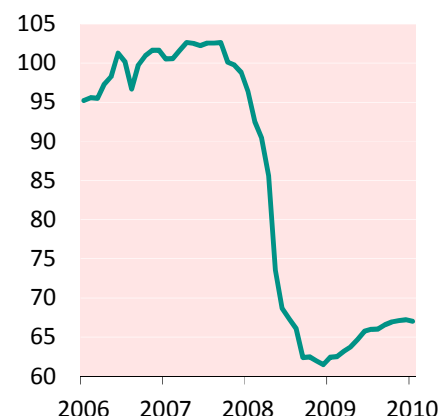
Source: IAI, VM Group

Chinese imports/exports of unwrought aluminium and aluminium products, 000t



Source: China Customs

US output, alumina and aluminium, 100=2002



Source: Federal Reserve, VM Group

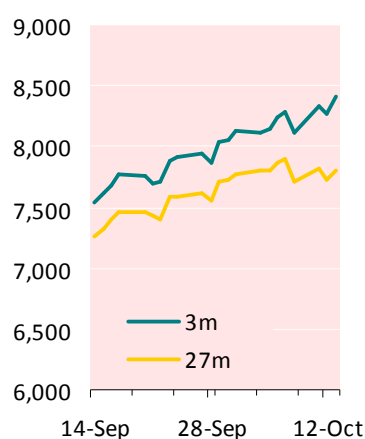
Aluminium supply & demand balance, 000t

	2006	2007	2008	2009	2010	2011
Supply						
China	9,352	12,605	13,247	13,483	16,655	18,250
North America	5,334	5,643	5,783	4,762	4,775	4,801
Europe & CIS	9,197	9,665	9,997	8,774	8,792	8,800
Rest of world	10,029	10,181	10,588	10,438	10,925	11,495
Total world output	33,912	38,094	39,615	37,457	41,148	43,346
Year-on-year % chg	6.4%	12.3%	4.0%	(5%)	9.9%	5.3%
Demand						
Total world consumption	34,121	37,765	38,265	35,721	40,115	42,823
Year-on-year % chg	6.5%	10.7%	1.3%	(7%)	12.3%	6.7%
Implied market balance	- 209	329	1,350	1,736	1,033	523
Total stocks	3,671	4,248	4,987	6,695	7,674	7,913
Average 3-m LME price (\$/t)	2,593	2,662	2,626	1,703	2,176	2,281

Source: IAI, WBMS, VM Group

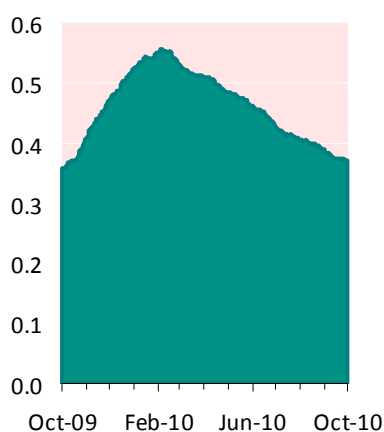
Copper

Copper price, LME, \$/tonne



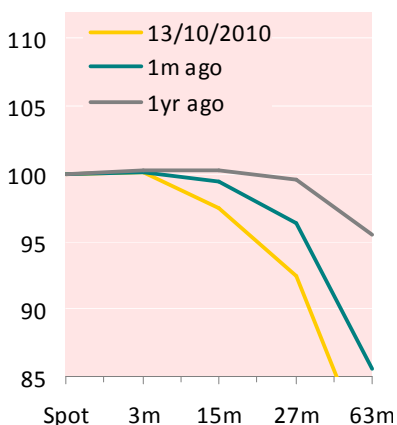
Source: VM Group

Copper stocks, LME, Mt



Source: VM Group

Copper forward curve, LME, various dates, spot = 100



Source: VM Group

- ETF Securities launched the first physically backed copper exchange traded product (ETP) on 10 December. It will charge annual management fees of 0.69% plus 0.12% insurance allowance and crucially, about \$0.36/t per day in warehouse rent. Although this storage cost varies, it works out as about 1.5% of the copper price. Whether the high cost of holding the copper ETP longer term will be distasteful to investors is debatable. We will need to wait for some months to find out – but given the supply-demand fundamentals, which are very supportive of the high price, we doubt it.

- On the evidence of the current copper price, which has risen to new records of more than \$9,000/t, even tepid investor interest in the new copper ETP will see prices reach more than \$10,000/t in 2011. But the journey will be volatile if the copper-backed ETPs attract short-term bets. This is especially true during supply disruption events, which normally send copper prices higher anyway. We anticipate physically backed copper ETPs might account for as much as 150,000t-200,000t of copper by the end of 2011, which is some 57% of total LME copper stocks as of 9 December 2010 (348,625t). Any risk to the upside will see our estimated market deficit of 466,000t in 2011 revised lower.

- For China the new ETPs will present a headache. Its imports of unwrought copper and copper products rose for the first time in three months in November, to 351,597t, up 29% on the month. The increase in imports is despite the negative differential between the LME and SHFE copper price, suggesting that copper demand in China is gaining some traction after the weakness shown in the past few months. Much of this can be attributed to the fact that working stocks had been run down on Beijing's efforts to ration electricity; from now to the Chinese New Year in February, imports are likely to stay high.

Short term outlook

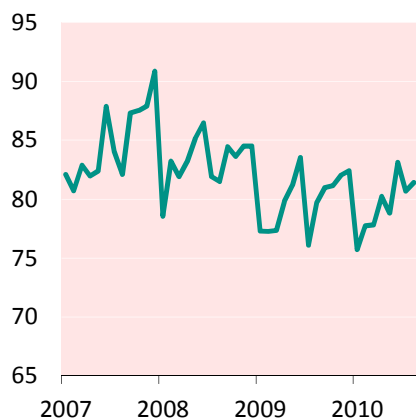
Chinese demand, ETPs, falling LME stocks and the weak mine supply profile all suggest the copper price could be in for a bumper year in 2011. But Chinese inflation remains a worry and if Beijing is aggressive in its approach to staunch money supply, then a sharp correction could be on the cards. Short-term, LME three-month copper price: \$8,900/t-\$9,300/t.

Chinese copper prices, yuan/t (unless stated otherwise)

	13 December 2010	Current	YoY %chg	Last mth	YoY %chg
SHFE spot price		65,210	18%	65,870	129%
SHFE three-month price		65,950	19%	66,500	130%
SHFE six-month price		66,260	18%	67,030	130%
SHFE stocks, tonnes		114,302	19%	106,851	102%
Chinese copper cathode (99.95%)		65,950	22%	66,650	32%
		Current		Last mth	6m ago
Copper TC (cif) China (\$/t)		87.5		87.5	7.5

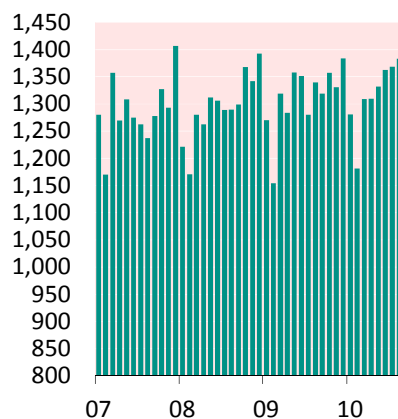
Copper data

World mine capacity utilisation, %



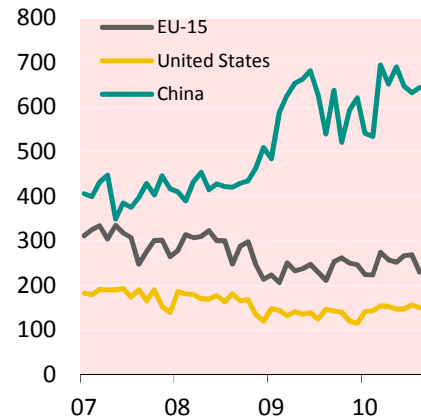
Source: ICSG, VM Group

Global copper concentrate output, monthly, 000t



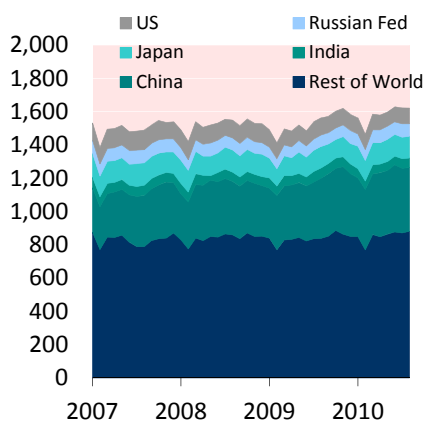
Source: ICSG, VM Group

Apparent copper usage, monthly, 000t



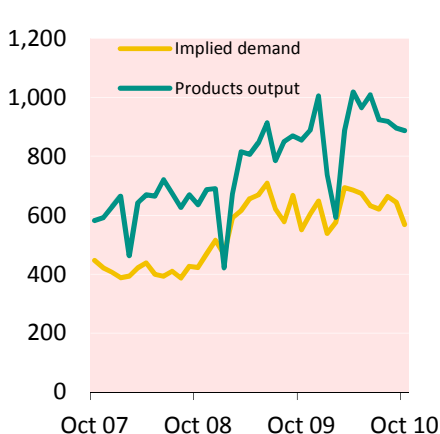
Source: ICSG, VM Group

Monthly refined copper production (primary and secondary), 000t



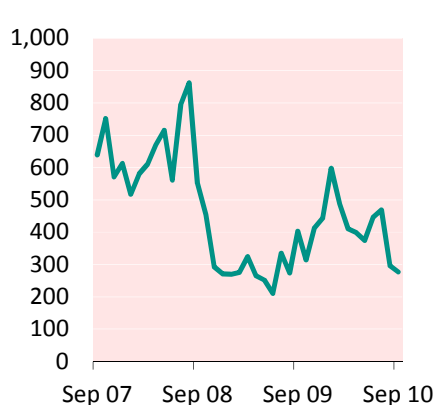
Source: ICSG, WBMS, VM Group

China implied copper demand & copper output, monthly, 000t



Source: China customs, NBS, VM Group

US copper imports in million dollars



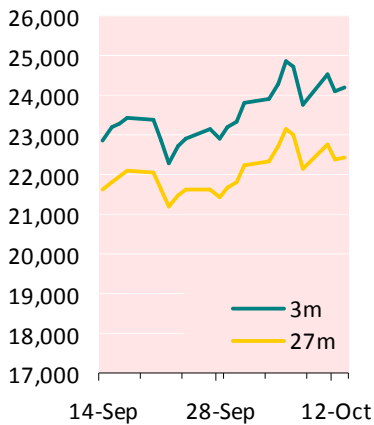
Source: US Census Bureau, VM Group

Copper supply & demand balance, 000t

	2006	2007	2008	2009	2010	2011
Supply						
Total mine production	14,983	15,439	15,450	15,956	16,068	16,269
Year-on-year %change	0%	3%	0%	3.3%	0.7%	1.3%
North America	2,150	2,169	2,182	2,002	1,862	2,151
Latin America	3,555	3,600	3,515	3,564	4,499	4,612
Asia (ex China)	3,974	4,167	4,121	3,952	3,520	4,065
China	2,822	3,222	3,597	4,005	4,725	5,068
Europe	3,551	3,578	3,698	3,522	3,659	3,787
Total refined production	17,361	18,011	18,232	18,362	18,913	19,613
Year-on-year %change	5%	4%	1%	0.7%	3.0%	3.7%
Demand						
Total refined consumption	17,148	18,048	18,027	17,721	19,157	20,076
Year-on-year %change	3%	5%	0%	(1.7%)	8.1%	4.8%
Implied balance	213	(37)	204	641	(244)	(463)
Total stocks	1,093	1,422	1,158	1,263	950	629
Average 3-m LME price (\$/t)	6,861	7,096	6,871	5,186	7,537	8,833

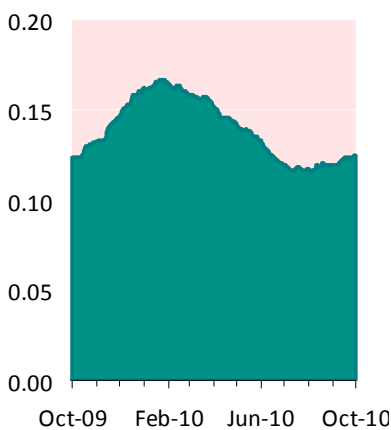
Source: ICSG, WBMS, VM Group

Nickel price, LME, \$/tonne



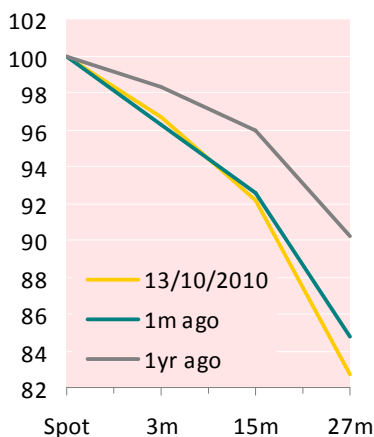
Source: VM Group

Nickel stocks, LME, Mt



Source: VM Group

Nickel forward curve, LME, various dates, spot = 100



Source: VM Group

Nickel

- Nickel's prospects in the year ahead look fragile. Many miners have announced plans to restart mines that were idled during the height of the recession in 2008-2009, while there is a flood of new supply coming onto the market from new high pressure acid leach nickel laterite projects and other sources. With the LME three-month nickel price steady at \$21,000/t-\$24,000/t Chinese nickel pig iron production is also mostly profitable and therefore active, notwithstanding government-enforced closures of some capacity to reach energy saving targets.
- With this in mind, the fact that LME nickel stocks have trended upwards since August to stand at ~130,000t in mid-December, from 115,668t in mid-August, suggests supply is currently outpacing demand (which is exacerbated by the seasonal slowdown anyway). This is corroborated by data from the International Nickel Study Group, which shows the nickel market to have been in surplus of 5,700t in September 2010. By extension we expect the market to show a surplus in October through to December, leaving an overall market in slight surplus in 2010 of 15,000t (our previous estimate was for balance).
- The ramp-up of Canadian nickel output following the end of the strike at Vale's Sudbury operation in Canada in July 2010 appears to be the swing factor. The addition therefore of 200,000t/year of nickel mine production capacity over the next 18 months suggests that the nickel market is heading for a sizeable surplus in 2011, and that stocks will continue to rise. Demand growth for nickel will also slow in 2011, as stainless steel mills in China work off excess stocks that have built up during the past year. This will dampen any recovery in nickel demand in OECD economies. The physically backed nickel exchange traded product, launched by ETF Securities on 10 December, will thus garner little investor interest in our view.

Short-term outlook

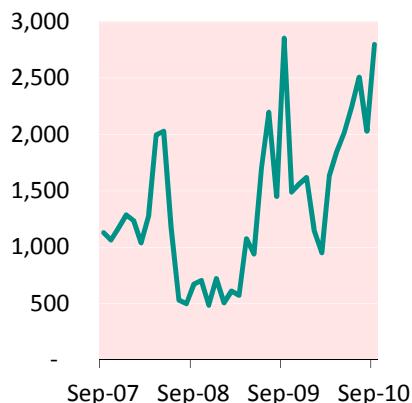
Nickel prices are not sustainable in the light of such weak fundamentals. That is not to say the nickel price will not follow the expected surge in the copper price during 2011, but if it does then our estimated surplus of 41,000t for 2011 may grow larger. Short term LME three-month nickel price: \$22,000/t-\$26,000/t.

Chinese nickel and stainless steel prices, yuan/t

	13 December 2010	Current	YoY %chg	Last mth	YoY %chg
Nickel cathode (Jinchuan, 99.9% min)	178,000		40%	186,000	44%
Nickel cathode (Norilsk 99.9% min)	177,500		41%	185,500	44%
Nickel cathode (Vale Inco, 99.9% min)	190,500		27%	197,500	29%
Stainless steel					
Hot rolled sheet (304)	22,750		30%	22,850	38%
Cold rolled coil (304)	24,750		20.4%	24,650	26%

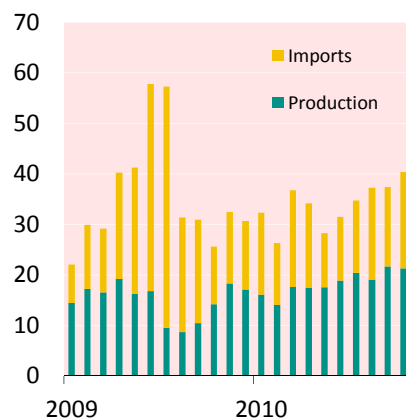
Nickel data

Chinese imports of nickel ore, 000t



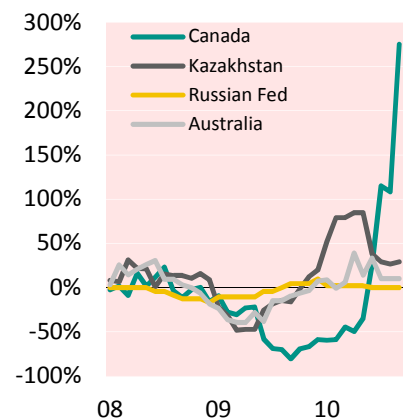
Source: China Customs

Chinese refined nickel output and imports, 000t



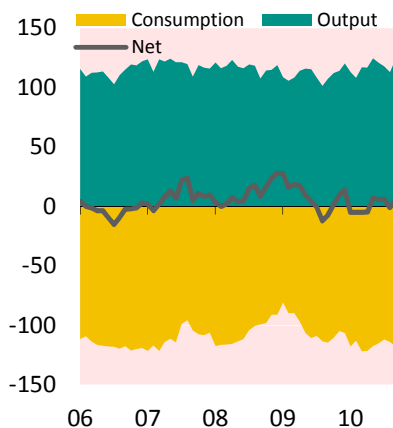
Source: China Customs, NBS

Nickel mine production, year-on-year % change



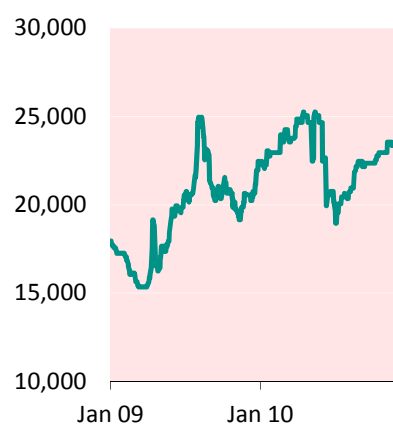
Source: INSG, VM Group

World primary output and refined consumption, 000t



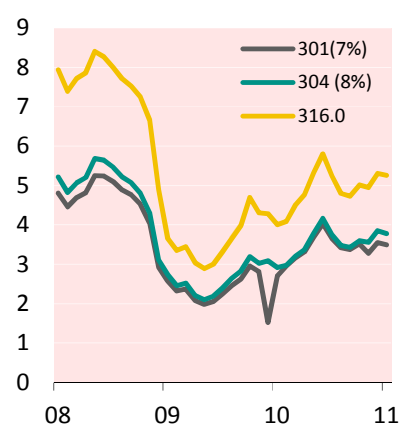
Source: INSG, VM Group

Chinese stainless CR Sheet (304 2b, 1mm), yuan/t



Source: Asian Metals, VM Group

US stainless steel prices for flat rolled coil, \$/kg



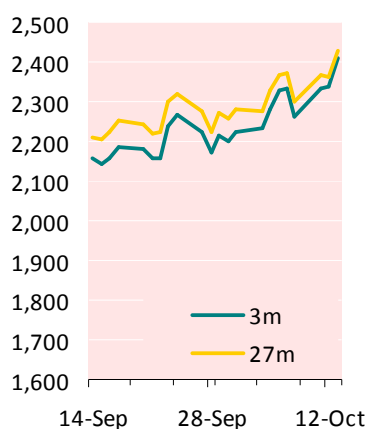
Source: Metal Prices

Nickel supply & demand balance, 000t

	2006	2007	2008	2009	2010	2011
Supply						
Total mine production	1,469	1,595	1,476	1,331	1,411	1,583
% chg y-o-y	5.9%	8.6%	(7.5%)	(9.8%)	6.0%	12.2%
Canada	147	154	168	116	80	210
China	137	199	200	240	325	325
Japan	152	162	158	142	167	161
Russian Fed.	286	272	258	244	258	260
Australia	114	111	104	112	114	124
Total refined production	1,368	1,395	1,375	1,319	1,426	1,538
% chg y-o-y	7.3%	2.0%	(1.4%)	(4.1%)	8.1%	7.9%
Demand						
Total refined consumption	1,398	1,351	1,319	1,238	1,410	1,498
% chg y-o-y	12.0%	(3.4%)	(2.4%)	(6.1%)	13.9%	6.2%
Implied balance	(31)	44	57	81	15	41
Total stocks	95	146	182	263	270	295
Average 3-month LME price (\$/t)	23,266	36,217	21,240	14,706	21,844	23,625

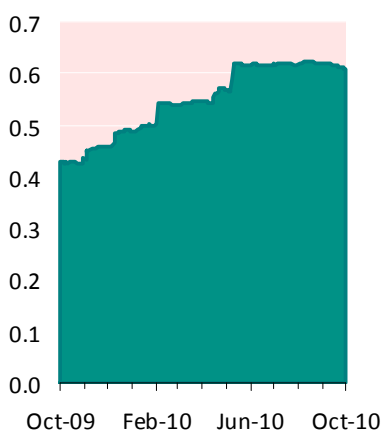
Source: INSG, WBMS, VM Group

Zinc price, LME, \$/tonne



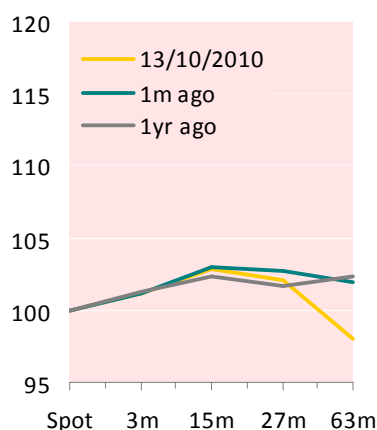
Source: VM Group

Zinc stocks, LME, Mt



Source: VM Group

Zinc forward curve, LME, various dates, spot = 100



Source: VM Group

Zinc

■ LME zinc stocks remain stubbornly high, with little sign of any improvement on the horizon. Stocks have risen by 29% this year, to ~0.63 Mt, while those for all other base metals, apart from lead, have fallen. In the case of tin and copper, stocks have fallen by 43% and 31%, respectively. What sets the zinc market apart is the fact that mines that had been idled due to the recession were restarted too fast against recovering demand. Although zinc demand has recovered strongly in 2010, supply grew from a much higher base, hence the large surplus and growing stocks. This is also true in China, where zinc stocks on the SHFE are at multi-year highs of ~0.3 Mt, while unallocated stocks are purportedly vast.

■ The main culprit has been China, with refined zinc supply growing 21% year-on-year in the first 11 months of 2010, to a record 4.8 Mt. Zinc concentrate production has risen by 25%, to a record 3.5 Mt. But Europe has also played a part; European refined production is up 22.3% year-on-year in the nine months to September, to 1.8 Mt. US output has advanced by 21%, to 0.2 Mt. The global nature of the runaway supply is unique for zinc. In the other base metal that is in similar massive surplus, aluminium, China accounts for much of the market imbalance.

■ Over the past few months there has been some relief in China, where enforced power saving cuts to smelters' output has impacted production. November's headline figure was 468,000t, the third highest on record, but below that of October and September's all-time total of 505,000t. We believe however that this is temporary, and that Chinese production will grow by ~4% in 2011, to more than 5.7 Mt, as 0.35 Mt/year of new capacity added in Q4 2010 ramps up.

Short-term outlook

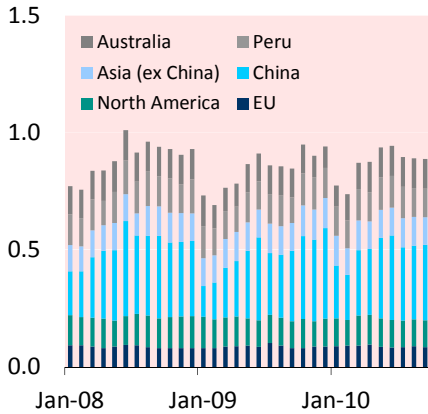
Zinc's forward spread remains in large contango, which should carry through much of 2011 due to the overhang of surplus inventory. A consequence will see the zinc stocks locked in financing term deals remaining largely intact, but this will still not prevent another surplus and further builds in visible and unallocated inventories. Short-term LME three-month zinc price: \$2,250/t-\$2,450/t.

Chinese zinc prices, yuan/t, unless otherwise stated

	13 December 2010	Current	YoY %chg	Last mth	YoY %chg
SHFE spot price		17,955	-1%	20,185	22%
SHFE three-month price		18,225	-1%	20,495	21%
SHFE six-month price		18,765	-1%	21,160	22%
Chinese zinc ingot (99.995% min)		17,800	0%	20,150	22%
Chinese zinc conc (55% min) S China		11,450	0%	14,000	37%
Chinese zinc conc. (55% min) N China		11,250	1%	13,750	37%
Zinc conc TC (50% min, cif) China (\$/t)		125	-32%	125	-32%

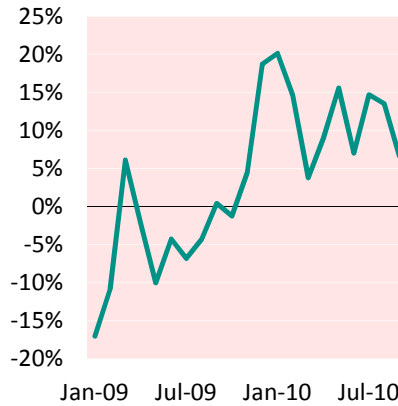
Zinc data

Zinc mine production, Mt



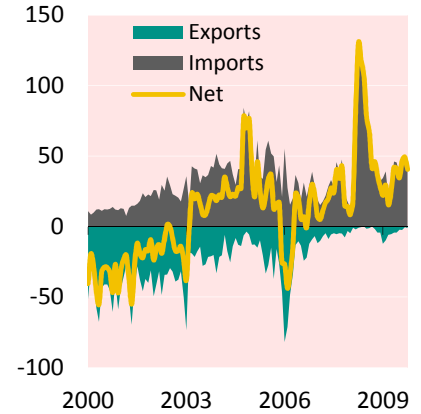
Source: ILZSG, WBMS, VM Group

World zinc demand, Jan 2009-Oct 2009, y-o-y % change



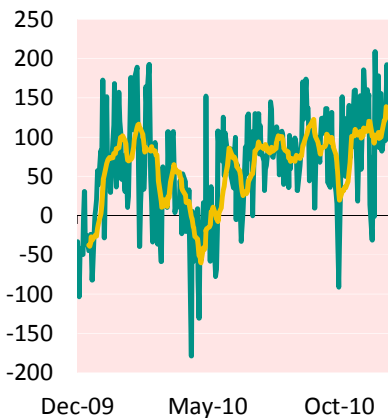
Source: ILZSG, CHR Metals, VM Group

China: imports and exports of unwrought zinc, 000t



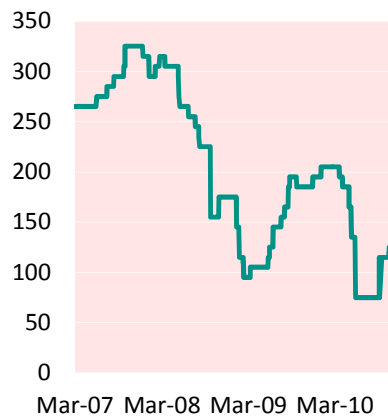
Source: China Customs

SHFE/LME price differential (inc VAT)



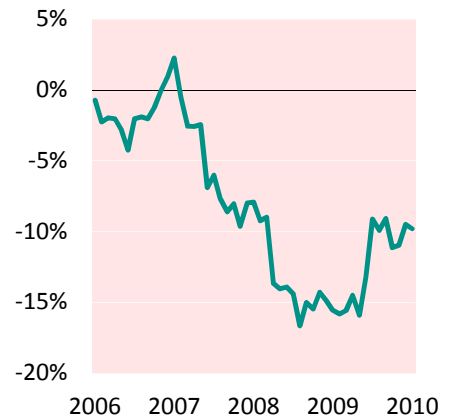
Source: SHFE, LME, VM Group

Zinc concentrate TC, cif China, \$/t



Source: Asian Metal, VM Group

US construction spending, y-o-y % change



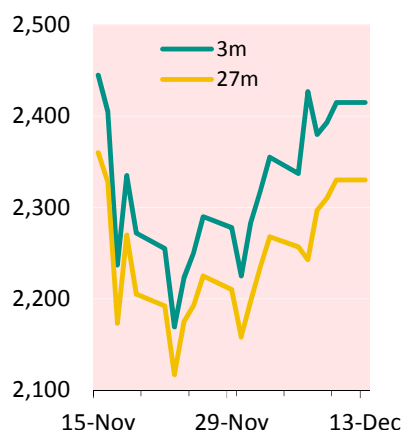
Source: USCB

Zinc supply & demand balance, 000t

	2006	2007	2008	2009	2010	2011
Supply						
Total mine production	10,321	10,975	11,501	11,204	11,931	11,956
% chg y-o-y	5.9%	6.3%	4.8%	(2.6%)	6.5%	0.2%
China	3,117	3,740	3,829	4,334	5,176	5,702
North America	1,371	1,388	1,356	1,120	1,300	1,493
South America	491	471	475	450	489	577
Europe	2,436	2,486	2,429	2,001	2,208	2,403
Australia	463	498	498	500	525	520
Total refined production	10,573	11,189	11,481	11,250	12,326	12,819
% chg y-o-y	5.5%	5.8%	2.6%	(2.0%)	9.6%	4.0%
Demand						
Total refined consumption	11,005	11,250	11,048	10,524	11,810	12,580
% chg y-o-y	5.9%	2.2%	(1.8%)	(4.7%)	12.2%	6.5%
Implied balance	(432)	(61)	433	725	516	239
Total stocks	851	641	825	1,123	1,404	1,658
3-month LME price (\$/t)	3,252	3,243	1,894	1,669	2,187	2,348

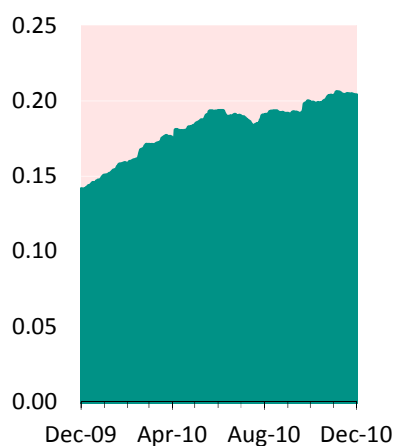
Source: CHR Metals, ILZSG, WBMS, VM Group

Lead price, LME, \$/tonne



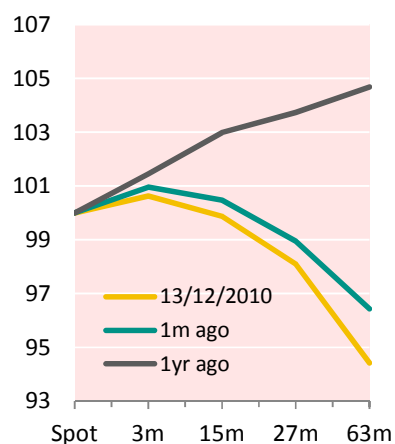
Source: VM Group

Lead stocks, LME, Mt



Source: VM Group

Lead forward curve, LME, various dates, spot = 100



Source: VM Group

Lead

Although there have been some price-positive developments in the lead market, such as the *force majeure* declared by Weser-Metall's lead plant after an accident stopped production in November, the market remains in surplus. This lead plant produces 135,000t annually, and hopes that it will resume output in mid-December, resulting in a loss of about 5,600t, is a mere drop in the lead ocean. Another positive has been the unusually cold weather across most parts of Europe in November and December. This has seen a 40% year-on-year rise in lead-acid battery sales in the UK in November. However, LME lead stocks have continued to rise towards the ten-year high of 208,650t reached in May 2000. Stocks stood at 204,375t on 10 December.

Global refined lead production for Jan-Sept 2010 increased by 4.4% from a year ago, to 6.715 Mt, leaving a global market in surplus by almost 50,000t in 2010. We expect this to grow to more than 110,000t in 2011. Chinese refined production in 2010 looks set to hit ~4.2 Mt, despite a reduction in output by some smelters in Henan due to power supply cuts. Power supply is now returning to previous levels and, with 0.6 Mt of new refining capacity by the end of 2010, Chinese refining capacity will increase to 5.5 Mt in 2011.

China's State Reserves Bureau (SRB) failed to auction more than half of the lead tendered in its 16 November auction. The SRB sold 16,535.4t of lead ingots from a total 34,500t. The highest bid was \$2,568/t, the lowest \$2,559/t, while the prevalent market price was higher, at \$2,682/t, which suggests that all the tendered metal should have been snapped up. However, with fears over China's official inflation level and the authorities tightening monetary controls, consumers expected that the lead price would fall below the SRB asking price (the lead ingot price in China was \$2,599/t on 14 December). Also impacting the sale was the fact that much of the lead up for tender had been stored for decades, and was in poor condition relative to newly refined metal.

Short term outlook

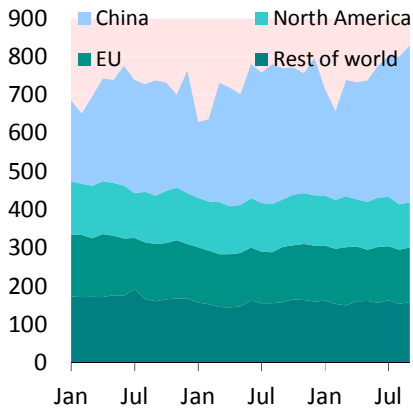
For now China's lead exports are a fraction of what they were before the global recession, but government tightening in 2011 to fight off inflation might see volumes increase and threaten to flood the global market. Not that lead supply internationally is thin; LME warehouse stocks are at multi-year high, and have showed no intention of falling for the past two years. Short-term LME three-month lead price: \$2,200/t-\$2,400/t.

Chinese lead prices, yuan/t, unless otherwise stated

	13 December 2010	Current	YoY %chg	Last mth	YoY %chg
Lead ingot (>99.99%)		17,200	10%	18,100	16%
Lead concentrate (60% min)		14,850	13%	15,650	20%
Lead concentrate TC (cif) China (\$/t)		105	40%	105	40%

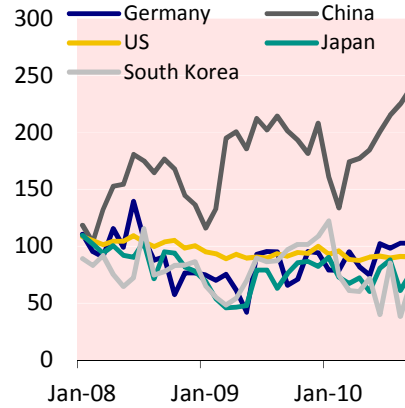
Lead data

World refined lead output, 000t



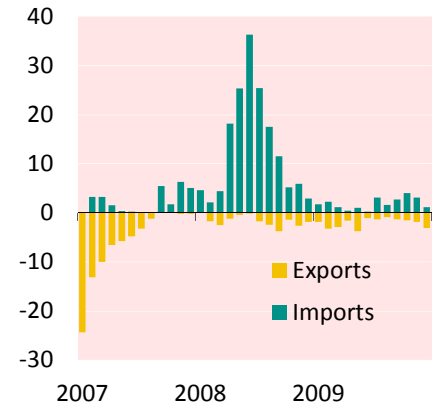
Source: ILZSG, WBMS, VM Group

Refined lead consumption, 100=Aug 2005



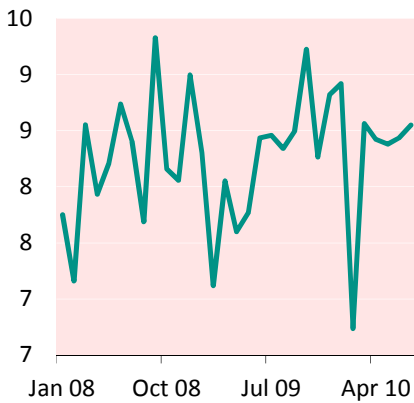
Source: ILZSG, WBMS, VM Group

Chinese lead trade, past two years, 000 tonnes



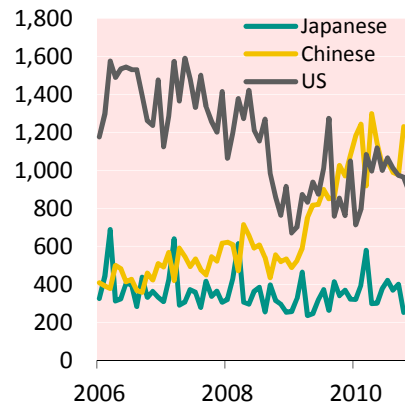
Source: China Customs

North American battery shipments, million units



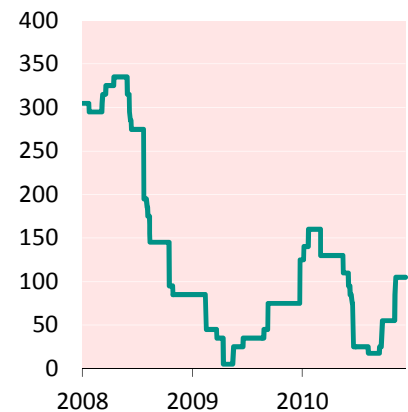
Source: Battery Council International

Passenger cars sold or produced, 000 units



Source: JAMA, NBS, BEA

Lead TC, cif China, \$/t



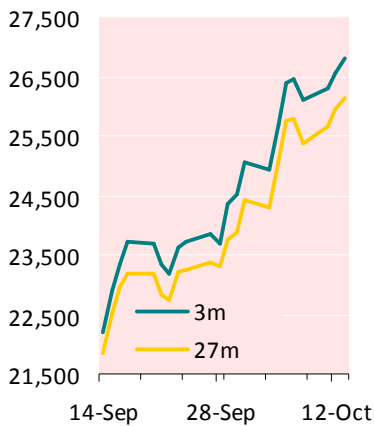
Source: VM Group

Lead supply & demand balance, 000t

	2006	2007	2008	2009	2010	2011
Supply						
Total mine production	3,573	3,690	3,985	3,864	4,258	4,470
% chg y-o-y	3.5%	3.3%	8.0%	(3.0%)	10.2%	5.0%
China	2,715	2,788	3,121	3,605	4,180	4,565
US	1,313	1,303	1,282	1,276	1,270	1,273
Europe	1,625	1,745	1,780	1,702	1,688	1,729
Total refined production	7,981	8,177	8,548	8,805	9,362	9,883
% chg y-o-y	4.8%	2.5%	4.5%	3.0%	6.3%	5.6%
Demand						
Total refined consumption	8,054	8,357	8,481	8,583	9,313	9,769
% chg y-o-y	3.7%	3.8%	1.5%	1.2%	8.5%	4.9%
Implied balance	(72)	(179)	67	222	49	114
Total stocks	284	234	301	521	570	684
3-month LME price (\$/t)	1,282	2,558	2,089	1,721	2,190	2,316

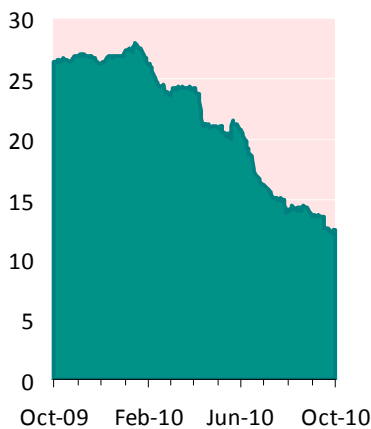
Source: WBMS, ILZSG, VM Group

Tin price, \$/tonne



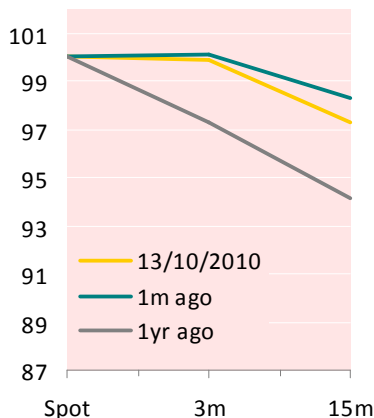
Source: VM Group

Tin stocks, LME, 000 tonnes



Source: VM Group

Tin forward curve, LME, various dates, spot = 100



Source: VM Group

Tin

- The rise in LME tin stocks may prove to be a short lived event, now that ETF Securities has launched a physically-backed tin ETP – the first of its kind – and PT Timah, Indonesia’s largest tin miner, has lowered its final production estimate for 2010. Timah expects to produce 40,000t of tin in 2010, from an earlier forecast of as much as 50,000t. Blaming wet weather for the poor performance of its on-shore and off-shore mines, the company’s quite sharp output revision implies that as a whole Indonesian tin production might fall below expectations, which were already down as much as 20% from 2009.
- Although the Indonesian government said this week it expects tin production to pick up in 2011 to 95,097t, from 54,646t this year, the past several years demonstrate a declining trend. Even if Indonesian supply surprise to the upside, we expect to see considerably less output from the Democratic Republic of the Congo due to the launch of conflict mineral legislation in the US in April 2011. Moreover, we anticipate, given our forecast tin market deficit of 21,000t in 2011, that the investor response to the tin ETP might be very favourable – it’s difficult to get exposure to tin as an investment asset and this one fills a gap.
- The physically backed ETP shares are based on one two hundredth of one tonne and include management fees of 0.69% per year and insurance allowance of 0.12% per year. Warehouse costs are about \$0.42/t per day, or about \$153/t per year. The relative high cost of the tin ETP in contrast with the physically backed precious metals ETFs might put off some investors, but with another deeper market deficit in 2011 we expect to see inflows. This additional demand should offset any rebound in tin supply, as is traditionally the case when prices spike higher, but also inject volatility in the market, which is the most illiquid of the base metals and small changes can propel prices higher and lower sharply.

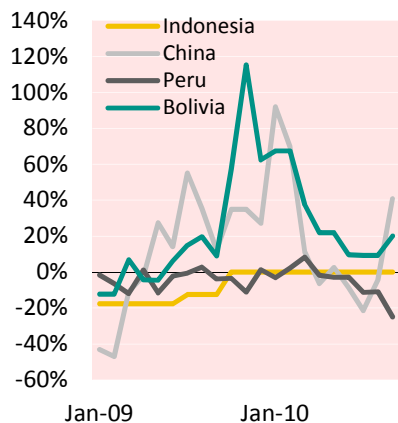
Short term outlook

Several factors in 2011 could force the tin price lower. More Chinese production could be tempted into the market as a result of the higher tin price, while Indonesia might surprise to the upside and reach government targets of ~95,000t; the impact from the US conflict minerals legislation on tin supply from the Democratic Republic of Congo might be temporary and higher prices might induce demand destruction. All of the above are possible – but trends so far imply more of the same in 2011. Short-term LME three-month tin price: \$25,000/t-\$27,500/t.

Chinese tin prices, yuan/t, unless otherwise stated					
	13 December 2010	Current	YoY %chg	Last mth	YoY %chg
Chinese tin ingot (99.9%)		160,000	38%	162,000	38%
Chinese tin concentrate (60% min)		140,500	33%	140,500	31%

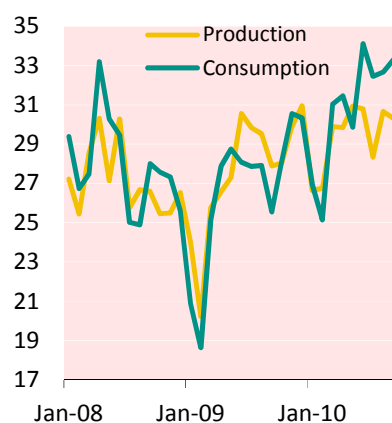
Tin data

Tin mine production, year-on-year % change



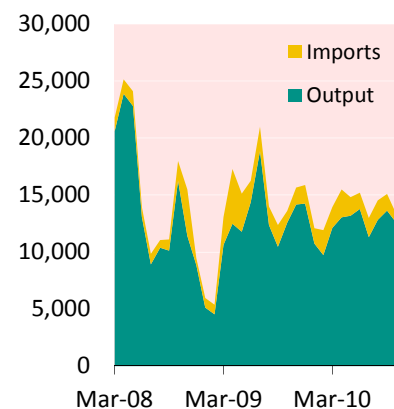
Source: WBM, VM Group

World refined tin production and consumption, 000t



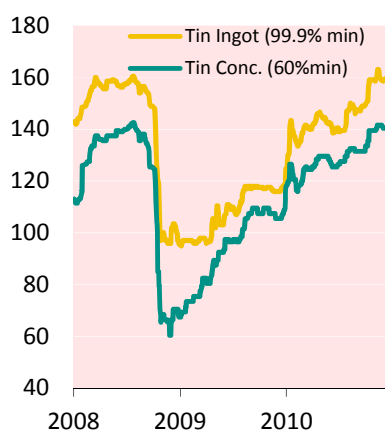
Source: WBMS, VM Group

China tin output and imports, tonnes



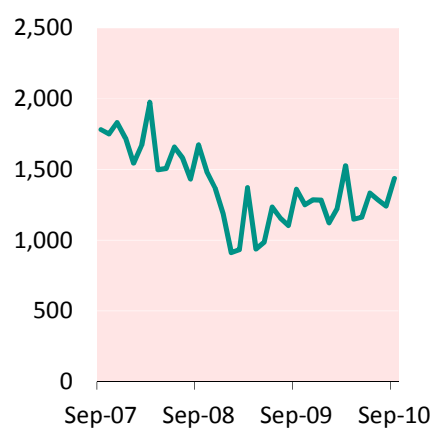
Source: China Customs, NBS

China tin concentrate and ingot prices, 000 yuan/t



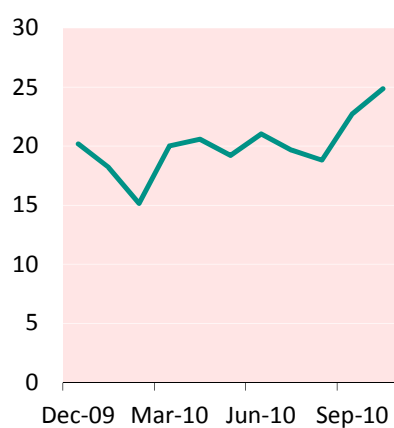
Source: Asian Metal

Japan electronics production, billion yen



Source: JEITA

China computer production, million units



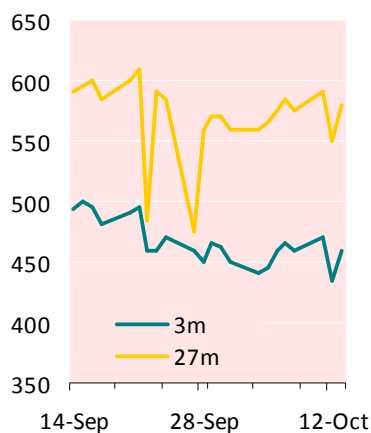
Source: NBS

Tin supply & demand balance, 000t

	2006	2007	2008	2009f	2010	2011
Supply						
Total mine production	334	353	314	306	314	331
% chg y-o-y	(4.4%)	5.7%	(11.0%)	(2.7%)	2.6%	5.4%
China	132	147	129	136	140	142
Indonesia	77	78	70	62	58	63
South America	65	58	61	58	61	60
Rest of world	54	40	43	40	39	39
Total refined production	351	348	334	331	332	334
% chg y-o-y	0.5%	(0.9%)	(4.1%)	(1.0%)	0.4%	0.6%
Demand						
Total refined consumption	363	354	341	311	349	355
% chg y-o-y	6.1%	(2.5%)	(3.5%)	(9.0%)	12.3%	1.8%
Implied balance	(12)	(6)	(7)	20	(17)	(21)
Total stocks	34	32	31	52	44	37
3-month LME price (\$/t)	8,758	14,532	18,442	13,337	21,844	23,625

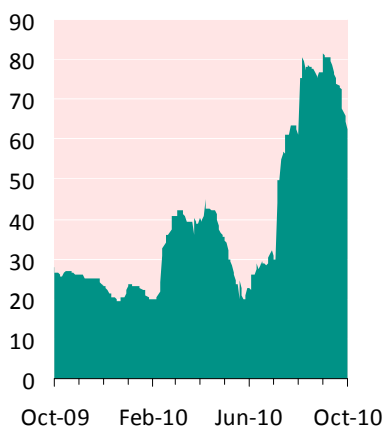
Source: WBMS, VM Group

Steel price, LME, Med, \$/tonne



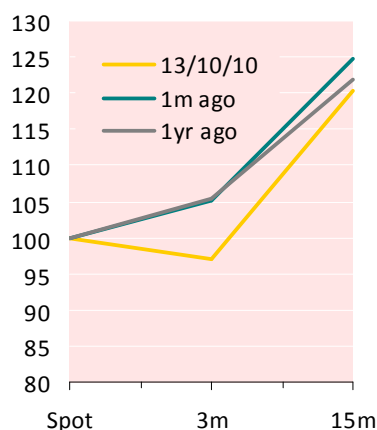
Source: VM Group

Steel stocks, LME, Med, 000 tonnes



Source: VM Group

Steel forward curve, LME, Med, various dates, spot = 100



Source: VM Group

Steel

Iron ore quarterly contract price rises are likely in Q1 2011, as the big three iron ore miners, Vale, Rio Tinto and BHP Billiton, lock in prices. Although officially China opposes the quarterly pricing system, it has allowed steel mills to negotiate individually. But with China's iron ore imports up 25.5%, to 57.4 Mt, in November, there is very little wriggle room to negotiate anything lower than the 4%-7.6% hike proposed by the miners. Prices for steel products will follow suit.

Apart from a recovery in demand for steel in OECD economies, the tight situation facing China in 2011 will determine the fortunes of the steel sector. China's consumer price inflation rose to 5.1% on the year in November 2010, its highest level in 28 months, while producer price inflation increased 6.1%. The average over the year to November is 0.2% above the 3% government threshold and monetary tightening is likely, especially considering that food prices rose by the highest in over two years. Politically Beijing cannot afford inflation, as it stokes the unthinkable, civil unrest. We expect further hikes in interest rates and a squeeze on lending in the hot property sector in 2011 to mitigate this risk. This will dampen the pace of construction and hence demand growth for steel but, if handled carefully, the impact should not be severe. Nevertheless, Chinese steel mills are unlikely to rein-in production. On the evidence of 2009 and H1 2010, production soared, in spite of government protests and large steel products' surpluses were built that are yet to be worked off.

Steel prices on the LME have performed well in 2010, in large part because steel mills in the US and Europe have stayed disciplined and thus have kept the market tight. In part this is due to the consolidation in the industry in the past ten years, but it is also down to political pressure on China in preventing its runaway excess steel production from flooding the market. The price for LME steel therefore looks well placed to break \$600/t in 2011.

Short-term outlook

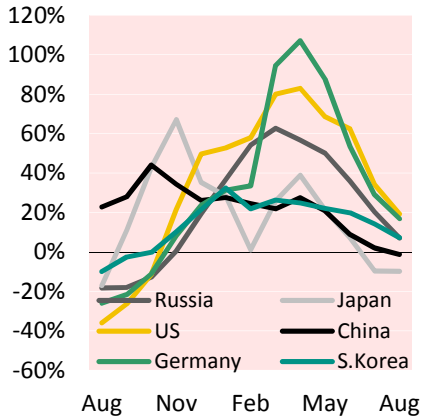
LME steel has been quietly advancing over the past few months and looks a good bet to break \$600/t in H1 2011. The catalyst for price rises will be the passing on of higher raw feedstock costs such as iron ore, coking coal and energy prices, as well as demand from the Middle East and Far East regions. Short term LME steel price: \$525/t-\$560/t.

Chinese steel prices, yuan/t, unless otherwise stated

	13 December 2010	Current	YoY %chg	Last mth	YoY %chg
SHFE spot rebar		4,798	31%	4,712	29%
SHFE 3m rebar		4,714	20%	4,629	18%
SHFE 6m rebar		4,744	11%	4,722	10%
SHFE 12m rebar		4,828	12%	4,922	15%
16mm Med plate (Q235b) China (\$/t)		650	23%	650	27%
Iron ore (Indian 61%, cnf China), (\$/dt)		161	63%	152.5	72%

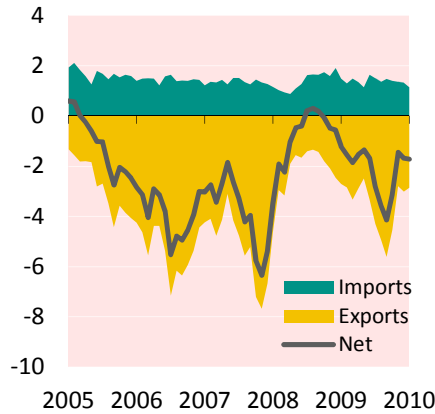
Steel data

Crude steel production, yoy %chg



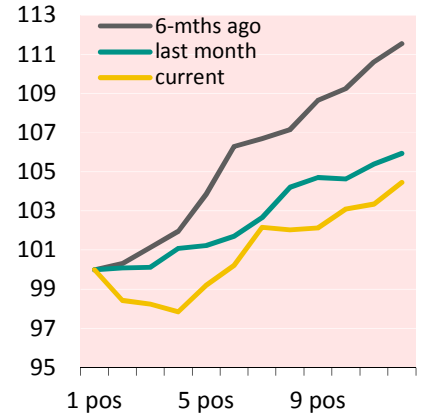
Source: WSA, VM Group

China export/imports, steel products, Mt



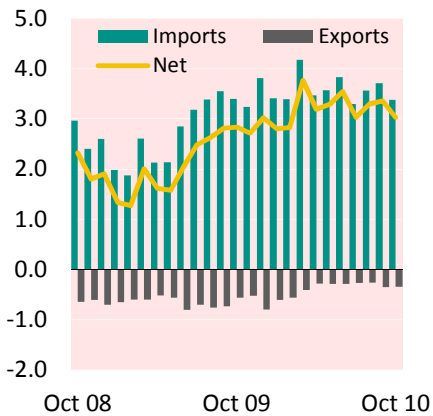
Source: China Customs

SHFE steel rebar price curve, 100=spot



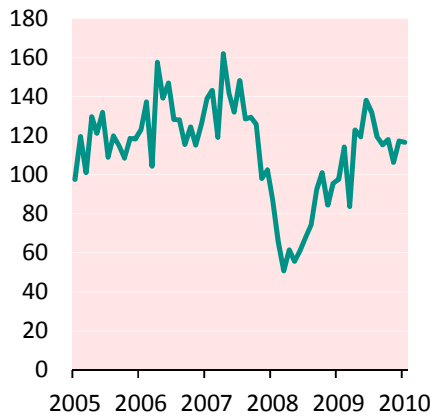
Source: SHFE, VM Group

Japan steel products trade, Mt



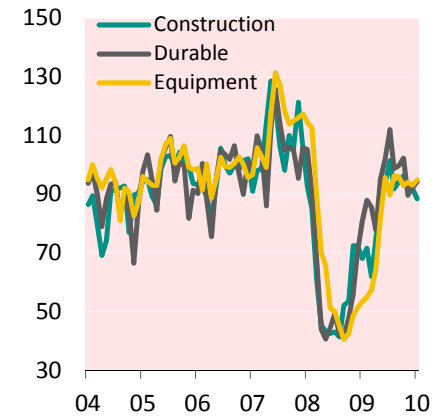
Source: Japan Customs

Germany, new orders of first processing of steel, constant prices, euros, 2005=100



Source: German Federal Statistical Office

US construction, consumer durable and equipment steel output, 100=2002 (\$)

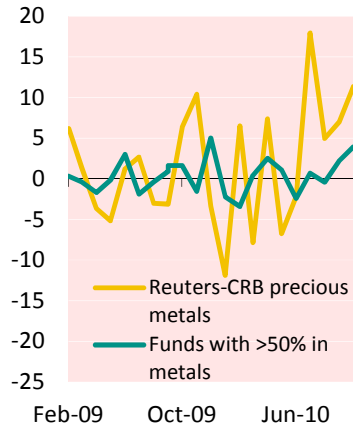


Source: Federal Reserve

Crude steel production, Mt	H1 08	H2 08	Q1 09	Q2 09	Q3 09	Q4 09	Q1 10	Q2 10	July	Aug	Sept
China	262.4	236.1	126.7	139.3	153.7	146.7	157.9	165.3	51.7	51.6	47.9
Year-on-year %change	9.5%	(6.3%)	1.9%	0.9%	20.8%	34.7%	24.6%	18.7%	2.1%	(1.32%)	(5.5%)
US	50.9	40.4	12.0	12.5	15.6	17.6	19.6	21.2	6.7	6.9	6.6
Year-on-year %change	5.1%	(18.7%)	(52.9%)	(51.1%)	(37.9%)	14.2%	63.5%	69.8%	32.9%	23.7%	15.0%
Russia	38.4	30.1	12.9	13.9	14.9	16.5	15.7	16.9	5.6	5.6	5.6
Year-on-year %change	4.8%	(15.8%)	(32.9%)	(27.3%)	(19.9%)	42.9%	22.3%	21.4%	11.5%	11.6%	3.3%
Germany	24.4	21.4	7.3	6.6	8.8	10.0	10.9	11.8	3.5	3.5	3.3
Year-on-year %change	(0.5%)	(10.8%)	(39.7%)	(46.9%)	(25.4%)	4.3%	50.1%	80.1%	29.7%	17.1%	4.2%
India	27.2	27.9	13.4	13.9	14.1	15.1	16.1	16.2	5.8	5.7	5.6
Year-on-year %change	4.2%	3.3%	(6.2%)	7.7%	1.2%	8.5%	18.7%	16.8%	21.6%	19.5%	20.0%
South Korea	27.6	26.1	10.5	12.3	12.7	13.4	13.2	14.8	4.8	4.5	4.7
Year-on-year %change	7.4%	0.8%	(22.4%)	(12.2%)	(8.4%)	9.8%	26.9%	19.9%	18.1%	7.3%	4.8%
Japan	61.9	56.8	17.6	19.1	24.2	26.6	26.5	28.1	9.2	8.9	9.2
Year-on-year %change	4.2%	(6.5%)	(42.9%)	(38.5%)	(20.4%)	0.8%	50.7%	47.0%	20.4%	7.1%	11.7%
Rest of world	164.7	136.7	51.0	54.6	57.7	65.4	67.9	73.4	22.2	20.9	23.6
Year-on-year %change	3.2%	(10.8%)	(36.9%)	(34.8%)	(25.9%)	11.2%	32.0%	34.3%	17.4%	16.0%	13.4%

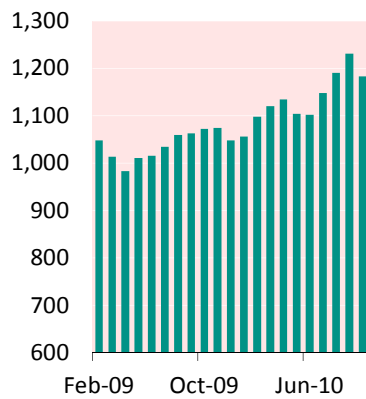
Source: World Steel Association

Hedge fund returns in metals, % monthly



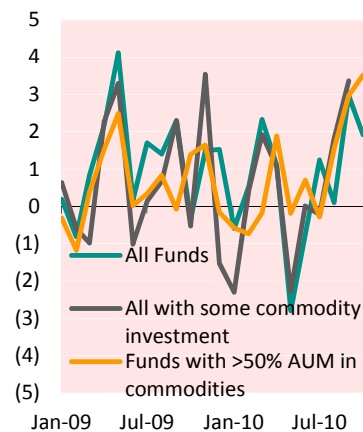
Source: VM Group, Barclay Database

Hedge funds AUM, \$bn



Source: VM Group, Barclay Database

Hedge fund returns by commodity weighting, % monthly



Source: VM Group, BarclayHedge

Fund activity

- The end of November saw a slew of bad press for the hedge fund industry, with a string of arrests and raids being made on various funds. The FBI raided three US hedge funds, reportedly to gather information relevant to an insider trading investigation. The three funds – Diamondback Capital Management LLC, Level Global Advisors LLP and Loch Capital Management – do not face any charges, but the raids have been viewed as a warning to the industry. The SEC settled an investigation into California-based hedge fund Opulent Lite, managed by Neil Godbole. Godbole was made to pay a \$40,000 civil penalty and has been barred from providing investment advice until 2015, following accusations that the fund concealed large losses from its investors.
- It has also been revealed that some hedge funds were amongst the investors who had access to government bailout funds following the financial crisis. Federal Reserve data recently released shows that funds were among those to receive loans under the Term-Asset Backed Securities Loan Facility (TALF), established to encourage lending from March 2009 to June 2010. Hedge funds are still viewed by some of the public as having contributed to the crisis with bearish bets on the US housing sector. The TALF programme generated huge returns for those able to access loans, and the revelation that private financial actors were able to access government support and profit from it may prove uncomfortable for the Federal Reserve. Hedge fund, Magnetar Capital, reportedly obtained about \$1.05bn in TALF loans, which was used to purchase \$1.2bn in securities; of the original loans \$921m is still outstanding.

Commodity funds pull ahead

Returns from hedge funds in our database were slightly subdued in October, the last month for which data is available, although still in positive territory at 1.97% on average. Commodity funds outperformed the rest. Those with a bias towards the sector returned 2.97%, while those with more than 50% of their assets devoted to commodities did even better, returning 3.52% on average. Evidently it paid to be in commodities in October, with energy funds returning 3.21%, softs funds returning 3.78%, and metals funds returning 3.32%. Can commodity funds retain their edge as the year draws to a close? They have been steadily outperforming average hedge fund returns by a respectable margin since August. Overall, assets under management took a dip this month, possibly as a result of investor jitters around the multiple legal disputes currently being tackled by some major funds. Assets dropped from \$1.23 trillion to \$1.18 trillion in October.

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