

Gold prices continue to move towards \$1500/oz

The three stages of gold price appreciation to \$1500/oz

As we [first discussed](#) in our October 13 2008 Metals Strategist, three variables alone can explain the fluctuations in the price of gold: risk, currency and commodity prices. Departing from this analytic framework, we argued back then that gold would move to \$1500/oz in three steps over three years. The outburst of the credit crisis in August 2007 marked the start of the first stage, with gold rising from about \$650/oz to about \$950/oz. The second stage of gold price appreciation is primarily about USD weakness and lack of confidence in fiat currencies, and should drive gold above \$1200/oz. The third and final stage will be driven, in our view, by a strong cyclical recovery in energy and commodity prices.

The 2nd stage of higher gold prices is about USD weakness

Decomposing gold spot returns into factors, we find that USD depreciation and currency risk have been the key contributors to higher gold prices in the last eight months. Our analysis also suggests that gold prices have also been leading indicators of 5Y breakeven inflation rates and the USD yield curve slope (10Y-2Y) since April. Moreover, we find that the correlation of gold returns to EURUSD is a lot higher on the upside than on the downside. In our opinion, the explanation for this is that the supply of money in all currency areas is increasing a lot faster than the supply gold. So the weak dollar is pushing gold prices higher in USD, and the increase in global money supply is driving gold prices up in every currency.

A 100t increase in gold demand = a \$45/oz move in prices

Broad money in a number of key currencies expanded 7 to 10 times faster than gold supply in 2008. This trend is poised continue over the next 18 months. If EM CBs come to the conclusion that gold at the current prices is better value and offers lower political risk than government bonds denominated in EUR or USD, reserve diversification into gold will continue. We estimate that any given increase physical gold demand of 100t (\$3.6bn) could push prices up by \$45/oz. With EM FX reserves at nearly \$6trn, it will not take much to send gold prices higher.

The point of fiat currencies is to debase them as needed

While some investors remain concerned that lax monetary policy could end up resulting in inflation sometime down the road, we would argue instead that the whole point of having a fiat currency is to be able to debase it when the economic conditions require it. Of course, as the combination of monetary and fiscal policy measures help create an upswing in economic activity over the next two years, cyclical pressures will come back into the system. Because we expect gold to maintain its long-run relationship with other commodities, we see a third stage of gold price appreciation in the next 18 months where prices push above \$1500/oz on the back of higher oil and commodity prices.

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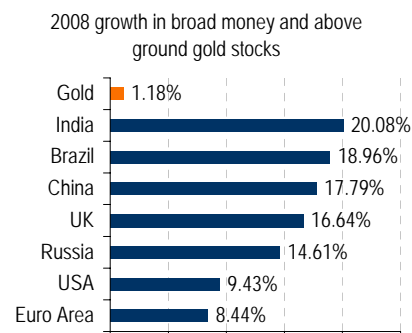
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Chart 1: Too much money, too little gold



Source: BofAML Global Commodity Research

Table 1: BofAML Commodity Price Forecasts

	2009E	2010E
Aluminium, \$/t	1,679	2,025
Copper, \$/t	5,137	7,125
Lead, \$/t	1,707	2,125
Nickel, \$/t	14,954	20,000
Zinc, \$/t	1,649	2,125
Gold, \$/oz	960	1,110
Silver, \$/oz	13.70	16.15
Platinum, \$/oz	1,140	1,350
Palladium, \$/oz	240	300
EURUSD (FX research)	1.50	1.28

Source: BofAML Commodity Estimates

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Refer to important disclosures on page 20 to 21.

Metals overview

Table 2: Price forecasts, fundamental drivers and risks

	Price forecasts		Fundamental drivers	Risks
	2009E	2010E		
Aluminium	\$1,679/t 76c/lb	\$2,025/t 92c/lb	<ul style="list-style-type: none"> ■ Smelters have pushed through substantial production cuts, helping to rebalance the market. Smelter surplus capacity persists. ■ Smelters will need to show production restraint in the coming years to restore a degree of normality on the aluminium market. ■ With demand accelerating, the spot market may tighten in 2H2009 as aluminium is tied up in financing deals. 	<ul style="list-style-type: none"> ■ Financing deals are broken and more metal becomes available. ■ There is considerable uncertainty over global aluminium production volumes in the medium-term.
Copper	\$5,137/t \$2.33/lb	\$7,125/t \$3.23/lb	<ul style="list-style-type: none"> ■ Destocking through the entire manufacturing supply chain is subsiding. An end to the draw in stocks is set to bring back some copper demand. Higher end-user demand and outright re-stocking, both of which should become more critical in 2010, should add further demand. ■ The concentrates market remains tight and mine supply will likely constrain refined output in the coming years 	<ul style="list-style-type: none"> ■ China's copper imports have risen sharply. Not all of the metal was purchased for immediate consumption. Destocking could lead to a weakening of copper demand. ■ Anaemic demand growth in world ex-China. ■ Mines that had been closed down during the economic downturn could be brought online quicker than anticipated.
Lead	\$1,707/t 77c/lb	2,125/t 96c/lb	<ul style="list-style-type: none"> ■ Lead demand has held up better than consumption of the other metals. This has been heavily influenced by relatively steady offtake from replacement batteries, which account for 50% of all lead usage. However, shipments of original equipment batteries (OE) dropped sharply. ■ As global vehicle production is set to pick up on the stimulus schemes implemented in various countries, OE shipments should perform better. ■ Lead supply is not abundant, so prices should respond to the better demand backdrop. 	<ul style="list-style-type: none"> ■ China's lead imports have risen rapidly in 1H2009 and there are indications that not all of this material was consumed. Destocking could dampen lead offtake. ■ Lead production is correlated with zinc output. As zinc output may be expanding (see below), there is a risk that supply comes back quicker than we currently factor in.
Nickel	\$14,954/t \$6.78/lb	\$20,000/t \$9.07/lb	<ul style="list-style-type: none"> ■ Stainless steel distributors have been running down inventories since 2H2007. The scope for further large stock draws is limited. ■ As the destocking subsides, demand for stainless steel is set to perform better. However, this is only a temporary factor. ■ We expect a pick-up in stainless steel end-user demand through 2010, which could push the nickel market into deficit. 	<ul style="list-style-type: none"> ■ End-user demand could remain weaker than we anticipate, on an anaemic economic recovery. ■ Shipments of nickel to China have risen sharply in 1H2009, with evidence that some of the metal was placed into storage. An end to the re-stocking or outright destocking would remove price support. ■ Nickel stocks remain high. ■ Nickel producers could ramp up production quicker than anticipated. Nickel pig iron manufacturers are said to increase output. ■ A swift end to the labour actions at Vale would remove price support
Zinc	\$1,649/t 75c/lb	\$2,125/t 96c/lb	<ul style="list-style-type: none"> ■ Zinc demand has been weak since 2007, driven by an underperforming steel industry. ■ We believe that the worst for steel is over. ■ Concentrates supply is set to constrain refined zinc production, helping to push the market into deficit by 2011. 	<ul style="list-style-type: none"> ■ Unreported inventories exist on the zinc market. If more metal becomes available, this could delay a recovery. ■ The zinc market is fragmented. There is evidence that miners consider early mine restarts.
Gold	\$960/oz	\$1,110/oz	<ul style="list-style-type: none"> ■ De-hedging continues for the time being. ■ USD set to remain weak. ■ Central banks to maintain loose monetary policy; liquidity creation is positive for metals. ■ Reserve diversification into gold continues, for instance by central banks. ■ Increasing gold demand from countries like China. 	<ul style="list-style-type: none"> ■ Gold taking a backseat in asset allocation as global economy recovers. ■ High gold prices deter buyers of physical gold. ■ Increased scrap supply.

Source: BofAML Commodity Estimates

Gold prices continue to move towards \$1500/oz

Gold is a function of risk, currency and commodity prices

As we [first discussed](#) in our October 13 2008 Metals Strategist, the price of gold can reflect several macro variables at once. This is because the yellow metal has been the ultimate store of value over thousands of years. During the last decade, however, we found that three variables alone could explain the fluctuations in the price of gold: risk, currency and commodity prices. In a nutshell, our analysis showed that gold is sometimes a currency, sometimes a commodity and sometimes a store of value. Of course, the elusive question will always be figuring out which market gold will track next.

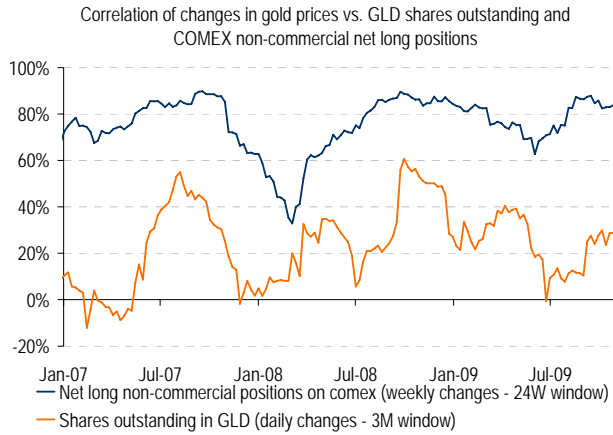
The three stages of gold price appreciation

Departing from this analytic framework, we argued back in October 2008 that gold prices would move up to \$1500/oz in three steps. The outburst of the credit crisis in August 2007 marked the start of the first stage where gold started to reflect the rising risk premia, rising from \$650/oz to about \$950/oz. The second stage of gold price appreciation, we argued well over a year ago, would primarily be about USD weakness and lack of confidence in fiat currencies. We argued that gold could break through \$1200/oz in this second stage and strengthen against all currency crosses. The third and final stage will be driven, in our view, by a strong cyclical recovery in energy and commodity prices.

A weak dollar is now driving investors into gold

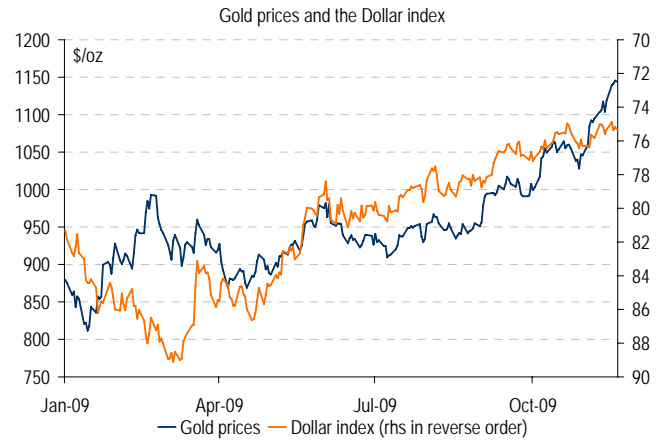
Our analysis shows that the recent rally in gold prices that started in April this year has mainly been about currency weakness, matching the second stage described in our October 2008 piece. Of course, many observers will argue that investor and central bank demand has been the main driver of gold prices for some time (Chart 2). But this is the old traders' truism: prices go up because there are more buyers than sellers. The more critical question to understand whether a trend is sustainable is what drives that investor demand. In that sense, gold prices have rallied this year on the back of a weaker trade-weighted USD (Chart 3).

Chart 2: Investor demand has been the main driver of gold prices for some time. But what drives investor demand?



Source: Bloomberg, BofA Merrill Lynch Commodity Research

Chart 3: Currency weakness: gold prices have rallied with the depreciation of the USD since April



Source: Bloomberg, BofA Merrill Lynch Commodity Research

The 2nd stage of higher gold prices is about USD weakness

Why are investors piling into gold? First and foremost, money is flowing into gold as investors seek to protect themselves from USD currency risk. Looking at daily gold spot returns and decomposing them into factors, we find that USD depreciation and currency risk have been important contributors to higher gold prices (Table 4). Secondly, our analysis also suggests that changes in gold prices have been leading indicators of changes in 5Y breakeven inflation rates and in the USD yield curve slope (10Y-2Y) since April, suggesting that gold is really moving ahead of inflation expectations.

Table 3: Decomposing the last rally in gold prices

Factor	t-statistic	Significance at 5% level
Risk (VIX Index)	-1.17	Not significant
USD (Dollar index)	-5.34	Significant
USD risk (EURUSD imp vol)	1.72	Significant
5Y USD breakeven inflation rates	0.01	Not significant
USD yield curve slope (Y10-Y2)	-0.47	Not significant
Commodity spot prices	0.18	Not significant
USD 2Y rates implied vol	0.68	Not significant

Source: Bloomberg, BofA Merrill Lynch Global Commodity Research

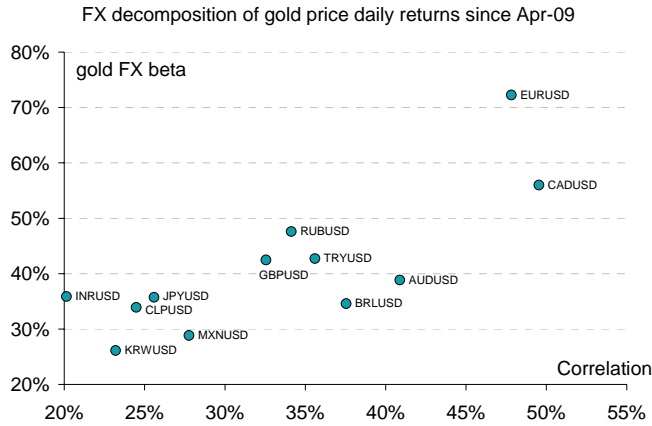
Based on a linear regression of log-changes in gold spot prices and changes or log-changes of each factor from 1-Apr-09 to today. t-statistics are computed with standard errors corrected for heteroskedasticity.

Decomposing the FX driven gold rally of 2009

In the most recent rally, some currencies have shown high correlation and high beta relative to gold prices since April (Chart 4). More specifically, EUR and CAD have shown the highest beta and correlation to gold, while KRW and JPY show some of the lowest in the last 8 months. But even those currencies that have not been correlated with gold have tended to be more correlated in the more recent period when using forward looking measures like implied volatility in the options markets (Chart 5).

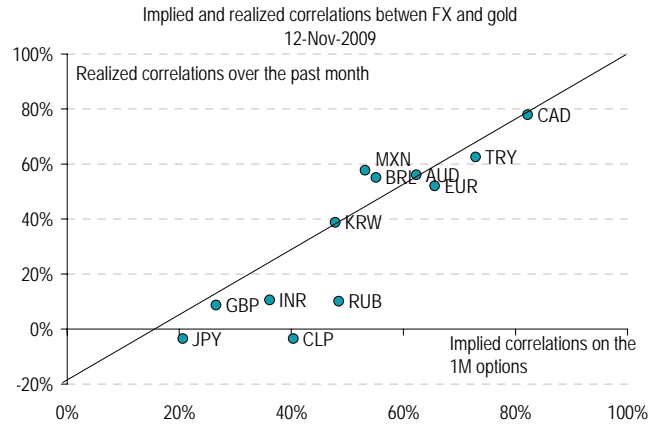
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Chart 4: Some currencies have shown high correlation and high beta relative to gold prices since April



Source: Bloomberg, BofA Merrill Lynch Commodity Research

Chart 5: Even the currencies that have not been correlated with gold recently tend to be more correlated on forward looking measures



Source: Bloomberg, BofA Merrill Lynch Research

* Implied correlations are estimated using implied vols in gold, implied vols in the local currency vs. USD and realized vol on the gold spot prices in local currency.

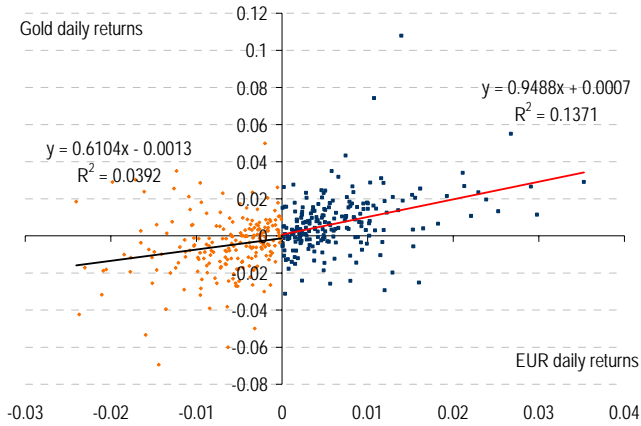
When EURUSD drops, gold tends to hold its value

So what is driving the correlation between gold and the various currencies? Our analysis suggests that the correlation of gold returns to EURUSD is a lot higher on the upside that it is on the downside (Chart 6). This is a rather interesting development that it is also present in other currency crosses. The simple explanation, in our opinion, is that the supply of money in all currency areas is increasing a lot faster than the supply gold. So the weaker dollar is contributing to push gold prices higher in USD, but the increase in money supply in all countries is driving gold prices in every currency.

Compared to the expansion in the money supply ...

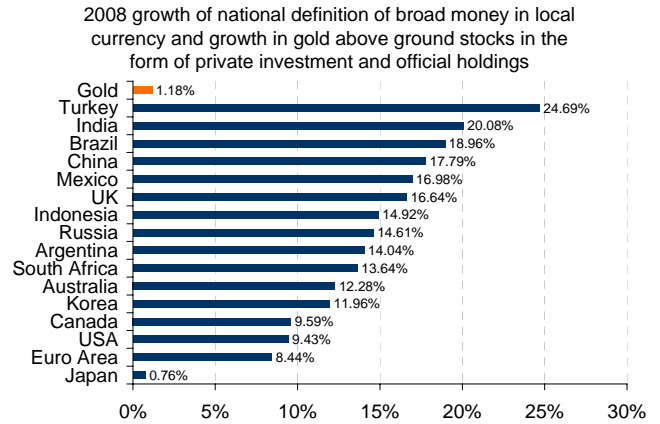
In our view, the massive expansion in money supply observed in 2008 represents a competitive debasement of fiat currencies relative to gold (Chart 7). With the exception of the JPY, broad money in local currency expanded at rates between 8.5% for the EUR and nearly 25% for the TRY, compared to an expansion in the global stock of gold of 1.18%. For the time being, however, the rapid increase in real money has not been accompanied by a broad-based increase in consumer prices as the credit multiplier has remained rather muted in most countries.

Chart 6: The correlation of gold returns to EURUSD is a lot higher on the upside that it is on the downside



Source: Bloomberg, BofA Merrill Lynch Global Commodity Research
Regression on daily returns since the start of Apr-09

Chart 7: In our view, this is probably because money supply is increasing a lot faster than gold

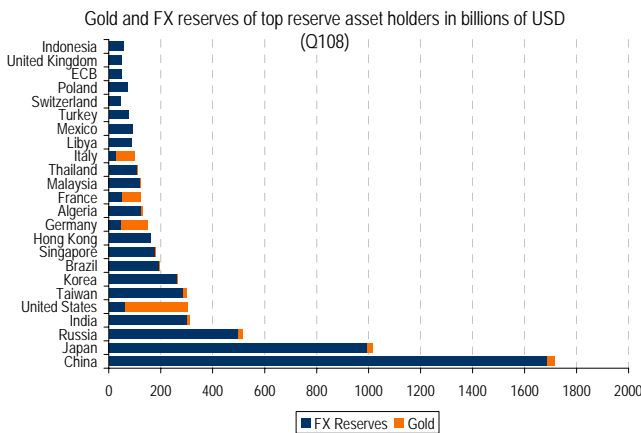


Source: IMF, World Gold Council, BofA Merrill Lynch Global Commodity Research

...there is just not enough gold to go around

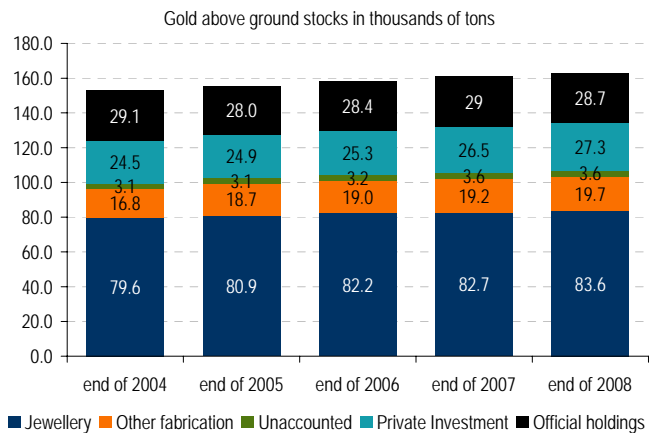
Top holders of currency reserves like China, Russia or India will likely need to increase their exposure to gold over the coming months and years (Chart 8) as the value of fiat currency reserve holdings like the USD or the EUR comes into question. The obvious problem with Emerging Market Central Bank (EM CB) diversification is that there is simply not enough gold to go round. Official sector holdings of gold have moved from 29.1 to 28.7 thousand tons from 2004 to 2008 (Chart 9) despite the higher prices. Net, gold held by the official sector has declined by 1.27% in the period, according to GFMS.

Chart 8: Top reserve holders need to increase their exposure to gold



Source: World Gold Council, BofA Merrill Lynch Global Commodity Research

Chart 9: Official sector holdings of gold have moved from 29.1 to 28.7 thousand tons from 2004 to 2008



Source: GFMS, BofA Merrill Lynch Global Commodity Research

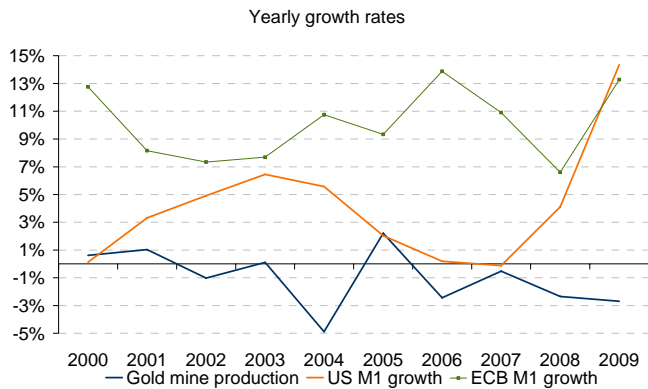
Gold supply trails the expansion in global nominal GDP

In effect, the increase in the global stock of gold is roughly equivalent to the increased mined output every year. In 2009 and 2010 we estimate this figure to be 2,350 and 2,300 tons, or roughly 1.5% of the current global above-ground stock of gold. With governments around the world loosening up monetary policy to stimulate the economy, not enough gold is mined out of the ground relative to other goods in the economy (Chart 10).

The risk of waves of competitive G10 FX depreciation...

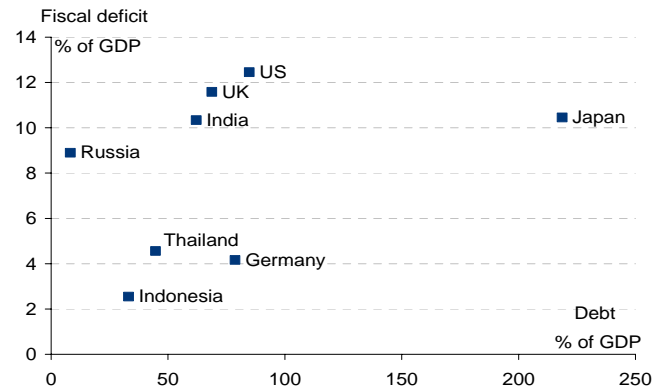
In the meantime, with G10 fiat currencies suffering from a credibility problem, a move towards hard assets like gold by investors and CBs appears likely. If the US prints money to fight off deflation and a soaring public sector deficit, Europe will have to follow or suffer from a USD competitive depreciation. Political and central bank discomfort over USD weakness is mounting within G10. Few, if any, G10 nations are willing to embrace further currency appreciation given the current valuation levels. The problem is that every country with a floating currency is in the same situation, creating a vicious cycle, where a USD competitive depreciation leads to a GBP competitive depreciation, which in turn leads to a EUR competitive depreciation and so on. Because the public finances of the US, Japan, Britain and the Eurozone are in such dire straits (Chart 11), it is hard to envision how these countries will return to trend economic growth without robust foreign demand, suggesting that this dynamic could go on for a while.

Chart 10: Not enough gold is mined out of the ground relative to other goods in the economy



Source: GFMS, Bloomberg, BofA Merrill Lynch Global Commodity Research

Chart 11: Large OECD economies are in dire straits from a public finance perspective, compared to economies in EMs



Source: IMF, IIF, BofA Merrill Lynch Global Commodity Research

...is forcing EM CBs to turn to gold instead of G-7 bonds

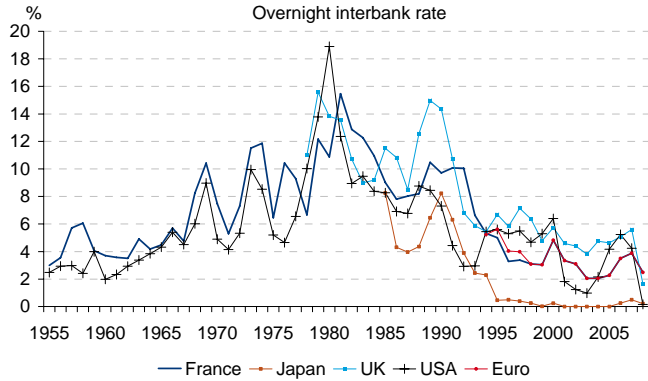
Any given EM CB cannot hedge against further USD weakness by buying EUR or GBP. This is because there is a significant probability that the ECB and the BOE will have to follow any monetary policy moves by the Fed, as it became apparent during the financial crisis. Then again, if EM CBs come to the conclusion that gold is better value than EUR, the problem of reserve diversification becomes one of game theory. In recent weeks, India made a first move by snapping up half of the IMF gold for sale in one go. With 203 tons of IMF gold still up for sale this year, every other EM central bank must be wondering who will move next and how fast. In the light of the experience of the last 10 years, more diversification out of G10 currency accumulation into gold seems like an attractive proposition.

Simply, beggar-thy-neighbour policies have natural limits...

Effectively, as the USD or the GBP weaken against the AUD, the NOK, the JPY or the EUR, these currency areas also lose competitiveness against Britain and the United States. In turn, this means that the diversification benefit for a nation's FX reserves from buying EUR or GBP rather than USD is limited. A point that we have made over and over is that monetary policy is contagious (Chart 12). Large economies like the Eurozone, the US or Britain may have different objectives when it comes to inflation or economic growth, but their central banks cannot operate independently of each other because their economic cycles are closely interlinked (Chart 13). More importantly, with the EURUSD touching 1.50 it is hard to argue for further dollar weakness against the European currency purely on fundamental grounds.

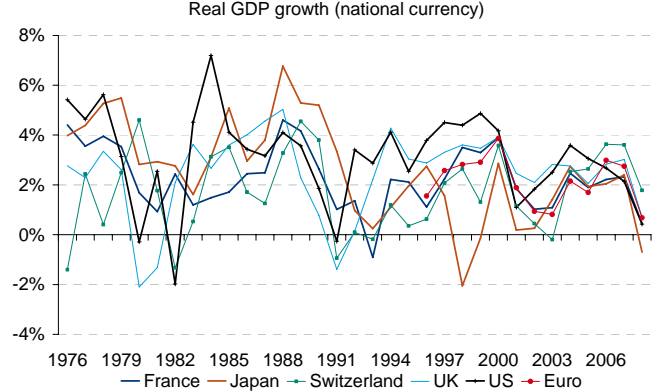
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Chart 12: As we have pointed out before, monetary policy is contagious because G-3 CBs can not operate in isolation



Source: OECD, BofA Merrill Lynch Global Commodity Research

Chart 13: Global economic cycles tend to be quite synchronous across the major economies due to the trade and investment linkages



Source: OECD, BofA Merrill Lynch Global Commodity Research

...because further USD weakness requires a CNY revaluation

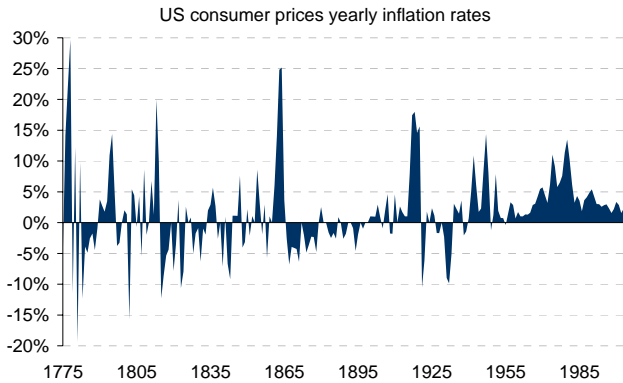
Because there are natural limits to floating G10 currency appreciation against the USD, our EM Fixed Income and FX Strategy team has been arguing for EM FX appreciation against G10 currencies (and against the USD). But most floating EM FX currencies have already surged tremendously in recent months. In the case of the commodity exporters, the risk of catching the “Dutch disease” is increasing very rapidly¹. In our view, further weakness in the trade-weighted dollar would require a CNY revaluation. In turn, as EM CBs can not accumulate CNY, the only practical way to avoid adding EUR at these levels to EM CB portfolios is to buy gold.

The point of fiat currencies is to debase them as needed

While some investors remain concerned that lax monetary policy could end up resulting in inflation sometime down the road, we would argue instead that the whole point of having a fiat currency is to be able to debase it when the economic conditions require it (Chart 14). As the combination of monetary and fiscal policy measures help create an upswing in economic activity over the next two years, cyclical pressures will come back into the system, likely resulting in a lot more money chasing the same oil barrels. As we expect gold to maintain its long-run relationship with other commodities, we see a third stage of gold price appreciation where prices push above \$1500/oz on the back of higher oil and commodity prices (Chart 15).

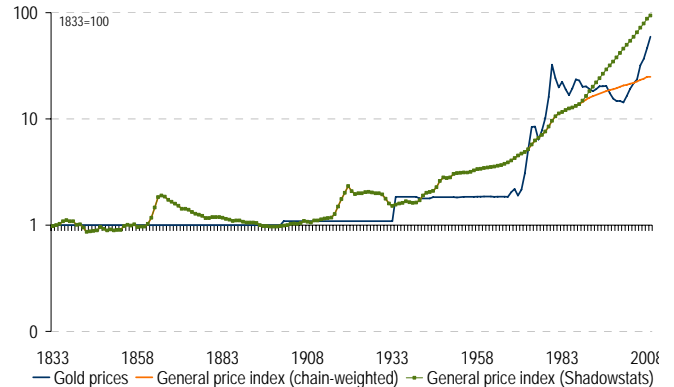
¹ The Dutch disease is a concept in international economics that refers to how the development of natural resources industries tends to bring along a decline in the manufacturing sector. In short, as revenues from natural resources increase, the exchange rate of that country tends to appreciate and hence reduces competitiveness in the manufacturing sector. The term was coined on the back of the discovery of a large natural gas field in the Netherlands and the subsequent economic events that followed in the Dutch economy.

Chart 14: The whole point of having fiat currencies is to be able to debase them when necessary



Source: Historical Statistics of the United States, BofA Merrill Lynch Commodity Research

Chart 15: As (commodity) price inflation comes back, we will see \$1,500/oz gold

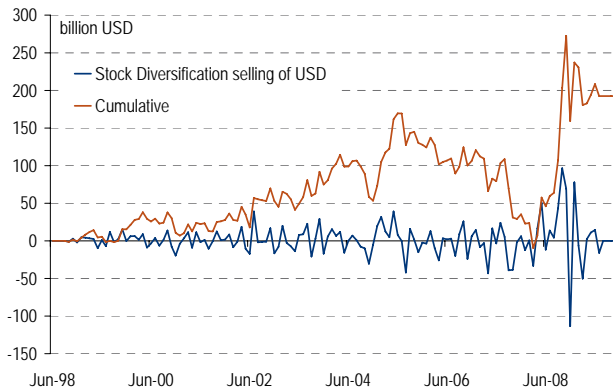


Source: Historical Statistics of the United States, BofA Merrill Lynch Research

Our view is, as always, not without risks

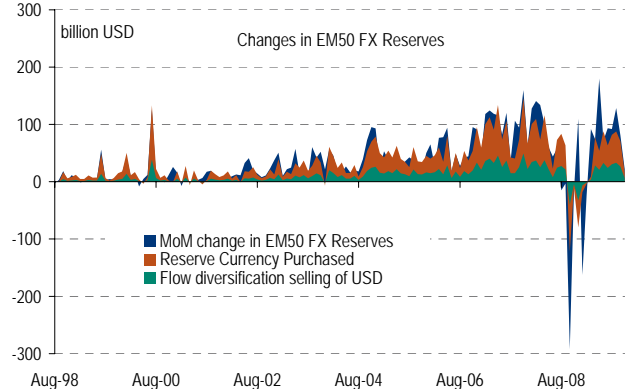
There is a clear case to be made for stronger gold prices, but our view is not without risk. Our positive gold view could come under pressure if EM central banks decide to shun gold in favour of USD or EUR denominated bonds (Chart 16). A move to diversify away from all G-10 currencies at the same time would hurt the USD most given the higher USD weight in FX reserves. Meanwhile, a more aggressive shift out of fresh USD inflows into both EUR and gold by CBs could bring about the dynamic observed in recent months (Chart 17), but the valuation and performance of the EUR during the crisis argues against this and we believe the share of gold will likely continue to increase.

Chart 16: Our negative EUR-USD view could come under pressure if EM CBs decide to sell their existing stock of USD for gold



Source: BofA Merrill Lynch Global Research

Chart 17: A more aggressive shift out of fresh USD inflows into both EUR and gold by CBs could bring about the dynamic of recent months



Source: BofA Merrill Lynch Global Research

Key Market Data

Table 4: Commodity prices, exchange rates, equity indices, yields and inventories

Base metals	Cash (\$/t)	3-month (\$/t)	Cash (% chge WoW)	3-month (% chge WoW)
Aluminium	1,997	2,031	4.3%	4.3%
Copper	6,767	6,826	4.4%	5.1%
Lead	2,307	2,331	3.2%	3.1%
Nickel	16,917	17,100	4.9%	5.6%
Tin	14,883	14,855	0.8%	1.1%
Zinc	2,186	2,215	2.9%	3.0%
LME	3,112		4.1%	

	Cash (c/lb)	3-month (c/lb)
Aluminium	91	92
Copper	307	310
Lead	105	106
Nickel	767	776
Tin	675	674
Zinc	99	100

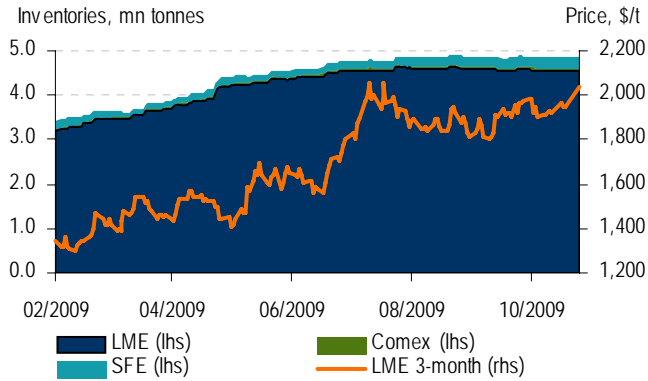
Other commodities, freight, exchange rates, equities and yields	Spot	% chge WoW
Gold, \$/oz	1,141	3.1%
Silver, \$/oz	18.46	6.8%
Platinum, \$/oz	1,447	6.4%
Palladium, \$/oz	369	5.2%
Steel, LME Far East, \$/t	495	0.0%
Steel, LME Mediterranean, \$/t	405	8.0%
Iron ore, China fines cfr \$/dmt	102.5	5.7%
Molybdenum, canned molybdic oxide, \$/lb	10.75	0.0%
Cobalt, high grade, \$/lb	22.00	0.0%
Ferro-chrome, 6-8% C basis 60% Cr, \$/lb	0.90	0.0%
WTI, \$/bbl	77.46	0.7%
Baltic Dry Index	4,661	17.9%
EUR/USD	1.4908	0.3%
Dow Jones Industrial Average	10,332	1.3%
10-year US Treasury yield	3.346	-2.9%

Exchange stocks and cancelled warrants	Stocks (tonnes)	% chge WoW	Canc. warrants (tonnes)	Canc. warr., % of stocks
Aluminium				
LME	4,537,200	-0.1%	125,650	2.8%
Shanghai	272,618	0.0%		
Comex	1,603	0.0%		
Comex Pieces	46,659	0.0%		
Total aluminium	4,858,080	-0.1%		
Copper				
LME	403,625	0.4%	1,725	0.4%
Comex	61,677	0.0%		
Shanghai	104,939	0.0%		
Total copper	570,241	0.3%		
Lead	132,250	0.1%	800	0.6%
Nickel	131,748	0.0%	1,248	0.9%
Tin	26,850	0.0%	190	0.7%
Zinc				
LME	425,200	0.2%	10,275	2.4%
Shanghai	161,704	0.0%		
Total zinc	586,904	0.2%		

Source: Reuters, Bloomberg, Metal Bulletin, BofA Merrill Lynch Global Commodity Research

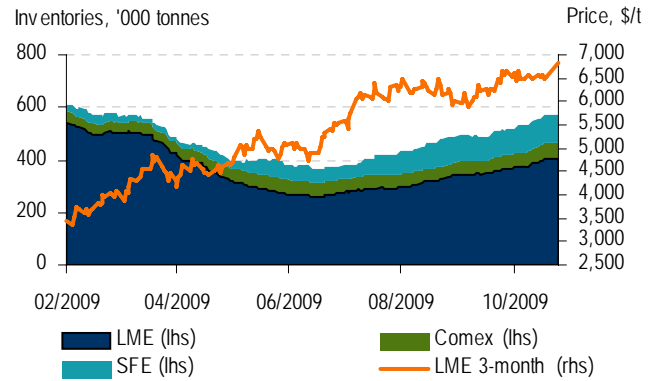
Exchange inventories and prices

Chart 18: Aluminium



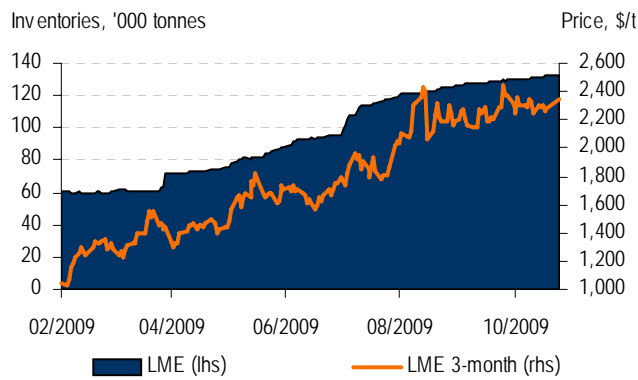
Source: Bloomberg

Chart 19: Copper



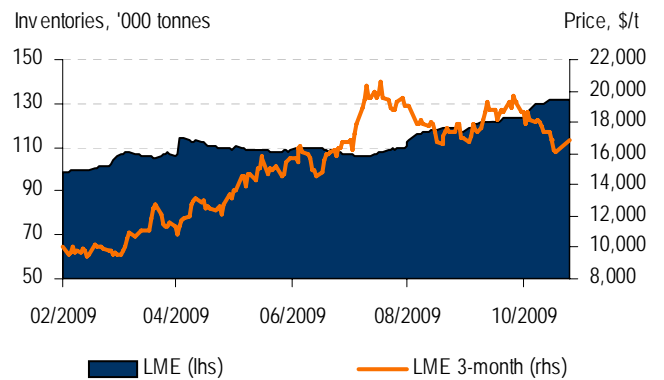
Source: Bloomberg

Chart 20: Lead



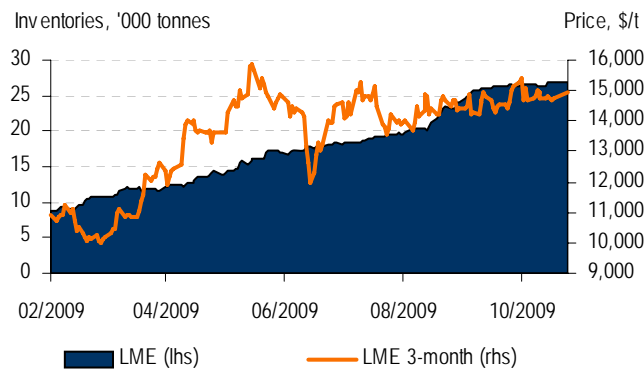
Source: Bloomberg

Chart 21: Nickel



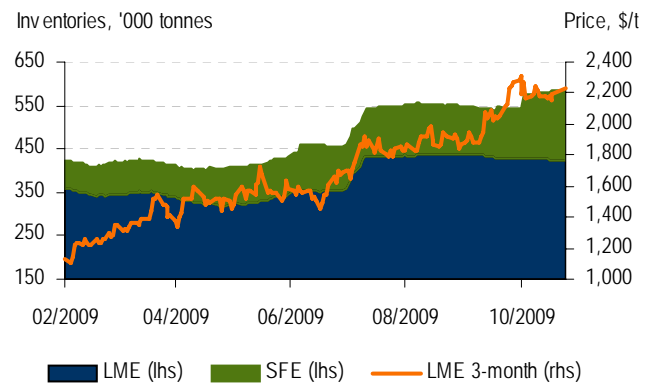
Source: Bloomberg

Chart 22: Tin



Source: Bloomberg

Chart 23: Zinc



Source: Bloomberg

Cancelled warrants, % of LME stocks

Chart 24: Aluminium



Source: Bloomberg

Chart 25: Copper



Source: Bloomberg

Chart 26: Lead



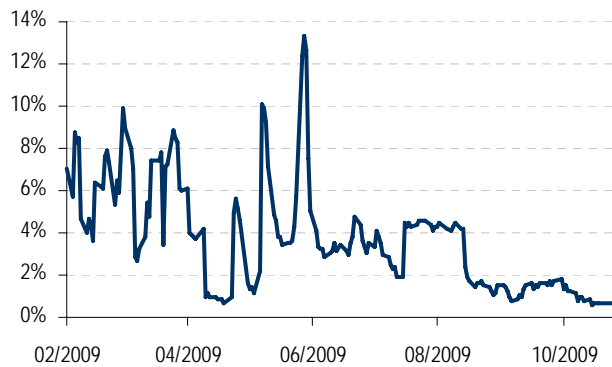
Source: Bloomberg

Chart 27: Nickel



Source: Bloomberg

Chart 28: Tin



Source: Bloomberg

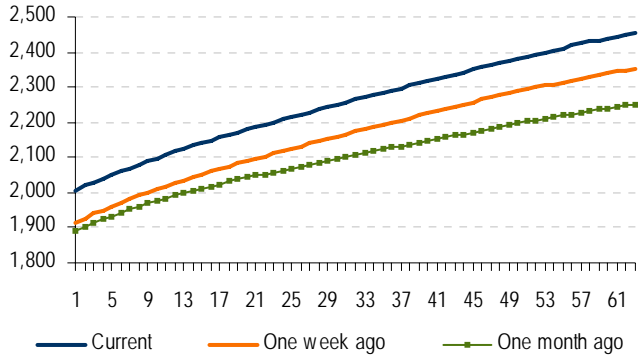
Chart 29: Zinc



Source: Bloomberg

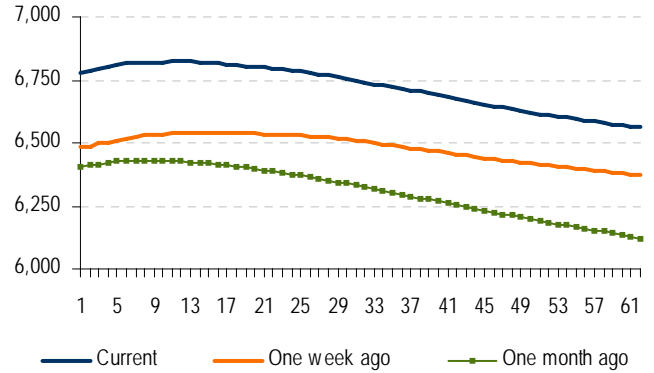
Forward curves

Chart 30: Aluminium, \$/t



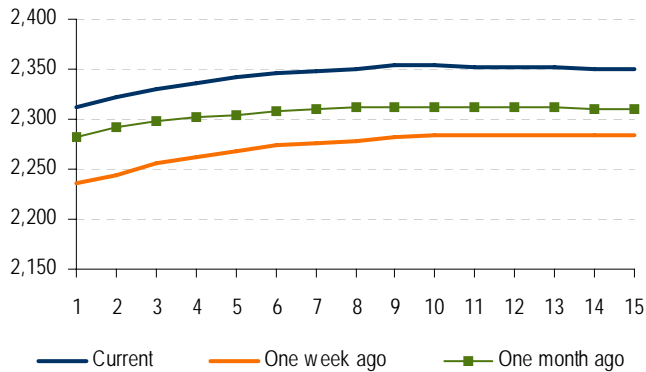
Source: Bloomberg

Chart 31: Copper, \$/t



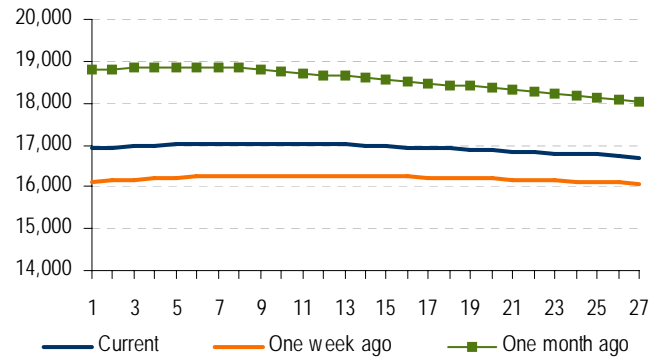
Source: Bloomberg

Chart 32: Lead, \$/t



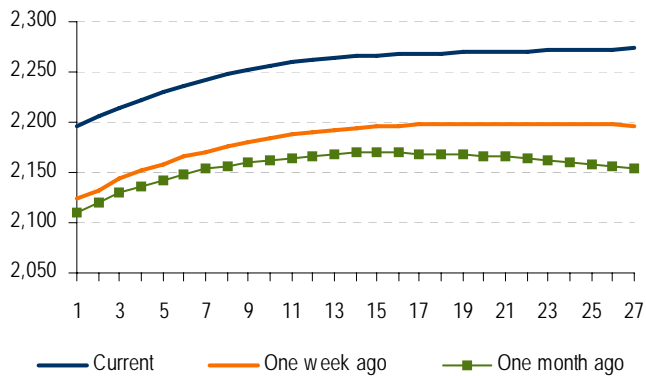
Source: Bloomberg

Chart 33: Nickel, \$/t



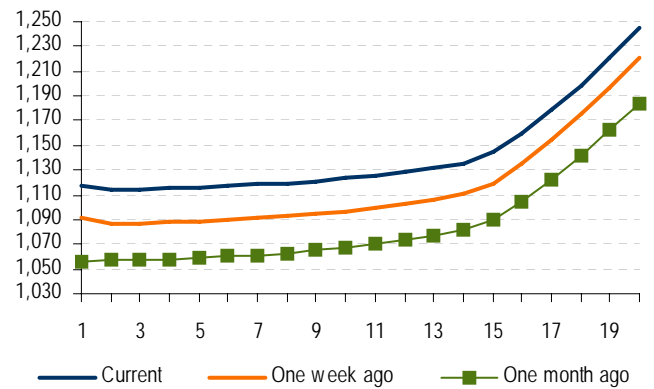
Source: Bloomberg

Chart 34: Zinc, \$/t



Source: Bloomberg

Chart 35: Gold, \$/oz

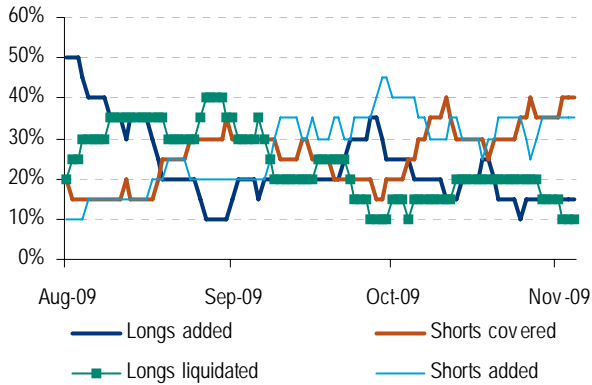


Source: Reuters Ecowin Pro
Note: data as at 13/11/09

LME, breakdown of positions taken and total open interest

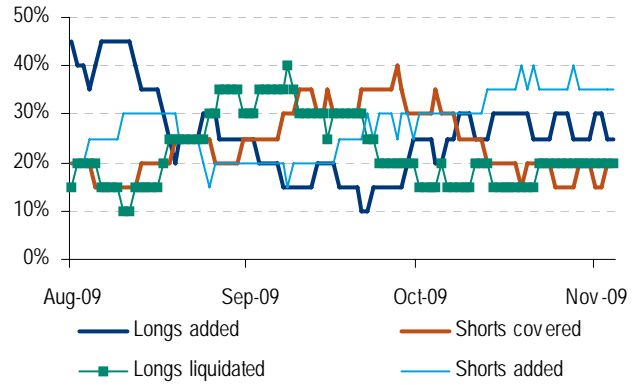
Note: breakdown of position is calculated on basis of a 30-day rolling average

Chart 36: Aluminium



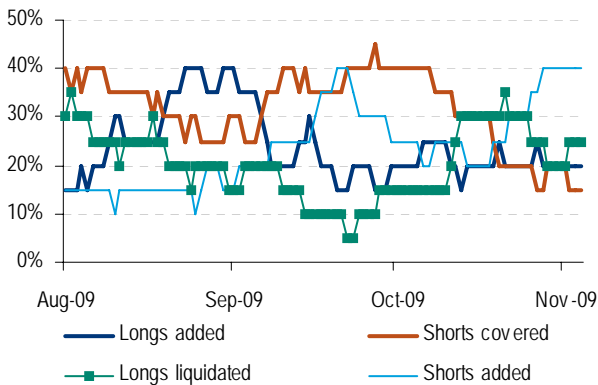
Source: Bloomberg, BofAML Global Commodity Research

Chart 37: Copper



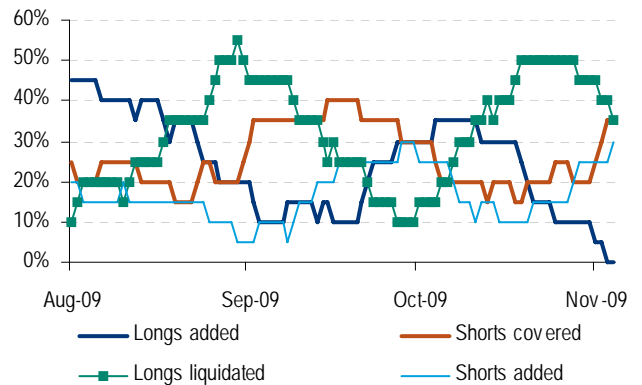
Source: Bloomberg, BofAML Global Commodity Research

Chart 38: Lead



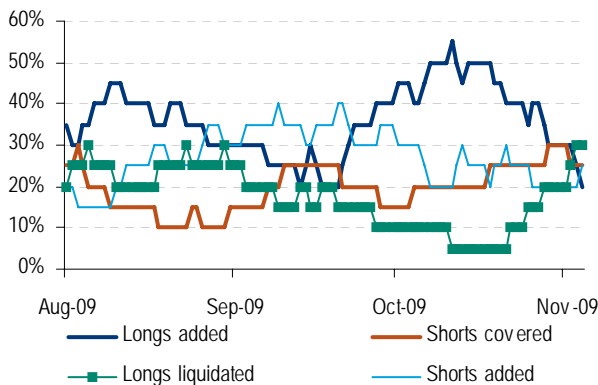
Source: Bloomberg, BofAML Global Commodity Research

Chart 39: Nickel



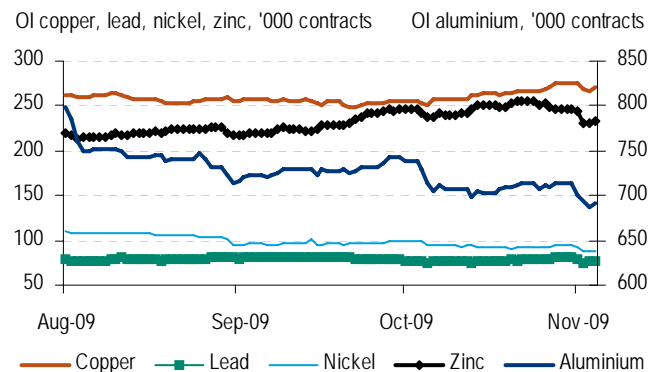
Source: Bloomberg, BofAML Global Commodity Research

Chart 40: Zinc



Source: Bloomberg, BofAML Global Commodity Research

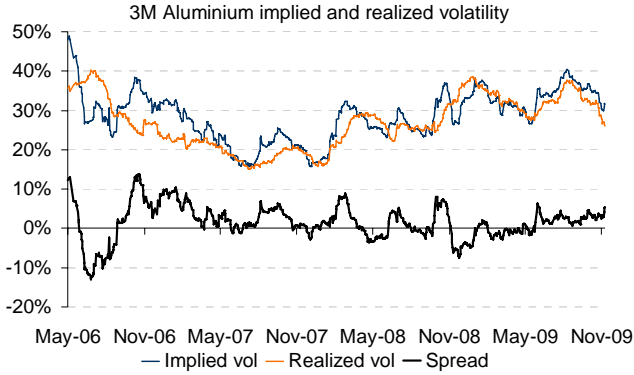
Chart 41: LME open interest by metal



Source: Bloomberg, BofAML Global Commodity Research

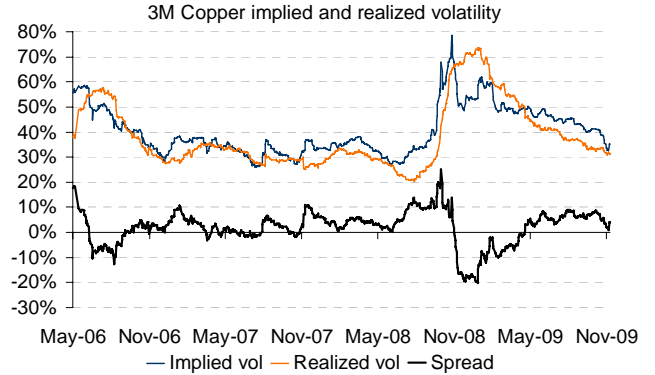
Implied and realised ATM volatility

Chart 42: Aluminium



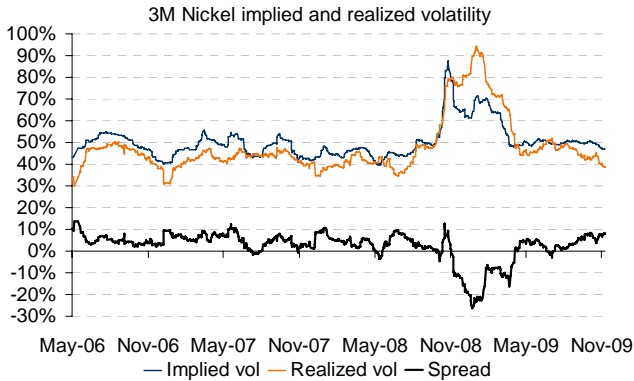
Source: Bloomberg, BofAML Global Commodity Research

Chart 43: Copper



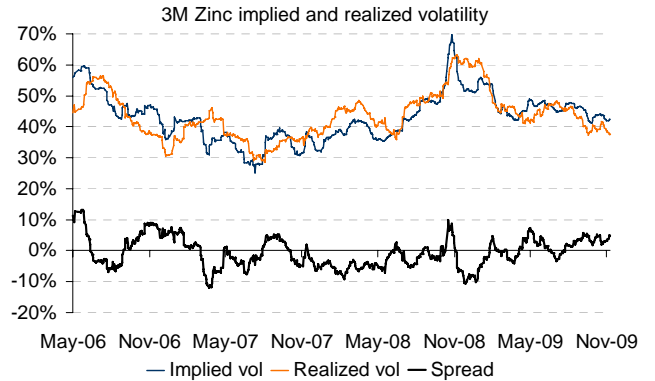
Source: Bloomberg, BofAML Global Commodity Research

Chart 44: Nickel



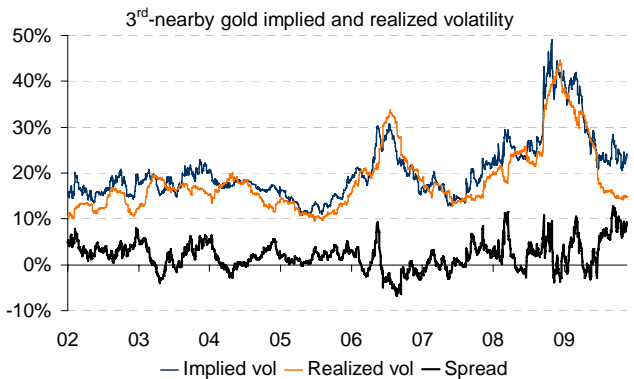
Source: Bloomberg, BofAML Global Commodity Research

Chart 45: Zinc



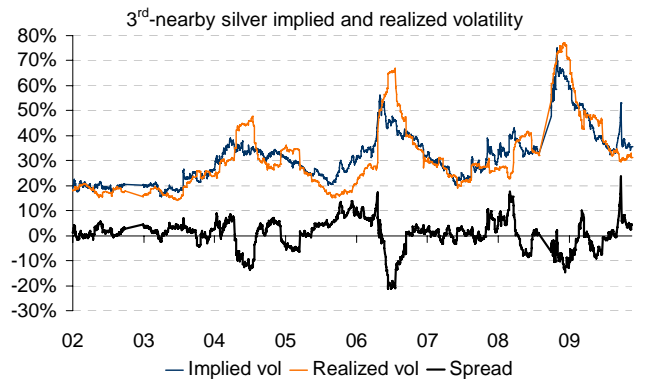
Source: Bloomberg, BofAML Global Commodity Research

Chart 46: Gold



Source: Bloomberg, BofAML Global Commodity Research

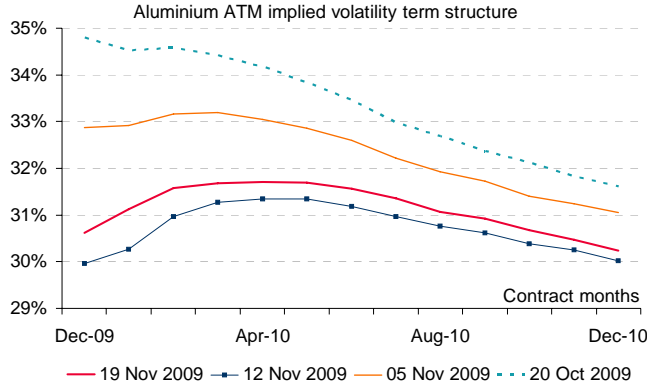
Chart 47: Silver



Source: Bloomberg, BofAML Global Commodity Research

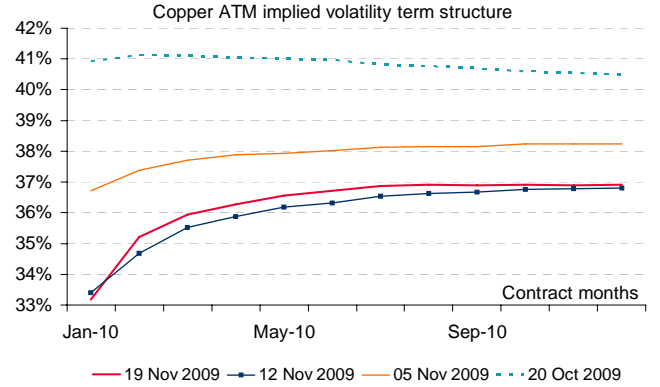
Term structure implied ATM volatility

Chart 48: Aluminium



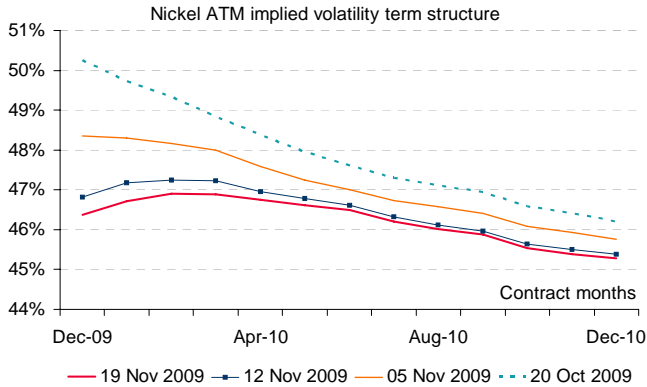
Source: BofAML Global Commodity Research

Chart 49: Copper



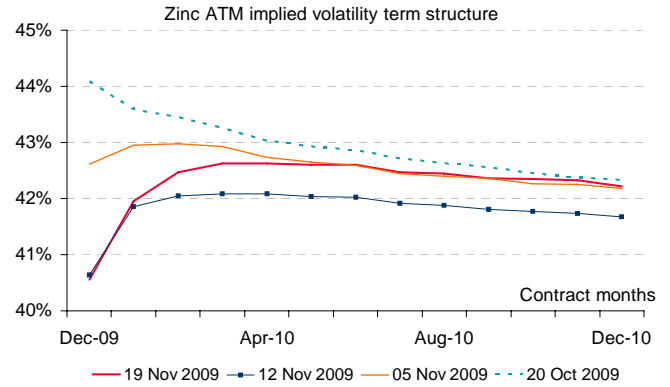
Source: BofAML Global Commodity Research

Chart 50: Nickel



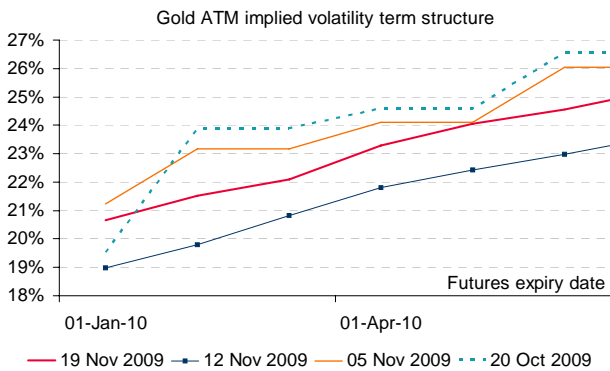
Source: BofAML Global Commodity Research

Chart 51: Zinc



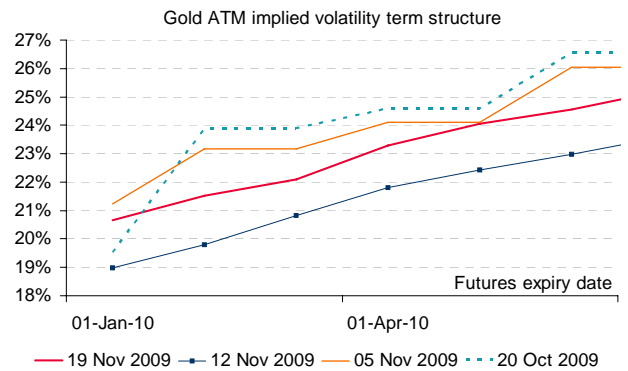
Source: BofAML Global Commodity Research

Chart 52: Gold



Source: BofAML Global Commodity Research

Chart 53: Silver



Source: BofAML Global Commodity Research

20 November 2009

Table 5: Global Commodity Research Publications - Past Topics*

Date	Publication	Title
20-Nov-09	Commodity Derivatives Insights	Gold and FX volatility at odds
12-Nov-09	Global Metals Weekly	Update to price forecasts
12-Nov-09	Global Energy Weekly	Revising up our crude oil price forecasts
06-Nov-09	Global Metals Weekly	Aluminium to stay weak
06-Nov-09	Global Energy Weekly	Gold leads oil: competitive depreciation?
02-Nov-09	Commodity Portfolio Monthly	Commodities rally in October
01-Nov-09	Global Metals Weekly	The union of China, USD and metals
30-Oct-09	Global Energy Weekly	Gasoline to weaken against HO this winter
28-Oct-09	Commodity Derivatives Insights	Gold bugs hold on to their calls
23-Oct-09	Global Metals Weekly	Silver: the golden child
23-Oct-09	Global Energy Weekly	Oil still lags other asset values
16-Oct-09	Global Metals Weekly	LME week in a nutshell
16-Oct-09	Global Energy Weekly	Week USD driving coal now, EM demand next
09-Oct-09	Global Metals Weekly	Zinc demand set to increase
09-Oct-09	Global Energy Weekly	Residual fuel cracks to weaken slightly
02-Oct-09	Metals Strategist	Lower Chinese metal imports as entry point
02-Oct-09	Global Energy Weekly	China back in a box oil vs. FX
01-Oct-09	Commodity Portfolio Monthly	September puts gold in focus
25-Sep-09	Global Metals Weekly	Unbalanced global growth affects nickel
24-Sep-09	Global Energy Weekly	Value opening up in US nat gas in 2H2010
23-Sep-09	Commodity Derivatives Insights	WTI oil impl vol high compared to realized
18-Sep-09	Global Metals Weekly	Are time-spreads fairly valued?
18-Sep-09	Global Energy Weekly	Distillate cracks on a recovery path
17-Sep-09	Global Commodity Paper #10	Investing in agriculture
11-Sep-09	Global Metals Weekly	Gold is breaking out
10-Sep-09	Global Energy Weekly	OPEC: Brothers in arms...or not?
01-Sep-09	Commodity Portfolio Monthly	Metals perform again in August
28-Aug-09	Global Metals Weekly	Housing as a foundation to metal demand
26-Aug-09	Global Energy Weekly	Crude oil volatility trending lower
21-Aug-09	Global Metals Weekly	Tight scrap supply to support metals
19-Aug-09	Global Energy Weekly	Rebound in distillate cracks months away
17-Aug-09	Commodity Derivatives Insights	Determining the risk premium in WTI crude oil futures
14-Aug-09	Global Metals Weekly	Governments save the day for metals
12-Aug-09	Global Energy Weekly	US gas: short-term pain, improving in 2010
06-Aug-09	Global Energy Weekly	Oil and money
05-Aug-09	Global Metals Weekly	Raising metal forecasts: be bullish
03-Aug-09	Commodity Portfolio Monthly	Metals outshine other commodities in July
31-Jul-09	Global Metals Weekly	Nickel demand is stabilising
30-Jul-09	Global Energy Weekly	A brief guide to the US carbon market
24-Jul-09	Global Metals Weekly	Platinum set to shine
22-Jul-09	Global Energy Weekly	No mean reversion in WTI-Brent spreads
20-Jul-09	Commodity Derivatives Insights	US nat gas: a high volatility, low return investment
16-Jul-09	Global Metals Weekly	Lead demand set to recover

Table 5: Global Commodity Research Publications - Past Topics*

Date	Publication	Title
14-Jul-09	Global Energy Weekly	No strength in jet until 2010
10-Jul-09	Global Metals Weekly	No abundance in copper mine output
07-Jul-09	Global Energy Weekly	Revising our crude oil price forecasts
02-Jul-09	Global Metals Weekly	Long-term storage deals limit spot aluminium availability
01-Jul-09	Commodity Portfolio Monthly	Commodity returns flat in June
30-Jun-09	Global Energy Weekly	Looking for leadership in energy
25-Jun-09	Global Metals Weekly	Bearish metals in the short-term, followed by recovery
23-Jun-09	Global Energy Weekly	No signs of life in European gas
17-Jun-09	Commodity Derivatives Insights	Not enough speculation in the commodity markets
15-Jun-09	Global Energy Weekly	Will gasoline hold up this winter?
09-Jun-09	Metals Strategist	Rotate from copper to zinc & nickel, and avoid aluminium
08-Jun-09	Global Energy Weekly	Can Iraq change the long-run bull case for oil prices?
01-Jun-09	Commodity Portfolio Monthly	Best performance in decade for MLCX Commodities in May
29-May-09	Global Energy Weekly	Volatility in US nat gas to trend higher
22-May-09	Global Energy Weekly	How high can oil go near-term?
20-May-09	Commodity Derivatives Insights	Energy and gold volatility coming off as prices stabilize
15-May-09	Global Energy Weekly	East vs. West in global coal
08-May-09	Global Energy Weekly	Money equals power in China
01-May-09	Commodity Portfolio Monthly	Commodity returns flat in April despite diverging sector moves
30-Apr-09	Global Energy Weekly	No shortage of winter gas in the UK
23-Apr-09	Energy Strategist	Coping with abundant spare productive capacity in energy
20-Apr-09	Commodity Derivatives Insights	Lower gold volatility on higher risk appetite
15-Apr-09	Global Energy Weekly	The up and coming 1.7 billion energy consumers
07-Apr-09	Global Energy Weekly	Swimming in liquid gas
01-Apr-09	Commodity Portfolio Monthly	Commodities post positive return in March after 8 months
31-Mar-09	Global Energy Weekly	More pain ahead for refiners
27-Mar-09	Commodity Derivatives Insights	Trading oil & US nat gas storage
18-Mar-09	Global Energy Weekly	Revising our 2009 oil forecast up, lowering 2010
17-Mar-09	Global Commodity Paper #9	Commodities and inflation: a framework for asset allocation
13-Mar-09	Global Energy Weekly	Set for wider summer-winter natural gas spreads in the US
05-Mar-09	Global Energy Weekly	Biofuels ready to make a comeback
04-Mar-09	Metals Strategist	Copper & Zinc over aluminium
02-Mar-09	Commodity Portfolio Monthly	Commodities fall again in February, but metals hold up
24-Feb-09	Global Energy Weekly	Watch China's money supply as oil demand fades
23-Feb-09	Commodity Derivatives Insights	Derivatives markets support the case for higher gold prices
16-Feb-09	Global Energy Weekly	The oil market is stabilizing. Where to next?
13-Feb-09	Global Commodity Paper #8	Capitalizing on highly volatile markets
09-Feb-09	Global Energy Weekly	Gasoline poised to outpace diesel this spring
03-Feb-09	Global Energy Weekly	Has non-OPEC oil production peaked?
02-Feb-09	Commodity Portfolio Monthly	Commodity correlations decline in January
26-Jan-09	Global Energy Weekly	Does the oil market need Canadian sands?
21-Jan-09	Commodity Derivatives Insights	WTI vol term structure to flatten as the market stabilizes
19-Jan-09	Global Energy Weekly	Cold weather and supply cuts hit the European gas market

Table 5: Global Commodity Research Publications - Past Topics*

Date	Publication	Title
12-Jan-09	Global Energy Weekly	Global power demand to languish in 2009
05-Jan-09	Commodity Portfolio Monthly	Energy, base metals push down commodities in December
30-Dec-08	Year Ahead Conference Call	2009 Commodity Outlook
19-Dec-08	Global Energy Weekly	Our best ideas for 1H2009
16-Dec-08	Commodity Strategist	2009 Commodity Outlook
12-Dec-08	Commodity Derivatives Insights	Index rebalancing should create opportunities in early January
05-Dec-08	Global Energy Weekly	Will long dated oil prices hold up at \$80/bbl?
01-Dec-08	Commodity Portfolio Monthly	In November commodities fell again as the economy faltered

Source: BofA Merrill Lynch Global Commodity Research

*Please contact us if you would like to receive copies of any of the above

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