

The yellow book

February 2009

FORTIS BANK



VM Group

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Introduction

Jessica Cross, CEO

VM Group

London, February 2009

That the Yellow Book is made available to the market on a complimentary basis is due to Fortis Bank SA/NV. VM Group would like to thank our colleagues at Fortis for their continued support and recognition of the value of this research to the industry.

We remind readers that our data is available electronically in Microsoft Excel format – drop us an email with specific data requests at: info@virtualmetals.co.uk.

Housekeeping

- All volumes are in metric tonnes or troy ounces unless stated.
- All references to dollars are US dollars unless stated.
- For space saving in the data tables (production, scrap, and jewellery), countries registering small amounts of gold are grouped into “other”. Contact us if you need a detailed breakdown.
- Numbers in the tables have been independently rounded and accordingly may not add exactly to indicated totals and subtotals.

This time 5 years ago

February 13th 2004
Morning fix: \$412.10/oz
Afternoon fix: \$416.00/oz
Dollar to Sterling: 1.88
Dollar to Euro: 1.29
Yen to Dollar: 105.47
Rand to Dollar: 6.59
1 month lease rate: -0.13%

Dow Jones, December 9th, 2003: Gold Bullion Securities, an initiative of the World Gold Council, was admitted to the official list and trading has begun on the main market of the London Stock Exchange.

CBC News, January 6th, 2003: Barrick Gold received government approval to begin development of its Tulawaka project in Tanzania. Tulawaka contains about 526,000 oz of gold.

Reuters, January 13th, 2003: Seasonally-adjusted South African gold output rose 0.3% while overall mineral production increased 2.4% during the three months to November 2003. Gold output increased 0.7% and total mineral production fell 0.1% in November compared to the previous month.

AFP, January 20th, 2003: European central banks were set to renew a deal to stabilise the gold market by limiting the amounts of gold they sell. The Central Bank Gold Agreement (CBGA) will be renewed well ahead of its scheduled five-year expiry date.

Frankfurter Allgemeine Zeitung, January 23rd, 2003: The London Bullion Market Association (LBMA) appointed South Africa's Rand Refinery as one of its five approved 'good delivery' referees. Rand Refinery, and the four other refiners appointed as referees – one in Japan and three in Switzerland – will assess the refiners on the LBMA's 'good delivery' list at least once every three years.

Reuters, January 28th, 2003: Freedom for Indian jewellery exporters and domestic bullion traders to import gold and silver directly without going through nominated agencies was close to being approved.

Bloomberg, January 30th, 2003: Bundesbank President Ernst Welteke said the German central bank will place the proceeds from gold sales over the next five years into an interest-paying fund, allowing the government to spend the money yielded from the investment. The fund may pay 5% interest annually, yielding between €200m-€250m every year.

Does the new IMF need to sell gold?

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Two years ago, recommending that the IMF ('the Fund') sell 403t of gold in order to fund an endowment to cover a shortfall in its income, Sir Andrew Crockett, former head of the Bank for International Settlements, observed:

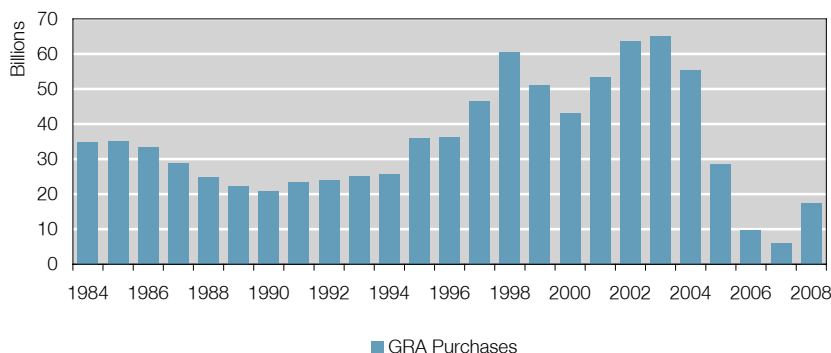
"The Fund does well when the world economy does badly."

Today, with the Fund's current Managing Director, Dominique Strauss-Kahn, noting that the advanced economies were "already in depression", the Fund should be doing fantastically well. So perhaps the need to sell its gold is less urgent?

The Fund gains most of its income to cover its operating expenses from interest received on the loans it makes to countries from its General Resources Account (GRA). More specifically, most of this income derives from the difference between the rate of interest it pays its creditors, and the amount it charges its debtors. A further major source of income is surcharges on such lending when it exceeds high levels. Traditionally, this profit margin, called the 'Margin for the Rate of Charge', has been set at a level sufficient to raise enough money to cover the Fund's predicted expenses for the year.

However, over the past decade the Fund's lending has shrank significantly, as the strong world economy enabled countries to repay IMF loans, and build up their own foreign exchange reserves as a cushion – a cushion moreover that had the benefit of not having IMF conditions attached. Outstanding loans of SDR 63bn at the end of 2003 (\$95bn at today's¹ exchange rate), fell steadily and by the end of Q1 2008 were just SDR 5.8bn. In 2006 alone, SDR 21bn of loans were repaid and only SDR 2.4bn were taken out.

Amount lent by IMF under General Resources Account (GRA), end-year, SDR billion



Source: VM Group from IMF

This dramatic decline in loans outstanding meant the Fund's potential interest income collapsed. Normally it would increase the Rate of Charge to cover its costs, but such was the steep decline in outstanding loans that it could not set this high enough, without making its loans either uncompetitive or economically damaging. A Rate of Charge of 1% when loans were SDR 63bn would return SDR 630m; with loans of just SDR 5.8bn, to receive the same income would need a Rate of Charge of 11%. So at the start of its 2007 fiscal year the Fund abandoned this policy, and instead said it would use its reserves to make up the shortfall, which it forecast would rise from SDR 69m in fiscal year 2007 to SDR 245m by fiscal year 2010².

¹ Approximately \$1.5 = 1 SDR. It fluctuates daily and has ranged between \$1.24 (in 2002) to \$1.64 (in 2008).

² Although in fact a strong performance by the Fund's investments meant that in 2008 its losses were much smaller than forecast.

Although the Fund's reserves were adequate to cover the forecast losses for many years (standing at SDR 6.9bn in 2007), they are designed to be a cushion against bad debts, not to set against running costs. The Fund therefore looked at ways to cut spending, and from the other side a task force was established to look into the long-term possibilities for the Fund's revenue. Called the Committee of Eminent Persons to Study Sustainable Long-term Financing of IMF Running Costs, it was led by Sir Andrew Crockett. When the Crockett Committee reported in January 2007 one of its key recommendations was the formation of an endowment, funded by the sale of 403t of IMF gold reserves; the interest income on this endowment (which at the time the Committee estimated would raise SDR 130m/year) would help plug the shortfall in its overall budget.

Enter the financial crisis

In the recent economic turmoil the Fund initially appeared irrelevant, but since October 2008 the demand for Fund loans has surged, as the financial crisis has turned into an economic crisis affecting middle-income countries particularly harshly. From that low of SDR 5.8bn at the end of Q1 2008, Fund loans rose to SDR 17.5bn by the end of Q4 2008, with new loans of SDR 10.4bn offsetting repayments of SDR 0.5bn. By 5th February 2009 this had edged up to SDR 17.8bn. In Q4 2008 major loans were advanced to Hungary (SDR 4.2bn), Iceland (SDR 0.56bn), Ukraine (SDR 3.1bn) and Pakistan (SDR 2.1bn).

This increase in loans means the Fund's income will be rising too. At the Fund's current Rate of Charge of 1.0%, another SDR 10bn of loans means SDR 100m more income a year (and only a negligible increase in associated costs). Furthermore, given the state of the world's economy and credit markets, it is likely that the outstanding loans will rise, further boosting the Fund's annual income (indeed the countries loaned money in Q4 2008 have another SDR 18bn on which they can draw if necessary). If loans were to rise by another SDR 20bn, then income would increase by SDR 200m.

These are significant sums, especially in the context of expected income from the endowment created by the potential gold sales. As noted above the Crockett Committee had estimated that 403t of gold sold at \$500/oz, and earning a 3% real return, would generate real income of SDR 130m. The gold price has since risen, so at current gold prices of \$900/oz, the amount would be nearer SDR 230m; however a real rate of 3% on investments might be seen as too optimistic in the current climate. A more likely real rate of 2% would yield just SDR 155m. Furthermore, this would naturally be lower if the IMF did not receive \$900/oz for its gold (or today's SDR equivalent).

So does the IMF now need to sell gold, when its income is rising again, and potentially by nearly as much as the endowment would provide? We believe the Fund would still like to sell, largely because the Crockett Committee pinpointed some structural problems in the way the IMF financed itself. The Committee criticised the IMF's funding strategy, not just on the ground that it no longer covered its expenditure, but because it was too concentrated, wasn't related to its expenditure (in that other functions were covered by unrelated interest income), and – crucially – that it lacked predictability, soaring in bad times and falling in good times. The Committee's proposals were designed not just to plug the income gap, but also to put the IMF's finances on a more diverse, sustainable³ and stable footing for the longer-term, and less subject to the ups and downs of the world economy.

In addition to the gold-funded endowment, other revenue-raising and revenue-diversifying proposals were: to invest the IMF's reserves less cautiously (forecast to raise an additional SDR 30m); to invest member states' quota resources to earn additional income (SDR 100m–SDR 200m); to charge directly

³ Expenditure was outside the Committee's remit, but cuts have been proposed by the IMF.

for other services the IMF gives to member countries; and stop waiving the charges incurred in loans to the very poorest countries (SDR 60m). The Executive Board of the IMF in April 2008 agreed⁴ all these measures except the use of quota resources. Thus, on the Committee's estimates, the additional income from these was to be SDR 220m, of which SDR 130m would come from the gold endowment (a figure that might be higher now). So the gold sales endowment forms a large part of the financing reform. Indeed after we first raised this issue the IMF confirmed that it was still planning on the gold sale.

US Congress remains a key interested party

But the Fund is not the only interested party in the question of IMF gold sales. It was always considered touch-and-go whether permission for the IMF to sell gold would be granted by the US Congress, which, given the US's share of IMF votes, has an effective veto. In the past, Congress has been against gold sales, not just because of the impact on the gold price (and gold-mining in the US and elsewhere), something the Crockett Committee was at pains to say would be minimised, but also through general unease about funding commitments to international financial institutions. Some US legislators will certainly pose the question – if they have time, given everything else that is currently on their plate, such as how to rescue the US from recession – now that the IMF's income is much better, does it really need to sell any gold? Moreover, the Fund might possibly have too much money after the financing reforms, if its loans were to continue to increase⁵.

The Crockett Committee's main argument was that the Fund's own income is too narrowly based and volatile. This remains the case today, and is unrelated to the wider international financial turmoil. Longer-term, the IMF needs financing reform, and a model in which its operating costs are funded by a variety of means. This will surely happen. However, with many now arguing that the IMF needs major change to face the challenges to the world economy, it is possible that the issue of gold sales to plug a funding gap that is disappearing (assuming present trends continue) and which are already two years down the line from the Crockett Committee's report, could be put on the back burner. At the very least, the IMF's renewed relevance has strengthened the case of those who oppose such sales.

⁴ <http://www.imf.org/external/np/sec/pr/2008/pr0874.htm>

⁵ The Crockett Committee briefly considered what would happen if IMF lending increased again after the reforms had been made. In that ('unlikely') case, it said, the additional income from lending, added to the income from the measures outlined above, would generate substantial surpluses. It said that such surpluses, aside from being used to bolster its reserves, should be returned to member countries.

Feature: A year of uncertainty

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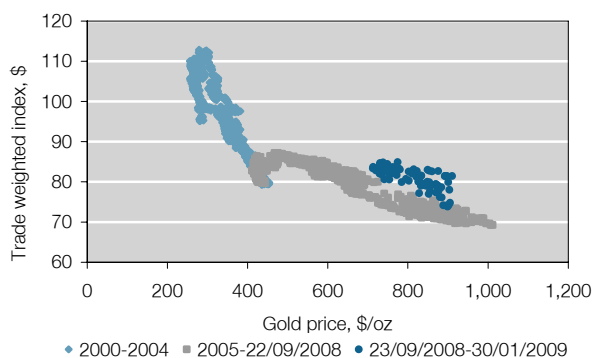
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Forecasting the gold price is never easy – but the financial turmoil of 2008 made this much more hazardous than usual. Gold started off 2008 supported by a weak US currency and a strong correlation with the oil price, much as we predicted in our January 2008 edition of the Yellow Book. But the end to the era of easy credit precipitated a slump in consumer confidence and a sharp end to years of sustained global economic growth. Now we are left with an array of uncertainties – most of which ought to see gold finally come into the limelight.

The heady rise beyond \$1,000/oz in March 2008 (to a new London Fixing nominal record high of \$1,011.25/oz on 17th March) was followed by some extremely sharp movements in the dollar-denominated price. By 2H 2008, and in particular after the fall of Lehman Brothers in mid-September – when the full impact of the financial crisis on the world's economy became apparent – the background macroeconomic situation became rather more murky. Opinions differed widely on which route gold would follow. After a brief surge higher in October, as it looked like the whole financial system would collapse, it seemed that the price would slump, along with those for industrial metals such as platinum, copper and aluminium.

But although gold got caught up with other commodities in the general investment scamper out of commodity indices, it was nowhere near being savaged as much as the purely industrial metals. Hedge funds and other large-scale speculative funds that had an urgent need for liquidity to meet the relentless demand by investors for cash – sold gold – but they sold all other commodities very much more aggressively. While the dollar gold price fell just 6.5% in 2H 2008 (as measured by the London pm fix), aluminium dropped more than 52%, copper more than 65%, lead almost 50%, nickel 50%, tin almost 60%, palladium 60%, platinum more than 56%, and even silver plunged by almost 40%. Relatively speaking, of all metals gold proved itself the place to be in late 2008 with the rot stopping at \$712.50/oz on 24th October, down 15% from the start of the year and 30% from the record high. Gold's safe haven status therefore seems intact, a fact highlighted by its closing fix of \$869.75/oz on 30th December 2008, up 4% year-on-year.

Gold price vs. trade weighted dollar index



Source: Reuters Ecowin, VM Group

* This chart plots the US dollar index (major currencies) daily against the gold price. The colours show different time periods that we believe saw different relationships between gold and the dollar.

Gold price vs. other metals: 2008-Jan 2009



Source: Reuters Ecowin

This background mayhem paradoxically ought to mean that predicting gold's journey is more straightforward; the price will be supported by uncertainty in most other assets. Former President George W. Bush's \$700bn Troubled Assets Relief Program and now President Barack Obama's \$787bn fiscal stimulus package should pump up the domestic economy at the cost of potentially creating a resurgence of inflation. This could propel gold through \$1,000/oz, to

perhaps \$1,300/oz by the end of 2009. We suspect the current price, around \$950/oz, has perhaps risen too far, too fast, and a Q2 setback might be on the cards. But if not our forecast average of \$905/oz over full-year 2009 will be overly conservative.

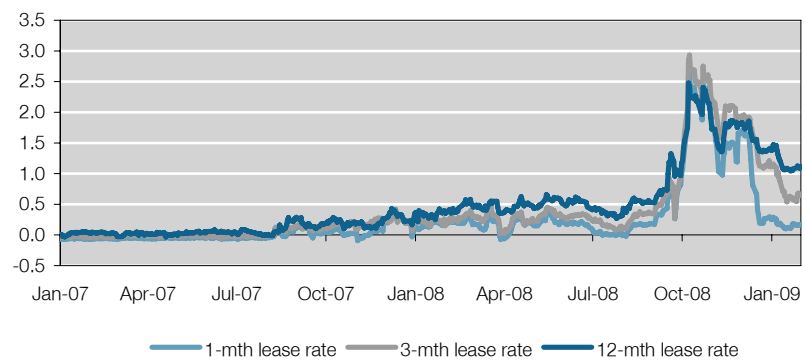
Into the unknown

There seems to be right now a universal determination by governments in all major economies to fend off outright economic collapse by a programme of fiscal spending, whether coordinated between countries or carried out independently.

In early February 2009 the new US Treasury Secretary, Timothy Geithner, said that US fiscal policy was about to turn “very aggressive” to stave off recession and avoid a slump like Japan suffered in the 1990s. If he sticks to his guns – and they are Obama’s guns, too – then the US is in for a period of Federal spending not seen since World War II. And Geithner also hinted that he will ensure that there are very strong indications of economic recovery before he will start to introduce restraints on fiscal spending. He said: “There’s a huge temptation to see the light at the end of the tunnel before it’s really there, and therefore to kind of shift back to restraint before you have recovery fully established.” For us, this spells one thing – a lengthy period of low US interest rates and ultimately a rebound in inflation in 2H 2010, by which time we also expect the crude oil price to be above \$80/barrel. On balance, inflation – not deflation – looks the most likely risk ahead for the US economy with time. This inflation should provide a strong boost to the gold price, particularly during a period of low to flat interest rates, currency uncertainties, and bombed-out valuations for most other assets, including property.

It is important to remember that the gold price has achieved all time highs in several other currencies in recent weeks, such as the Euro, Sterling, New Zealand dollar, Swedish Krona, Israeli shekel, Turkish lira, South African rand, Canadian dollar, Malaysian ringgit and the Indian rupee. Only when measured in the traditionally inflation-adverse currencies of Switzerland (and Germany, if the DM was still in operation) and the resurgent Yen is the gold high still back in 1980. This signifies strong investment demand worldwide. Although the volumes traded in the gold market are insignificant compared with the forex, bonds and equity markets, gold’s price strength does imply that some investors see the metal as a safe (or at least safer) option.

That of course begs an important question – why hasn’t the price tested its record high in dollar terms and why did it sell off in October 2008 when the financial crisis was intensifying? Well obviously the dollar’s strength has not helped. But more fundamentally the answer probably lies in the worst days of the financial crisis of last autumn. We believe that from August last year, bullion banks borrowed as much gold as was available and executed gold swaps to raise liquidity. The net result with respect to the long term gold price is neutral, but in the short term, the activity had an immediate and very marked affect on lease rates, as well as holding the spot price back, even in the wake of strong retail demand for physical metal.

Gold lease rates: 2007-Jan 2009

Source: Reuters Ecowin

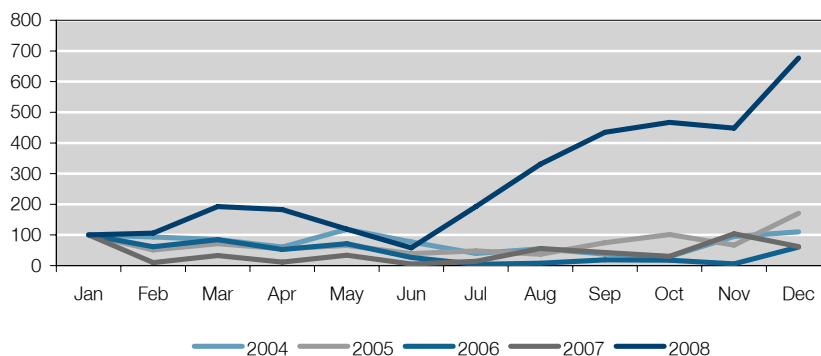
2009 will be a year of severe uncertainty, in which governments, in their efforts to prevent outright economic collapse, will inevitably commit the error of going too far; a case in point is the considerable amount of effort being made to prevent the collapse of car companies, which will do little except permit carmakers to continue to build inventory at a time when buyers of new cars are scarcer than hen's teeth. This may be sensible from the perspective of preventing higher unemployment, but not in helping the market rebalance. There remains the lingering chance that such efforts will completely fail, in which case the most serious enemy of gold – deflation – will happen; but we see a 10% chance of that, a 70% chance of inflation and just a 20% chance that the politicians will manage to keep all the balls in the air without over-balancing.

So we are probably in for a period in which not the supply-demand fundamentals but fear that will ultimately drive the gold price somewhat higher. It is gold's perceived ability to hold value in times of debauched paper currency that will tempt demand in both physical and paper forms. The surging demand for gold investment coins and bullion bars stands as testimony to this, as does the partial recovery in speculative net longs on Comex and Tocom.

2008: A tale of two halves

Mints were at full stretch in 2008. The knock-on effect of the financial crisis and the global economic downturn lifted legal tender gold coin demand by 59%, to a 20-year high of 206t (6.6 Moz) in 2008. The majority of demand came in 2H 2008 as investors scrambled for gold to preserve value when all about them fell off a cliff, while the surge in demand enabled a rise in premiums of 10%-15% between the coin price and gold price. Western demand led the way, with coin sales in the US up 123% year-on-year to 48.9t (1.57 Moz) and up by an average of 57% across Europe (and a whopping 200% in Austria for its gold coins). Such was the strength of demand that the US Mint, Perth Mint and Rand Refinery in South Africa were forced to suspend orders, while mints in Australia and New Zealand had to re-adjust work schedules to increase production.

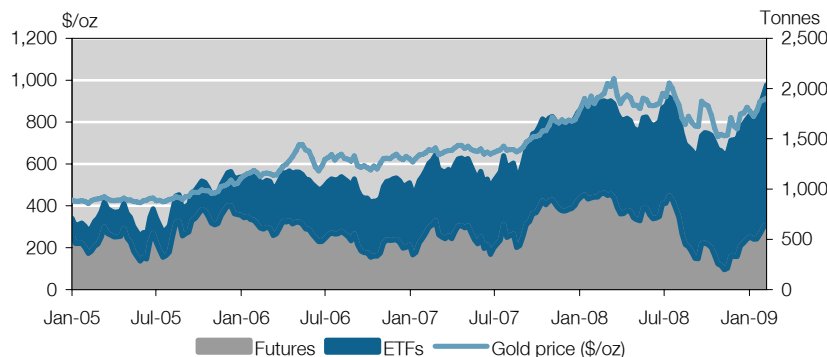
American Eagle gold bullion coin: ounces sold per month (100 = start of year)



Source: US Mint

In contrast, as the financial crisis swung into full gear from August to November 2008, total net long positions on the major gold-trading exchanges more than halved. In fact Comex net longs fell as low as 184t in early November from 817t in early January. The sell-off was part of a general shift to raise liquidity to buy out positions and meet redemption claims, while the recovery in late November through to early February 2009 marked a hiatus in the financial crisis. Conversely, ETF demand over the same period grew steadily, stalling briefly in October and November before picking up in December. By year-end, we estimate that ETFs in 2008 had grown by 321t (10.32 Moz), up 28% from 2007. In 2009 the pace of inflows has been explosive, with over 100t (3.22 Moz) in January, and more than that already in February (by the 14th).

Gold price (\$/oz), investment demand and ETF demand (tonnes)



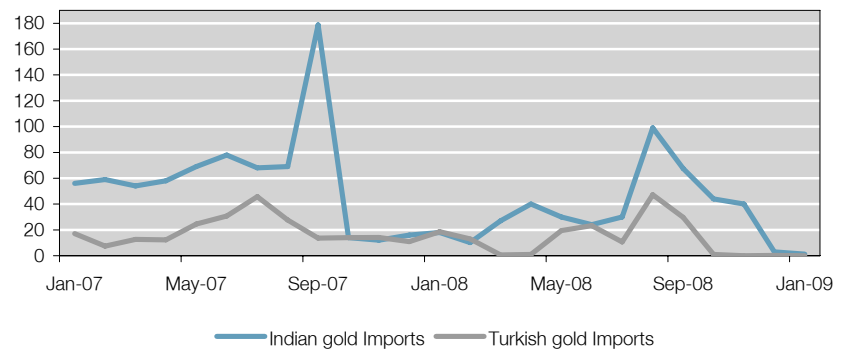
Source: VM Group

Investment jewellery (destined primarily for the Indian Subcontinent and Middle East) fared well, despite the collapse in crude oil prices. Demand in the Middle East was particularly strong, and reinforced by Iran where inflation and general political uncertainty fed a flight into portable assets. Meanwhile, besides a small rise in electronics demand, both dehedging and, more importantly, adornment jewellery fabrication fell. The former's decline was modest given that most of the steam has already been removed from miners' hedge books, and represents the last hurrah for dehedging: 2009 will be sharply lower. The decline in adornment jewellery offtake only surprised by its severity.

We estimate that adornment jewellery demand fell to its lowest level since the late 1980s at 1,054t (34 Moz), down 14.8% year-on-year, with most of the collapse coming from North America and Europe, each down 18%. Simply put, gold's average of \$872/oz and the recessionary environment spelled extreme gloom for low caratage jewellery sales. What is more, the sharp increase in scrap supply suggests adornment jewellery offtake was probably a lot worse than our supply and demand figures imply; we estimate a fall more in the region of 30%.

This increase in scrap supply is a consequence of the high gold price in most currencies and is vividly highlighted by the fall in Indian and Turkish gold bullion imports in the past few months. Turkish imports dropped to zero in January 2009, from 18.6t in January 2008, while imports in the four months to January 2009 were just 1.34t. The situation with India, the world's largest gold import market, is similar, with bullion imports down to 1.2t in January 2009, from 18.6t in the same month last year. The sharp fall in imports is attributable to weakness in the local currencies against the dollar, which in turn boosts the gold price in those currencies and hence led to the sale of jewellery for cash.

Indian and Turkish gold imports



Source: VM Group

Elsewhere on the supply side, mine production declined by 3% to 2,325t (74.7 Moz), as reduced output from South Africa, Australia and Indonesia offset gains in China, Peru and Russia. As expected, central bank gold sales also fell, with less than 300t sold in calendar year 2008.

The year ahead

World gold supply will continue to be impacted by lower mine supply although expected falls in South African, Australian and Canadian production will to some extent be offset by increased output from Peru, Russia and China. The long-term situation with South African gold mining is bleak. Even taking into account the power supply problems early in 2008, production was poor. The difficulty lies with the increasing depths that have to be reached and the geological complexity of the country's gold deposits, which make exploitation and extraction a very difficult and expensive task. When combined with the current lack of credit, we foresee another decline in South African output in 2009, and this alone will offset gains in China, Russia and Peru. Coupled with a ~20t fall in Australian output and 7t fall in Canadian output, we estimate gold mine supply will fall by 1.3% year-on-year, to 2,295t (73.7 Moz) in 2009. The risk to the upside is in higher prices, which will encourage greater mining.

While hedging is expected to fall to just 16t, from 33t in 2008 (we are assuming no return to price protection hedging), scrap supply will more than fill the void, increasing by 13%, to 1,261t (40.5 Moz) thanks to a stronger gold price. Central bank gold sales will fall again this year, although it is worth noting that the vast majority of sales come from signatories to the Central Bank Gold Agreement (CBGA), and this ends on the 26th September 2009. We are expecting sales of just 150t (4.8 Moz) for this, the bulk of which is in the final year of the current CGBA round (which runs September 27th to September 26th), unless any new sellers emerge; even if they do, total sales are likely to be less than 200t (6.4 Moz). After that, it is impossible to predict whether a new agreement will be implemented or if sales outside the pact might resume, which would be the first time since 1999. Given that Germany and Italy have not made any major disposals for many years, and that the wrangling between German politicians and the Bundesbank over whether or not to sell gold to help fund a \$50bn stimulus package is as yet unresolved, we cannot rule out the agreement not

being renewed. However if either Germany or Italy do opt to sell gold, or the IMF still wants to sell –we are likely to see another renewal of the Agreement. An announcement is likely to be made in March. Either way it is unlikely to result in a surge of Central Bank gold sales taking place between October to December 2009, thus our calendar year total is a similarly low 128t (4.1 Moz).

On the demand side adornment jewellery demand will rise slightly, but we expect sharp falls in the face of any sustained gold rally. The stellar performance on the demand side will come from ETF demand, which we estimate will add another 400t by year-end, but this may be too conservative given that ETF holdings grew by more than 260t (8.3 Moz) in January and the first half of February 2009 alone. In a sense, though, ETF demand is another swing factor.

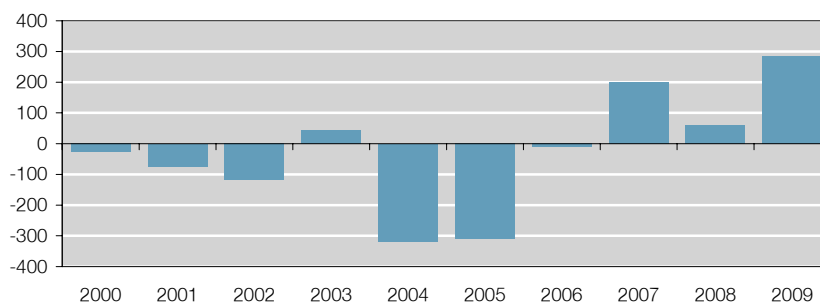
Taken together, although total gold supply is expected to weaken slightly this year to 3,770t (121 Moz), a fall in demand will see the market surplus widening from 60t (1.9 Moz) to 284t (9.1 Moz). Although the largest surplus for a number of years, it is relatively modest given the potential for investment demand outside of the ETFs and coins to absorb this metal. This does emphasise, however, how it is investment demand that is driving this market – and necessarily given the decline in support from dehedging and price-hit jewellery sales.

Good and bad scenarios

In 2008 gold demonstrated why it is widely considered to be a safe haven, albeit one that at times was battered by the remarkable sequence of economic events. When it closed at \$869.75/oz on 30th December 2008, it was the only metal to have gained – up almost 4%. During more normal times this would be nothing to shout about; but given that all other metals collapsed it was an impressive performance.

While gold might come down from its current heights in H1 2009, unprecedented deficit-funded government spending and the spectre of quantitative easing are likely to be very supportive of gold later in 2009, with investors, currently ignoring inflationary risks for the safety of government bonds, feeling increasingly uneasy about the inflationary consequences of the prevalent devil-take-tomorrow attitude being seized upon by governments in dealing with this recession. There are of course alternative scenarios that are not so good for gold. An economic recovery, especially one that begins in the US, might see the dollar rally, particularly against the euro, as the EU economies entered this downturn later than the US. This would knock the dollar gold price. The perfect scenario for a sustained higher gold price would be one in which sluggish economies require ever more government intervention, but where economic recovery kicks in before policymakers realise, and hence rapid inflation ensues. This would imply a strong second-half rally; the mere possibility of this should keep gold well supported.

Gold supply and demand residual 2000-2009 (t)



Source: VM Group

The data

The methodology

General comments: In an industry characterised by large and permanent above-ground stocks, a gold supply/demand balance only attempts to record the additions made to those stocks in a calendar year, the destination of that new supply, the mobilisation of the existing stocks through recycling and official sector sales and lending. Furthermore, it has to be recognised that there are large swathes of the gold market which are clandestine and unofficial, and therefore movements of metal within these sectors are largely unmeasurable and unverifiable. VM Group attempts to avoid spurious accuracy – measuring something visible to the last two decimal places is a waste of resources considering the global picture for this commodity. In the context of large tonnages of gold being smuggled across borders, the claim that it is possible to measure to fine accuracy the relatively small end-uses such as dental alloys and medallions adds little to the understanding of the big picture.

These supply/demand balances are designed therefore to give overall general flows of metal between regions and sectors.

The derivation of the data series

- Mine supply – data collated from Raw Materials Group, company reports, the Chamber of Mines of South Africa, ABARE, USBM, China Gold Association, the World Bureau of Metal Statistics and newswires.
- Scrap recycling – Data from refineries and industry participants. VM Group estimates based on gold price movements, political developments.
- Producer hedging – Data from the Fortis Hedging and Financial Gold Report produced by VM Group and Haliburton Mineral Services.
- Central Bank transactions – Data from IFS statistics, ECB statistics and newswires. Interpretation from discussions with Central Banking sector.
- Jewellery fabrication: Data derived from data series published by Consolidated Gold Fields, London until 1988. Individual country data series estimated by VM Group from our understanding of the individual markets, discussions with the bullion banks active in various physical markets, jewellery wholesalers, hallmarking figures where available, and trade data, which is subject to interpretation but gives direction of physical flows.
- Jewellery consumption – Data series generated by VM Group based on our analysis of exports and imports of gold jewellery to and from countries and gross retail sales as reported by a number of countries. The fabrication data was re-allocated on a country-by-country and percentage basis to derive consumption. The calculation of gold jewellery as a percentage of total jewellery retail sales is formula-based and has been verified in the countries concerned. All jewellery figures include old jewellery scrap but exclude process scrap generated during jewellery manufacturing. The generation of process scrap has been assessed depending on the manufacturing process, e.g. machine-made, stamping, casting or hand made. In mature markets, close scrutiny of jewellery fabrication and consumption is not necessary. We know that these have not been growth industries and that jewellery's share of disposable income expenditure has been falling. Thus, in these markets, demographic trends and rising disposable incomes have been offset by life-style preferences which favour other goods over jewellery.

The countries of most interest are those consuming large tonnages of gold jewellery, specifically the USA, India, Turkey, China and countries in the Middle East. For these countries, trade data, retail sales, commodity exchange-related figures or data contributed by industry is sufficient to

generate the needed data series.

- Legal tender coins – Data made available by the Mints and refineries concerned, for example, the US Mint, the SA Mint and Rand Refinery. There are some smaller mintings for which VM Group does not have data, and therefore this data series probably understates the sector. VM Group makes allowance for this in the “other industrial” data series.
- Electronics – Data series derived by VM Group based on work relating to the electronics industry when studying the pgm industry and the recycling of electronic scrap.
- Exchange traded funds – Data series from published data.
- The “other category” of gold end-uses is an estimate of all other applications of gold including medallions (not legal tender coinage), industrial and decorative uses (excluding electronics), as well as medical and dental demand.

The residual

The overall supply/demand balance does not balance. The difference between supply and demand (negative is demand exceeding supply), we term the residual. The residual is an acknowledgement that a) omniscience about this market is impossible, and to pretend otherwise is misleading b) there are gold flows of considerable magnitude associated with the unofficial market, such as smuggled or stolen gold which cannot be verified and c) there are sectors which cannot be measured and therefore we do not pretend otherwise; these include “bar hoarding”, which is the purchase of gold in bar form, the vast majority of which is in any case rapidly turned into jewellery.

The residual also does not reflect the net long or short positions held by the hedge funds or the speculators over year-end. While CFTC data gives an indication of outstanding positions on COMEX, it is not possible to put a number on the net longs or shorts in the OTC market.

Physical supply and demand: world total and by region, 2004-2009f

World total and regional supply/demand imbalances (tonnes)

	World total						North America					
	2004	2005	2006	2007	2008e	2009f	2004	2005	2006	2007	2008e	2009f
Supply												
Mine supply	2,374	2,444	2,398	2,404	2,325	2,295	389	380	364	339	331	324
Scrap recycling	1,100	857	1,083	1,005	1,121	1,261	81	70	88	83	92	101
Hedging	68	84	45	71	33	16	19	30	29	48	0	5
Central Bank sales	464	616	379	605	298	198	0	0	2	0	0	0
Total supply	4,006	4,000	3,905	4,085	3,776	3,770	489	480	482	470	423	425
Demand												
Jewellery fabrication	2,878	2,996	2,276	2,227	1,958	2,023	212	207	177	164	128	130
Jewellery consumption	2,878	2,996	2,276	2,227	1,958	2,023	396	390	351	334	275	285
Legal tender coins	109	108	113	129	206	200	26	24	25	31	61	67
Electronics	332	357	372	403	422	371	73	75	78	84	87	76
Other end uses	350	393	315	311	313	301	31	31	29	29	28	25
ETFs	125	195	254	253	321	397	95	178	212	185	164	206
Central Bank purchases	7	39	132	68	115	60	0	0	0	0	0	0
Dehedging	524	223	455	493	382	135	195	146	336	245	128	40
Total Demand	4,325	4,311	3,916	3,884	3,717	3,486	816	844	1,032	908	742	695
Residual (supply less demand)	(318)	(310)	(11)	201	60	284	(327)	(365)	(549)	(438)	(319)	(265)
	Europe						Asia					
	2004	2005	2006	2007	2008e	2009f	2004	2005	2006	2007	2008e	2009f
Supply												
Mine supply	18	15	19	17	19	16	514	557	530	612	555	559
Scrap recycling	163	102	126	117	125	137	261	237	288	269	285	294
Hedging	0	9	15	7	2	3	0	0	0	0	0	0
Central Bank sales	410	529	338	534	283	198	34	67	11	12	12	0
Total supply	590	654	498	676	429	354	809	860	828	893	853	853
Demand												
Jewellery fabrication	790	791	671	688	542	553	696	716	584	566	502	518
Jewellery consumption	547	546	476	473	379	385	614	633	499	485	432	446
Legal tender coins	57	67	71	73	87	78	18	9	10	13	25	24
Electronics	41	43	44	48	49	43	200	221	230	249	264	232
Other end uses	128	143	114	112	113	108	70	74	64	64	63	56
ETFs	28	12	37	44	158	175	0	0	0	0	0	0
Central Bank purchases	0	0	0	0	0	0	3	6	14	4	27	10
Dehedging	22	9	5	32	5	15	0	0	0	0	0	0
Total Demand	823	820	747	782	791	804	905	943	817	816	810	768
Residual (supply less demand)	(233)	(166)	(249)	(105)	(363)	(450)	(96)	(83)	11	77	43	84
	Indian sub-continent						Middle East					
	2004	2005	2006	2007	2008e	2009f	2004	2005	2006	2007	2008e	2009f
Supply												
Mine supply	5	3	3	3	2	2	9	8	8	8	8	7
Scrap recycling	186	142	198	180	215	257	270	209	261	238	277	332
Hedging	0	0	0	0	0	0	0	0	0	0	0	0
Central Bank sales	0	0	0	0	0	0	20	20	20	0	2	0
Total supply	191	145	200	182	217	259	299	237	289	246	286	340
Demand												
Jewellery fabrication	607	661	397	357	337	354	426	466	321	336	341	357
Jewellery consumption	661	714	437	401	377	398	528	572	399	429	397	452
Legal tender coins	0	0	0	0	0	0	0	0	0	0	0	0
Electronics	0	0	0	0	0	0	0	0	0	0	0	0
Other end uses	86	105	79	78	80	81	24	28	19	17	19	21
ETFs	0	0	0	4	1	5	0	0	0	0	0	0
Central Bank purchases	0	0	0	0	0	0	0	30	100	12	10	0
Dehedging	0	0	0	0	0	0	0	0	0	0	0	0
Total Demand	747	819	516	483	458	483	552	631	518	459	426	473
Residual (supply less demand)	(556)	(674)	(316)	(301)	(241)	(224)	(254)	(394)	(229)	(213)	(140)	(134)

Source: VM Group

Note: Regional totals include jewellery consumption but not jewellery fabrication. Totals might not add due to rounding.

World total and regional supply/demand imbalances (tonnes)

	Latin America						Africa					
	2004	2005	2006	2007	2008e	2009f	2004	2005	2006	2007	2008e	2009f
Supply												
Mine supply	373	431	467	441	455	472	553	520	513	480	444	415
Scrap recycling	69	40	50	48	51	56	22	15	18	16	17	19
Hedging	0	0	0	0	0	0	16	12	0	4	1	0
Central Bank sales	0	0	6	0	0	0	0	0	0	0	0	0
Total supply	442	471	523	489	507	528	591	546	531	501	462	434
Demand												
Jewellery fabrication	78	80	68	63	57	58	31	31	21	20	20	20
Jewellery consumption	65	66	56	52	47	48	28	29	19	18	18	19
Legal tender coins	0	0	0	0	12	16	3	3	2	7	10	6
Electronics	2	2	2	2	2	2	0	0	0	0	0	0
Other end uses	10	11	10	11	10	9	0	0	0	0	0	0
ETFs	0	0	0	0	0	0	3	4	3	14	3	7
Central Bank purchases	0	0	0	2	3	0	0	0	0	0	0	0
Dehedging	0	0	0	0	0	0	170	0	40	30	163	40
Total Demand	76	79	68	66	75	75	204	36	63	69	194	72
Residual (supply less demand)	366	392	455	423	432	453	386	510	467	432	268	372
	Australasia						Eastern Europe					
	2004	2005	2006	2007	2008e	2009f	2004	2005	2006	2007	2008e	2009f
Supply												
Mine supply	339	347	317	325	318	294	175	184	178	179	193	206
Scrap recycling	4	3	4	3	4	4	45	40	53	50	55	61
Hedging	33	33	1	12	30	84	0	0	0	0	0	0
Central Bank sales	0	0	0	0	0	0	0	0	1	58	0	0
Total supply	376	382	321	340	352	306	220	224	232	287	248	266
Demand												
Jewellery fabrication	5	6	5	4	4	4	34	39	33	30	27	28
Jewellery consumption	5	6	5	4	4	4	34	39	33	30	27	28
Legal tender coins	5	5	5	6	12	8	0	0	0	0	0	0
Electronics	1	1	1	1	1	1	16	17	17	19	19	17
Other end uses	0	0	0	0	0	0	0	0	0	0	0	0
ETFs	(1)	1	2	6	(5)	5	0	0	0	0	0	0
Central Bank purchases	0	0	0	0	0	0	3	3	18	50	75	40
Dehedging	137	68	74	186	86	40	0	0	0	0	0	0
Total Demand	147	80	87	203	98	58	54	58	68	99	121	85
Residual (supply less demand)	229	302	234	138	254	248	166	166	164	189	127	182

Source: VM Group

Note: Regional totals include jewellery consumption but not jewellery fabrication. Totals might not add due to rounding. The allocation of hedging and dehedging to individual regions is complicated and for simplicity we have used the regions used in The Fortis Hedging and Financial Gold Report.

Primary mine supply, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
South Africa	343.0	294.8	272.0	245.7	219.3	195.2
Ghana	60.0	66.5	72.0	70.8	72.2	73.3
Mali	40.0	49.0	58.0	56.8	50.1	44.1
Tanzania	48.0	45.5	45.0	47.0	37.6	33.8
Guinea	13.0	13.0	17.0	18.0	18.6	18.6
Other Africa	10.9	15.7	18.6	14.0	15.0	15.0
Congo (Dem Rep)	5.7	4.2	4.2	5.0	4.8	4.5
Ethiopia	6.0	6.0	6.0	6.0	6.0	6.0
Sudan	5.0	5.0	3.5	2.7	2.5	2.3
Zimbabwe	20.0	14.0	11.0	7.0	3.4	6.0
Cote D'Ivoire	0.0	2.0	1.4	1.5	4.0	3.4
Total Africa	553.0	519.7	512.9	480.3	444.2	415.3
China	220.0	224.0	240.0	270.5	275.9	281.4
Indonesia	100.0	142.0	110.9	147.9	76.9	76.9
Other Asia	10.7	10.7	9.2	22.0	30.0	30.0
Mongolia	16.0	18.0	24.0	24.0	24.0	21.4
Japan	7.9	8.5	7.5	7.3	5.5	5.2
Philippines	5.0	6.2	6.8	7.0	7.0	7.0
North Korea	5.0	5.0	0.0	0.0	0.0	0.0
Uzbekistan	90.0	86.0	85.0	88.0	88.4	88.4
Kazakhstan	22.0	22.0	20.0	21.4	20.3	19.3
Kyrgyzstan	22.0	17.0	11.0	11.0	16.3	16.3
Total Asia	514.1	556.5	529.7	611.6	554.9	558.7
Australia	253.0	264.0	247.0	253.0	222.6	200.4
Papua New Guinea	71.0	68.7	58.3	60.0	69.6	66.1
New Zealand	11.0	11.0	10.0	10.0	12.3	13.4
Fiji	4.0	2.8	1.7	2.0	13.2	14.3
Other Australasia	0.0	0.0	0.0	0.0	0.0	0.0
Total Australasia	339.0	346.5	317.0	325.0	317.8	294.1
Russia	159.0	168.0	165.0	161.9	176.0	188.3
Armenia	2.1	1.4	0.9	0.6	0.6	1.0
Bulgaria	1.4	3.9	3.8	4.0	2.1	2.0
Georgia	1.4	1.6	2.4	2.4	2.4	2.4
Hungary	0.5	0.5	0.5	0.5	0.5	0.5
Romania	0.5	0.5	0.5	0.5	0.5	0.5
Ukraine	0.5	0.5	0.5	0.5	0.5	0.5
Serbia	0.3	0.3	0.3	0.3	0.3	0.3
Other Eastern Europe	9.0	7.7	4.2	8.0	10.0	10.0
Total Eastern Europe	174.7	184.4	178.1	178.7	192.9	205.5
Sweden	6.0	5.2	6.8	6.8	6.8	6.3
Spain	5.0	3.0	3.0	3.0	3.0	0.0
Turkey	0.0	0.0	0.0	4.0	5.0	7.0
Other Western Europe	6.5	6.3	9.3	3.3	4.0	3.0
Total Western Europe	17.5	14.5	19.1	17.1	18.8	16.3
India	5.0	3.4	2.5	2.7	2.5	2.4
Total Indian sub-continent	5.0	3.4	2.5	2.7	2.5	2.4
Peru	173.0	207.8	203.6	170.0	179.9	183.5
Argentina	27.0	25.0	44.0	44.0	41.8	39.7
Brazil	34.0	35.0	41.0	42.0	41.6	41.2
Chile	39.0	39.6	40.8	40.9	38.4	36.1
Colombia	30.0	35.8	37.0	39.0	41.5	44.0
Mexico	24.0	31.6	33.7	35.0	42.0	46.2
Other Latin America	11.0	15.7	22.2	26.0	28.0	30.0
Venezuela	14.0	10.8	11.3	8.7	9.1	18.1
Bolivia	0.0	8.9	9.6	10.0	9.7	9.4
Guyana	12.0	8.2	6.4	6.2	6.8	7.4
Ecuador	0.0	4.0	4.0	4.0	4.1	4.2
Honduras	4.0	4.5	4.5	4.5	2.7	2.7
Nicaragua	5.0	3.4	3.5	3.6	2.6	1.9
Dominican Republic	0.0	0.0	0.0	0.0	0.0	0.0
Total Latin America	373.0	430.9	466.6	441.0	455.3	471.7

Continued overleaf

Primary mine supply, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Saudi Arabia	8.0	8.0	8.0	8.0	7.6	7.2
Other Middle East	1.0	0.0	0.0	0.0	0.0	0.0
Total Middle East	9.0	8.0	8.0	8.0	7.6	7.2
USA	260.0	261.0	260.0	238.0	237.3	236.6
Canada	129.0	118.5	104.0	101.2	94.1	87.5
Total North America	389.0	379.5	364.0	339.2	331.4	324.1
World total	2,374.3	2,443.5	2,397.8	2,403.6	2,325.4	2,295.2

Source: Raw Materials Group, Chamber of Mines, South Africa, News Wires

Scrap recycling (excluding process scrap), 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Algeria	5.4	4.0	4.9	4.4	4.7	5.2
Morocco	5.5	4.0	4.9	4.4	4.7	5.1
Tunisia	5.2	3.5	4.3	3.9	4.1	4.5
Other Africa	5.5	3.0	3.7	3.5	3.7	4.1
Total Africa	21.6	14.5	17.7	16.2	17.2	18.9
Thailand	45.0	45.0	54.9	52.3	55.4	57.1
Indonesia	33.0	40.0	48.8	44.4	47.0	48.4
Japan	42.0	30.0	35.1	33.4	35.4	36.5
Malaysia	18.0	30.0	36.6	33.3	35.3	36.3
China	37.0	25.0	30.5	29.0	30.8	31.7
Philippines	15.0	18.0	22.0	20.0	21.2	21.8
South Korea	20.0	15.0	18.3	17.4	18.5	19.0
Taiwan	16.0	12.0	14.6	13.9	14.8	15.2
Singapore	15.0	10.0	12.2	11.6	12.3	12.7
Hong Kong	17.0	10.0	12.2	11.6	12.3	12.7
Myanmar	3.0	2.0	2.4	2.3	2.5	2.5
Total Asia	261.0	237.0	287.6	269.3	285.5	294.0
Australia	4.0	3.0	3.5	3.3	3.5	3.9
Total Australasia	4.0	3.0	3.5	3.3	3.5	3.9
Russia	45.0	40.0	52.8	50.3	55.3	60.8
Total Eastern Europe	45.0	40.0	52.8	50.3	55.3	60.8
Turkey	80.0	40.0	48.8	44.4	49.7	59.6
Italy	34.0	26.0	32.5	31.0	31.9	32.8
France	7.0	6.0	7.5	7.1	7.4	7.6
Germany	7.0	5.0	6.3	6.0	6.1	6.3
Switzerland	6.8	5.0	6.3	6.0	6.1	6.3
UK & Ireland	7.0	5.0	6.3	6.0	6.1	6.3
Other	21.1	14.5	18.0	17.1	17.6	18.2
Total Western Europe	162.9	101.5	125.5	117.4	124.9	137.1
India	145.0	115.0	161.0	146.4	175.6	210.8
Pakistan	30.0	20.0	28.0	25.5	30.5	36.7
Bangladesh	7.0	4.0	4.9	4.4	4.9	5.4
Sri Lanka	4.0	3.0	3.7	3.3	3.7	4.0
Total Indian subcontinent	186.0	142.0	197.5	179.6	214.7	256.8
Argentina	8.0	6.0	7.5	7.1	7.6	8.4
Brazil	10.0	6.0	7.5	7.1	7.6	8.4
Chile	8.0	5.0	6.3	6.0	6.4	7.0
Colombia	8.0	5.0	6.3	6.0	6.4	7.0
Mexico	8.0	5.0	6.3	6.0	6.4	7.0
Other Latin America	10.0	5.0	6.3	6.0	6.4	7.0
Peru	8.0	4.0	5.0	4.8	5.1	5.6
Venezuela	9.0	4.0	5.0	4.8	5.1	5.6
Total Latin America	69.0	40.0	50.0	47.6	51.0	56.0
Saudi Arabia	90.0	70.0	87.5	79.5	92.3	110.7
Iraq	65.0	40.0	50.0	45.5	52.7	63.3
Egypt	33.0	27.0	33.8	30.7	35.6	42.7
Iran	28.0	32.0	40.0	36.4	43.6	52.4
Kuwait	25.0	22.0	27.5	25.0	29.0	34.8
UAE	15.0	10.0	12.5	11.4	13.2	15.8
Lebanon	9.0	5.0	6.3	5.7	6.6	7.9
Israel	4.5	3.0	3.8	3.4	4.0	4.7
Total Middle East	269.5	209.0	261.3	237.5	277.0	332.3
USA	75.0	65.0	81.3	77.4	85.1	93.6
Canada	6.0	5.0	6.3	6.0	6.5	7.2
Total North America	81.0	70.0	87.5	83.3	91.7	100.8
World total	1,100.0	857.0	1083.4	1,004.6	1,120.7	1,260.8

Source: VM Group

Jewellery fabrication, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
South Africa	9.6	9.6	8.2	7.4	7.5	7.6
Morocco	10.0	10.0	6.0	5.7	5.8	6.1
Libya	5.0	5.0	3.0	3.0	3.0	3.1
Algeria	5.0	5.0	3.0	2.9	2.9	2.9
Tunisia	1.0	1.0	0.6	0.7	0.7	0.7
Total Africa	30.6	30.6	20.8	19.6	19.9	20.5
China	240.0	250.0	260.0	252.2	227.0	231.5
Indonesia	100.0	100.0	60.0	57.0	51.3	52.3
Thailand	75.0	70.0	56.0	53.2	45.2	47.5
Taiwan	70.0	70.0	56.0	53.2	45.2	45.2
South Korea	50.0	52.0	31.2	31.5	28.4	28.9
Malaysia	50.0	55.0	33.0	31.4	26.6	28.0
Japan	25.0	25.0	22.5	21.4	18.1	18.2
Vietnam	30.0	34.5	20.7	25.0	22.5	27.1
Hong Kong	17.3	20.0	17.0	15.2	13.7	13.8
Afghanistan	10.0	10.0	8.0	7.9	8.1	8.2
Singapore	10.0	10.0	8.0	7.6	6.5	6.8
Cambodia	10.0	10.0	6.0	5.7	5.2	5.3
Other Asia	9.0	9.0	5.4	5.1	4.7	4.8
Total Asia	696.3	715.5	583.8	566.4	502.4	517.6
Australia	5.0	5.5	4.7	4.3	4.1	4.2
Total Australasia	5.0	5.5	4.7	4.3	4.1	4.2
Russia	30.0	35.0	29.8	26.8	24.3	24.8
Uzbekistan	3.0	3.0	2.6	2.3	2.2	2.3
Croatia	0.7	0.7	0.6	0.5	0.5	0.5
Bulgaria	0.3	0.3	0.3	0.3	0.2	0.2
Estonia	0.2	0.2	0.2	0.2	0.1	0.2
Total Eastern Europe	34.2	39.2	33.4	30.1	27.5	28.0
Italy	330.0	320.0	304.0	288.8	240.7	245.5
Turkey	263.6	283.5	192.7	230.8	163.9	172.1
UK & Ireland	49.0	38.0	32.0	32.8	24.7	25.2
Switzerland	30.0	30.0	28.5	27.1	22.6	23.0
Spain	30.0	30.0	28.5	27.1	22.6	23.0
Germany	22.5	22.5	21.4	20.3	16.9	17.3
France	20.0	22.0	20.9	19.9	16.5	16.9
Portugal	10.0	10.0	9.5	9.0	7.5	7.7
Greece	10.0	10.0	9.5	9.0	7.5	7.7
Poland	5.5	5.5	5.2	5.0	4.1	0.0
Other Western Europe	19.1	19.6	18.6	17.8	14.8	15.1
Total Western Europe	789.7	791.1	670.8	687.5	541.8	553.3
India	532.0	592.5	355.5	319.9	303.9	319.1
Pakistan	50.0	50.0	30.0	27.0	24.3	25.5
Bangladesh	20.0	14.0	8.4	7.6	6.8	7.1
Sri Lanka	5.0	5.0	3.0	2.7	2.4	2.4
Total Indian sub-continent	607.0	661.5	396.9	357.2	337.4	354.2
Mexico	30.0	30.0	25.5	23.6	21.4	21.9
Brazil	20.0	22.0	18.7	17.3	15.7	16.2
Dominican Republic	6.0	6.0	5.1	4.7	4.3	4.3
Peru	5.0	5.0	4.3	3.9	3.6	3.6
Chile	5.0	5.0	4.3	3.9	3.6	3.6
Colombia	3.0	3.0	2.6	2.4	2.1	2.2
Bolivia	3.0	3.0	2.6	2.4	2.1	2.2
Venezuela	2.0	2.0	1.7	1.6	1.4	1.5
Ecuador	2.0	2.0	1.7	1.6	1.4	1.4
Argentina	1.5	1.5	1.3	1.2	1.1	1.1
Total Latin America	77.5	79.5	67.6	62.5	56.8	57.9

Continued overleaf

Jewellery fabrication, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Saudi Arabia	180.0	190.0	133.0	139.7	142.4	149.6
Egypt	75.0	85.0	55.3	58.0	59.2	62.1
UAE	50.0	55.0	38.5	40.4	41.2	43.3
Iran	35.0	40.0	34.0	35.7	36.4	38.2
Iraq	30.0	35.0	21.0	22.1	22.5	22.9
Kuwait	15.0	17.5	10.9	11.4	11.6	12.2
Israel	15.0	15.0	12.3	11.7	10.2	10.7
Lebanon	10.0	12.0	6.6	6.9	7.1	7.4
Other Middle East	16.0	16.3	9.3	9.8	10.0	10.5
Total Middle East	426.0	465.8	320.8	335.7	340.6	357.0
USA	200.0	195.0	165.8	153.3	117.9	120.3
Canada	12.0	12.0	11.4	10.5	9.6	9.8
Total North America	212.0	207.0	177.2	163.9	127.5	130.1
World total	2,878.2	2,995.6	2,275.8	2,227.0	1,958.2	2,096.5

Source: VM Group

Jewellery consumption, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Morocco	8.8	8.9	5.4	5.2	5.3	5.5
South Africa	5.9	5.9	5.1	4.7	4.6	4.7
Other Africa	13.7	14.1	8.5	8.5	8.6	8.9
Total Africa	28.4	28.9	19.0	18.4	18.5	19.0
China	265.0	274.2	252.6	243.2	216.5	221.0
Indonesia	82.0	82.8	57.7	55.2	49.5	50.6
South Korea	37.5	39.0	23.4	23.6	21.3	21.7
Japan	28.8	28.8	24.2	23.0	19.6	19.7
Afghanistan	27.0	28.5	19.9	20.0	20.1	20.9
Thailand	29.9	28.3	21.6	20.5	17.6	18.3
Taiwan	27.5	27.3	21.8	20.7	17.6	17.7
Vietnam	30.0	34.5	20.7	25.0	22.5	27.1
Malaysia	27.6	29.1	18.4	17.5	15.0	15.6
Singapore	18.9	19.4	12.9	12.2	10.5	11.0
Philippines	11.7	11.8	7.5	7.1	6.2	6.4
Myanmar	12.7	12.6	8.0	7.5	6.6	6.9
Other Asia	15.8	16.6	10.6	9.8	9.0	9.2
Total Asia	614.4	632.9	499.3	485.4	432.2	446.2
Australia	5.0	5.5	4.7	4.3	4.1	4.2
Total Australasia	5.0	5.5	4.7	4.3	4.1	4.2
Russia	30.0	35.0	29.8	26.8	24.3	24.8
Uzbekistan	3.0	3.0	2.6	2.3	2.2	2.3
Croatia	0.7	0.7	0.6	0.5	0.5	0.5
Bulgaria	0.3	0.3	0.3	0.3	0.2	0.2
Estonia	0.2	0.2	0.2	0.2	0.1	0.2
Total Eastern Europe	34.2	39.2	33.4	30.1	27.5	28.0
Turkey	128.5	137.6	98.9	114.7	84.2	88.0
Italy	87.4	85.1	81.1	77.1	64.4	65.7
Switzerland	72.7	71.7	63.7	59.6	47.6	48.6
Germany	58.5	57.4	50.1	46.7	36.8	37.6
UK & Ireland	54.5	51.2	47.0	45.3	37.8	38.6
Spain	38.9	38.3	36.2	34.6	28.9	29.5
France	20.5	21.8	20.8	19.8	16.7	17.0
Portugal	16.0	15.5	14.5	14.0	11.7	11.9
Greece	10.8	10.8	10.3	9.8	8.4	8.5
Austria	9.1	9.3	8.9	8.5	7.3	7.5
Belgium	9.7	9.3	8.8	8.5	7.2	7.3
Netherlands	8.5	8.1	7.6	7.3	6.0	6.1
Poland	7.6	7.3	6.8	6.6	5.4	1.3
Yugoslavia	3.0	3.0	2.9	2.7	2.3	2.3
Other Europe	21.1	20.1	18.6	18.0	14.7	15.0
Total Western Europe	546.8	546.5	476.1	473.2	379.3	384.8
India	526.0	576.3	353.2	323.2	305.9	320.8
Pakistan	93.2	100.2	61.4	57.3	52.6	57.0
Bangladesh	36.5	32.9	19.7	17.8	16.5	17.3
Sri Lanka	5.0	5.0	3.0	2.7	2.4	2.4
Total Indian sub-continent	660.7	714.5	437.3	400.9	377.4	397.6
Mexico	27.4	27.4	23.3	21.5	19.6	19.9
Brazil	11.0	12.0	10.2	9.4	8.5	8.8
Other Latin America	26.4	26.6	22.6	20.9	19.0	19.2
Total Latin America	64.8	66.0	56.1	51.9	47.1	48.0

Continued overleaf

Jewellery consumption, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Saudi Arabia	152.3	160.0	116.8	123.4	114.6	119.8
Egypt	76.7	85.8	56.4	61.2	57.4	60.3
Iran	49.7	55.6	44.0	46.1	47.1	49.4
Iraq	54.1	60.3	39.0	42.4	39.6	41.1
UAE	40.4	43.1	31.3	34.9	27.2	28.4
Lebanon	34.3	38.1	24.6	26.5	25.2	26.5
Syria	32.2	34.4	23.4	26.0	22.9	24.1
Yemen	31.3	33.3	22.8	24.6	23.3	24.5
Kuwait	27.7	30.8	20.3	22.6	19.4	20.4
Jordan	27.3	29.0	18.6	20.1	19.1	20.0
Israel	1.8	1.8	1.5	1.5	1.3	1.4
Total Middle East	527.7	572.3	398.7	429.3	397.2	415.7
USA	378.5	372.2	334.5	317.8	260.9	266.8
Canada	17.7	17.7	16.8	15.8	14.0	14.2
Total North America	396.2	390.0	351.3	333.6	274.9	281.0
World total	2,878.2	2,995.6	2,275.8	2,227.0	1,958.2	2,022.7

Source: VM Group

Gold usage in electronics, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Japan	125.0	131.6	135.5	146.3	150.7	132.6
South Korea	55.5	66.6	69.2	74.8	77.0	67.8
Singapore	13.5	15.4	15.6	16.9	17.4	15.3
China	2.5	3.8	5.7	7.4	14.5	12.8
Taiwan	3.3	3.4	3.6	3.9	4.0	3.5
Total Asia	2.5	3.8	5.7	7.4	14.5	12.8
Australia	0.5	0.5	0.6	0.6	0.6	0.6
Total Australasia	0.5	0.5	0.6	0.6	0.6	0.6
Russia	16.0	16.5	17.2	18.6	19.1	16.8
Total Eastern Europe	16.0	16.5	17.2	18.6	19.1	16.8
Germany	10.8	10.9	11.3	12.2	12.6	11.1
France	8.9	9.5	9.9	10.6	11.0	9.6
Switzerland	8.9	9.4	9.8	10.6	10.9	9.6
UK & Ireland	5.5	5.4	5.6	6.0	6.2	5.5
Other Western Europe	7.4	7.5	7.8	8.4	8.6	7.6
Total Western Europe	41.5	42.6	44.3	47.9	49.3	43.4
India	0.1	0.1	0.1	0.1	0.1	0.1
Total Indian sub-continent	0.1	0.1	0.1	0.1	0.1	0.1
Brazil	1.4	1.4	1.5	1.6	1.6	1.4
Mexico	0.1	0.1	0.1	0.2	0.2	0.1
Total Latin America	1.5	1.5	1.6	1.7	1.8	1.6
Israel	0.1	0.1	0.1	0.2	0.2	0.1
Total Middle East	0.1	0.1	0.1	0.2	0.2	0.1
USA	72.2	74.4	77.4	83.5	86.0	75.7
Canada	0.7	0.7	0.7	0.8	0.8	0.7
Total North America	72.9	75.1	78.1	84.3	86.9	76.4
World total	332.5	357.3	371.6	402.6	421.5	370.9

Source: VM Group

Other end uses, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Japan	53.4	56.2	47.8	47.0	45.7	40.9
South Korea	13.6	14.7	13.5	13.9	13.9	12.4
Other Asia	3.0	3.1	2.8	2.9	3.0	2.9
Total Asia	69.9	74.0	64.1	63.7	62.6	56.1
Australia	0.5	0.5	0.4	0.5	0.5	0.4
Total Australasia	0.5	0.5	0.4	0.5	0.5	0.4
Turkey	60.7	72.8	48.9	46.9	49.6	51.2
Germany	23.7	24.1	22.6	22.1	21.2	19.0
Switzerland	16.6	17.7	16.2	16.5	16.1	14.4
Italy	7.9	7.8	7.2	7.2	7.1	6.5
France	6.5	6.7	6.0	6.3	6.2	5.5
Netherlands	5.9	6.7	6.4	6.1	5.8	5.2
Spain	2.5	2.7	2.5	2.6	2.5	2.2
Other Europe	4.6	4.7	4.4	4.3	4.2	3.8
Total Western Europe	128.4	143.2	114.1	112.0	112.7	107.8
India	83.7	102.5	76.9	76.1	77.4	78.9
Pakistan	2.2	2.3	2.2	2.0	2.2	2.4
Total Indian sub-continent	85.9	104.8	79.0	78.0	79.5	81.3
Brazil	9.1	10.1	9.2	9.6	9.4	8.4
Other Latin America	1.0	1.0	0.9	0.9	0.9	0.8
Total Latin America	10.1	11.1	10.1	10.5	10.3	9.2
United Arab Emirates	18.5	22.2	13.3	12.1	13.3	14.6
Other Middle East	5.9	6.1	5.8	5.3	5.8	6.4
Total Middle East	24.4	28.3	19.1	17.4	19.1	21.0
USA	30.8	30.6	28.3	28.6	27.7	24.7
Canada	0.3	0.3	0.3	0.3	0.3	0.2
Total North America	31.1	30.9	28.5	28.8	27.9	25.0
World total	350.3	392.8	315.4	311.0	312.6	300.9

Source: VM Group

Note: Includes Dental Alloys, Non-Legal Tender Coins and Other Industrial Uses

Legal tender coins, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
South Africa	2.9	3.0	1.6	6.8	9.7	6.1
Total Africa	2.9	3.0	1.6	6.8	9.7	6.1
Japan	0.0	0.0	0.0	0.0	8.5	11.3
Singapore	0.0	0.0	0.0	0.0	0.5	0.6
South Korea	0.0	0.0	0.0	0.0	1.4	1.9
Taiwan	0.0	0.0	0.0	0.0	0.5	0.6
Thailand	0.0	0.0	0.0	0.0	0.4	0.5
China	17.9	9.1	9.7	13.1	13.6	9.0
Total Asia	17.9	9.1	9.7	13.1	24.8	23.9
Australia	5.2	5.1	5.2	5.8	11.8	8.1
Total Australasia	5.2	5.1	5.2	5.8	11.8	8.1
Austria	7.0	6.0	3.2	5.4	16.0	9.1
Belgium	0.0	0.0	0.1	0.1	0.0	0.2
France	0.0	0.0	0.1	0.4	0.2	0.1
Italy	0.0	0.0	0.0	0.0	2.0	0.0
Netherlands	2.4	2.5	2.5	2.3	3.0	3.5
Switzerland	0.2	0.1	0.1	0.1	1.3	0.1
Turkey	45.0	55.0	61.8	61.9	57.8	57.9
UK & Ireland	2.4	3.0	3.0	2.7	6.2	7.0
Yugoslavia	0.0	0.0	0.0	0.0	0.1	0.2
Total Europe	57.0	66.5	70.8	72.8	86.8	78.0
Chile	0.0	0.0	0.0	0.0	0.5	0.7
Mexico	0.0	0.0	0.0	0.0	11.5	15.4
Venezuela	0.0	0.0	0.0	0.0	0.3	0.2
Total Latin America	0.0	0.0	0.0	0.0	12.3	16.2
Canada	8.9	10.0	7.2	8.7	11.7	11.5
USA	16.7	14.0	18.2	21.9	48.9	55.9
Total North America	25.6	24.0	25.4	30.7	60.6	67.4
World total	108.6	107.6	112.8	129.2	205.9	199.7

Source: VM Group

Financials: prices, volatilities and lease rates

Gold prices in various currencies, average, 1994-2009

	\$/oz	Euro/oz	Rand/kg	Yen/gr	A\$/oz
1994	384.02	324.26	42,409	1,261	527.24
1995	384.18	296.91	43,343	1,162	517.53
1996	387.71	309.91	52,205	1,356	493.66
1997	331.37	293.10	47,377	1,287	444.82
1998	294.17	262.39	50,729	1,238	469.37
1999	278.73	261.45	53,006	1,018	432.90
2000	279.14	302.78	60,106	967	480.54
2001	271.10	302.82	74,496	1,056	524.66
2002	307.20	328.03	101,011	1,243	569.83
2003	363.32	321.06	85,026	1,346	558.89
2004	409.17	329.16	84,361	1,422	556.16
2005	444.45	358.28	90,829	1,577	583.45
2006	603.77	480.43	131,490	2,256	801.48
2007	695.39	506.78	156,820	2,628	828.53
2008	871.96	593.08	229,426	2,906	1,033.39
Aug-06	632.59	493.89	140,804	2,357	829.01
Sep-06	598.19	469.91	142,911	2,253	791.81
Oct-06	585.78	464.15	143,601	2,233	776.96
Nov-06	627.83	487.10	145,867	2,367	812.45
Dec-06	629.79	476.66	142,321	2,370	801.89
Jan-07	631.17	486.00	145,481	2,444	806.83
Feb-07	664.75	507.94	152,744	2,573	848.98
Mar-07	654.90	494.32	154,266	2,469	826.17
Apr-07	679.37	502.22	154,376	2,597	819.98
May-07	666.86	493.72	149,995	2,590	808.69
Jun-07	655.49	488.32	150,450	2,584	778.48
Jul-07	665.30	484.90	148,702	2,596	767.82
Aug-07	665.41	488.69	153,807	2,499	802.42
Sep-07	712.65	511.95	162,228	2,636	840.38
Oct-07	754.60	530.15	163,353	2,811	838.76
Nov-07	806.25	549.31	173,674	2,875	901.03
Dec-07	803.20	551.45	176,025	2,897	922.29
Jan-08	889.60	604.22	200,081	3,079	1,008.60
Feb-08	922.30	624.89	226,839	3,175	1,009.79
Mar-08	968.43	623.45	248,043	3,139	1,047.77
Apr-08	909.70	577.21	226,708	3,002	976.94
May-08	888.66	571.35	217,201	2,980	936.09
Jun-08	889.49	571.32	226,821	3,056	935.02
Jul-08	939.77	596.11	230,152	3,228	977.05
Aug-08	839.03	560.59	206,175	2,950	951.17
Sep-08	829.93	577.73	214,719	2,842	1,015.07
Oct-08	806.62	606.52	252,065	2,602	1,176.86
Nov-08	760.86	597.85	247,133	2,368	1,160.32
Dec-08	816.09	606.99	261,127	2,391	1,218.97
Jan-09	858.69	648.64	272,607	2,493	1,273.56

Source: VM Group

Inflation-adjusted gold price (in 2008 dollars)

	Nominal gold price (\$/oz)	US CPI (2008=100)	Real gold price (2008 dollars)
1980	612.6	39.2	1,440.1
1981	459.9	43.2	982.0
1982	375.8	45.9	753.2
1983	424.1	47.4	825.0
1984	360.3	49.4	671.8
1985	317.2	51.2	570.7
1986	367.7	52.1	649.1
1987	446.5	54.0	760.1
1988	437.0	56.3	715.7
1989	381.4	59.0	595.7
1990	383.5	62.2	568.5
1991	362.2	64.8	514.8
1992	343.7	66.7	474.2
1993	359.8	68.7	481.9
1994	384.1	70.5	501.6
1995	384.2	72.5	529.9
1996	387.7	74.6	519.5
1997	331.2	76.3	433.8
1998	294.2	77.5	379.4
1999	278.6	79.2	351.6
2000	279.1	81.9	340.8
2001	271.1	84.2	321.8
2002	307.2	85.6	359.0
2003	363.3	87.5	415.1
2004	409.2	89.9	455.4
2005	444.4	92.9	478.4
2006	603.8	95.9	629.6
2007	695.4	99.9	696.0
2008	872.0	100.0	872.0

Source: VM Group

Price volatility, 1994-2009 (%)

	Daily	1M	3M	6M	12M
1994	6.47	8.12	8.35	9.19	9.89
1995	4.22	5.70	5.74	5.91	6.05
1996	4.44	5.45	5.52	5.66	5.80
1997	7.52	9.80	9.78	9.23	8.81
1998	9.29	12.32	12.80	12.95	12.86
1999	9.44	13.41	13.87	13.10	12.64
2000	8.57	12.37	13.40	15.94	17.13
2001	8.17	11.41	11.83	11.89	11.75
2002	10.42	12.72	12.78	13.00	13.04
2003	11.53	15.69	16.13	15.79	15.31
2004	11.32	14.05	14.03	14.37	14.77
2005	9.31	11.60	11.39	11.27	12.29
2006	12.33	14.56	19.11	22.14	23.92
2007	17.10	22.01	19.00	15.59	15.23
2008	30.48	41.34	44.58	37.06	30.78
Jul-07	7.56	10.82	12.08	13.96	17.15
Aug-07	8.27	11.89	11.59	13.20	16.01
Sep-07	11.34	10.74	11.38	11.73	15.03
Oct-07	12.92	14.04	12.52	12.37	14.14
Nov-07	16.33	19.43	15.35	13.77	14.56
Dec-07	17.10	22.01	19.00	15.59	15.23
Jan-08	11.02	17.04	19.90	16.52	15.27
Feb-08	20.38	20.13	19.63	17.71	15.60
Mar-08	13.95	22.15	19.82	19.32	16.12
Apr-08	19.70	29.11	24.27	22.08	17.99
May-08	16.88	22.46	24.91	22.48	18.75
Jun-08	20.42	20.37	23.99	22.24	19.34
Jul-08	15.16	21.92	21.59	22.86	20.11
Aug-08	24.07	26.03	23.38	24.06	21.43
Sep-08	24.56	33.01	27.88	25.91	23.20
Oct-08	43.95	46.74	36.96	30.16	26.68
Nov-08	34.92	43.78	42.22	33.93	28.87
Dec-08	30.48	41.34	44.58	37.06	30.78
Jan-09	20.64	27.75	37.92	37.74	31.39

Source: VM Group

Lease rates, 1993-2009 (% p.a.)

	1-month	3-month	6-month	12-month
1993	0.74	0.86	0.94	1.15
1994	0.54	0.66	0.75	0.91
1995	1.74	1.69	1.59	1.59
1996	1.52	1.71	1.90	2.17
1997	1.84	1.90	1.97	2.12
1998	2.60	2.69	2.94	3.27
1999	1.71	1.90	2.05	2.27
2000	0.60	0.82	1.04	1.50
2001	1.29	1.33	1.42	1.68
2002	0.26	0.40	0.58	0.94
2003	0.09	0.14	0.23	0.41
2004	0.08	0.11	0.15	0.25
2005	0.11	0.11	0.13	0.18
2006	0.09	0.11	0.12	0.12
2007	0.16	0.21	0.25	0.26
2008	0.51	0.71	0.83	0.82
Jul-07	0.11	0.14	0.17	0.20
Aug-07	0.19	0.23	0.28	0.29
Sep-07	0.23	0.28	0.33	0.33
Oct-07	0.20	0.32	0.35	0.37
Nov-07	0.20	0.36	0.39	0.33
Dec-07	0.41	0.38	0.47	0.45
Jan-08	0.16	0.22	0.34	0.33
Feb-08	0.21	0.29	0.46	0.45
Mar-08	0.14	0.27	0.43	0.45
Apr-08	0.15	0.22	0.40	0.46
May-08	0.24	0.34	0.47	0.55
Jun-08	0.18	0.30	0.47	0.52
Jul-08	0.02	0.16	0.33	0.36
Aug-08	0.13	0.29	0.48	0.52
Sep-08	0.50	0.63	0.84	0.87
Oct-08	2.12	2.38	2.18	2.06
Nov-08	1.37	1.93	1.92	1.68
Dec-08	0.86	1.52	1.68	1.56
Jan-09	0.16	0.74	1.03	1.16

Source: VM Group

Official sector by region, 2004-2009 (tonnes)

	2004	2005	2006	2007	2008e	2009f
Africa	420	420	420	420	420	420
Asia	2,326	2,262	2,258	2,250	2,265	2,275
Australasia	80	80	80	80	80	80
Eastern Europe	930	935	959	960	1,035	1,075
Western Europe	14,051	13,529	13,207	12,707	12,437	12,259
Indian sub-continent	432	432	432	432	432	432
Latin America	571	571	565	566	569	574
Middle East	1,072	1,082	1,162	1,174	1,182	1,187
North America	8,140	8,140	8,138	8,138	8,138	8,138
IMF/BIS	3,425	3,418	3,402	3,368	3,355	3,335
Total	31,444	30,868	30,621	30,094	29,912	29,774

Source: IMF, national central banks websites, VM Group

Official sector purchases, 2004-2009 (tonnes)

	2004	2005	2006	2007	2008e	2009f
Africa	0.0	0.0	0.0	0.2	0.0	0.0
Asia	3.1	6.4	14.3	4.3	26.9	10.0
Australasia	0.0	0.0	0.0	0.0	0.0	0.0
Eastern Europe	3.4	2.7	17.7	49.9	74.7	40.0
Western Europe	0.0	0.0	0.0	0.8	0.0	0.0
Indian sub-continent	0.0	0.0	0.0	0.0	0.0	0.0
Latin America	0.0	0.0	0.0	1.5	3.4	5.0
Middle East	0.0	30.0	100.0	11.8	10.0	5.0
North America	0.0	0.0	0.0	0.0	0.0	0.0
IMF/BIS	0.0	0.0	0.0	0.0	0.0	0.0
Total	6.5	39.1	132.0	68.5	115.0	60.0

Source: IMF, national central banks websites, VM Group

Official sector sales, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008e	2009f
Africa	0.0	0.0	0.0	0.0	0.0	0.0
Asia	34.0	66.9	11.0	12.1	12.3	0.0
Australasia	0.0	0.0	0.0	0.0	0.0	0.0
Eastern Europe	0.0	0.0	1.2	58.3	0.2	0.0
Western Europe	410.0	522.0	322.3	499.9	270.4	178.0
Indian sub-continent	0.0	0.0	0.0	0.0	0.0	0.0
Latin America	0.0	0.0	6.0	0.3	0.3	0.0
Middle East	20.0	20.0	20.0	0.0	1.6	0.0
North America	0.0	0.0	2.0	0.0	0.0	0.0
IMF/BIS	0.0	7.0	16.0	34.3	12.8	20.0
Total	464.0	615.9	378.5	604.9	297.6	198.0

Source: IMF, national central banks websites, VM Group

Gold lending, 2004-2009f (tonnes) (*)

	2004	2005	2006	2007	2008e	2009f
Africa	123	107	104	92	83	75
Asia	648	536	520	438	373	328
Australasia	76	76	72	64	58	52
Eastern Europe	405	382	345	306	234	206
Western Europe	2,218	2,002	1,737	1,459	1,180	1,003
Indian sub-continent	100	95	94	94	72	65
Latin America	299	277	251	231	164	133
Middle East	444	356	294	232	179	140
North America	2	2	1	1	1	1
Total	4,315	3,831	3,418	2,918	2,345	2,002

Source: IMF, national central banks websites, VM Group. Note the IMF does not lend gold, so the BIS has been included in estimates of Western European lending in order to not identify its exact level.

(*) Includes estimate of private lending.

Other

Hedging, delta-adjusted, end-period, 2004-2008 (tonnes)

	2004	2005	2006	2007	2008 Q3
Global					
Net forwards	1,489	1,307	922	563	370
Net calls	252	296	291	252	136
Other products	44	52	36	3	2
Net puts	22	13	7	17	14
Total hedge impact	1808	1667	1256	835	521
<i>Change</i>	<i>(456)</i>	<i>(141)</i>	<i>(411)</i>	<i>(421)</i>	<i>(314)</i>
Americas					
Net forwards	849	764	503	325	216
Net calls	62	54	24	13	6
Other products	29	25	10	3	2
Net puts	22	5	3	2	2
Total hedge impact	963	847	541	342	226
<i>Change</i>	<i>(176)</i>	<i>(116)</i>	<i>(307)</i>	<i>(198)</i>	<i>(116)</i>
Africa					
Net forwards	235	184	129	120	68
Net calls	162	214	237	217	122
Other products	0	0	0	0	0
Net puts	(6)	0	(9)	(4)	0
Total hedge impact	392	398	358	334	190
<i>Change</i>	<i>(154)</i>	<i>7</i>	<i>(40)</i>	<i>(24)</i>	<i>(144)</i>
Australias					
Net forwards	357	317	249	93	54
Net calls	27	21	14	10	3
Other products	15	27	25	0	0
Net puts	6	5	8	20	12
Total hedge impact	404	370	297	124	70
<i>Change</i>	<i>(104)</i>	<i>(35)</i>	<i>(73)</i>	<i>(174)</i>	<i>(54)</i>
Europe					
Net forwards	48	42	41	25	31
Net calls	0	6	16	12	5
Other products	0	0	0	0	0
Net puts	0	3	4	(1)	0
Total hedge impact	48	51	61	36	36
<i>Change</i>	<i>(22)</i>	<i>3</i>	<i>9</i>	<i>(25)</i>	<i>0</i>

Source: "The Fortis Hedging and Financial Gold Report", by Haliburton Mineral Services and VM Group

Hedging, committed, end-period, 2004-2008 (tonnes)

	2004	2005	2006	2007	2008
Global					
Net forwards	1517	1327	934	575	375
Calls sold	391	407	417	306	168
Calls bought	64	57	56	20	12
Other products	49	53	36	3	2
Total committed	1893	1731	1331	865	533
<i>Change</i>	(438)	(162)	(400)	(466)	(332)
Puts bought	253	241	196	203	139
Puts sold	40	23	50	47	8
Americas					
Net forwards	866	776	510	334	220
Calls sold	76	65	48	21	13
Calls bought	3	1	4	3	4
Other products	35	26	10	3	2
Total committed	973	866	565	355	231
<i>Change</i>	(187)	(107)	(301)	(210)	(124)
Puts bought	151	93	57	27	19
Puts sold	5	2	0	0	0
Africa					
Net forwards	239	187	131	121	69
Calls sold	271	301	323	260	145
Calls bought	61	56	52	17	8
Other products	0	0	0	0	0
Total committed	448	433	402	364	206
<i>Change</i>	(154)	(16)	(31)	(38)	(157)
Puts bought	75	84	59	1	1
Puts sold	35	21	50	47	8
Australias					
Net forwards	361	319	252	96	55
Calls sold	44	28	16	11	4
Calls bought	0	0	0	0	0
Other products	15	28	26	0	0
Total committed	420	375	294	107	59
<i>Change</i>	(74)	(45)	(81)	(187)	(48)
Puts bought	27	48	51	153	112
Puts sold	0	0	0	0	0
Europe					
Net forwards	51	44	41	25	31
Calls sold	0	13	29	14	6
Calls bought	0	0	0	0	0
Other products	0	0	0	0	0
Total committed	51	58	70	39	37
<i>Change</i>	(23)	6	12	(31)	(3)
Puts bought	0	16	29	22	6
Puts sold	0	0	0	0	0

Source: "The Hedge Book", by Mitsui Global Precious Metals, Haliburton Mineral Services, VM Group

Exchange traded funds, annual offtake, 2004-2009f (tonnes)

	2004	2005	2006	2007	2008	2009f
Africa	3.0	4.3	2.6	13.5	3.2	7.1
Australasia	(1.0)	0.9	2.1	5.8	(4.9)	4.5
India	0.0	0.0	0.0	4.4	1.0	4.5
Europe	27.6	11.9	36.7	43.6	157.5	175.0
North America	94.9	178.2	212.3	185.4	163.9	205.5
World total	124.5	195.3	253.6	252.7	320.7	396.6

Source: Company websites, VM Group analysis.

COMEX speculation futures and options, end-period, 1994-Jan 2009 (tonnes)

	Open interest	Large speculators net long (futures)	Small speculators net long (futures)	Total net long
1994	559	(125)	5	(120)
1995	439	7	45	52
1996	590	(130)	(5)	(135)
1997	553	(159)	21	(138)
1998	506	(108)	(8)	(116)
1999	487	(90)	34	(56)
2000	357	(44)	25	(20)
2001	345	(9)	46	37
2002	644	185	140	325
2003	867	350	147	497
2004	1,029	307	121	428
2005	1,226	481	108	589
2006	1,059	212	109	321
2007	2,089	620	121	741
2008	1,342	392	52	444
Aug-06	1,216	273	92	365
Sep-06	1,266	222	75	297
Oct-06	1,331	201	85	286
Nov-06	1,318	248	118	366
Dec-06	1,294	212	109	321
Jan-07	1,326	312	110	422
Feb-07	1,659	442	130	572
Mar-07	1,360	296	135	431
Apr-07	1,569	416	118	534
May-07	1,511	295	74	369
Jun-07	1,484	196	64	260
Jul-07	1,323	252	99	350
Aug-07	1,268	240	67	308
Sep-07	1,714	541	106	647
Oct-07	2,095	618	114	732
Nov-07	1,938	545	94	639
Dec-07	2,089	620	121	741
Jan-08	2,006	640	122	762
Feb-08	2,011	651	133	784
Mar-08	1,932	547	95	642
Apr-08	1,726	500	77	577
May-08	1,755	485	83	568
Jun-08	1,619	478	103	581
Jul-08	1,734	567	116	683
Aug-08	1,561	327	52	379
Sep-08	1,524	366	72	438
Oct-08	1,496	244	21	265
Nov-08	1,236	255	35	290
Dec-08	1,342	392	52	444
Jan-09	1,501	439	54	493

Source: Commodity Futures Trading Commission

Weights and measures

Chemical properties

Atomic weight	196.967
Atomic number	79
Chemical symbol	Au
Melting point deg C	1,063
Hardness (mohs)	2.5-3.0
Boiling point deg C	2,966
Specific gravity gr/cubic cm	19.32
Hardness	25
Tensile strength km/Sq mm	11.9

Source: VM Group

Purity (caratage) – In parts per 1,000

24 carat	1,000	
	999.9	Termed four nines
	995	London good delivery
22 carat	916	Common caratage for jewellery in Middle East & Asia
18 carat	750	Common caratage for jewellery throughout Europe
14 carat	583	Common caratage for jewellery in the USA
10 carat	417	Lowest acceptable for jewellery in USA
9 carat	375	Common caratage for jewellery in the UK
8 carat	333	Lowest acceptable caratage in parts of Europe
1 carat	41.7	

Source: VM Group

Measures

1 troy ounce	= 31.103 grammes = 408.6 grains = 1.097 oz avoirdupois = 20 pennyweights
1 metric tonne	= 32.151 troy ounces = 1.102 short tons
1 short ton	= 0.893 long tonnes = 2,000 Pounds
1 pound	= 14.58 troy ounces
1 grain	= 0.0648 grammes = 0.002083 troy ounces
1 gramme	= 14.43 grains
1 pennyweight	= 24 grains
1 kilogramme	= 32.1507 troy ounces
1 oz avoirdupois	= 0.9115 troy ounces

Source: VM Group

Glossary

A

- **Accelerated supply:** Gold reaching the market through lending and leasing before it is physically produced.
- **American style:** (option) that can be exercised at any stage during its life, in other words at or before expiration date. Contrast **European style**.
- **Asian options:** A **history-dependent** option where the outcome is reliant not only on whether or not the option is **in-the-money** at expiry but also depends on the average price of the underlying throughout the option life. These options are used mostly (in the base metal markets) to reduce exposure or incentives to manipulate the underlying price at expiry. Asian options are also used by market participants who are obliged to have frequent exposure to the underlying asset over time. The options are then useful in capping the overall cost of the physical exposure and are ideal for producers.
- **At-the-money option:** An option with a strike price equal to that of the current price.

B

- **Backwardation:** A market situation where the spot price trades at a premium to the forward price. Opposite of **contango**.
- **Barrier options:** Unlike standard **European options** where the income depends only on the price of the underlying at expiration, barrier options are **history-dependent**. In other words, their outcome depends on the performance of the price of the underlying during the life of the option and whether that price breaches some predetermined barrier or level. See 'in' barrier and 'out' barrier options.
- **Binary options:** Unlike standard options which have a constant income, binary options have variable (usually all or nothing) pay backs depending on whether or not the price of the underlying meets some pre-agreed condition. Binary options can be either **history-dependent** or **history-independent**.
- **BIS:** Bank for International Settlements.
- **Bonds:** Means of raising debt through the capital markets. See also Gold-backed bonds.

C

- **Call option:** Option giving the purchaser the right but not the obligation to buy gold at a predetermined (strike) price.
- **CBOT:** The Chicago Board of Trade.
- **CCA:** Comex Clearing Association.
- **CFTC:** Commodity Futures Trading Commission (the futures and options watch-dog).
- **CIS:** Commonwealth of Independent States (former Soviet Union).
- **Collars:** Options which have the same pay-out as the standard call except that the upside is not unlimited. It is subject to a maximum. The option buyer forgoes any further income above this maximum.
- **COMEX:** The Commodity Exchange in New York.
- **Compound options:** These are options on options. The underlying asset is an option rather than a tangible commodity or security. Valuation of the option is complicated by the fact that two expiry dates must be accounted for: the time to expiration of the compound and the time to expiration of the underlying option.
- **Contango:** A market situation where the spot price is lower than the forward quotation; the differential representing the carrying (financing) costs and prevailing interest rates. Opposite of backwardation.
- **Cost curve:** Graphical representation of the costs of producing a metal for an entire primary industry. Usually cumulative output expressed in percent plotted against unit operating costs.
- **Coupon:** Annual interest rate associated with capital market bond issues.

E

- **EGA:** European Gold Agreement.
- **EMCF:** European Monetary Co-operation Fund.
- **ETF:** Exchange Traded Fund.
- **European style:** An option that can only be exercised on the date of expiry.
- **Exercising: (An Option)** Whereby the option purchaser holds the writer (seller) of an option to the agreed contract.
- **Exotic options:** Generic term for the more sophisticated option strategy which has features over and above the basic contracts.

G

- **GOFO:** Reuters screen code for the daily gold lease rates.
- **Gold backed bonds:** Debt raised through the capital markets issued with a gold options alternative to enhance the value/attractiveness of the investment.
- **Gold loan:** A means of raising capital for project financing which involves monetising gold.

I

- **IFS:** International Financial Statistics.
- **IMF:** International Monetary Fund.
- **IMM:** International Monetary Market.
- **'In' barrier options:** Options which are paid for at the time of the initial transaction but are not received until a specified price level (the barrier or the knock-in boundary) is broken. If the barrier is broken at some stage during the option's life, then the buyer receives a standard **European** option with a **strike** price and time to expiration. If the barrier is not broken, then at expiry, the holder receives a cash rebate.
- **In-the-money option:** An option which has a positive **intrinsic value** is said to be in the money. In the case of a **call**, it is in the money when the **strike** price is lower than the current price. A **put** option is in the money when the **strike** price is higher than the current price.
- **Intrinsic value** (of an option): The difference between the strike price and current price of the underlying commodity.

K

- **Knock-out options: Exotic option** whereby the contract is cancelled if the spot price breaks through an agreed price. See up-and-out puts and down-and-out calls. The knock-out option is priced differently since it can explode or be cancelled while theoretically it still has **time value**.

L

- **Limit down:** Arbitrary price level below which trading on a Futures and Options Exchange ceases during that trading day. Imposed to prevent very sharp price declines in futures prices and are adjusted from time to time at the discretion of the Exchange. See Limits.
- **Limits:** Arbitrary price barriers imposed by Futures and Options Exchanges to limit severe price movements during a trading day. There are no limits in the spot market. See Limit Up and Limit Down.
- **Limit up:** Arbitrary price level above which trading on a Futures and Options Exchange ceases during that trading day. Imposed to prevent very sharp price increases in futures prices and are adjusted from time-to-time at the discretion of the Exchange.
- **Liquidity:** The volume of business or turnover on an exchange or any market forum; can be applied to either the paper market or the physical.
- **Loco:** Physical location of metal. Unless otherwise stated, price quotations imply delivery loco London.
- **Long:** To be long of a commodity or associated futures or options contract is to have been a buyer. Contrast **short**.

M

- **Maturity date:** Date on which option matures; when it is either exercised or it expires worthless. Also known as expiration date.
- **Margin:** The cash deposit against a paper contract payable as a guarantee. An initial payment is usually made and thereafter further margin requirements may have to be met depending on the performance of the contract throughout its life.

N

- **Naked options:** Option granted and left unhedged or exposed to potential exercising.

O

- **Open outcry:** Method of trading any commodity where dealers face each other in a dealing ring or pit and there is direct communication. Contrast: **Screen Trading**.
- **Out-of-the-money (option):** An option that has no **intrinsic value** is said to be out-of-the-money. A **call** is out-of-the-money when the **strike price** is higher than the current price. A **put** is when the **strike price** is lower than the current price.
- **OTC:** Over-the-counter; term used to describe an option that is written and traded through principals rather than an exchange.
- **'Out' Barrier:** Options which are paid for immediately and exist until, during the option life, a predetermined barrier is broken after which the options are rendered null and void – they cease to exist. If the barrier is not breached, the holder receives standard **European** options. If the barrier is broken and the options are extinguished, the holder is then paid a rebate.

P

- **Principal-to-principal:** Bullion transactions executed directly between the client and the market makers without being channelled through an exchange. Used primarily by market participants who have actual physical transactions to complete rather than the speculators. Speculative business tends to be channelled via the exchanges.
- **Premium:** The cost which the buyer of an option pays to the writer or seller of the option; normally only a very small fraction of the value of the underlying commodity.
- **Put option:** Option giving the purchaser the right but not the obligation to sell gold at a particular **strike price**.

R

- **Reuters:** International screen-based news agency widely used by all metal and foreign exchange market participants.

S

- **Screen trading:** Method of trading via computer screens and telephones in which there is no direct contact between dealers. Contrast: **open outcry**.
- **SDR:** Special Drawing Right.
- **Short:** To be short of a commodity or associated futures or options contract is to have been a seller. Contrast **long**.
- **Spot deferred:** Hybrid forward contract offering floating interest rates and no fixed delivery. More flexible than a conventional forward but without the cost of an option.
- **Spot market:** The immediate market where delivery obligations usually occur no more than 2 days after the transaction.
- **Strike price:** The agreed price at which the option can be exercised which will be equal to, higher or lower than the current price of the underlying.
- **Swap:** A spot sale with a simultaneous equal forward purchase of equal tonnage. This is the definition of a gold or bullion swap which may differ from the term used by the foreign exchange markets.

- **Synthetic gold loan:** A means of raising finance using the gold forward market but which does not result in the monetising of physical metal.

T

- **Time value:** Option value associated with the time left to maturity since during its life an option can move in- and out-of-the-money.

U

- **Underlying:** Shortened term for the underlying commodity upon which futures and options are traded.

V

- **Volatility:** The rate of change in the price of the underlying commodity.

W

- **Writing options:** Selling someone else the right to buy or sell gold at a particular price.
- **10K report:** Set of audited annual accounts published and issued to shareholders. Differs from an annual report only in detail.

Notes

Notes

Notes

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