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In Perfect Harmony?

The ARMgold-Harmony May Merger May Soon Embrace Avgold

By David Davis, Mining Investment Analyst, SCMB Securities

On 2 May 2003, Harmony and ARMgold announced the details of their proposed merger. The new entity will trade as Harmony, with the emphasis on ARM. With a production of some 4.1 million ounces per annum, it will become the largest South African gold producer and will be the fifthlargest gold producer in the world. The merger will boost black ownership in the new company to more than 26 per cent of its issued ordinary share capital, meeting the government's target a decade ahead of deadline.

The merger will also exploit a number of synergies, particularly in the Free State. The new entity will be able to make optimal use of the infrastructure and exploitation of the ore bodies. Harmony estimates that in the short term at least R120 million per annum could

Organic Growth vs. Growth by Acquisition

Some time back Harmony and ARMgold announced their having entered an organicgrowth phase that would increase their reserve base and extend life-of-mine. This phase included a number of brownfield and greenfield projects as well as strategic investments, both local and international. The life-of-mine of gold recovered for both companies are represented graphically in Charts 1 and 2. The life-of-mine of gold recovered for the merged company, together the additional ounces from Free Gold's growth

projects - Phakisa Mine, Nyala Shaft and the Tsheopong North Deepening Project are shown in Chart 3.

Along with the merger, the companies also announced their joint acquisition of a 34.5 per cent stake in Anglovaal Mining Limited (Avmin), which effectively gives them a strategic investment in Avgold. Rather than purchase Avgold shares, the two companies believe the Avmin investment to be the best route to unlocking both Avgold's and Avmin's value.

Avgold operates the new Target gold mine in the Northern Free State, which has 2.6 million ounces of reserves. Target was commissioned in May 2002 and was in full production by the end of that year. It should produce 350,000 per annum over 17 years.

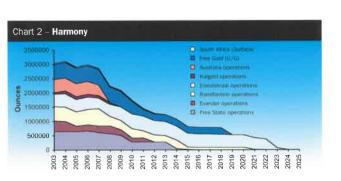
Avgold is also conducting a surfacedrilling programme -

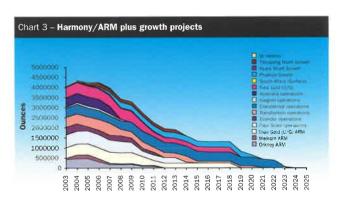
now nearing completion - on an extensive unexploited gold resource on the property immediately north of the Target mine. The Target North Project will likely exploit an extension of the Target ore body. Should the project prove feasible, we estimate that production would be around 500,000 ounces per annum over a life-of-mine of 30 years, suggesting a reserve base of in excess of 15 million ounces.

The Competition

It will likely take around 10 to 15 years at a cost of R6billion-8 billion to bring a project of

Chart 1 - ARMgold





this size into production. The only other similar project in recent years has been the Western Areas/Placer Dome joint venture South Deep Project, which will have taken 15 years to bring on line at a cost of around R5.5 billion and has an estimated production of around 700,000 ounces per annum.

There are a handful of other greenfield growth projects currently under consideration in South Africa (mines of production levels between 100,000 and 1,000,000 oz/pa with a life-of-mine in excess of 10 years):

NSW 2000

Tokyo 100

EC4V 5HH

- Gold Fields Limited Kloof Division,
 EBA development
 Estimated production: 750,000 oz p.a.
- Durban Deep Argonaut Project
 Estimated production: 1,000,000 oz p.a.
- Harmony's Popular project at Evander Estimated production: 150,000 oz p.a.
- Harmony's Rolspruit project at Evander Estimated production: 200,000 oz p.a.

Sustaining Target North

The financial and economic figures surrounding Avgold's proposed Target North project were used, together with a simple economic valuation, to benchmark the gold price that would be needed to sustain the project in today's terms, the results of which are summarised in Table 1. The valuation takes each major cost associated with a mining project and expresses them as a function of cost per ounce of reserve over the life-of-mine to calculate the total cost of the investment in dollars per ounce. This method may be used as a yardstick to gauge how robust the project would be by comparing the total cost of the investment plus a 20 per cent shareholder return against the current gold price.

For an orebody at and below 3,000m, the likely time and cost to bring it into production is 10 to 15 years at a cost R6-8 billion (\$800 million). The model indicates that a gold price of around US\$421/oz over the life of the project would be required for a 20% return. The model also indicates that the required reserve grade should be in excess of 5.8g/t, and we have back-calculated the reserve grade of the Target North project to be around 7.2g/t (given our assumptions with regard to the reserve base, production and treatment rate).

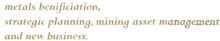
The project is likely to be able to deliver a 20 per cent return with regard to grade since the calculated reserve grade is greater than that determined by the model. Under these circumstances, the grade-adjusted gold price required for the project reduces to \$339/oz from \$421/oz.

The Impact of the Merger and the Acquisition

With the acquisition of Avmin, Harmony and ARMgold have moved ahead of their rivals to take up a strategic position with regard to the future replacement of their gold reserves. We calculate that the merged company will have to replace around 250,000 ounces every year after 2006 in order to maintain current production.

Should Avgold proceed to develop the Target North project, it would need to take on a joint venture partner. Under these circumstances, the capital risk of the project would be halved. We believe that Harmony is positioning itself accordingly.

David Richard Davis
has been associated
with South Africa's
mining industry for the
past 25 years. He has
served on executive
committees in platinum,
gold and uranium and
base metals, advising on



As Chairman of the South African Bureau of Standards Steering Committee, he helped develop the Code of Practice for Mine Residue Deposits adopted by the Department of Mineral and Energy Affairs.

David is published widely in academic journals, financial magazines and newspapers and regularly presents at local and international conferences and symposiums.

Cost and Return Model for Avgold's Target North Project Expressed as US\$ per ounce of Reserve

Value Model	US\$/oz
Exploration Capital Cost Sustaining Capital Production Cost General Expenses @ 3% of production costs	3 55 2 190 6
Total costs of investment and production	256
Tax Royalty @3% US\$(350/oz) Required gold price after tax	82 13 350
Return estimate for required gold price Required gold price (costs only)	70 421
Cumulative cash flow (costs and return) NPV@ 10% costs only Breakeven yield g/t Required yield g/t Reserve grade g/t Differential return adj. for grade and costs	1051439528 955854117 4.4 5.2 5.8 -12
Equivalent overall return Cumulative cash flow adj, for grade and costs NPV@ 10% adj, for grade and costs Equivalent return %	3 82 1226282535 1114802305 23

- **1** To meet a 20% return, the gold price over the life-of-mine should be around US\$421/oz. Much depends on the strength of the rand and the production costs BUT
- 2 This project should meet a 23% return given that the reserve grade (7.2g/t) is in excess of the required grade (5.8g/t) at US\$421/oz.
- **3** Equivalent overall grade-adjusted return for the Target North project at US\$421/oz.



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Transforming South Africa's Mineral Policy

By Roger A Baxter, Chief Economist, Chamber of Mines of South Africa

Congress came to power in April 1994, the new ANC-led government in South Africa took on the mammoth task of rewriting virtually the entire statute book. It was indeed understandable that as South Africa moved away from the apartheid state, legislative and economic-policy changes

Given the important role of mining in the economy (8.1% of GDP, 10.5% of fixed investment, 34% of merchandise exports, 40% of the market capitalisation of the JSE and 410,000 employees in the industry), it was obvious that mining policy reform would form a central part of the overall reforms.

......

An A-to-Z of Great Ideas. . .

Following the removal of bans against the ANC in the early 1990's, in 1993 the Chamber of Mines and the ANC began discussions on a new minerals' policy. It was clear even at that early stage that the reforms would have to encapsulate everything — from beneficiation (adding value to a mineral beyond a certain base state, such as the production of catalytic converters from platinum) right through to sector transformation (the normalisation of the society and business environment in South Africa).

Discussions and negotiations intensified in 1998 with the release of the Government's Green Paper on Minerals Policy, which dealt with the A-to-Z of issues from which legislation would need to be developed. In particular, the Green Paper proposed the state taking custodianship of South Africa's mineral resources and allocating mining and prospecting rights on a basis of the use-it-orlose-it concept. In May 2001 the mining industry captains agreed to the principle of the state becoming the custodian of the nation's mineral resources, which assumed agreement with the use-it-or-lose-it concept – provided that certain checks and balances were put in place. These included the promotion of security of tenure for existing mines and issues such as the right of appeal to the courts.

... Now - Implement Them

On 18 December 2001, a draft Mineral and Petroleum Resources Development Bill was published in the Government Gazette. In essence, this sought to achieve several significant objectives – notably:

- Exercising State sovereignty over mineral resources in South Africa
- Expanding opportunities for historically disadvantaged persons to enter the minerals



Above, examples of gold beneficiation At left, platinum foil

industry and benefit from the exploitation of mineral resources

- Promoting economic growth and mineral development
- Promoting employment and social and economic welfare – as well as ecologically sustainable development.

Again, it is crucial to point out that the Executive Council of the Chamber of Mines, the highest decision-making authority of the organised mining industry, gave its full support to the objectives as outlined in the draft bill.

The critical issue for the industry captains was how these objectives should be achieved. From the mining industry's perspective, the minerals policy should comply with the highest standards of administrative justice, promote internationally acceptable levels of security of tenure and ultimately promote an environment that would enhance South Africa's competitiveness as an investment destination. Following intensive negotiations and discussions between the parties, and after a parliamentary hearing process, the new Mineral and Petroleum Resources Development Act was signed into law by the president in June of 2002.

Work was already quite advanced on a number of other subsidiary regulatory and legislative aspects of the new Minerals Act. These included the negotiations on a broad-based socio-economic Empowerment Charter for the mining industry, the Mining Titles Registration Amendment Bill, and the draft Mineral and Petroleum Royalty Bill.
Discussions between the Chamber of Mines and the government on transformation issues had taken place as early as 2000. The Chamber of Mines had developed its own discussion paper around transformation in the sector, while the Department of Minerals and Energy had been working on their own version of

Rocking the Markets

Unfortunately, on 26 July 2002, a very rough government-proposed draft Charter was somehow leaked to the press. It proposed the transfer of some 50 per cent of the equity of the mining industry to historically disadvantaged people within a ten-year period. This clearly rocked the markets. What followed was two days of blood on the markets, with South African listed mining companies losing over R52 billion in value.

The social partners in the industry — the government, the Chamber of Mines, the unions, the community (as represented by the Royal Bafokeng Nation, who own certain mineral rights and have agreements with some mining companies over these rights) and new emerging producers (as represented by the South African Mining Development Association) immediately set out to negotiate a Charter that would be acceptable to all parties.

And, obviously, to address the negative consequences of the leaked draft Government document. In a process described as the start of South Africa's economic CODESA (the Convention for a Democratic South Africa was the meeting that led to the development of a new constitution for South Africa), the social partners set about plotting a course for unwinding the economic legacy of apartheid — but firmly within the confines of the need for competitiveness within a rapidly expanding domestic economic pie.

South Africans again demonstrated their ability to sit down around a table and negotiate an outcome, and on 11 October 2002 the broadbased socio-economic Empowerment Charter was publicly released.

Can Neither Please – Nor Displease – Everyone

The Charter represents a compromise solution, and not all parties were entirely happy nor entirely dissatisfied with the outcome. But the Charter succeeded in capturing a number of issues that stakeholders have committed to in terms of human resource development, employment equity, mine community and labour-sending community development, procurement,

broad-based equity participation and beneficiation.

From the Chamber's perspective, much of the Charter makes business sense and, over the longer term, the emergence of a more inclusive mining industry will actually reduce the sovereign risk profile of operating in South Africa.

The Charter also recognised that it was not the government's intention to nationalise the industry, that the transfer of ownership would take place in a transparent manner and at fair market value, and that the targets established in the Charter represent what is practically achievable without value leakage from existing companies.

In February 2003 a Scorecard, which acts as a checklist for the commitments in the Charter, was agreed between the Chamber of Mines and the Government.

The National Treasury released a draft Mineral and Petroleum Royalty Bill in late March 2003. It was designed to give effect to the fiscal ramifications of the Minerals Act. In responding to the Royalty Bill, the Chamber of Mines recognised the government's right to impose a royalty for the extraction of a non-renewable resource, but challenged the basis on which a royalty would be charged and the proposed royalty rates per mineral. In particular, gross revenue royalties are the exception rather than the rule for the world's successful mining countries (Chile, Peru and Canada). However, they are prevalent in countries that have little investment in mining activities.

The Chamber of Mines has proposed a move towards a profit-based royalty system, which would not undermine the realisation of the objectives of the Minerals Act (including greater HDSA — historically disadvantaged South African — participation, investment and growth), and would allow the country to remain a globally competitive mining investment destination. A further two-month negotiating process with the government is envisaged, and it is hoped that this will produce a mutually acceptable outcome.

The last outstanding piece of reform to mining legislation is the Promotion of Beneficiation Bill, which will be developed during the second half of 2003. This bill is expected to cover regulation pertaining to the holding of precious minerals (gold, PGMs and diamonds), and is also expected to deal with incentives for the promotion of beneficiation in South Africa.

In South Africa it is still illegal to hold gold — except in the form of jewellery or legal tender. It is hoped that this reform will encourage the holding of legal gold in forms such as bullion bars, investment products and, ultimately, encourage a gold culture in South Africa.

As expected, the mining sector has been the focus of significant policy reform over the last few years. The time is fast approaching where the suite of mining policy reforms will be complete and the practical application of the new laws and regulations will start to take effect.

It is only once mining companies have been able to reregister their rights under the new system — and a suitable case history has been developed of a successful transition to the new system — that all parties, including investors, mining companies and the government, will be more comfortable with the new paradigm.

For its part, the Chamber of Mines of South Africa continues to be a key conduit through which the industry engages with both the government and other social partners to ensure that the suite of mining policy reforms will not only work, but also enhance South Africa's international competitiveness.

Roger Baxter is the Chief Economist of the Chamber of Mines of South Africa. He joined the Chamber in 1992 after completing post-graduate studies at the University of Natal.



He has been involved in a number of public policy debates, including the current mining Charter and Royalty Bill discussions and the development of the Chamber of Mines response to the draft Mineral and Petroleum Royalty Bill. He has also played an active role within the structures of Business South Africa, especially within the standing committee on economic policy, where he has chaired a number of projects.

Roger is chairman of the finance committee of the Economic Society of South Africa and is a member of the Investment Analysts Society.

Official Gold Sales and the Central Bank Gold Agreement

By Philip Klapwijk, Managing Director, Gold Fields Mineral Services

The September 1999 Central Ban Gold Agreement has had a tremendous impact on the gold market. Not only did the CBGA head off a likely plunge below \$250, but the shock it provided also triggered important structural changes — the two key being reduced short selling by funds (with them eventually moving more to the long side) and, above all, an about turn by producer hedgers (with positions tending to decline rather than increase).

By September 1999 the market was ready for such a shift. The slide in the price, growth in producer hedging and short selling had all been taken to extremes. However something as it turned out, the CBGA – still was required to force a change in direction. During the third quarter of 1999 European central banks had become increasingly concerned at the danger of an uncontrolled fall in the price that would reduce the value of their own holdings. This fear, coupled with the need to provide a framework for Swiss and British sales, plus other intended disposals, led to the deal announced in Washington to limit sales to 2,000 tonnes over five years and to cap lending and derivatives activity at existing levels. Due to space constraints, this article focuses exclusively on the issue of sales.

After close to four years, it is clear that the CBGA has contributed to a stabilisation of total official sales, albeit at a higher level

The September 1999 Central Bank

(i.e., around 200 tonnes per annum up on the 1989-98 average). The data also show that, with the exception of 1999, when there was a good deal of "front running" of UK and expected Swiss gold sales by other countries, the sales numbers have been dominated by market. Not only did the CBGA

(i.e., around 200 tonnes per annum up on the 1989-98 average). The data also show that, with the exception of 1999, when there was a good deal of "front running" of UK and expected Swiss gold sales by other countries, the sales numbers have been dominated by the CBGA signatories.

A Case for CBGA Renewal

Indeed, GFMS estimates show that in calendar years 2000-02, CBGA countries accounted for 80 per cent of net sales. Other countries' net sales have averaged just over 100 tonnes per annum across the same three-year period (close to their long-run average). Looking at the global pattern of gold ownership, and excluding other large holders like the United States and the IMF, it is clear that decisions by a handful of European countries will be key to the level of official gold supply in future. Although the odd large sale could emerge from elsewhere, it is only from Europe that a sustained high level of disposals is possible. In light of this, a critical issue for the market is whether the CBGA will be renewed and, if so, on what terms?

On balance, renewal is the most likely outcome, even though it is possible that a second CBGA might be on somewhat different terms, e.g., for a shorter period or with a higher sales quota balanced,

perhaps, by a reduction in lending. The main reason for expecting renewal is that the CBGA has, after all, fulfilled its principal objectives: price stabilisation (and indeed recovery) combined with the orderly disposal of reserves by those wanting to reduce their gold holdings.

Even though the price stabilisation objective has become more a question of the dollar-euro rate than the gold price, the CBGA does at least provide an instrument for influencing the latter. Furthermore, there remains a strong case for certain "overweight" countries to reduce

their gold holdings in a controlled fashion. So, looking ahead, the pertinent questions for the gold market and the price are: which countries still want to sell and, of those that do, how much?

Who's Selling How Much?

At the end of 2002, signatories to the CBGA held 14,829 tonnes. On the basis of their stated sales plans, Switzerland and the Netherlands will both end the agreement with gold holdings below end-2002 levels. Similarly, we would expect further attrition of German and Portuguese reserves. None of this, however, changes the big picture, namely that for a renewed CBGA to deliver the same amount of gold to the market (i.e., 2,000 tonnes over five years) one or more of Germany, Italy, France or Switzerland would have to sell a large share of their gold holdings. By no means all "other" countries (including potential recruits from central and eastern Europe) can be expected to sell and, even if this were so, they would not have the necessary tonnage.

Taking Switzerland first, some local politicians have argued for additional sales over and above the 50 per cent of reserves that the Swiss National Bank is already committed to sell. However, given the lengthy and difficult

CBGA Signatories' Gold Reserves

(rounded to the nearest tonne)

	start-CBGA	end-2002
Germany	3,469	3,446
France	3,025	3,025
Italy	2,452	2,452
Switzerland	2,590	1,917
Netherlands	1,012	852
ECB	747	767
Portugal	607	592
Spain	523	523
Austria	407	318
United Kingdom	664	314
Belgium	258	258
Others	374	365
Total	16,128	14,829

Source: IMF

political process to be negotiated before this could ever become policy, it is inconceivable that the Swiss would be in a position to make any such decision within the next couple of years. With Switzerland out of the picture (though there will be some carry-over from the existing sales target beyond September 2004), the spotlight shifts to the three large Eurozone holders.

Of the three, France has traditionally been the most vocal and articulate advocate for gold. A volte-face from France would therefore be an extraordinary development. Such a shift is perhaps even less likely under a Gaullist administration, especially after it has gone to some lengths to argue its view on national sovereignty in opposition to the perceived hegemony of the United States (precisely the same considerations that influenced France's explicitly pro-gold policy in the 1960s).

Things are less clear-cut when it comes to Italy or Germany. Nevertheless, the former has given no indication that it intends to reduce the level of its gold reserves. Germany, by contrast, would seem to have made its intention clear through comments made last year by the President of the Bundesbank, Ernst Welteke, who on several occasions pointedly referred to the possibility of large-scale gold sales by his institution.

However, German sales may now have become less certain due to differences between the government and the Bundesbank over what to do with the expected profits resulting from any sales. Indeed, on 26 March this year Welteke stated that unless the Bundesbank had the opportunity to invest the proceeds, it would be unlikely to go along with sales from its reserves (he also claimed it was "open" as to whether there will be another CBGA).

This raises the intriguing prospect that Germany may not after all become a major seller and, if so, it is difficult to see how, e.g., a 2,000-tonnes quota over five years could be filled. As indicated above, assuming no change in French or Italian policy, other sellers, of which there could be a handful, cannot make up the numbers. This would be very bullish for gold. Either way, in our opinion, Germany's decision will be key to any new CBGA.

In conclusion, the GFMS view is that there remains a good chance of a second agreement, with Germany (probably) replacing Switzerland as the core seller. If this were the case, then the market will quite likely have to absorb a quota of at least 400 tonnes per annum and, possibly, a higher number − this would almost certainly be the case if, for instance, Italy were to make a move. On the other hand, a nein from Germany could well result in lower European and, therefore, global official gold sales, given the improbability of other countries making good any shortfall from the CBGA group. ■

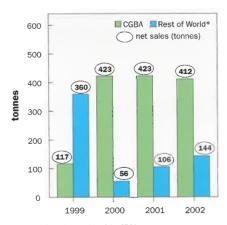


Philip Klapwijk is Managing Director of GFMS, where he has worked as part of the gold research team since 1989. In his capacity as an analyst he covers the official sector, investment and fabrication demand in North America, Latin America and much of Europe.

In 1987 he was appointed Group Economist at Consolidated Gold Fields, responsible for developing the group's economic scenarios and participating in the work for the annual Gold Survey.

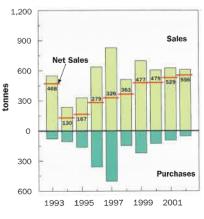
Philip holds a degree in economics from the London School of Economics and a Master's in economics from the College of Europe in Bruges.

CRGA and Rest of World Net Gold Sales



* Countries outside of the CBG Source: GEMS

World Offical Sector Sales and Purchases



Source: GFMS

Brides, Heavy Owners and Bollywood Stars

Marketing Platinum Jewellery Across a Range of Global Markets

An Interview with James Courage, Chief Executive, Platinum Guild International By Susanne M Capano, Editor

James Courage joined the Platinum Guild International as Chief Executive in September 1996. The Guild was established in 1975 to develop demand for platinum jewellery, with its initial target markets being Japan and Germany. Their sphere of activity has expanded to include Italy in 1986, the US in 1991, China in 1997 and, since late 2000, India.

China has been an amazing success story for platinum thus far, but, post-SARS, how has the picture changed?

SARS hit at a bad time — as we approached the May holiday week, a peak period for jewellery purchases. Whereas the government normally encourages people to go out and spend for the holidays, this year they wanted to keep people home. May is traditionally a strong season for weddings as well, but with people wanting to avoid large gatherings, many of these aren't taking place — however, they may represent purchases postponed, not cancelled.

Beyond bridal, the larger part of the market in number terms is the self-purchase market. How that will be impacted depends on how long the SARS cautions remain in place. The Chinese have a strong jewellery-buying culture and that won't change because of SARS, though it may be put on hold. But it's not proving easy on the trade meanwhile — they aren't getting their cash flow.

In a market the size of China, there must be bright spots.

With the Chinese economy growing seven or eight per cent per annum, the target group of consumers with the desire and ability to purchase jewellery is growing. This encompasses both buyers able to purchase their first piece of jewellery as well as 'heavy owners' — those who keep purchasing. Those who've made a first purchase have a lower barrier to buying a second and third item.

One very positive development would be the planned addition of platinum trading on the Shanghai Gold Exchange.

What was the effect of the price fluctuations in China at the start of the year?

It certainly impacted manufacturers. They end up bearing most of the price risk, having to cope with a double whammy of price fluctuations and high lease rates. Chinese production levels were much lower, clearly reflected in the import figures.

But consumer demand remained very strong for the first two to three months of the year. Since stocks were at fairly good levels, these were basically drawn down until the price corrected and there was some rebuilding of inventory.

Do price levels impact consumer demand at all?

I think it is fairly well established in the consumer's mind that platinum is the rarest—therefore logically the most expensive—precious metal, a concept reinforced by marketing of items such as platinum credit cards or platinum disks. Its rarity is an advantage to the consumer looking for something special.

One area where price can become a challenge is India, which is still a relatively small market for platinum because of the long tradition of buybacks. Buyback levels can't be as good for platinum as they are for gold because of production costs.

But we are seeing change in many markets — certainly in China — in that people are buying jewellery for jewellery's sake, not as an investment. While its lasting value, or its potential to increase in value, is still a factor — for younger consumers especially — that's not the driving force behind the

purchase. Gold jewellery still acts as a traditional investment in some areas, but that's not likely to become the case for platinum.

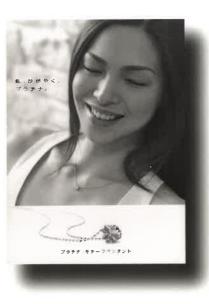
India has been the most recent addition to your target markets. How has the market there been faring?

It's still in the early stages of developing consumer awareness. The Guild didn't target India because it's the largest gold market, but because there is a consumer base — particularly the young — looking for jewellery to wear rather than invest in. However, since many purchases involve the whole family, you need to get everybody on board.

We do need to ensure that consumers are comfortable with the level of quality, and we've set up a system to ensure adherence to 950 purity levels before the individual pieces are manufactured. While higher prices could be a problem, by promoting platinum's strong points – durability, purity, and its ability to hold diamonds – this can be countered. It's the precious ultimate metal.

Maggi Cheung, a leading film star, is PGI's brand ambassador in China.





Ads run in Japan, above and Germany, below.

The manufacturers and retail trade are positive — they've cut their teeth on platinum with the export market and are now keen to develop a domestic one. And most platinum pieces in India are higher margin, as they have diamonds set in them, which also helps avoid parallels with silver.

We've had good success by associating platinum with film stars in China, and the same approach could prove very successful in India. Bollywood has a huge influence on the young.

What about some of your more established markets – Japan, the US?

In broad terms, the Japanese jewellery market has suffered from the economic malaise. The highest level of sales was actually reached five years after economic bubble burst in 1991 and has declined ever since. And the nature of the industry there has changed — independent retailers have come under pressure from the large international brands and sales counters onthe ground floor of department stores, the former playing to the aspiration of the consumer to own a foreign brand.

Market share in the bridal area is still very high, about 90 per cent for engagement rings and 80 per cent for wedding rings. The Japanese bridal market represents about a quarter of the total, so it is

quarter of the total, so it is necessary to target non-bridal areas – heavy owners, for example.

In contrast to Japan, the US has a younger demographic, which means an increase in weddings, and our main focus in the US remains the bridal sector, which is where we started in the 1990s. It makes sense to stay with that until it's very firmly established — one can never be complacent — whilst exploring how much potential there is to attract the bride coming back to look for her next piece of jewellery.

There was a noticeable effect after 9/11- people placed more value on their personal relationships, wanting them to be more enduring — and wanting something that symbolised that.

How do you persuade the Western retailer to consider platinum as a profit centre beyond bridal?

Part of the challenge is that while we have found that consumers have a desire for platinum, retailers — especially in the US — only have it in their bridal counters, not in fashion jewellery, where white gold has tended to be the metal of preference. To counter this, we are building the arguments for the trade, showing that the consumer is interested and that as a higher value metal, the sale of a single platinum piece can be more profitable.

We've also found value in educating sales associates to cope with customer questions. If you've gotten consumers interested but the sales associates can't help, you're failing at the first hurdle.

Do you plan to add any new markets?

We are considering Taiwan and Korea. Both have been markets for platinum over the last 30 to 40 years, but never really got fully established. We've started working with the leading jewellery retail chain in Taiwan and are already seeing an increase in interest and demand, which is attracting the attention of others. Korea has a lot of potential for growth, depending on the state of the economy. Department stores there carry most leading international brands, plus there is a strong bridal market.

Where will you be concentrating your efforts for the rest of the year?

We'll be launching a campaign in the autumn with two main goals – firstly, to bring the

global advertising and marketing programme under a single visual umbrella using a new brand line and logo. Urban women, the purchasers, have a lot in common no matter what country they live in.

Secondly, there will be a new website — www.preciousplatinum.com — currently covering the US, but which will eventually include all our markets. There will be something for everyone — both the trade and consumers. For the trade, there will be an extranet with support and technical information. Retailers will be able to see what manufacturers have on offer.

Consumers like the idea of a neutral website, so they'll find a wide range of designs in both bridal and fashion jewellery. Over time, they will be able to use the site to view a piece they like, together with a listing of nearby retailers who can supply it.

The knowledge barrier can be difficult to cross, especially with male consumers, so there will be an information section on the website. The new adverts can be used to attract attention — then, to find out more, visit our website.



The Effect of SARS on Commodities Markets

By Matt Schwab, Director, Barclays Capital

The impact of SARS has already
affected our industry — one
example: the LBMA Conference
was moved from Shanghai to
Lisbon. And with Asian economies
accounting for a substantial
portion of global commodities'
demand, markets are heavily
exposed to the potential threat of
the SARS virus in Asia.

In a generally subdued global economy, strong Asian demand growth has been one of the few bright spots for commodities so far this year — nowhere more so than in China, where imports of crude oil, base metals and certain precious metals have continued to outpace expectations. Will that demand continue?

The SARS virus now appears to be peaking in most of the affected regions and, if current trends continue, its impact in terms of cases and deaths is likely to turn out to be relatively minor. China remains an exception, however, and new cases continue to be confirmed at a rate that suggests there is still no sign of the disease being contained.

Platinum tops the list of commodities with the greatest exposure to a slowdown in Chinese growth - China is now the world's largest market for platinum in jewellery form and personal consumption is one of the sectors of the Chinese economy most at risk.

Base metals such as zinc, copper and aluminium, of which China is a major consumer and where demand growth early this year has been very strong, are also vulnerable, particularly since foreign direct investment, which has helped fund China's manufacturing boom, is under threat. In contrast, China's consumption of oil is less

significant as a share of global demand. However, a drop from the very high level of imports seen early this year could exert a strong impact on market fundamentals, given growing fears of crude oil oversupply on the world market.

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Precious Metals

Precious metals are unique among commodities in that demand is largely retail and not industrial. Jewellery represents more than 70 per cent of gold demand and close to 50 per cent of platinum demand, while photography accounts for 25 per cent of silver demand. Therefore for precious metals, the impact of SARS on industrial production/infrastructure spending is less relevant than its impact on consumer spending.

Only palladium, as an industrial commodity, is vulnerable to any impact on global industrial production. We believe that palladium prices will be unaffected by SARS, for we do not forecast any significant impact on global automotive production.

Reports from Hong Kong suggest that retail trade was down by as much as 50 per cent in April, with anecdotal evidence (the only kind available) of a drop of between 80 and 90 per cent in Beijing's retail and catering sector sales. Although obviously prudent, the closure of dance halls, theatres and other public venues will exacerbate panic, thus keeping more consumers away from the shops. The abbreviation of the May Day holiday, one of the three main periods for consumer spending, will have an obvious impact on sales of platinum and gold jewellery.

Platinum

China is the largest consumer of platinum jewellery in the world, representing more than 25 per cent of total platinum demand. The key factor in the dramatic growth in platinum jewellery consumption — itself a major factor in platinum's price rise — has been China, where demand has risen by 1.1 million ounces over the past five years (larger than the total growth in demand over the period).

Moreover, the Platinum Guild has targeted the middle- and upper-middle classes — which in China means the city dweller. Therefore, platinum demand has become increasingly reliant on the urban Chinese consumer — exactly the person whose behaviour is likely to be most impacted by SARS.

The Chinese Non-ferrous Metals Information Network (Antaike) has revised down its estimates for 2003 Chinese platinum demand growth from +10 per cent to flat. According to the Platinum Guild, jewellery demand in Guangdong is down by 20 per cent, which is "better compared to Beijing, where there is SARS panic".

The question, of course, is whether demand is being destroyed or merely delayed. Anecdotal evidence suggests that while consumer demand has collapsed, retailers are using this opportunity to rebuild stocks that were allowed to run down as platinum approached \$700/oz.

This is consistent with reports of increased spending on promotions for June — after which SARS is expected to be under control. Certainly, wedding-related demand is likely being delayed and not cancelled — people are hardly likely to cancel their marriage because of it. Therefore, Barclays' expectation is for continued demand weakness in the short term with the potential for a "catch up" after the virus has come under control in mainland China.

Gold

In contrast, although China consumes more than four times as much gold (in ounce terms) as platinum, it represents only 5 per cent of total gold demand. Therefore, although gold is far more dependent on jewellery than platinum, the impact of a SARS-related collapse in demand is likely to be smaller.

More importantly, gold prices at present are not being driven by physical demand – they are being driven by producer de-hedging. By way of example, between 2001 and 2002 Indian consumer demand alone fell by more than 150 tonnes, while the gold price rose

from \$271 to \$309. This is equivalent to 75 per cent of Chinese consumer demand in 2002. Put another way, Harmony Gold's recent announcement of a 600,000-ounce buyback in Q1 03 is equivalent to the World Gold Council's projection for growth in Chinese demand in 2003.

The only potential for a large SARS-related impact on the gold price would be via a major epidemic that led to a sharp slowdown in regional economic growth – well outside of our worst-case scenario. A dramatic regional slowdown would be likely to have the same impact on scrap supply as in 1998, when East Asia swung from being a net importer of more than 500 tonnes to a net exporter of more than 100 tonnes.

Silver

The SARS outbreak is likely to hit silver demand indirectly – via its impact on both domestic Chinese and international tourism. Before 9/11, the International Labor Office projected that travel and tourism demand would rise 3.8 per cent in 2001 and 2002. Demand actually fell by 1.3 per cent in 2001 and is projected to be, at best, flat in 2002. The impact on this was already being felt on silver photographic demand, which fell by 4 per cent in 2001.

The collapse in tourism receipts in Hong Kong and China (down between 30 per cent and 50 per cent, according to Fitch, the international ratings agency) is especially hard for the industry as Southeast Asia and the Pacific was the only region to record growth in travel receipts in 2001.

Chinese tourism revenues have grown on average by 12.7 per cent over recent years, with 2001 revenues up 9.3 per cent in the first nine months. More than two-thirds of revenue is from domestic tourism, which will be severely impacted by the crisis. The shortening of the May Day holiday (one of the peak travel seasons) as well as, in some cases, physical prohibitions on travel in and out of affected areas will significantly impact domestic tourism. Travel into China has likely already been affected, as will travel abroad by Chinese citizens.

All of this will have a significant impact on photographic film demand. The Chinese film market is the fourth largest in the world and has been growing at roughly 10 per cent per annum — and has therefore been one of the few recent bright spots in photographic film sales. Indeed, in 2002, when Kodak's worldwide revenues fell 3 per cent, Chinese revenues were up 25 per cent.

With domestic and international tourism likely to be hit by SARS, the impact on photographic demand could be severe. Unlike platinum, it is possible that this demand will be destroyed – i.e., travel will be cancelled and not merely delayed. This suggests that the impact on silver demand could be the most significant of all of the precious metals. Indeed, silver's positive correlation with economic growth suggests that – microeconomic impact on the travel industry aside – silver prices should be negatively impacted by SARS.

Measuring the Effect of SARS on Asian Growth

The economic impact of SARS is difficult to quantify and ultimately could significantly outweigh the seriousness of the disease itself—in effect, the fear of SARS is worse than SARS itself. Economic effects are likely to be felt mainly in Asia (and in China particularly), where there is a substantial amount of anecdotal information pointing to a sharp slowdown in travel and consumer activity.

This is likely to show up in economic data releases from the region for March and April and, reflecting this, both national governments and international agencies have engaged in downgrading economic growth forecasts.

China has seen the most severe downgrades to its annual growth rate, ranging from 0.5-1.5

percentage points subtracted from previous forecasts that had projected GDP growth at seven to eight per cent.

Barclays' view is that since the main driver of Chinese growth is fixed-asset investment, a looser fiscal policy should limit the damage to growth prospects, and our Asian economists have cut their previous Chinese growth forecasts by just 0.5 percentage points to 7.5%, based on the disease being brought under control within about three months.

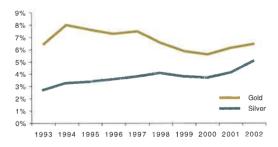
Matthew Schwab is
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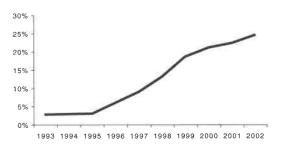
been with Barclays since July, 2000.

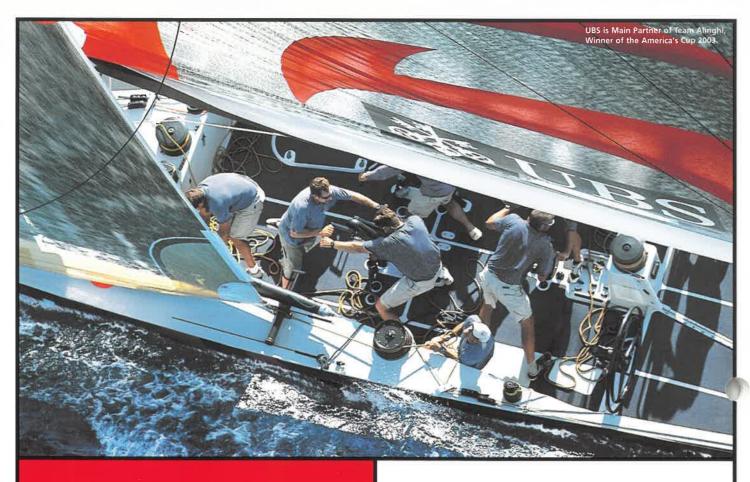
Following his graduation from Kenyon College, Ohio in 1993, he joined AIG International Inc., working in both foreign exchange and commodities in Greenwich, CT, London, and Hong Kong.

China's Share of Global Consumption of Gold and Silver



China's Share of Global Consumption of Platinun





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Gold medal performance.



The Gold Hedge Indicator

By Ted Reeve, Haliburton Mineral Services Inc. Jessica Cross, Virtual Metals Research and Consulting Ltd. Martin Fraenkel, N M Rothschild and Sons Limited

The Gold Hedge Indicator measures the net delta of the global hedge book, and is thus designed to be a simple but comprehensive gauge of the impact of producer hedging on the ounces as of 31 March 2003 – a fall of 23.6 spot gold market. Currently the survey covers 85 producers, accounting for about 67 per cent of world production.

Until recently most producer hedge surveys have been based on calculations involving "committed ounces" or, during the bear market for gold, on "protected ounces". These surveys, while providing a useful aid in understanding the theoretical maximum a producer might have to sell or over which it has price protection, are imperfect measures of the impact on the spot market.

The net delta approach, used by the GHI, takes into account the market impact of all derivative contracts in a producer's hedging portfolio. At a given point in time and gold price, the net delta calculates the actual impact of hedging in terms of equivalent ounces of gold sold into the spot market.

For example the sale of 100,000 ounces of one-year \$400 calls is a commitment of 100,000 ounces, whereas on a net delta basis - at say a gold price of \$335 per ounce - the impact on the spot market might be only around 17,000 ounces, as they are unlikely to be exercised. Accordingly the committed ounce methodology overstates the actual impact of option positions.

With the publication of the March 2003 GHI report we now have a considerable body of data from which to begin drawing some important long-term conclusions.

Decline in the GHI Fuelled Gold's Recovery

As the table and accompanying chart show, the net delta has declined from 100.9 million ounces at 30 September 2001 to 77.3 million million ounces, or 734 tonnes. For 2002 the decline was a robust 14.4 million ounces, or 447 tonnes. Although the rate of decline has slowed in recent quarters, it is still close to four million ounces per quarter and, in recent weeks, there have been announcements of additional reductions in several books. We think that this trend, and the weakening US dollar, are key factors behind the sustained climb in the gold price over the last year.

What factors have spurred this ongoing decline in hedging? The most significant have

- A reduction in the contango due to low interest rates (e.g., the one-month US dollar contango has dropped from about five per cent at the start of 2001 to about one per cent today)
- Renewed optimism among gold producers fuelled by an improving price
- Current apparent disapproval of heavily hedged producers by some investors.

We think these factors may continue to drive a reduction in producer hedging for at least the balance of the year. If gold prices continue to improve, the net delta on net calls will rise as these positions come closer to being "in the money". However there is an offset from puts, which are increasingly out of the money and do not require as much gold to support the positions.

Committed Global Hedge Book Down 30.4 Million Ounces

The committed ounce methodology shows a similar but steeper decline than the net delta methodology. From a high of 112.7 million ounces at 30 September 2001, the committed ounces have declined to 82.3 million ounces at 31 March 2003. In considering this 30.4million-ounce (945 tonnes) or 27 per cent decline over six quarters, it should be noted that the growth of producer hedging took place over more than ten years.

Within the overall committed ounce decline, net forwards are down 26 per cent. An even sharper fall is recorded with respect to other products (hybrids, contingents, and convertibles), reflecting a swing to more plain-vanilla products. As committed ounces decline they are diminishing relative to annual production. Currently the producers in the GHI survey have about 1.5 years of annual production hedged, down from 2.2 years in mid-2001. The book is equivalent to about one year of total global mine production.

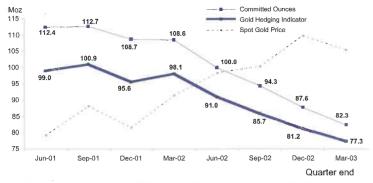
What do we expect of the future? The factors driving the contraction in producer hedging show no signs of going away at least in the near term. What impact will this have on future hedging trends?

For the near term the hedge book seems set to decline further, but before extrapolating that too far into the future we should explore the underlying motivations more carefully. One factor behind recent de-hedging is that a number of large mergers in the gold industry have seen some heavily hedged Australian producers acquired by North American or South African producers, who either have nonhedging or lower levels of hedging as basic strategies.

Once these consolidated entities reach their objectives, the pace of hedging declines will slow significantly. Furthermore if gold prices

The Gold Hedge Indicator - or GHI - a joint venture between Haliburton Mineral Services and Virtual Metals, is a quarterly report on global gold producer hedging activity, and is about to move into its second year. Central to the GHI is the focus on net delta calculations. The authors thank NM Rothschild, the project sponsor, which initially conceived a report based on the net delta approach and which developed the detailed methodology for calculation of the option deltas. The authors also thank Clive Turner and Martin Fewings for their help in developing the GHI concept.

Gold Hedging Indicator, Committed Ounces and Gold Price



Source: Haliburton Mineral Services, Virtual Metals Research and Consulting, NM Rothschild and Sons Ltd.

remain firm, gold exploration and, hence, discovery rates should pick up from current low levels, and projects currently on the shelf due to the gold price will get dusted off. Financing anticipated new discoveries and more leveraged projects may well require hedging to assure cash flow and fund debt repayment.

Another trend, mentioned above, is the move away from exotic products. Also, although insurance for price protection is not high on many producers' agendas, there are some new puts showing up in our survey, and there may be more puts and forward sales if price spikes create attractive opportunities.

Over the last decade producer hedging has ebbed and flowed as the outlook for bullion and the industry changed and, although the current decline clearly has "legs", no trend is forever.

Ted Reeve is a Toronto-based consultant. Prior to setting up his business, Haliburton Mineral Services Inc, in 2002, he was for nearly twenty years a gold equity analyst with a number of brokerage firms. In 1990 he began publishing a quarterly gold hedge survey that detailed the growth in producer hedging over a decade. He has a Ph.D. in geology and an MBA from the University of Toronto.

Jessica Cross is CEO of Virtual Metals, successor company to Crosswords Research & Consulting, which she founded in 1994. She has been a precious metals analyst for 15 years and has a Ph.D. in financial derivatives.

Martin Fraenkel is a director with N M Rothschild and Sons Limited, where he is Head of Commodities. He has worked on producer hedging strategies in gold and other commodity markets for nearly 20 years.

Gold Hedging Indicator

Million Ounces

Quarter ending	Jun-01	Sep-01	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03
Net Delta Ounces								
Net Forwards	76.9	79.5	73.7	74.5	69.2	65.3	64.4	60.2
Net Calls	6.9	7.8	7.0	8.6	8.8	7.9	8.3	7.4
Other Products	6.5	7.1	6.9	8.4	7.0	7.1	4.1	3.5
Net Puts	8.6	6.5	7.9	6.5	5.9	5.4	4.4	6.3
Gold Hedge Indicator	99.0	100.9	95.5	98.1	91.0	85.7	81.2	77.3
Change (Moz)		2.0	-5.4	2.6	-7.1	-5.2	-4.6	-3.8
Quarter ending	Jun-01	Sep-01	Dec-01	Mar-02	Jun-02	Sep-02	Dec-02	Mar-03
Committed Ounces								
Net Forwards	82.0	84.5	78.6	78.8	72.6	68.7	68.5	62.7
Calls sold	24.8	21.4	24.3	21.5	18.6	17.4	15.9	16.1
Calls bought	6.6	5.2	6.7	5.8	3.9	4.1	3.6	2.7
Other Products	12.3	11.9	12.5	14.0	12.7	12.4	6.8	6.3
Net Calls Sold	18.2	16.2	17.6	15.7	14.7	13.3	12.3	13.3
Total Committed	112.4	112.7	108.7	108.6	100.0	94.3	87.6	82.3
Change (Moz)		0.2	-3.9	-0.2	-8.6	-5.6	-6.7	-5.3
Puts bought	21.6	20.9	23.2	22.4	21.5	21.0	17.4	18.0
Puts sold	0.3	0.3	1.0	3.6	3.6	3.0	1.9	2.3
Spot USD Gold	270.6	293.1	276.5	301.4	318.5	323.5	347.0	336.0

Source: Haliburton Mineral Services, Virtual Metals Research and Consulting, NM Rothschild and Sons Ltd





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The Advent of Hedge Funds in the Gold Sector

By Trevor Steel, Baker Steel Capital Managers LLP

This article is based on a speech given to the European Gold Forum, Zurich, 15-16 April 2003.

The late great Julian Baring once said that he didn't care much for hedging, since behind every hedge there is invariably a ditch and ditches are invariably wet and miserable places. I hasten to add that he was directing his fire at hedging in the mining company context — not the hedge fund context.

Nevertheless, I often wonder what Julian would have made of the application of hedge fund strategies in the gold mining sector. He was continuously innovating, looking for improvements in his analysis techniques of companies and striving to identify moneymaking opportunities. I think for this reason he would be intrigued — maybe even supportive — whilst reminding us to be sure not to lose sight of what we pay per ounce of gold versus what we get!

600-Billion-Dollar Men

Hedge funds are by no means a new financial invention — as far back as the 1920s, investors were constructing portfolios composed of an equal dollar value of longs and shorts to 'hedge' themselves against the vagaries of the market.

The term applies to a multitude of different investment management approaches, but generally speaking, the common denominator is that hedge funds typically undertake some forms of shorting equities or indices in order to remove/reduce market risk, distinguishing them from a normal long only management approach. By reducing market risk, in theory the portfolio's return will be purely down to the manager's skills — and not market movement. Such an approach lowers the volatility of the portfolio, which appeals particulary to very wealthy investors who like the idea of capital preservation whilst hopefully making decent but steady returns on top.

In recent years, hedge funds have seen phenomenal growth in assets under management, now estimated to be at \$600 billion. Doubtless the equities bear market has refocused investors' attention on investment products that are intended to preserve capital. Although the growth rate has slowed recently, the hedge fund sector is one of the few areas of the investment management industry still making decent headway.

Although hedge funds have seen remarkable growth, they still remain a tiny part of the overall assets under management globally — probably under 1%. Of course, there have been a few notable corpses in the hedge fund world, not least Long Term Capital Management (LTCM).

The Holy Grail of the hedge fund industry has been to persuade pension funds that hedge funds represent an alternative asset class that should be considered for an allocation of assets. If the hedge fund industry can be successful in making this case, hedge fund assets under management could multiply several fold from here. News that CALPERS — one of the largest pension funds in the US — plans to invest \$1 billion in hedge funds is significant. A discussion paper published by the FSA in the UK suggests that regulators are increasingly prepared to debate the issue, even if full blown retailisation of hedge funds may still be some way off.

Are hedge funds just another bubble, and will they become unfashionable with investors as soon as equities markets head upwards? Only time will tell, but as they have been in existence for so long my instinct is that they are here to stay. Many money managers who grew frustrated at running long-only money in bear markets and have started to undertake shorting strategies will be unwilling to give up this practice once it has proved profitable.

Indeed sources in the Canadian broking world tell me that they have seen the number of accounts willing to short natural resources equities increase several fold in the past few years alone. Announcements have been made that two new gold funds are launching in Canada that will undertake limited shorting whilst retaining significant exposure to the market — so-called hybrid funds. Hybrid funds are a recognition that managers who claim to add value through stock selection, as many

Genus NAV and FT Gold Mines Index -Last Six Months (Indexed to 100)



claim to do, can add even more value by undertaking shorting of the least preferred stocks in their investment universe. If funds that do undertake shorting are successful, gold 'hedge-funds' will become an ever-more important source of capital to gold mining companies.

Reasons for Growth...

Volatility of gold mining equities is likely to increase further due to the activities of hedge funds, as companies which report bad news get punished by the market more severely than in a pre-hedge-fund world. This is good news for stock pickers and value investors — for them, volatility is an opportunity. Recent punishing falls in stocks like Meridian, Royal Gold and Agnico Eagle have no doubt been exacerbated by hedge fund short selling.

On the flip side hedge fund investors tend to be more aggressive in mining finance opportunities and offer companies access to capital that perhaps would otherwise not have been available. Durban Deeps successfully offered a U\$60 million convertible last year which reportedly went almost entirely to hedge funds (because of the optionality provided by the convertibility)— indeed they definitely were the price setters in the deal, and the company paid quite a high price in terms of short-term volatility, as hedge fund investors shorted the ordinary shares to buy the convertible issue.

The swathe of special warrant-bought deal financings completed by Candian brokers on behalf of their gold mining company clients in 2002 were healthily subscribed for by hedge

funds, which generally seek to acquire optionality on a market at minimal capital risk: utilisation of options, warrants and convertibles allows them to minimise volatility whilst retaining significant directional exposure to a market. In other words, acquiring optionality allows funds to better manage risk and optimise risk-adjusted returns for the portfolio.

...And Reasons to be Careful

For investors seeking to maximise the portfolio insurance characteristics of gold and gold equities, a modest exposure to a long-only fund may make most sense. However, other investors wishing to emphasise exposure to the stock-picking skills of a manager over an outright directional view on gold may prefer the lower volatility alternative of a hedge fund approach. It's horses for courses!

What are the issues worth consideration from a gold mining company perspective? Optimising the cost of financing using the equity markets needs to be considered carefully given the demand for optionality by hedge funds. Monitoring the borrowability of a company's stock and, if available, the fluctuations in borrowing costs and disclosed short positions will provide a company more of a window into the vagaries of their share price performance. This fact introduces some bias against the large-cap gold stocks and in favour of emerging producers.

In addition to two new gold hedge funds being launched in Canada, in Europe, United European Bank (UEB), a subsidiary of BNP Paribas, has just launched an innovative multi-manager fund called the UEB Gold Hedge Fund. It comprises three compartments — long-only gold equities, long-short gold equities and Commodities Trading Adviser (a fund which typically uses a systematic basis to determine its trades). Its objective is to provide steadier returns than pure long-only gold funds by capitalising on sector volatility through long-short and CTA strategies whilst retaining upside beta to gold through the long only compartment. (Baker Steel has been chosen as one of the managers for this fund).

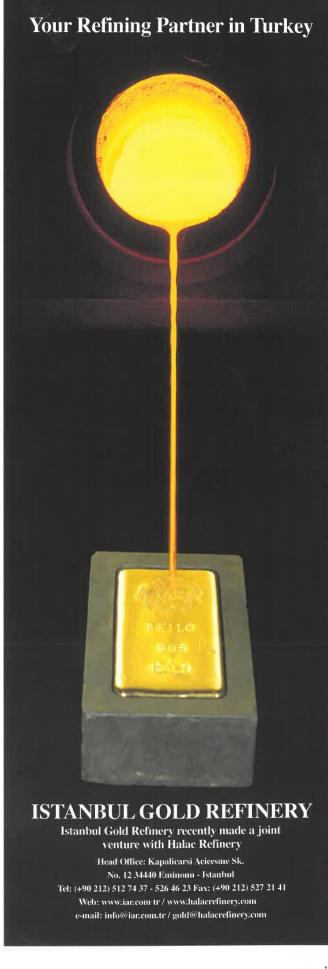
Considering the above, I would conclude that hedge funds are in a secular up trend and specialist gold/natural resources equity fund managers are increasingly undertaking shorting, which likely will increase sector volatility further. However, hedge funds clearly are contributing to liquidity and access to capital for gold mining companies. Like it or loath it, investors and gold mining companies alike will have to learn to live with the evolution in capital markets.

Trevor Steel was a senior portfolio manager at Merrill Lynch Investment Managers (MLIM) until 2001, when he and a senior colleague, David Baker, established Baker Steel

colleague, David Baker, established Baker Stee Capital Managers, an FSA-regulated investment management company specializing in the natural resources sector.

While at MLIM, Trevor helped build its highly respected natural resources team and was specifically responsible for managing the award-winning ML World Gold Fund – from its inception in 1995 until he left MLIM.

A regular speaker at conferences, Trevor has often been quoted in the press and has appeared on television. Trevor is a member of the Association for Investment Management and Research. He holds a degree in geology from London's Royal School of Mines.



The Impact of Central Bank Gold Sales on the Canadian Mining Industry

By Martin Murenbeeld, M Murenbeeld & Associates, Inc.

This article is based on a speech given to the Canadian Mining Institute in Montreal on 7 May 2003.

With a value added during the previous decade of well over \$15 billion, there can be no doubt of the gold mining industry's importance to the Canadian economy. At various times, over 12,000 people were employed in the industry.

Of course, the industry monitors the gold price closely — it directly affects gold mining revenues and profits, which in turn affect exploration expenditures, employment levels, and materials and supplies purchased by the industry.

Of all the factors impacting the gold price, the annual supply into the market – including that provided by central bank sales – is one of the more significant. World mine output stands at around 2,500 tonnes per annum, and central banks have added another 20% to total supply in recent years. As Chart 1 shows, these sales affect the price by shifting the supply schedule outward – at any given price, there is more supply on the market. With demand conditions unchanged, the outward shift has the net effect of lowering the gold price from P to P' so that demand may increase to absorb the extra supply from central banks (Q'-Q"). Producers are left to sell amount Q" at P', as opposed to amount Q at P.

Direct, Measurable Impacts

In theory, then, central bank gold sales have a direct impact on the Canadian gold mining industry. Indeed, even Bank of Canada gold sales, as miniscule as they are lately, have an impact. In the early 1990s, these sales were above 100 tonnes on an annual basis, making the Bank one of the major central bank sellers at the time.

Our models, based on the theory of Chart 1, show that a 10% increase in supply depresses the gold price by 3.4%. In 1992, central banks sold 622 tonnes of gold, raising the total supply that year by 24.3%. Accordingly, the gold price was 8.27%, or US\$26.27 lower than it would otherwise have been that year, meaning that all producers — including Canadian producers — received US\$26.27 less for each ounce of gold sold that year. For the Canadian industry, that translates into lost revenue of US\$136.34 million. The total loss of revenue (neglecting present

Chart 1

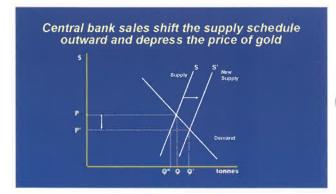


Chart 2

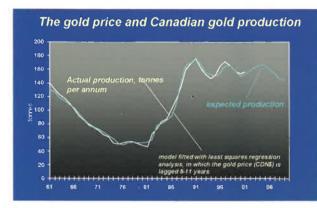


Table 1

Date 1990	Impact on production in trans.	Impact on Workers unumber	Impact on all Employment	Impact on Sal +Wage 1991 (4000) -9743	Marerial 4 Supplies 1001 \$0000 -10141	Impact on Value Added 20015/000 -11400
1991	82003	27	45	1311	2433	9269
1992	-1010	-52	-85	-13187	-17662	-108409
1993	-14499	-243	-314	-34107	-43412	-107301
1994	-5015	-176	-221	-21788	-27686	-34359
1995	20529	-28	-34	-4073	-6198	-23780
1996	36727	-21	-26	-4643	-7909	-44268
1997	8527	-78	-104	-13558	-19252	-45214
1998	-69320	-142	-199	-23197	-32858	-84406
1999	-49989	-166	-223	-24677	-38248	-79908
2000	-109564					
2001	-144331					

value considerations) over the period 1990-2001 adds up to just over US\$730 million.

These models can also be applied to the Bank of Canada gold sales. In 1993, for example, the Bank sold nearly 121 tonnes of gold (which was 78.9% as much as the domestic industry mined that year). These sales depressed the gold price by US\$3.52 (assuming other central banks continued to sell gold). In 2001 the Bank sold only 4.11 tonnes of gold — while marginal, we estimate that it still cost Canadian producers \$.11 per ounce. The loss of revenue resulting from Bank of Canada sales over the period 1990-2001 is a not insignificant US\$96.0 million.

Lower Price = Lower Employment and Decline in Value Added

Given that a lower gold price affects industry revenues negatively, how does a lower gold price affect more specific mining industry variables? Models developed for this study show that employment would decline .8% in the first year in response to a 10% decline in price, and 3.2% in the second year. Value added in the Canadian industry declines 9.4% over two years in response to a 10% price decline!

Lower gold prices also retard future output. Chart 2 highlights a least-squares regression model, which shows the relationship between Canadian gold production and lagged gold prices. The model shows that after some pickup in gold output in Canada resulting from the price upturn in 1993-96, output will decline again because of weaker post-1996 gold prices. Indeed, the model suggests that a 10% price decline today reduces gold output in Canada by a total 5.4% spread over years eight to eleven. In other words, the Canadian industry will be suffering from price-induced production declines for some years to come.

It was once thought that the "normal" production response to price changes was about five years, but our data suggests that the response time is much longer!

In turn, lower gold production has an impact on specific mining industry variables. A 10% decline in gold production in any one year reduces total employment by 7.5% in the current year and 1.5% in the following year. Material inputs to the mining process decline 14.3% over two years furthermore, and mining value added declines by 11.2% over a two-year period following a production cut of 10%.

The total impact of central bank gold sales on the Canadian industry is therefore the sum of the impact of an immediate central bank-induced price decline and the impact of reduced production resulting from previous central bank-induced price declines. Table 1 presents the combined results, shown in CDN 2001\$. For example, due to current and past central bank gold sales, Canadian gold production was 49,989 ounces less than otherwise in 1999, there were 223 less employees in the industry, and there was CDN\$79.9 million less value added from the industry in 1999. For the period 1990-99, the cumulative impact was 1,216 man-years of employment lost and CDN\$530 million of value added lost.

The impact of Bank of Canada gold sales is much smaller, but still not insignificant — 362 man-years of employment were lost over 1990-99, CDN\$118 million of value added was lost and the direct revenue losses were CDN\$136.1 million.

Selling into a Rising Market

To be sure, these are data are 'estimates'. But if these estimates are close to accurate, we can unequivocally conclude that central bank gold sales have "hurt" the Canadian gold mining industry. Accordingly, with an eye on the renewal of the Central Bank Agreement on Gold in 2004, we'd like to recommend that:

1 - Central banks not sell gold below some
"fixed" price, say US\$325 per ounce
2 - Central banks sell gold above the "fixed"
price by writing call options at progressively

higher strike prices.

While this would mean irregular revenues from gold sales, it would ensure that central banks not only sell into a rising gold market, but also not sell gold at prices that are already at distress levels for the industry.

Dr. Martin
Murenbeeld is the
founder and a
principal of M.
Murenbeeld &
Associates Inc. The
firm consults on
gold markets,
foreign exchange



markets and international financial and economic trends and publishes the Gold Monitor, the Financial Monitor and the Bond and Stock Market Monitor. Clients include gold miners, investment counsellors, corporate treasurers, financial institutions, government treasuries, and international gold organisations.

Martin is frequently quoted in the financial press and speaks regularly at international foreign exchange and precious metals conferences. He is also a member of the Board of Trustees of the University of Victoria Pension Fund and an adjunct professor of international finance at the University of Victoria.

He graduated from the University of California, Berkeley, in 1972 with a Ph.D. in international finance. He then joined the Faculty of Management Studies at the University of Toronto to develop the international business curriculum in the MBA program before leaving to found M. Murenbeeld & Associates Inc.

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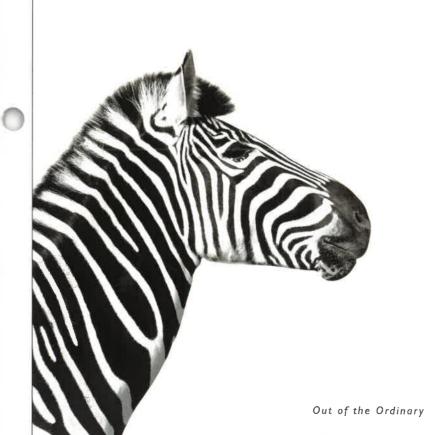
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LBMA News

By Stewart Murray, Chief Executive, LBMA

Membership

Change of Address

The Bank of Nova Scotia – Scotia Mocatta relocated on 22 April to Scotia House 33 Finsbury Square London EC2A 1BB Tel: +44 (0)20 7826 5655 Fax: +44 (0)20 7826 5948

Good Delivery List

The Shui Kou Shan Mining Bureau of Hunan Province, China was admitted to the Good Delivery List for Silver on 28 May.

Committees

Management Committee

There has only been one Management Committee meeting since the last *Alchemist*. The Committee approved the Annual Accounts for 2002 for submission to the AGM (see below). It also approved an amendment to the Non Investment Products (NIPs) Code relating to Undisclosed Principal Trading.

Public Affairs Committee

As usual at this time, the PAC has been extremely busy with arrangements for the LBMA Conference. As the decision was taken to move the event from Shanghai to Lisbon only on 1 April, the past two months have seen a period of intense activity in the Executive, Lisbon represents the first Conference to be held in the European Union, thus requiring the LBMA to obtain Portuguese VAT registration and considerably adding to the amount of work involved in the lead up to the Conference, as well as dealing with re-registrations and venue arrangments.

One of the publications overseen by the PAC is the *Guide to the London Bullion Market* and following the release of an Italian version earlier this year, a Chinese language edition has now been completed and is currently being printed.

Physical Committee

......

The Committee has now virtually completed the work required to expand the panel of Good Delivery Referees and as a result, it is expected that an announcement will be made in mid-June. A tremendous amount of work has been expended on this project both within the Executive and in the laboratories of a number of Good Delivery Refiners who were invited to apply for Referee status. Once the new panel members have been appointed, progress towards the introduction of proactive monitoring can be expected to be rapid during the summer months. A special meeting of Good Delivery Refiners will take place on Monday, 2 June at the Lisbon Conference to provide an opportunity for feedback to the LBMA on this subject. All members of the Good Delivery List have been invited to participate.

Annual General Meeting

The AGM will be held at the City Club, Old Broad Street at 4.30 pm on 25 June. All Members and Associates are invited to attend. Senior representatives of any Member Company are eligible to stand for election to the Management Committee, all members of which resign at the AGM. As usual at the AGM and in addition to the formal business, full reports from the Chairman of the LBMA and the Chairmen of all the Sub-Committees are presented.

Documentation including the nomination forms for the Management Committee were circulated on 23 May to all Member contacts. Completed nomination forms must be returned by close of business on 13 June.

Market Moves

Kevin Roche has joined Investec Bank UK Ltd as the precious and base metal options trader. Prior to joining the company, Kevin spent over six years with Westpac Banking Corporation. For three of those years he was based in Sydney, where he was their gold trader.

The LBMA Annual Golf Day

By Susanne M Capano

In conditions best described as 'varied', the 2003 LBMA Annual Golf Day was held at Blackmoor Golf Club, Hampshire, on the 1st of May. As the rain fell, the wind blew and the sun shone brightly in equal proportions — but at different times — the Jack Spall Trophy was played on what is acknowledged by the pros as 'the toughest track in Hampshire'.

The competition proved to be a triumph for Brink's, whose employees took the podium for the first three places. Darren Johnson pipped Andy Chapman on countback for the runner-up spot with 34 points, while John Coley finally secured his first win after 12 attempts with 37 points. The fact that the event was held on John's home course was not lost on the competitors!

afternoon was played as a 'Yellow Ball' competition. This is a format that exerts great pressure on the holder of the yellow ball as it is passed around to each member of the team on a strictly hole-by-hole basis. That individual's score then counts double as part of the team score. Terry Barnes, Colin Griffith and Clive Turner took that pressure best and romped

The LBMA Team Trophy in the

home with an impressive 104 points.

The prizes were presented by Valerie Saubergue and during the day our thoughts often wandered to Chris, who had become a regular participant. Stella Thompson also came to see 'her boys', as she calls them, as well as to help out in the running of the event.

Thanks are due to John Coley for continuing to organise the event, and all the players were grateful to Securicor International Valuables Transport Ltd and EBS Dealing Resources International Limited for their generous sponsorship. Added to the contribution from the LBMA itself, it all came together to make a most enjoyable day at an affordable price. We now look

forward to the
2004 event,
which will be
held at
Brickendon Grange
in Hertfordshire on
a date to be
announced.

DIARY OF EVENTS

June 2003

2 – 3

The LBMA Precious Metals Conference 2003 Lisbon, Portugal Tel: +44 (0) 20 7796-3067 Fax: +44 (0) 20 7796-2112 conference@lbma.org.uk www.lbma.org.uk

6 – 9

16th Industrial Minerals International Congress Montreal, Canada Tel: +44 (0) 20 7827-5284 Fax: +44 (0) 20 7827-5253

8 - 9

Conference
Vancouver, Canada
Tel: +1 604 687-4151
Fax: +1 604 687-4726
hfitch@cambridgehouse.ca

World Gold and PGM Investment

10 - 11

San Francisco Gold Forum 2003 San Francisco, USA Tel: +1 305 669-1963 Fax: +1 305 669-7350 iiconf@iiconf.com

10 - 13

18th International Congress and Mining Exhibition Ankara, Turkey gulhano@metu.edu.tr

11 – 12

PricewaterhouseCoopers Global
Mining Conference: Unlocking Value in
the Mining Industry – Closing the Gap
in Investor Perceptions
New York
Tel: +1 602 364-8193
steve.ralbovsky@us.pwcglobal.com

14 – 17

IPMI 27th Annual Conference of Precious Metals San Juan, Puerto Rico Tel +1 850 476-1156 Fax +1 850 476-1548 mail@ipmi.org

July 2003

1

CPM Group PGM Annual Report New York Tel: +1 212 785-8320 Fax: +1 212 785-8325 info@cpmgroup.com

14 - 15

Australian Platinum Conference Perth, Western Australia Tel: +61-8-9231-0355 Fax: +61-8-9321-0426 brooke@louthen.com.au

August 2003

4 - 6

Diggers & Dealers Mining Forum Kalgoorlie, Western Australia Tel: +61-8-9481-6440 Fax: +61-8-9481-6446

September 2003

1 – 2

China – Strategies for the Metals Industry II Hong Kong Tel: +44 (0) 20 7958-9823 Jill@metalevents.com

8 – 9

New York Institutional Gold Conference New York Tel +1 305 669-1963 Fax +1 305 669-7350 iiconf@iiconf.com

17

GFMS Gold Survey 2003 – Update 1 London Tel +44 (0) 20 7539-7820 Fax +44 (0) 20 7539-7818 laurette.perrard@gfms.co.uk

17

GFMS Precious Metals Seminar London Tel: +44 (0) 20 7539-7820 Fax: +44 (0) 20 7539-7818 laurette.perrard@gfms.co.uk

21 - 24

Denver Gold Forum 2003 Denver, USA Tel: +1 303 825-3368 info@denvergold.org

28 - 1

Gold 2003: New Industrial Applications for Gold Vancouver, Canada Tel: +44 (0) 20 7930-5171 chris.corti@wgclon.gold.org

October 2003

20 – 25

The Mexican Association of Mining, Metallurgical and Geological Engineers XXV Convention Acapulco, Mexico Tel: +52 (55) 5543-9130 Fax: +52 (55) 5543-9135 fernando_galvan@aimmgm.org.mx

A Lifetime in Metals Trading

Editorial Comment by Colin Griffith, Standard Bank London Limited

At 12.50 on 15 April 1969, the bell Amongst my memories rang and a rather nervous twenty-one year old entered the ring. In the first couple of minutes it dawned on him that being a metal trader was much harder than he had fondly imagined while acting as a runner. The low seat made it difficult to comprehend what was really happening and the noise - silver was in an especially active period - was right in his face. The sudden realisation that over four minutes had flown past and prices were moving higher nearly prevented a very squeaky voice from saying, "Can I buy 2 lots at 181p, please?" before the closing bell.

As I left the ring with my legs still shaking, my boss, Ivor Foster, (later to become chairman of the London Metal Exchange) said, "The client will be pleased with that execution." But I had the distinct feeling it was not what he really meant

I moved into the hallowed bullion market in 1973, just as gold was breaking away from the historic \$35 level. Over the ensuing thirty years, I have been privileged to hold senior trading, marketing and managerial positions for very contrasting organisations - Mocatta, the oldest bullion dealer in London, Credit Suisse and Standard Bank, the leading South

are the preparations made (with the price just below \$200 per ounce) for the expected heavy demand that would follow when, in January 1975, Americans would first allowed to purchase gold. Just over a year later you guessed it - the price was back down to \$100 per ounce.

However, from then onwards high inflation. increasing oil prices and global economic uncertainty attracted considerable attention to precious metals. For a period of time, the market seemed to be setting new volume levels and price records on an almost daily basis. One morning the price rallied over \$100 between the London opening and the 10.30 fixing. I have known many years when the gold trading range was smaller than in that

Silver had a life of its own as well, driven by the Hunt brothers' attempt to corner the market. Prices eventually rose to \$50 an ounce in January 1980, but when Nelson dropped the Gold Cup at Cheltenham that his horse, Dahlia, had just won, the writing was on the wall. By May the price was back below \$11 per ounce and the Hunt brothers were well on their way to losing millions of dollars.

There have been numerous "unusual" days. I remember the Brinks \$26 million robbery in 1983, the collapse of Johnson Matthey the following year, Black Monday in October 1987 and, more recently, the Ashanti affair. A couple of non-bullion events that caused a few sleepless nights included the disgraceful default - with enormous debts - of the International Tin Council, and the Sumitomo copper crisis a decade later.

During my time I have watched the boundaries, products and services of precious metals markets be extended. Today every major financial centre has a bullion market or exchange, or has banks and financial institutions that provide their global customers with all the bullion services they require, and at very competitive prices.

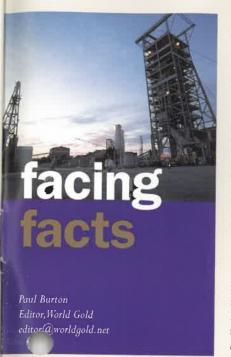


But one aspect of our market is as true now as it was thirty years ago. On joining the market I was immediately struck by the extremely high standards and ethics demanded by the five fixing members, and when the LBMA was formed in 1987, these same standards helped form the basis for its constitution.

I was invited to join the Management Committee the following March and, apart from a one year gap in 1994, have been a member since. During this time the LBMA has achieved much, including:

- Maintaining the ongoing high standards of the London Good Delivery Lists for gold and
- Bringing greater transparency to the London market without threatening confidentiality - a difficult objective to achieve. When one sees the range of historical data the LBMA consistently makes available, the progress is clear
- Producing the "PR" magazine for the industry. The LBMA's first publication, a fourpage black-and-white newsletter, was circulated to only existing members. Today the Alchemist has up to 28 pages of far-ranging articles from global correspondents and reaches some 2,500 organisations
- Organising an annual Conference, which in the short space of four years has come to be regarded as the world's premier precious
- Providing standard documentation and encouraging ever-higher standards of customer service, helping to create a level playing field for all market customers.

During my fifteen years at the LBMA, I have been proud to serve alongside many dedicated individuals who ensure that in precious metals there is no doubt - the London market leads the world



The industry dynamics in South Africa, which is still the world's largest gold producing country, are fascinating for the concerned observer.

Against an economic backdrop of a strengthening currency and high local inflation, there is a powerful socio-political initiative driven by recent legislation intended to aid distribution of wealth within the gold industry. Such a changing socio-economic environment presents unique challenges for gold producers, and it is instructive to observe the reactions of the main protagonists.

Harmony Gold Mining has aggressively embraced the new realities and last month announced a merger with ARMgold Ltd, the latest in a series of acquisitive moves, which will increase Harmony's exposure

to the South African economy. Importantly, this politically expedient manoeuvre will immediately satisfy all the company's requirements in terms of the new Minerals Development Bill and the associated Mining Charter for greater involvement in ownership of the industry by Historically Disadvantaged South Africans.

The Harmony-ARMgold business model may become the template for the next generation of gold companies in the country.

Harmony laid the seeds for this new venture last year, when it formed a joint venture with ARMgold and acquired four mines comprising the Freegold assets from AngloGold Ltd. At the same time, Harmony and ARMgold entered into a cooperation agreement for a period of 12 months. Since that time Harmony and ARMgold have worked together pursuing various opportunities, including the acquisition of St Helena from Gold Fields.

The ARMgold transaction makes a lot of business sense for a company committed to South Africa. The two companies are neighbours and partners and, with consolidation, will tie up most of the Free State. In a separate deal, Harmony and ARMgold have jointly agreed to purchase Anglo American's 34.5 per cent stake in Avmin Ltd, giving the partners a strategic holding in Avgold Ltd and its new 300,000-ounce per year Target mine, also in the Free State. There will clearly be operational synergies in this merger, with opportunities to cut costs - a critical aspect as margins become increasingly squeezed. For, in addition to inflation, which is forcing up cash operating costs, the recent significant strength of the rand (from its 52-week low of R10.88/US\$ in August last year to around R7.20/US\$ at the end of April, an appreciation of 34%) has had a profoundly negative

impact on the gold price that the South African gold companies are now receiving.

Although May saw some reversal of this trend, the windfall profits that the South African producers have enjoyed over the past two vears, as the gold price reached R112,000/kg, are becoming something of a memory as worryingly harsh economic reality takes over. (The gold price was down to 78,000/kg at the end of April.)

By way of example, in the March quarter AngloGold received a price for its gold on the international market that was, in US\$ terms, 20 per cent up on a year earlier. But instead of improving profits, the stronger rand meant that the actual price translated to 13 per cent lower than in the March 2002 quarter. AngloGold was at least able to contain its cost inflation and thus mitigate some of the decrease in earnings. Harmony suffered a similar fall in unit revenue, but its financial position was further eroded by cash costs that rose 12 per cent in local terms.

Part of the explanation of why the companies reported disparate trends is their respective reliance on South African production. AngloGold has diversified some of its South African country risk by investing overseas to the extent that its domicile now only accounts for 57 per cent of its production. Harmony, despite recent acquisitions in Australia and Russia, has its production roots firmly entrenched in South Africa. The 84 per cent of production that currently derives from South Africa will increase significantly with ARMgold

ARMgold currently produces about 1 Moz/y, all from its Free State mines. Thus once the merger is completed, only 11 per cent of the New Harmony's 4.1 Moz/y production will be

sourced outside of the country. Harmony chief executive Bernard Swanepoel is clearly not overly concerned by the economic implications of this greater dependency on home-based assets. In the company's March quarterly report he remarks, "Whilst the current gold price environment is becoming more challenging with the unexpected strengthening of the South African currency, this is the environment which is similar to that in which Harmony grew substantially. It was during this time, with South African producers' margins under

pressure, that the company grew

its production base from 580 000

ounces per annum in 1995 to the

plus-3.0-million ounces for the

current financial year."

Meanwhile, the New Harmony looks set to become the fifth largest producer in the world behind the two North Americans, Newmont and Barrick, and its fellow South Africans, AngloGold and Gold Fields.

The Alchemist is published uarterly by the LBMA. For further ormation please contact Susanne M Capano, Editor. LBMA Executive 3rd Floor, 13-14 Basinghall Street London EC2V 5BQ Telephone: 020 7796 3067 Fax: 020 7796 2112 Email: alchemist@lbma.org.uk www.lbma.org.uk

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