



Gold



Lead



Copper



Platinum



Nickel



Iron



Aluminium



Zinc



Silver

## GLOBAL GOLD PRODUCTION – PRICE VS COST

US\$ gold prices have improved dramatically in the past 3 years, largely on the back of a weakening US dollar and strong market sentiment. 2003 saw the spot gold price breach US\$400/oz for the first time in 7 years, with an average price of US\$364/oz for the year.

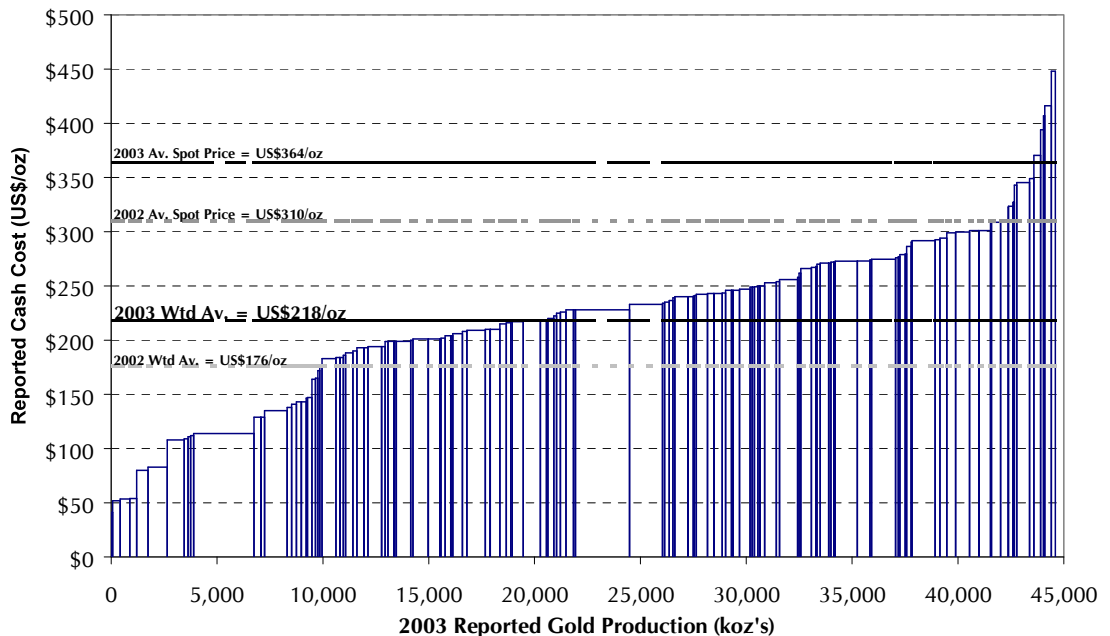
With gold producers having now reported their December year end results, it is an appropriate time to investigate not only industry trends in production but also to examine how producers have been impacted by the appreciating currencies.

## US\$ CASH COST CURVE – THE START OF THE ANALYSIS

The chart below shows the reported US\$/oz cash costs for over 130 gold mining operations, representing more than 44Moz of 2003 gold production (around 50-55% of total annual worldwide production). The curve has been derived from publicly reported data – hence reflects results primarily from companies on developed market exchanges.

We have used reported figures only, hence have assumed that all figures are consistent (in reality there are bound to be some differences due to variances in reporting – not all producers report to the Gold Standard). Other important features to note include: the inclusion of credits is not accounted for, and that the curve plots the performance of mining operations and not individual mines (for example, Newmont's Nevada operations are included in the curve as a single point).

2003 Global Gold Cash Cost Curve (US\$/oz)



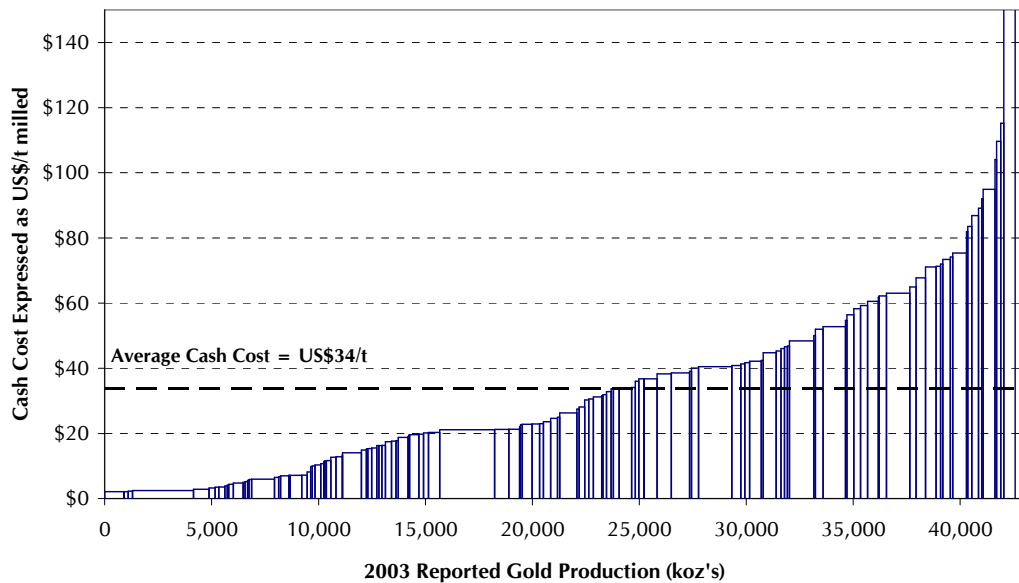
The curve shows a weighted average cash cost of US\$218/oz for 2003 gold production – an increase of US\$42/oz (or 24%) over the US\$176/oz calculated for 2002.

Major currencies have appreciated against the US\$ over the period 2002/2003, so an increase is not unexpected. The increase in the US dollar gold price over the same period was US\$54/oz, or 17% (US\$310/oz in 2002 vs US\$364/oz in 2003), implying that even though the US\$ gold price has had a stellar run, producers have only been able to add an additional US\$12/oz to their operating margins (and in fact have been unable to deliver this performance to their relative cash margins).

**CASH COST CURVE – PUTTING IT IN CONTEXT**

One of the difficulties of expressing cash costs in terms of \$/oz is that production grades impact the fundamental costs of each operation (higher grades generally result in a lower \$/oz result, but not necessarily a change in the actual cash operating cost of an operation). In the chart below, the curve has been restated to show cash costs in terms of reported tonnes milled. As can be seen, the resulting curve is much steeper than on a US\$/oz basis, highlighting the impact of grade.

**2003 Global Gold Cash Cost Curve (US\$/t milled)**



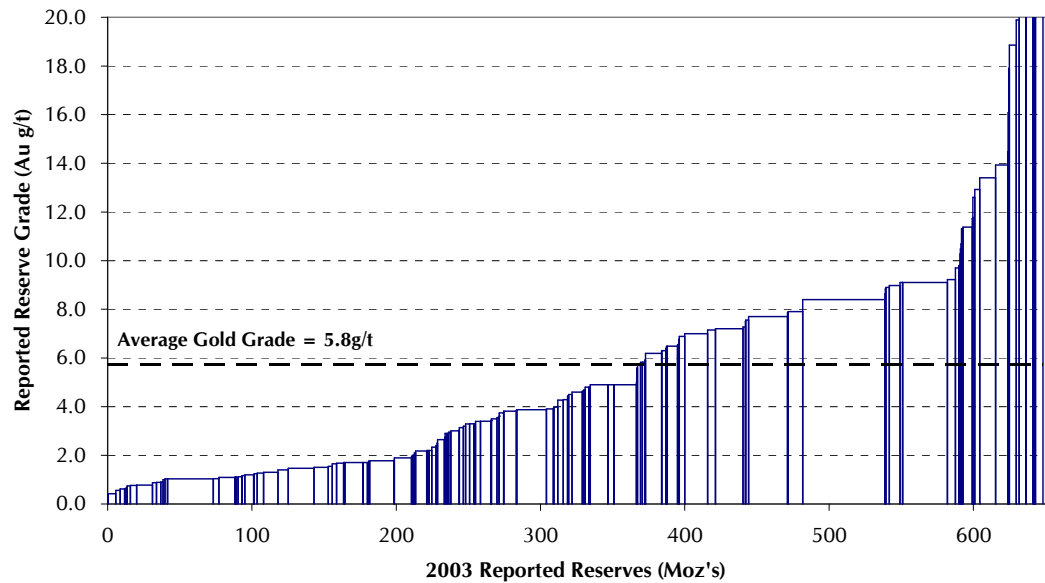
**2003 RESERVES – THE KEY TO IMMEDIATE FUTURE PRODUCTION**

RFC has also looked at the existing reserves position for each of the operations examined on a cost basis (plus a few not yet in production). The chart below demonstrates the spread of global reserves across over 150 gold mining operations/deposits. As with the cost curves above, we have assumed that all reserves have been reported on a comparable basis.

The average grade of these reserves is 5.8g/t, with gold grades above 8g/t being in the highest grade quartile (by contained reserves ounces).

We have assessed the average 2003 production grade to be around 5.9g/t – not significantly different from the average of existing reserves. This is somewhat reflective of the inability of producers to react quickly to periods of boom times by high grading operations in response to higher prices.

**2003 Reported Gold Reserves**



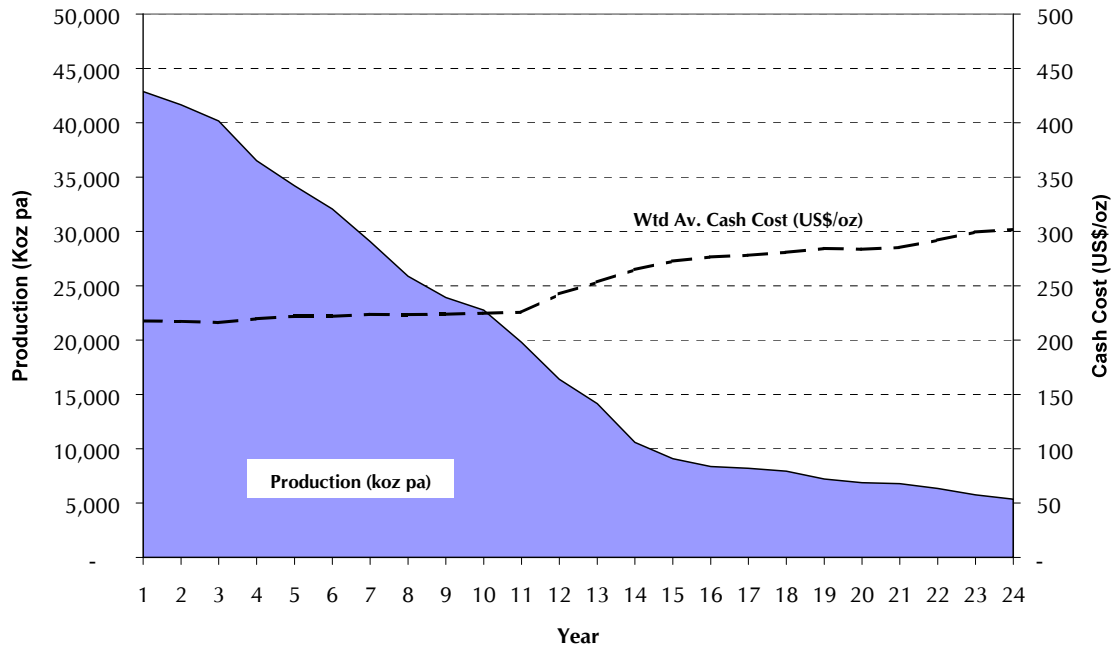
**OUTLOOK FOR GOLD PRODUCTION FROM CURRENT RESERVES**

We have attempted to chart the theoretical future gold production from the mining operations examined assuming static business and operating conditions (ie, fixed gold price, operating costs and reserve life) in order to gain some insight into the state of the industries longevity.

As can be seen from the chart, the curve shows a sharp drop off over the next 10-15 years, before flattening out as the operations with very long lives become prominent. While we do not believe such a profile will eventuate (given the likely conversion of resources to reserves, exploration success and the development of new mines, etc) the chart does highlight the need for gold producers to continue exploration and resources conversion to ensure the ongoing viability of the industry.

Interestingly, beyond 10 years, over 75% of reserves production comes from Africa – reflecting the large size of the reserves versus annual production that is a feature of operations on this continent. The increased cash cost with this increase in African dominance is strongly influenced by the currency impact of the high Rand during 2003.

Theoretical Production Curve from the Reserves of Producing Gold Operations in 2003

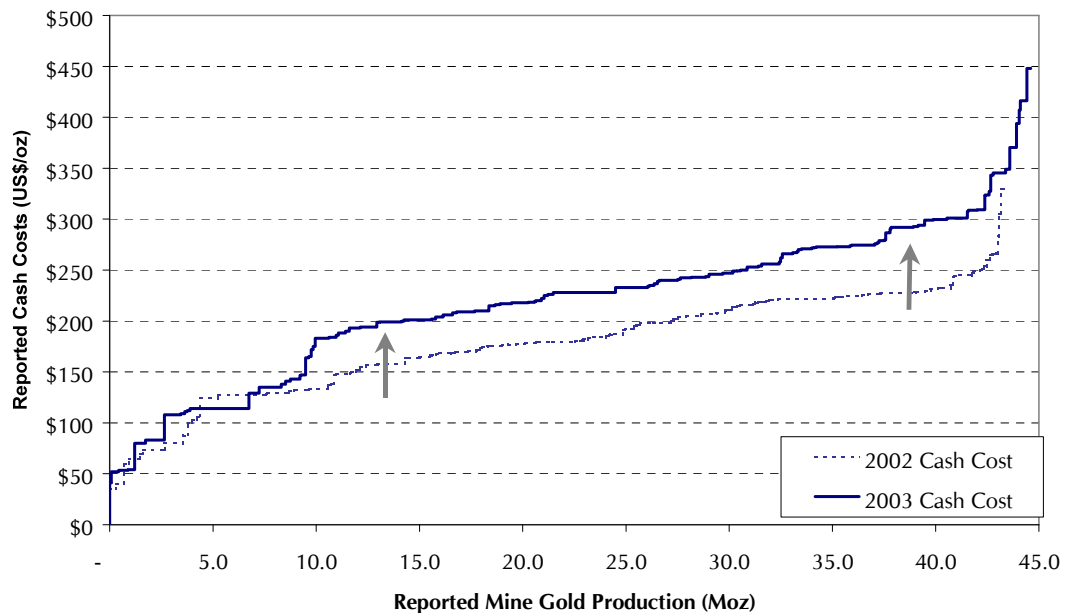


**THE CURVE COMPARED – WHY HAVE COSTS INCREASED?**

The chart below shows the 2003 curve against the 2002 curve. What is immediately obvious is that although the front end of the curve has remained relatively unchanged, there has been a marked increase in the average cash cost through the core middle production. An average US\$35-45/oz increase in this part of the curve represents 20-25% increase in average costs.

Of note is that only 10 of the 24 operations that make up the lowest cost 10Moz of production is from Africa. The remaining 34Moz comprises nearly 40% African based production. The weighted average cash costs of African operations in US\$ terms have increased over 45% yoy from 2002 to 2003, and it is this impact that has seen the curve shift up as a step change. The primary driver for the increased costs coming from the African operations is, we believe, the impact of the appreciating Rand, which moved from 10.5:1 against the US dollar in 2002 to 7.5:1 in 2003.

2003 Cash Cost Curve Relative to 2002 (US\$/oz)



The table below shows the level of coverage for RFC's cost curves for both 2002 and 2003. The table highlights the considerable increase in costs exhibited by African operations versus the rest of the world.

**2003 Global Gold Production Relative to 2002**

US\$/oz	2002	2003	YOY Change to US\$/oz Cash Cost
Australia	7.9Moz @ 189	8.3Moz @ 224	+18%
North America	11.5Moz @ 195	11Moz @ 205	+5%
South America	5.7Moz @ 125	5.8Moz @ 123	-2%
Africa	15.8Moz @ 175	15.7Moz @ 258	+47%
Rest of World	3.3Moz @ 184	3.8Moz @ 225	+22%
<b>TOTAL</b>	<b>44Moz @ 176</b>	<b>44.6Moz @ 218</b>	<b>+24%</b>

*The Alchemist*

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