



## Case study: Where does our gold go – an economic perspective

Much of the reporting undertaken by AngloGold Ashanti focuses on examining where and how AngloGold Ashanti's gold is found and mined. A further question is: Where does the gold go once it has been mined and refined – to whom is it sold and for what purpose? In other words, where and what are the markets for gold, and what drives these markets?

Once the gold has been mined, processed and smelted into doré bars (roughly 85% gold content) at the AngloGold Ashanti operations, these are further refined into saleable form by refineries such as the Rand Refinery (see box on page 40) in South Africa, which refines most of the gold mined by AngloGold Ashanti in Africa, and various other refineries in Brazil, the United States, Australia and Europe.

These refineries sell the gold AngloGold Ashanti produces, generally to bullion banks, such as Rand Merchant Bank and Standard Bank in South Africa or internationally to HSBC, Morgan Stanley, Scotia Mocatta or Société Générale, or to trading houses such as Mitsui or Sumitomo. The exceptions to this are where gold is sold directly to jewellery fabrication industries by refineries, or where forward sales exist and AngloGold Ashanti elects to deliver physical product to fulfil these contracts.

AngloGold Ashanti's gold sales for 2007 can be broken down according to the following geographical regions: South Africa; Europe; North America (this includes the gold mined at AngloGold Ashanti operations in South and North America); and Asia – the gold mined in Australia. (See graph).

Although the supply of newly-mined gold from South Africa has diminished greatly since the peak of 1,000 tonnes of production recorded in 1970, South Africa was the world's largest producer of gold for close on 120 years. China surpassed South Africa's gold production in 2007. In 2007, South African gold production accounted for 11% of global output, with AngloGold Ashanti accounting for almost 27% of this quantity. From a group perspective, AngloGold Ashanti's African operations account for 30% of its total production. Total AngloGold Ashanti production accounts for 7% of global newly-mined gold production.

The international gold price has increased steadily since 2002. In 2007, the gold price reached a 27-year high of \$845.84/oz which approached the previous all-time record high of \$852 per ounce. On 4 February 2008, it reached an all-time high of \$936.50. The average spot gold price for 2007 of \$697 per ounce is 15% up on the average price of \$604 per ounce in 2006 (2005: \$444 per ounce).

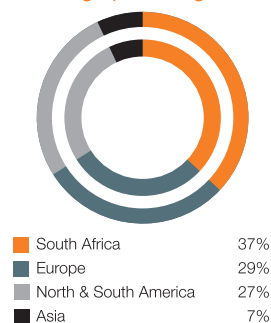
The rise in the gold price has been a result of several factors. The most recent surge, towards the end of 2007 and continuing into 2008, can be attributed to a steadily weakening dollar, the global credit crises (the matter of the enormous US trade deficit remains unresolved, and the lingering problem regarding the sub-prime mortgage market in the United States has ramifications for the international credit market) and continuing geopolitical tensions – all of which are bullish for gold and have encouraged investment and speculative demand for the metal. Fears of global inflation, which effectively devalues currencies and enhances the value of gold, have been spurred by increases in the prices of oil and other commodities, which in turn have been driven by world economic growth, all of which has contributed positively to the gold price. Note though that although the price of gold has almost doubled since 2004, it has not risen by nearly as much as that of industrial commodities such as nickel, copper and lead.

Secondly, positive market fundamentals, including strong demand especially from the jewellery and investment sectors, have boosted demand for gold. This has also been as a consequence of positive global economic growth, and the strength of demand for gold, particularly in emerging markets. Jewellery consumption/fabrication demand accounts for approximately 68% of total gold consumption annually, and investment demand for approximately 28%.

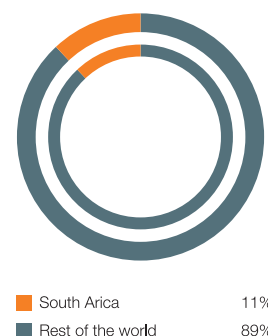
Continued growth in physical consumption is, however, hostage to other gold price movements. High gold prices and high levels of gold price volatility tend to deter buyers in price-sensitive markets from gold purchases; this phenomenon was evident particularly in the last quarter of 2007.

During the first half of 2007, however, on the back of a more stable gold price, gold demand reached unprecedented levels, particularly in China and India where strong economic growth has resulted in increased demand for gold jewellery. Gold jewellery sales in Russia and the Middle East (Turkey) also soared during this period.

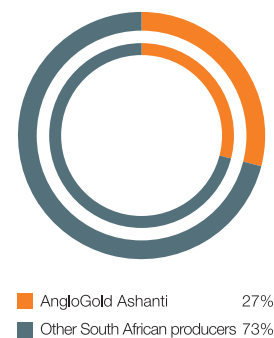
AngloGold Ashanti's gold sales for 2007 Geographical regions



South Africa's role in gold production – 2007



AngloGold Ashanti's role in South African gold production – 2007



## Case study: Where does our gold go – an economic perspective continued

AngloGold Ashanti's role in global gold production – 2007



AngloGold Ashanti 7%  
Other gold companies 93%

Overall, during 2007, jewellery demand in tonnage terms was 6% higher than in 2006. In India, consumer demand for gold was 7% higher than 2006. Demand in the first 8 months of the year was well supported by a buoyant economy and stock market, however the latter part of the year volatile gold prices impacted on demand. Similarly in China, a booming economy together with the start of the auspicious Year of the Golden Pig in early 2007, resulted in gold demand there increasing by 23% over 2006 levels with gold jewellery demand reaching 302 tonnes for the full year, exceeding 300 tonnes for the first time since 1997. The Middle East (Turkey in particular) and Russia recorded increases in gold demand of 20% and 27% respectively.

Global net retail investment rose by 51% to 133 tonnes and by 60% in value to \$2.9 billion in Q2 2007. The major change in recent years has been the introduction of gold-based exchange traded funds (ETFs), for which physical holdings of gold back the value of shares in these funds. The first such fund to be launched, and now the largest, was StreetTracks Gold Shares in 2004. The price of the ETF shares track the gold price and they have made it very simple for retail investors to invest in physical gold – around 70% of investors in StreetTracks are from the retail sector. As at the end of the year, the major gold ETFs had combined physical holdings close to 28 million ounces, with a total value of over \$23 billion.

Although industrial demand for gold is negligible, there is ongoing research into several promising industrial and chemical applications.





### **The supply side**

On the supply side, there have been some constraints. The market in recent years has been characterised by declining global output and reduced sales by central banks. Production of newly mined gold globally has peaked, despite the strength of the gold price in recent years. This is largely a function of depleted resources and the costs of developing a new mine – existing miners are experiencing rising costs, ever deeper resources and declining grades. Regarding central banks, the Central Bank Gold Agreement (CBGA), or the Washington Agreement, the second one of which (CBGA2) came into effect in September 2004, provides for sales of up to 2,500 tonnes (500 tonnes annually) of gold over five years (i.e. until September 2008) as compared to the 2,000 tonnes (400 tonnes annually) provided for in the initial agreement in 1999. These agreements reaffirmed gold's status as a monetary reserve asset and set out to limit the sales of gold by individual signatory central banks. In recent years these sales have lagged and it is thought that certain central banks (China, Russia, and possibly some South American countries) have in fact been net purchasers of gold.

In terms of CBGA2, gold sales by central banks totalled 1,269 tonnes by the end of the third year of this agreement, which is less than the maximum of 1,500 tonnes permitted. An additional 117 tonnes has been sold since in the fourth year of CBGA2.



### **The role of Rand Refinery**

Rand Refinery is the only gold refining operation in South Africa accredited by the London Bullion Market Association, which implies that the good delivery status of the gold, as endorsed by the London Bullion Market Association, guarantees assurance that a bar of gold produced by Rand Refinery contains the quantity and purity of gold as stamped on the bar. It is one of 52 such accredited refiners around the world, the seven largest of which have sufficient capacity to refine three times the current global output of newly mined gold. The refining market is extremely competitive and Rand Refinery's profitability is driven largely by the value it is able to add to product sold, rather than revenue from refining fees.

Rand Refinery is an unlisted public company whose major shareholders are the South African gold mining companies, AngloGold Ashanti (53%) and Gold Fields (35%). Rand Refinery refines and sells almost 100% of the gold mined in South Africa and 80% of that mined in the rest of Africa. This includes most of the gold mined by AngloGold Ashanti's African operations.

The gold (doré) received by Rand Refinery from the gold mines is 70% to 85% pure and contains silver, iron and various other by-products. Rand Refinery refines the gold up to a purity level of 99.5% which is then saleable on international gold markets. Rand Refinery refines the gold even further by means of an electrolytic process to achieve a purity level of 99.99%. After this, the gold can be 'alloyed down' in terms of customers' requirements.

Less than 50% of the gold refined and sold by Rand Refinery is in the form of 400 ounce London Good Delivery bars. Gold in this form is effectively sold at a discount as the price received by the Rand Refinery is that quoted in London and the gold still has to be transported there, and the travel and insurance costs paid.

Rand Refinery currently refines around 400 tonnes of gold per annum – with a ratio of 65:35 in terms of Value Add versus London Good Delivery. Thus around 35% of the gold refined by Rand Refinery is sold into the London market where the purchasers are mostly the bullion banks, exchange traded

funds and some central banks while 65% is sold to India, Turkey, Italy and the Middle East. Gold demand from India for South African gold in 2007 is estimated at around 160 tonnes (2006: 95 tonnes), which has increased substantially following the successful introduction of more direct marketing. The three main groups of consumers of gold in India are farmers (who buy and store gold as a currency hedge in order to finance the next season's crops), jewellery fabricators and investors. In Turkey (estimated to account for around 70 tonnes of South African gold in 2007), jewellery fabrication demand has increased exponentially in the last five to six years, largely as a result of the significantly cheaper labour and production costs there as compared to those in Italy where jewellery fabrication demand has fallen from some 400 tonnes to around 200 tonnes. Italy nevertheless remains a major destination for Rand Refinery's gold, as is the Middle East (Dubai, Saudi Arabia and Yemen).

Additional factors in determining the destination of Rand Refinery's gold on world markets are transport logistics and market proximity. Australia, the third largest producer of gold, competes with South Africa to supply the Indian market which is fortunately large enough to accommodate both. Australia also supplies gold to South East Asia (Malaysia, Singapore and Bangkok), in which markets are more readily accessible. The United States and Canada are self-sufficient regarding demand for beneficiated gold while China, which became the world's largest producer of gold in 2007, may shortly become a net exporter of gold.

In order to understand the gold market, Rand Refinery has found that it is necessary to 'own' the value chain and it has formed alliances with the security and freight forwarding companies which carry the risk of transportation and insurance. Rand Refinery arranges to collect the doré from the mine sites by helicopter. It oversees the refining of the gold and its transportation to its vaults at OR Tambo International Airport in Johannesburg, South Africa. From here around 1,500 kilograms of gold is transported to world markets every day. This 'ownership' of the value chain gives Rand Refinery closer links and access to important market intelligence concerning the gold market.

