



CHAPTER 2: MINING

2.1. KEY FINDINGS

- Production of gold in South Africa as a share of global output has been declining consistently for a decade (Figure 12).
- According to the Chamber of Mines, South African mines produced 275.1mt of fine gold in 2006¹⁰ and 297.3mt of gold in 2005.
- Mining accounts for the largest proportion of employees (95.31% in 2005 and 95.05% in 2006) in the gold value chain, employing 160,634 people in 2005 and 159,984 people in 2006 earning R12.6billion in wages.¹¹

2.2. PRODUCTION DATA

South Africa has dominated the global gold mining industry for over 120 years and is still the world's leading gold producer. From 1884, when records of production were first collected, to 2006, the gold mining sector produced 50,627mt of gold, which accounts for 32% of all gold estimated to be above the world's surface.¹² However, the gold mining industry in South Africa is reaching a mature stage and new areas of competitive production have emerged in China, Russia, Indonesia, Uzbekistan, Peru, Papua New Guinea, Mali and Tanzania. Production peaked at 1,000mt in 1970 and has declined since.

South Africa's share of global gold output has decreased consistently over the last decade, declining on average by 5.6% per year (see Figure 12). In 2006 South Africa accounted for 11.8% of new global mine supply compared to over 20% a decade ago and approximately 70% in 1970.¹³

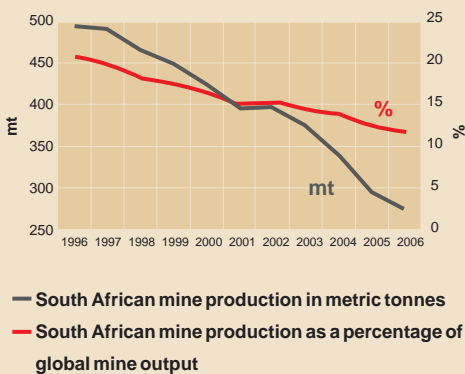


Figure 12: South African mining production from 1996 to 2006

Source: Chamber of Mines, GFMS

¹⁰ For 2006, the Chamber of Mines figure of 275.1mt differs slightly from the figure given by the refineries for gold production. This is likely a timing difference. It is also possible that small quantities of mine production are refined by recycling operations that were not available to participate in this survey. While the Chamber figure is stated here, the refineries figure is used to reconcile the rest of the value chain.

¹¹ Chamber of Mines, Facts and Figures Report 2005; Genesis calculations.

¹² Chamber of Mines

¹³ GFMS



In 2005, South Africa produced 297.3mt of fine gold, which declined to 275.1mt in 2006 - the lowest level of production in 84 years. The non-gold mining sector also experienced a decline (0.3%) in production volume in 2006.¹⁴

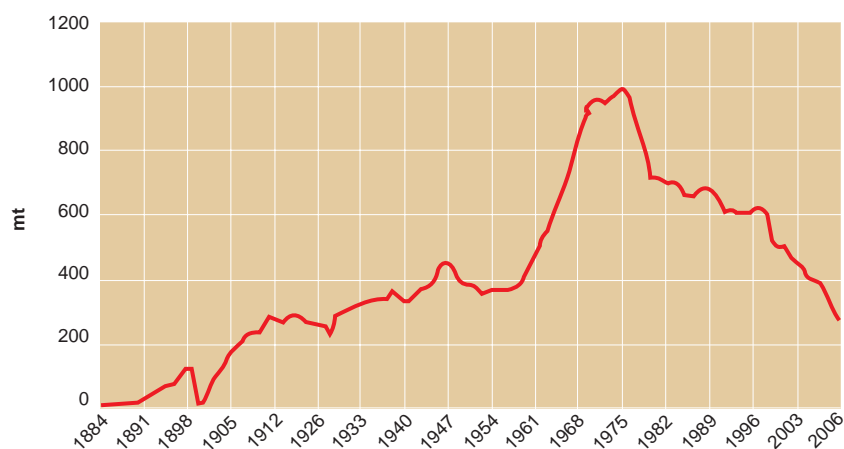
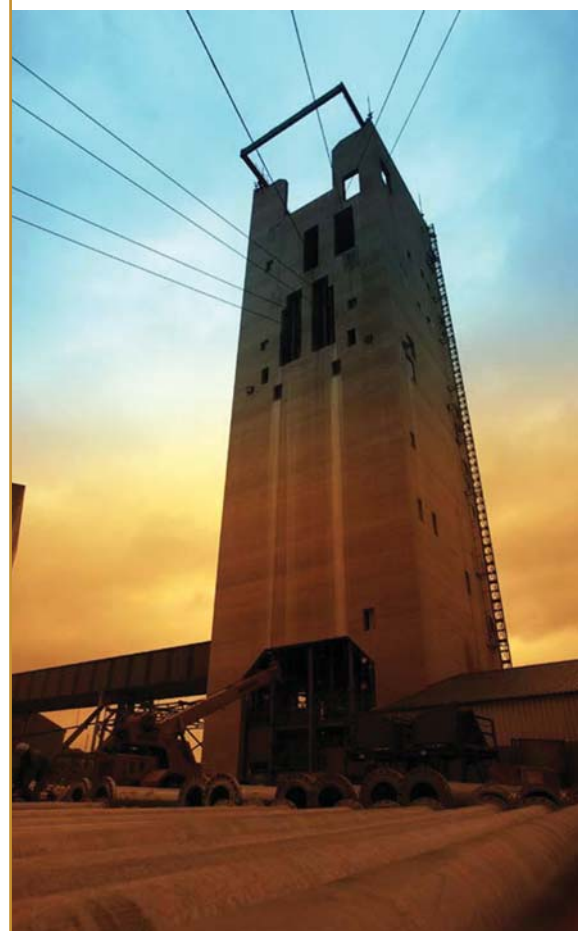


Figure 13: South African gold mining production from 1884 to 2006

Source: Chamber of Mines

Factors that have led to the scaling down of production in the last two years include increasing mine depth and declining grades, as well as higher material input costs. Under normal circumstances an increasing dollar gold price would mitigate these trends and enable more projects to be brought on line, and this is now taking place as the strong gold price is prompting deepening projects which will reduce the rate of decline in production.

Nonetheless, the gold mining industry continues to be an important player in the South African economy. Gold is South Africa's second largest export after platinum group metals, accounting for 8.4% of the country's export earnings and 1.1% of GDP (3% if indirect multipliers are added).¹⁵ 159,984 people were employed in the industry in 2006, and were paid some R12.6 billion in wages.¹⁶



¹⁴ Chamber of Mines

¹⁵ Chamber of Mines

¹⁶ Chamber of Mines



2.3. STRUCTURE OF THE SECTOR

Company	2005 Production (mt)	2006 Production (mt)	2006 Numbers employed
AngloGold Ashanti	83.22	79.43	35,968
Gold Fields	85.30	80.62	48,467
Harmony Gold	72.43	65.58	48,570
DRD Gold	13.59	11.06	7,693
Western Areas	14.34	9.42	5,636
Totals	268.88	246.11	146,334

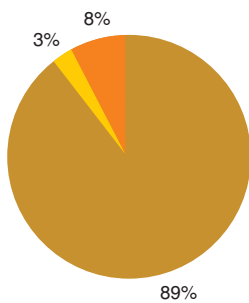
Table 5: Production of main gold mining houses in South Africa for 2005 and 2006

Source: Chamber of Mines, company annual reports, interviews

Company	2005 % of total production	2006 % of total production	% of total numbers employed
AngloGold Ashanti	27.99%	28.87%	24.58%
Gold Fields	28.69%	29.30%	33.12%
Harmony Gold	24.36%	23.84%	33.19%
DRD Gold	4.57%	4.02%	5.26%
Western Areas	4.82%	3.42%	3.85%
Totals	90.43%	89.45%	100%

Table 6: Share of production of main gold mining houses in South Africa for 2005 and 2006

Source: Chamber of Mines, company annual reports, interviews



- Primary gold and uranium producers
- By-product gold producers
- Small-scale producers and dump re-treatment

Figure 14: Sources of gold in South Africa for 2006

Source: Chamber of Mines

Production in 2005 and 2006 was dominated by five publicly listed gold mining entities, namely AngloGold Ashanti, Gold Fields, Harmony, DRDGOLD and Western Areas. (Table 5 and 6).

In 2006, these large public gold mining companies accounted for 89.45% of gold produced. The balance came from companies producing gold as a by-product of other mining activity (2.8%), from other smaller-scale miners and from the treatment of existing mine dumps (7.7%)¹⁷ (Figure 14).

In 2005, the breakdown was similar, with the primary gold mining companies accounting for 89.1% of the gold produced, companies producing gold as a by-product 2.51% and 8.36% of production originating from other smaller-scale miners and the treatment of existing mine dumps.¹⁸

Informal gold mining also occurs in South Africa. Informal sector miners tend to be one-man operations eking out a living from abandoned mine sites and dumps. It is not known how many miners operate informally - by nature they are unregistered and transitory. However, this review estimates that collectively these miners produce less than 1mt of gold annually.



¹⁷ Chamber of Mines

¹⁸ Chamber of Mines



2.4. EMPLOYMENT

The South African gold mining industry employs substantially more people than in other gold mining countries because it is engaged in deep-level, hard rock, underground mining which is labour intensive. Even so, there have been considerable job losses in mining as a result of mine closures and changing work patterns in the sector. In the last five years, numbers employed in the gold mining industry fell by around 8% per year on average. Job losses have been specific to gold mining and have not occurred to the same extent in other extractive mineral industries.

Employment in the gold mining sector declined from 180,039 employees in 2004, to 160,634 in 2005, and then to 159,984 in 2006 (Figure 15). This is in comparison with a high of 530,622 reached in 1987.

Despite the declining employment levels, gold mining still accounts for the largest proportion of employees by far in the gold value chain (95.33%).

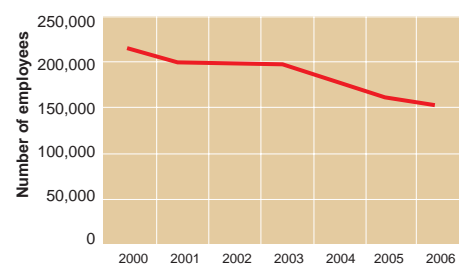


Figure 15: Employment in gold mining in South Africa from 2000 to 2006

Source: Chamber of Mines, DME

