APPENDICES

APPENDICES

Contents:

APPENDIX 1

THE INTERVIEW LIST

ACKNOWLEDGEMENTS

Many people have assisted with the compilation of this review and their contribution and support is gratefully appreciated. To all the industry players who participated in the interview process – a very special thank you!

Quotable quotes:
"Apart from the VM team, I would like to extend a special thank you to the following who went the extra mile with this review. Gwyn Fourie of VM, Lebo Mogotsi of Lebone Resources, Claire Minnitt of 9 Dots, Lynne La Croix of Alan Mair, Margot Rudolf of the Foschini Group, Patrizia Tennent of Musuku, Adél Botha of Rand Refinery and Cathy Lapping of Ernst & Young.

In keeping with the rest of this Review, I completed an analysis of this data sample noting that 100% of those who went the extra mile were women."
Primary researcher

Gold Review Interview List

Sector	Company/department
Banking/Finance	ABSA Bank Ltd
Banking/Finance	Industrial Development Corporation (IDC)
Banking/Finance	Standard Bank Plc (Dubai)
Coins	SA Mint Company/Coin World
Coins	Universal Mint
Consultants	9 Dots
Government	Department of Minerals and Energy
Government	Department of Trade and Industry
Government	South African Customs and Excise
Government	South African Revenue Service
Government	South African Police Service - Diamonds and Gold
Government	South African Reserve Bank
Hallmarking	Sheffield Assay Office UK
Industrial	Bosco Printed Circuits (Pty) Ltd
Industry Body	Chamber of Mines of South Africa
Industry Body	Jewellery Council of South Africa
Industry Body	SA Chamber of Business (SACOB)
Industry Body	South African Mining Development Association (SAMDA)
Jewellery Manufacturing	Alan Mair Manufacturing Jewellers
Jewellery Manufacturing	Andreas Salver Manufacturing Jewellers
Jewellery Manufacturing	Angelo's Manufacturing Jewellers
Jewellery Manufacturing	Creative Gold Manufacturing Jewellers
Jewellery Manufacturing	Daberon Manufacturing Jewellers
Jewellery Manufacturing	Haglund Jewellers
Jewellery Manufacturing	Michael's Designs cc
Jewellery Manufacturing	OroAfrica (Pty) Ltd
Jewellery Manufacturing	Orofino Gioielli
Jewellery Manufacturing	Peter Scott Jewellers cc
Jewellery Manufacturing	Piero G Manufacturing Jewellers
Jewellery Manufacturing	Pneuma Jewellers
Jewellery Manufacturing	Rob's Workshop
Jewellery Manufacturing	Schwartz Jewellers
Jewellery Manufacturing	Sid Forman Manufacturing Jewellers (Pty) Ltd
Jewellery Manufacturing	Silmar Marketing SA (Pty) Ltd
Jewellery Manufacturing	Simon Efune Manufacturers
Jewellery Manufacturing	Studio C Manufacturing Jewellers
Jewellery Manufacturing	Subsaharan Livingstone
Jewellery Manufacturing/Retailing	Galaxy Jewellers
Jewellery Manufacturing/Retailing	Natal Wholesale Jewellers
Jewellery Manufacturing/Retailing	Tourvest Group
Jewellery Retailing	Foschini Group
Jewellery Retailing	Mass Discounters
Labour Union	National Union of Mineworkers
Mining	AngloGold Ashanti Ltd
Mining	Gold Fields Ltd
Mining	Harmony Gold Mining Company Ltd
Museum/Cultural	Gold of Africa Museum
Museum/Cultural	Gold Reef City Mint
Primary Refining	Musuku Beneficiation Systems (Pty) Ltd
Primary Refining	Rand Refinery Ltd
Publications	Jewellers' Network
Retailing	Woolworths (Pty) Ltd
Secondary Recycling	Cape Precious Metals
Secondary Recycling	First Assay
Secondary Recycling	Metal Concentrators
Secondary Recycling	Perkins Metal Recovery
Technical	Council for Scientific and Industrial Research (CSIR)
Technical	Mintek
Training	Tshwane University of Technology
Training	Vukani-Ubuntu Community Development Projects
Training	Witwatersrand University of Technology

APPENDIX 2

THE SOUTH AFRICAN ECONOMY IN AN INTERNATIONAL CONTEXT

APPENDIX 2

Contents:

8

APPENDIX 2

THE SOUTH AFRICAN ECONOMY IN AN INTERNATIONAL CONTEXT

South Africa's lead economic indicators are as follows:

Basic Economic Indicators

	2003	2004
GNI per capita ($)	2,780	3,630
GNI per capita ($ PPP)	n/a	10,960
Economic Growth GDP	2.8%	3.7%
Household cons. expenditure (year-on-year growth)	3.4%	6.0%
Consumer Price Inflation	5.8%	1.4%
Prime Overdraft Rate (end-year)	11.5%	11.0%
Rand/Dollar Exchange Rate (average)	7.56	6.45
Balance of Payments deficit (% of GDP)	2.0%	3.0%

Data Source: World Bank, South Africa at a Glance, DTI, Reserve Bank, June 2005 Quarterly Report.

A2.1 ECONOMIC CENTRES, DEMOGRAPHICS AND CONSUMER PROFILES

South Africa is the ninth largest country in Africa, and the 25th largest in the world by land area. At 1.22 million square kilometres, it is just under one-eighth the size of the USA but more than twice the size of France and five times larger than the UK. In terms of population, it is the fourth largest country in Africa, and the 26th largest country in the world.

South Africa's population density is 37.2 people per square kilometre, compared with 134 for China and 245 for the UK.[1]

Urbanisation has been a characteristic of demographic flows, especially over the past decade, resulting in distinct urban metropoles that dominate commercial, social, political and fiscal activities.

These are:
- Greater Johannesburg - financial and commercial centre;
- Tshwane (formerly Pretoria) – executive and administrative capital;
- Cape Town – legislative capital and seat of parliament;
- Bloemfontein – judicial capital;
- Durban;
- Port Elizabeth; and
- East London.

Demographics at a glance (2004 unless stated)

Population	44.8m
Annual growth rate	2.0%
Population/Sq Km	37.2
Population under 15	34%
Birth Rate/1,000	22.6
Death Rate/1,000	16.9
Unemployment (2002)	29.5%
Urban Population	57.7%
Life expectancy	
Men	45.1 yrs
Women	50.7 yrs
Adult Literacy	
Male	87%
Female	85%

Source: United Nations.

[1] Data Source: CIA World Fact Book, 2003.

The unemployment rate, measured using the official expanded definitions[2], has tended to increase since 1995, although it fell slightly in 2004. In September 2004[3] (the latest available data), the official rate was 26.2%, or 4.1 million people. Women have a slightly higher official unemployment rate of 30.2% compared to 23.1% for men. There is little difference, however, in the official unemployment rate for urban and non-urban areas. The official expanded rate, which includes 'discouraged workers'[4], was 41%.

Unemployment by racial breakdown is as follows:
- black people have the highest official unemployment rate of 31.3%; and
- the corresponding figure is 21.8% for Coloureds, 13.4% for Indians and 5.4% for Whites.

Formal sector employment has decreased from 79% of total employment in 1995 to 71% in 2004, while employment in the informal sector has grown from 14% of total employment in 1995 to 20% in 2001. In the absence of formal sector employment growth, the burden of absorbing the country's expanding labour force falls on the informal sector.

While there are no statistics to shed reliable light on the size of the informal sector and the contribution it makes to the South African economy, discussions with academics, commerce and government suggest that its contribution is considerable and increasing.

Household expenditure

% of total	2000	1995
Food	20%	22%
Housing	16%	14%
Income Tax	14%	9%
Transport	10%	10%
Clothing/Footwear	5%	4%
Furniture	4%	3%
Health	4%	4%
Insurance	3%	4%
Drinks/Tobacco	3%	3%
Personal Care	3%	3%
Communication	3%	3%
Recreation/Holidays	2%	1%
Investments/Savings	2%	4%
Education	2%	4%
Household	2%	2%
Pensions	2%	3%
Domestic workers	2%	3%
Fuel/power	1%	1%
Other	1%	3%
Total	**100%**	**100%**

Data Source: Income and Expenditure Surveys, Statistics South Africa.

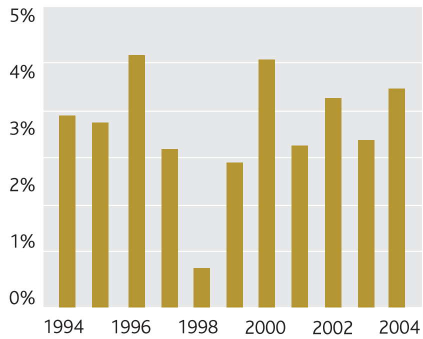
A2.2 LEGISLATIVE AND FINANCIAL INFRASTRUCTURE

South Africa has in place a modern and democratic constitution. It also has a long-established judicial system operating within first world financial and commercial infrastructures.

At the end of 2003, South Africa had the 18th largest stock market in the world in terms of capitalisation, and the largest in Africa.

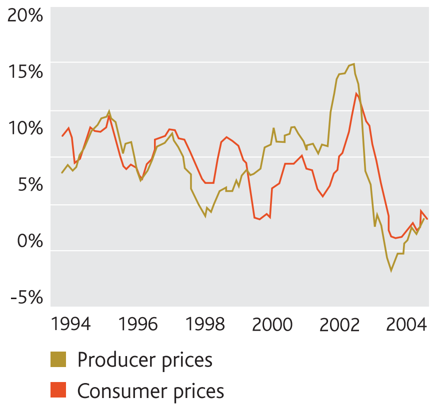
The country still has exchange controls in place although, since 1994, certain of these controls have been relaxed and further market liberalisation is anticipated.

Gross domestic product
% growth, year-on-year



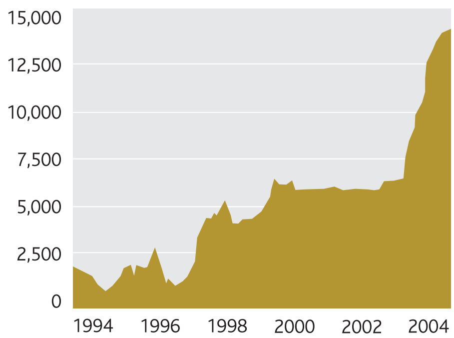
Data source: Department of Trade and Industry.

South African inflation rates
Monthly, year-on-year change



Data source: South African Reserve Bank Quarterly Reports.

South African Forex (excluding gold) reserves
End-period, $m



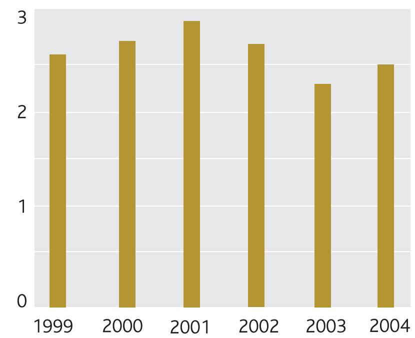
Data source: IMF.

[2] Unemployment (official definition) includes all persons who during a specified reference period were: (i) without work, ie. were not in paid employment or self-employment; (ii) currently available for work, and (iii) seeking work, ie. had taken specific steps, in a specified recent period, to seek paid employment or self-employment.
[3] Stats SA – OHS 1995 and LFS, 2004.
[4] This is the standard rate plus 'persons that did not take active steps to find employment in the month prior to the survey interview'. It should be noted that the measure is controversial and will no longer be reported, although it will be possible to calculate it from the underlying data.

APPENDIX 2

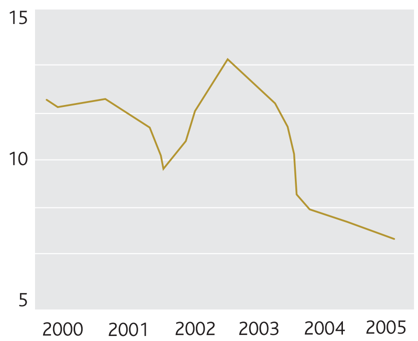
THE SOUTH AFRICAN ECONOMY IN AN INTERNATIONAL CONTEXT

South Africa months' import cover
Reserves excluding gold, annual average



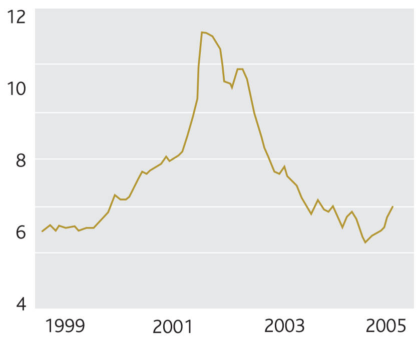
Data source: South African Reserve Bank Quarterly Reports.

South African interest rates
Repo rate, % per annum



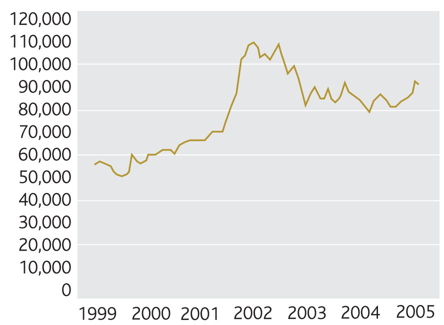
Data source: IMF.

South African Rand to US Dollar
Monthly average



Data source: IMF.

Gold price in South African Rand
Rand per Kg



Data source: Virtual Metals.

Stock market capitalization

	$bn
US	14,266
UK	2,412
China	681
Italy	615
Australia	586
India	279
South Africa	268
Mexico	123
Turkey	68
Austria	55
Poland	37
Zimbabwe	24

Data source: The Economist World in Figures.

A2.3 THE ECONOMY IN MORE DETAIL

The formal South African economy, with the exception of 1998, has seen reasonably solid GDP growth over the last 10 years. In 2004 it recorded a GDP growth rate of 3.7% (see chart on previous page).

Despite relatively robust economic growth, the fiscal authorities have kept inflation under control, as the chart on the previous page reveals, for both consumer and producer prices. This was achieved largely through the management of interest rates.

The country's foreign reserves are currently at record highs, in part as a consequence of the strong Rand. Reserves have increased since 1997 and by mid-2005 stood at more than $15 billion. Nevertheless, fast rising imports mean that the number of months' imports covered by reserves has remained essentially unchanged at between two and three months.

The South African economy still operates in a high interest rate environment, certainly relative to the USA and Europe. Interest rates were at 7% in July, the lowest they have been since 1981. Real interest rates, in other words after adjusting for inflation, are 2.8% (CPI-X[5] is 4.2%) as at July 2005.

In recent years, the South African Rand has been volatile against most currencies, particularly the Dollar. Against the Dollar, it has seen record lows and multi-year highs in a space of only four years (see chart at left).

The Rand's weak point came in December 2001 when it fell to R12.1 to the Dollar before rebounding to highs of R5.6 in December 2004. It currently (September 2005) trades at R6.7 to the Dollar.

While the movements in the Rand were influenced by the fortunes of the Dollar itself, some of the Rand's performance can be attributed to internal financial and economic circumstances specific to South Africa.

These currency movements have had an impact on the local gold industry. The strength of the Rand has placed a number of gold mining companies under pressure despite substantially higher Dollar-denominated spot gold prices. While the Dollar gold price has increased steadily from May 2000, the strengthening of the Rand against the Dollar has entirely offset those Dollar-denominated gains.

Thus, the gold price in Rands received by the local gold mining industry since early 2003 has made serious inroads into the revenues earned, threatening the future of a number of operations. This is discussed in more detail in Chapter 2.

[5] CPI-X is the measure of inflation the South African Reserve Bank targets.

APPENDIX 3

TRAINING AND SKILLS TRANSFER

APPENDIX 3

Contents:

8

APPENDIX 3

TRAINING AND SKILLS TRANSFER

A3.1 LEGISLATION

The Government has put legislation in place to ensure training, development of skills and skills transfer in South Africa. The legislation applies to all sectors of the gold value chain. The Skills Development Act of 1998 and the Skills Development Levies Act of 1999 address skills development in South Africa in a structured manner.

The Skills Development Act aims to equip South Africans with the skills to succeed in the global market and to offer opportunities to individuals and communities for self-advancement to enable them to play a productive role in society while the Skills Levies Act provides the infrastructure to fund the necessary training and skills development.

Together, these acts provide a framework for the collection of funds through training levies payable by employers in South Africa (see Chapter 6 for details) and the disbursement of the funds via two mechanisms - Sector Education and Training Authorities (SETAs) and the National Skills Fund (NSF) which account for 80% and 20% respectively of the disbursement of funds.

The beneficiaries of the Skills Development Act are all South Africans who require training, with a focus on unemployed or under-employed South Africans who are 16 years of age or older, or Historically Disadvantaged South Africans (HDSAs). Training projects funded by the NSF focus on national training priorities and usually target HDSA individuals but the Department of Labour notes that the emphasis should be as follows:

- women;
- HDSAs; and
- people with disabilities.

A3.2 AUTHORITIES INVOLVED WITH TRAINING

A3.2.1 Sector Education and Training Authorities (SETAs)

As a consequence of the skills development legislation, 27 SETAs[1] have been established to administer the scheme's funds and to manage national skills development.

The SETAs, established in March 2000, are managed by the Department of Labour and are responsible for the distribution of funds accumulated from the training levies paid by employers in the specific sectors in which they operate. SETAs are also tasked to oversee the quality assurance of training provided within their sector and the accreditation of training providers. All SETA qualifications are accredited by the South African Qualifications Authority[2] (SAQA), and must be reflected on the National Qualifications Framework (NQF). This framework plots all the available qualifications in South Africa and identifies them in terms of requirements and level of qualification.

Each sector in the economy has its own SETA, including Government departments. Participants in SETAs are representatives from trade unions, Government and industry representative bodies from the specified sector (stakeholders).

The South African government recognises the need to have industry related qualifications. As an integral part of the process, SETAs oversee Standards Generating Bodies (SGBs). The SGBs are representative groups tasked with the creation of standards according to which training must be undertaken. These bodies include industry representatives, organised labour and government. The SGBs create structures for the necessary qualifications and then present them through their relevant SETA to SAQA to be verified and registered.

[1] This number has been reduced recently. After an initial period, some of the SETAs who failed to perform merged with others who did better in their delivery.
[2] Hence the term 'SETA-accredited' as it applies to training programmes.

Within its sector, a SETA must develop and implement a skills development plan, be responsible for quality controls of SETA projects and of training provided by its accredited training providers and for paying out development grants. Combined, they are responsible for R2.5 billion per annum of funding across the economy, although it is not clear whether the full amount of this funding has been spent on training programmes. The skills development levies paid by employers are distributed as follows:

- NSF projects receive and distribute 20% of the total skills levies through projects deemed of national strategic importance;
- SETAs utilise the remaining 80% as follows;
  - 10% - Administrative and operational costs;
  - 10% - Provided to constituents on the presentation of a workplace skills plan (a document detailing the training to be conducted by or through the employer with its staff)[3];
  - 50% - Provided to constituents after proof has been provided of the training delivered; and
  - 10% - Discretionary grants such as learnerships, apprenticeship training etc.

Contributions to skills development through the training levy on the part of employers in the private sector became compulsory on 1 April 2000. This requirement applies to employers who are registered with the South African Revenue Services (SARS) for tax purposes, or to employers with a payroll in excess of R250,000 annually[4]. The levy rate is equivalent to 1% of the total payroll and the collection of the funds is administered by SARS.

Skills development levies are held in a separate fund from which 80% is distributed to the different SETAs and the remaining 20% is paid to the NSF. The SETAs then pay grants to employers who appoint Skills Development Facilitators who have to meet specified criteria[5]. Thus the private sector can recoup part of its contribution to the skills levy through these grants.

A3.2.2 Mining Qualifications Authority (MQA)

The MQA is a statutory body consisting of the State, employer and employee organisations in the mining industry. It was established as an outcome of the South African Qualifications Authority (SAQA) Act, (Act No. 58 of 1995) and the Mine Health and Safety Act, (Act No. 29 of 1996).

The MQA's key function is to promote the objectives of the Skill Development Act through implementation of the National Qualifications Framework (NQF)[6] and advise the Minister of Minerals and Energy on matters relating to education and training, standards and qualifications in the mining industry. To perform this function, the MQA undertakes the following:

- the development and facilitation of the implementation of a Sector Skills Plan (SSP);
- the generation of Unit Standards and Qualifications;
- the establishment, administration and promotion of learnerships and skills programmes;
- the maintenance of the quality of training provided; and
- the disbursement of skills grants from training levies.

The SETA identifies the need for a learnership. A qualification and its associated unit standards are registered with the SAQA, under which the MQA is governed. The SETA then submits an application for learnership registration to SAQA.

[3] This 10% fell away in the 2005 revision of the act and employers can now only claim back 5% of their contribution. A Workplace Skills Plan is, however, still a requirement.
[4] Revision of the act now allows a cut-off point of R500,000. Public service employees in the national or provincial sphere of government are excluded from this.
[5] The revision of the act no longer stipulates the requirement of a skills development facilitator, but a workplace skills plan and annual training report are still required.
[6] The National Qualifications Framework is a framework structuring qualifications and making it possible to find synergies between qualifications. It also allows for the redressing of past inequalities through a process called RPL or recognition of prior learning.

APPENDIX 3

TRAINING AND SKILLS TRANSFER

Once SAQA has registered the learnership, skills programme or qualification, the SETA is then mandated to fund structured training programmes. To enter into a learnership, each learner must sign a three-way agreement with a workplace provider and an accredited training provider. This agreement forms a contract between the training provider, employer and learner and is lodged with the MQA before any funds are provided.

Quotable quotes:
"We were not given any choice with respect to our student and I was apprehensive. As it turns out, his attitude is very positive – he is willing to learn and we are careful to build up his confidence when teaching him. While he is not fully qualified, he is certainly able to take his place at my workbench and be productive without ruining my equipment."
Micro jewellery manufacturer

The contract details the responsibilities of each party and amongst others defines the minimum payment a learner must receive during training. This new structure provides full payment for the training, and the payment to the learner allows the learner the necessary means to attend the training. If the learner is unemployed, he or she will also need to sign a fixed-term employment contract with the workplace provider in accordance to South African labour law.

Learnerships are primarily workplace learning programmes, supported by structured institutional learning, which result in a qualification.

When learners have successfully been assessed against all the unit standards that make up a particular qualification, the MQA is responsible for issuing a qualification certificate to that learner. This certificate is only issued for qualifications that have been registered by SAQA and identified on the NQF.

There is a low level of uptake of MQA grants on part of the small and medium jewellery enterprises. Of the 20 jewellery manufacturers interviewed, only seven noted that they had MQA-financed students. Four of these were micro or small jewellery manufacturers as defined in this review. Many of the jewellery manufacturers are unaware of the learnership programme offered by the MQA.

Of the seven jewellery manufacturers that have had MQA learnership experience, four noted particular success. These jewellery manufacturers commented that they would continue with the learnership programme.

A3.3 JEWELLERY TRAINING AND SKILLS TRANSFER

Training in the design and manufacture of jewellery is formally provided via certificates, diplomas and degrees by a number of institutions in South Africa. Training courses are also offered by private organisations and through internal skills transfer by employees within the jewellery manufacturing sector. This section reviews these sources of skills and training.

A3.4 ISSUES FACING THE JEWELLERY INDUSTRY WITH RESPECT TO TRAINING AND SKILLS TRANSFER

Research revealed a number of concerns with respect to what the industry expects from the training institutions and what the training institutions deliver in terms of graduate competency.

Quotable quotes:
"We ask newcomers to make a plain but perfect wedding band. I then evaluate them firstly on their attitude, then on the product and finally on the time it took them to make it. Few seem to understand that if you cannot produce a perfect band you cannot be capable of more intricate work."
Manufacturing jeweller

Throughout the interviews conducted for this review, a lack of understanding and communication between the training institutions and jewellery manufacturers was detected. This was particularly true with regard to the respective expectations of these two constituents regarding what training should be offered, the quality and standard of the training, the course content, levels of anticipated expertise from graduates and students, as well as how the industry should perceive future training needs and how it should be positioning itself to address identified training priorities.

Many jewellery manufacturers are critical of the standard and skill of graduates of the training institutions, their level of competency on the workbench and their attitude towards their work.

The institutions themselves raised concerns about what the industry expects from their graduates. This they deem unrealistically high and consider that criticism from the industry – that students are not fully tutored to take their place productively on a workbench – is unwarranted.

The institutions argue that jewellery-making is a combination of taught technical skills, artistic flair and experience. In addition, while they could train a student to a reasonable level of competency on a workbench, only a limited number of students each year would excel, particularly in the field of jewellery design.

The institutions also argue that manufacturers fail to consider the structure of the jewellery courses and that the industry fails to understand the lead times required in adjusting course content to meet industry requirements.

The MQA report of May 2003[7] noted that the most requested skill from the jewellery industry was design. In late 2004, interviews for this review revealed that jewellery manufacturers were calling for practical applications and skills on the bench. There appears to be a lack of consensus on what the jewellery industry needs.

As discussed in Chapter 4, the training institutions also raised a concern that the jewellery manufacturers were unwilling to acknowledge the certificates, diplomas and degrees held by their students. They suggested that the real reason behind this was a financial one in that, by not acknowledging the qualifications, the jewellers were not obliged to pay these graduates the appropriate salaries. While many jewellery manufacturers denied this, others noted that there was an element of truth in the concern raised.

The training reportedly provided by the jewellery manufacturers, in some cases, raised two additional concerns on the part of the training institutions.

The first concern is that 'training' is used in a broad generic sense by the manufacturers. While the manufacturers provide the workbench experience and mentor staff on the workbench, employees do not necessarily receive formalised or structured tuition on the workbench. Mentoring on the benches is necessary and a vital component of gaining the experience needed to become a manufacturing jeweller. However, the process should not be confused with 'training' which implies more formal, structured course work as defined by the training institutions.

Secondly, mentoring that takes place in-house among the jewellery manufacturers appears to be very narrow. For example, a staff member might gain experience in casting or polishing, but receive no holistic exposure to the entire manufacturing and financial process within that business. As a result these employees are poorly equipped to start a business in their own right, or would be limited to performing the same function in another company.

Quotable quotes:
"How can I spend time with an institution helping their students when I am battling to keep my own company above water? I am so tied up with management issues, mainly financial worries that I don't even have the time to do what I was originally trained to do – design jewellery."
Jewellery manufacturer

Quotable quotes:
"Some years back the industry said it needed emphasis on design. Now it is calling for more practical work. When it asks for something it wants it immediately, without realising it takes years for us to be able to respond to these requests. The industry has no understanding of what goes into the planning and structuring of an academic course and there is no co-ordinated long-term planning or vision as to what the industry should be aspiring to in the long term. Therefore, there can be no consensus about training needs."
Formal training institution

[7] A Skills Analysis of the Jewellery Manufacturing and Gemstone Processing Industries in South African By the Human Science Research Council and Povey Mulvenna & Associates, pg 23.

A3.5 TRAINING INSTITUTIONS

Six educational facilities offer formal courses in jewellery design and manufacture. Five of these were formerly known as technikons but have now been renamed as Higher Educational and Training Institutions (HETs) or universities of technology.

Apart from these training institutions, there are a number of community-based organisations that offer training courses in jewellery manufacturing. A number offer courses in gemmology, diamond sorting and cutting and watch-making. These training courses have been excluded from this analysis, which concentrates on gold.

Finally, the jewellery manufacturers themselves maintain that they offer in-house training for employees.

The six training institutions are:
- the Cape Peninsula University of Technology, formerly the Cape Technikon;
- the Tshwane University of Technology, formerly the Pretoria Technikon;
- Witwatersrand University of Technology, formerly the Witwatersrand Technikon;
- the Central University of Technology in Virginia, Free State;
- Durban Institute of Technology, formerly the Durban Technikon; and
- the University of Stellenbosch.

The first five offer diplomas and technical degrees in jewellery design and manufacture while the University of Stellenbosch offers a Bachelor of Arts degree in jewellery design.[8]

In addition to these institutions, there are three SETA-accredited colleges that offer courses in jewellery design, manufacturing and gemmology.

These are:
- the Cape College;
- the Port Elizabeth College; and
- the Bloemfontein College.

All nine training institutions offer combinations of the following course work[9]:
- design of jewellery;
- model making for casting of jewellery;
- making rubber moulds and casting moulds;
- making waxes for rubber moulds and mould trees[10];
- injecting metal into moulds (for casting);
- casting and cutting mould trees;
- cleaning castings;
- soldering and joining seams in items of jewellery;
- polishing of finished product; and
- electroplating to yield final finish.

The fees to the student for a three- or four-year course in jewellery are approximately R14,000 annually, although the total cost for first year students is higher as they need to buy a jewellery tool box of basic tools and equipment, at a cost of R5,000.

In 2004, 185 students were enrolled for the courses offered by these nine institutions.

Enrolment numbers have been steady over the years, limited by capacity constraints, specifically the number of workbenches available for training. Graduates from these institutions have found employment within the jewellery manufacturing sector and among the private institutions offering training, such as Vukani-Ubuntu (see following page).

[8] Diplomas are awarded by the universities of technology (formerly technikons) and degrees are awarded by universities.
[9] Excludes course work related to stones
[10] Wax tree: a structure on which casting moulds are suspended.

A3.5.1 Community-based jewellery training programmes

There are a number of community-based jewellery training institutions and programmes. These include:

- the Cullinan Jewellery School;
- Vukani-Ubuntu Community Development Projects (Atteridgeville, Barberton/Umjindi and Galeshewe);
- Mintek's Bopa Batho;
- Virginia Jewellery School;
- Kgabane Jewellery Training; and
- Imfundiso Skills Development Project.

These community initiatives are structured as Section 21 companies (companies operating on a not for profit basis) and are funded by sponsorships.

These programmes have a number of objectives in common. These are:

- to fast-track basic training of unskilled, unemployed and inexperienced youth to produce jewellery;
- to place emphasis on African art and culture and encourage this in the creation of jewellery; and
- to promote beneficiation of the country's natural resources.

Vukani-Ubuntu

In 1999, Vukani-Ubuntu established South Africa's first goldsmith training programme in a black township, Atteridgeville. The concept has been applied to other areas of the country including Virginia in the Free State in 2000, Barberton, Mpumalanga in 2000 and Galeshewe in the Northern Cape in 2005.[11] The company has received the 'Impumelelo Award', awarded by the DTI, recognising Vukani as one of the top 300 black empowerment companies in South Africa.

The three-year jewellery design course trains inexperienced people to produce jewellery and other crafts of saleable quality in the shortest possible time. The course is broken down into skills programmes covering the following functions:

- benchman;
- polisher;
- repairman;
- modelmaker; and
- setter.

It also includes jewellery design and small business management skills and is industry focused.

The project has two divisions:

- the training division, which trains students from previously disadvantaged communities; and
- the manufacturing division, which operates a hive[12] in all the Vukani-Ubuntu projects, drawing trainees and craftspeople from the local community and assisting them to produce finished product.

The hive represents an entire jewellery and crafts manufacturing infrastructure provided by Vukani-Ubuntu.

[11] Vukani-Ubuntu has also opened its first gemstone cutting and polishing programme at Galeshewe in Kimberley. This handbook concentrates only on the first three projects which are directly involved with gold.

[12] Hives: Co-operative associations of manufacturers of similar products operating collectively and usually cost-effectively via the sharing of overheads and other fixed costs.

The hive has the following characteristics:

- it affords people the opportunity to operate without needing to purchase expensive equipment and materials;
- it alleviates the need for participants to finance the formation of a small business and negates start-up costs;
- it offers participants a safe, secure working environment;
- it offers the participants a shareholding in the hive;
- it assists with marketing of finished product to enable the participants to focus solely on their chosen profession; and
- it provides experiential training to its trainees in a manufacturing environment where they work side-by-side with qualified jewellers.

Details of the Vukani-Ubuntu projects are as follows:

The Atteridgeville Jewellery Project	
Date Established	January 1999
Sponsors	AngloGold Ashanti
	Nelson Mandela Children's Fund
	De Beers
	Pick & Pay Foundation
	National Development Agency
	Academy International
	Atteridgeville College
	Nedcor
	South African Breweries Inc
	National Lotteries Fund
	Jewellery Council of South Africa
Management	Vukani-Ubuntu
Capacity	
1st Year	20
2nd Year	15
Hive	10
Location	Atteridgeville, Gauteng
Premised by	Atteridgeville College
Sustainable by	2006
1st Intake	January 1999 – 20 learners

Data source: Vukani-Ubuntu

The Atteridgeville Jewellery Project has achieved a 98% employment rate for its qualifying graduates. A number of graduates have started their own jewellery manufacturing businesses.

The Harmony Jewellery School	
Date Established	September 2000
Sponsors	UNOPS-SEHD*
	Harmony Gold
	Cooperazione Italiana
	DTI
Management	Harmony Gold (originally Vukani-Ubuntu)
Capacity	
1st Year	20
2nd Year	20
Hive	20
Location	Virginia, Free State
Premised by	Harmony Gold Mining
Sustainable by	2005
1st Intake	September 2000 – 20 learners

**United Nations Office for Projects - Small Enterprise and Human Development.*

The Harmony Jewellery School (previously the Virginia Jewellery Project) is managed by Harmony Gold Mining Company. The project was initially co-funded by UNOPS-SEHD and Harmony Gold Mining. Since then, the UNOPS-SEHD funding has expired and Harmony Gold Mining is now the primary funder. To date, Harmony Gold Mining has spent R5.3 million on the jewellery school, which includes refurbishment of the premises, the purchase of tools and equipment and the cost of course design and management. Harmony Gold Mining also subsidises the students' travel costs and makes funding available for bursaries.

Two courses are offered:
- the three-year National Diploma Course in Jewellery Manufacturing and Design; and
- the one-year Further Education Training learnership programme.

The learnership programme often but not always serves as a bridging course in preparing students for the diploma.

The school operates as a satellite of the Central University of Technology of the Free State. The University of Technology provides the training diploma and Harmony Gold Mining provides the funding, infrastructure and management of the project, as well as designing the course content. As of 2005, a total of 32 students were enrolled for the diploma and another 40 were enrolled for the learnership programme, 12 of whom have MQA funding.

Four of the graduates are currently employed at the school as facilitators, assisting with teaching and course development.

The Barberton Jewellery Project	
Date Established	May 2002
Sponsors	Umjindi Town Council
	Local Economic Development Fund
	African Pioneer Mining
	Department of Economic Affairs and Tourism (Mpumalanga Province)
Management	Vukani-Ubuntu
Capacity	
1st Year	20
2nd Year	20
Hive	5
Location	Barberton, Mpumalanga
Premised by	Umjindi Town Council
Sustainable by	2006
1st Intake	February 2002 – 20 learners

Data Source: Vukani-Ubuntu.

In addition to its specific training programme, Vukani-Ubuntu is actively involved with the communities in the vicinity of its projects. In Baberton, the project includes a jewellery retail facility and an African art gallery actively promoting the work of 33 local artists.

APPENDIX 3

TRAINING AND SKILLS TRANSFER

The Galeshewe Jewellery Project	
Date Established	January 2005
Sponsors	Nelson Mandela Children's Fund
	Northern Cape Urban FET College
Management	Vukani-Ubuntu
Capacity	
1st Year	13
Location	Galeshewe, Kimberley
Premised by	Northern Cape Urban FET College
Sustainable by	2008
1st Intake	April 2005 – 13 learners

Data source: Vukani-Ubuntu

Bopa Batho

Bopa Batho means 'Building People' and is aimed at developing and training people from South Africa's previously disadvantaged communities for jobs in the mining, minerals processing and minerals beneficiation industries.

Funded by Mintek, several programmes for technicians, technologists, engineers and artisans are in place, covering skills in the mining industry as well as in jewellery manufacturing.

Mintek is the lead service provider for this initiative and programmes cover school-based teacher training through to skills development in conjunction with tertiary educational institutions and industry. Programmes cover small-scale mining and jewellery projects including the Kgabane Jewellery Training Programme (see below).

Bopa Batho is administered by a Board of Trustees, which comprises Mintek's CEO, Chairperson and General Manager of Research and Development, as well as representatives of contributing organisations and institutions.

Bateman Africa has recently allocated five per cent of its shareholding to Bopa Batho.

Kgabane Project

Kgabane, meaning 'precious', was initiated by the Department of Minerals and Energy and is a partnership between Mintek, Harmony Gold Mining Company, the MQA and the People's Bank. It is an accredited jewellery training initiative housed at Mintek, giving HDSA women the opportunity to develop jewellery-making skills.

In 2002/3, the project trained 153 learners, 53 more than its target. It trained 265 learners in 2003/4. Information on the graduates' employment history after training was not available.

In terms of the contract entered into with the MQA, Kgabane is required to train 250 learners in 2004/2005, a majority of whom are to be rural women of South Africa.

Imfundiso Skills Development
The Imfundiso Skills Development project was established in 2001.

The project has four operating centres:
- at the Cullinan Diamond Mine (formerly Premier Mine), east of Pretoria, in Gauteng Province (opened in 2001);
- at the Sekhukhune Education Multi-Purpose Centre, in the Sekhukhune District Municipality area, south of Limpopo Province, (opened in 2003 but started operating in January 2004);
- at the South West Gauteng College's George Tabor Campus in Dube, Soweto, (started operations in January 2004); and
- at the Thabamopo Education Multi-Purpose Centre, at Lebowakgomo, in the Capricorn District Municipality of Limpopo Province (established in September, 2004).

The two-year jewellery design and manufacturing training course promotes African design through:
- the creation of unique, locally influenced art and design;
- manufacture of indigenous jewellery, blending various materials including gold, platinum, copper, brass, silver, wood and glass; and
- the marketing of finished products to tourists and industry.

The course covers the following subjects:
- jewellery-making techniques and practical goldsmithing;
- jewellery design and drawing; and
- gemmology, metallurgy and business management.

The course allows a student with no skills or formal education to:
- enrol at a university of technology or university for further studies in jewellery manufacture;
- be employed by the formal jewellery industry; or
- be self-employed through entrepreneurship; and
- work towards the continuation of the project in the training school.

The course is geared to practical work, which makes up 80% of the curriculum. Design, drawing and theory make up the balance. Students start by working with brass and then move on to working in silver and gold as the course progresses. The first graduation ceremony took place in Cullinan on 14 April 2004 and the course was accredited by the MQA in the first quarter of 2005.

Graduates from the programme have found employment with Orofino and Sub-Sahara Livingstone.

Students of Imfundiso have participated in AngloGold Ashanti's AuDITIONS Riches of Africa jewellery design competitions[13] and in AngloGold Ashanti's Traditional African Goldsmith Training programmes. Several of the Imfundiso students have won prizes and scholarships associated with these projects.

A3.6 JEWELLERY COMPETITIONS

In recent years, jewellery design competitions have been run in South Africa, sponsored by local gold companies. The objectives of these competitions include the recognition and encouragement of local talent and the promotion of public awareness of local jewellery design. The following section describes each of the competitions in more detail.

The Jewellery Council of South Africa's Collection Awards Jewellery Competition
The Collection Awards jewellery design competition was founded and sponsored by the Jewellery Council of South Africa in 1994. In this annual event, the judges evaluate the jewellery in terms of its commercial viability. The criteria include interpretation of an annual theme, wearability, manufacturing practicality and the innovative use of materials.

Quotable quotes:
"The industry should not underestimate the importance of these competitions for our students. They allow the students to have creative freedom beyond the confines of their theoretical course work. They really have fun but at the same time they are gaining valuable design experience."
Formal training institution

[13] See later for details.

APPENDIX 3

TRAINING AND SKILLS TRANSFER

The competition is open to Southern Africa's practising jewellers, apprentices and students of jewellery design. The competition receives in excess of 1,000 entries per annum.

The theme for the 2005 competition was 'The Precious Palette'. Designers were requested to draw their design from the world of colour.

Winners receive their awards at the Jewellex annual exhibition, after which the collection is displayed at the International Jewellery London exhibition.

AngloGold Ashanti AuDITIONS Riches of Africa

In 1999 AngloGold Ashanti[14] established an annual South African gold jewellery design competition called Riches of Africa, with the following objectives:

- to promote the beneficiation of gold in the South African jewellery industry;
- to promote excellence in South African gold jewellery design; and
- to provide education and skills development in the South African jewellery industry.

In 2004, AngloGold Ashanti took the opportunity to re-launch Riches of Africa as 'AngloGold Ashanti AuDITIONS Riches of Africa', the gold jewellery design competition. The table that follows lists the number of entrants in the competition since its inception.

Riches of Africa (now AngloGold Ashanti AuDITIONS Riches of Africa)
Number of Entries

	1999	2000	2001	2002	2003	2004
Entries	204	594	320	1,282	1,112	1,189
Finalists	17	17	20	25	26	24

Data source: AngloGold Ashanti.

Since its inception, a number of changes have been made to the competition with the intention of increasing its scope and positive impact. Among these are:

- the sponsorship by AngloGold Ashanti of workshops for all the competition entrants in design and goldsmithing techniques. These workshops are held in the Western Cape, KwaZulu-Natal and Gauteng;
- the addition of international judges to the judging panel;
- the inclusion of white and rose gold into designs; and
- the inclusion of the Riches of Africa competition under the AuDITIONS brand.

From 2005/2006 onwards, AuDITIONS Riches of Africa will be held every two years. Winners will benefit from the biennial format as their pieces will gain a longer period of exposure.

AngloGold Ashanti provides the gold used by entrants in their jewellery designs. The company owns the final pieces of jewellery but the competition entrants maintain ownership of their design.

The prizes are:

- an overall winner's prize up to the value of R40,000;
- second prize to the value of R15,000;
- third prize to the value of R10,000;
- grant awards to students to the value of up to R45,000; and
- a merit award prize for the institution with the most winners.

[14] At that stage still AngloGold.

Once winners have been announced at the awards event, the winning pieces are exhibited at events held throughout South Africa and internationally. A total of 137 events and exhibitions have been arranged both locally and internationally over the past six years as the following table shows:[15]

Riches of Africa (now AngloGold Ashanti AuDITIONS Riches of Africa)
Publicity and Promotions

	Eastern & Western Cape	Durban	Johannnes-burg & Pretoria	Regional within South Africa	Inter-national	Total
1999	5	2	8	1	3	19
2000	3	1	11	1	4	20
2001	6	1	7	3	4	21
2002	8	2	4	2	4	20
2003	10	1	8	4	4	27
2004	7	4	9	5	5	30
Total	**39**	**11**	**47**	**16**	**24**	**137**

Data source: AngloGold Ashanti

Textures of Africa

In 2004, the SA Mint sponsored a competition, called 'Textures of Africa', aimed at promoting jewellery designed specifically to incorporate the country's 1/4 and 1/10th ounce gold and silver coins. The Mint is now in the process of organising the 2005 competition and intends to make this an annual event.

Participants submit a coin-related design in silver of no more than 80g. The reasons behind the decision to ask entrants to work in silver were two-fold: the lower cost of silver for the sponsor of the competition, and the fact that most entrants were students who were still completing most of their practical work in silver and not gold. Subsequent commercial orders for the winning designs have, however, been in gold.

The SA Mint received 130 entries. It drew up a list of finalists, and a panel of independent judges from the industry – including academics, marketers and manufacturers – selected the winners. The pieces were judged on a number of criteria including design, finish, craftsmanship, creativity and practicality.

[15] In addition, AngloGold Ashanti have hosted gold jewellery shows and displays in Turkey, Italy, the United Kingdom, Switzerland, Australia, Mali and Tanzania.

APPENDIX 4

THE INTERNATIONAL GOLD MARKET

APPENDIX 4

8

Contents:

APPENDIX 4

THE INTERNATIONAL GOLD MARKET

Of the 445t[1] of gold refined in South Africa in 2004, 97% was fabricated into bars[2] and exported. These bars were destined either for direct export into India or were shipped to international bullion banks[3] for sale into the global gold market.

The international gold market is a 24-hour market that covers the trading of gold spot, gold forward contracts, over-the-counter derivative products and exchange-traded futures and options contracts in gold[4]. Consumers and producers interact via the exchanges that trade gold or over-the-counter (on a principal-to-principal basis, via the bullion banks).

Business centres dominant in physical gold trading include London and Zurich, with New York's physical business being overshadowed by its gold futures trade. Other important markets are to be found in Mumbai, Tokyo, Hong Kong, Istanbul, Singapore, Dubai and Shanghai. Of the Asian centres, Tokyo is biggest in terms of volumes. In the Middle East, Dubai has traditionally been a key gold trading centre, much of its trade being with India.

The twice-daily London market price 'fix'[5] acts as an important indicator for gold traders everywhere, providing a mechanism for daily price benchmarking. Despite its name, this is close to an open auction process, with offers and bids netted off throughout the market as part of a bidding process during the fix itself.

The five commercial banks which currently make up the members of the London gold fixing are:

- Barclays Bank plc;
- The Bank of Nova Scotia – ScotiaMocatta;
- HSBC;
- Deutsche Bank AG; and
- Société Générale.

The fix is executed on a single price at which outstanding bids and offers are transacted. Clients who wish to transact on the fix place orders with the bank or bullion dealer, who will either be one of the fixing members themselves, or another bullion dealer who will be in touch with a fixing member (and with the client, if necessary) while the fixing proceeds.

The fixing members net all orders before communicating their individual net interest at the fixing. The fix begins with the chairman suggesting a 'trying price', reflecting the market price prevailing at the opening of the fix. The fixing members then relay this to their dealing rooms which are themselves in touch with all interested parties. Any market participant may enter the fixing process at any time, or adjust or withdraw their order according to their view of the price as relayed to them. The gold price is adjusted up or down until all the buy and sell orders are matched and the price is declared fixed. The fix is therefore a full and fair representation of all market interest at the time.

Outside the pricing mechanism of the London gold fixing, buying and selling physical gold in major bullion markets is a straightforward process for any established company in the gold business. Most transactions are by electronic or telephonic means. Payment for bullion trades is usually required in full by the end of the second working day after the spot contract has been executed. On receipt of payment, the bullion may be delivered or held in the dealer's vault on behalf of the client. The latter is the most common practice apart from many Asian markets, where physical possession is usually preferred.

Although the gold market is small compared to the stock and bond markets, it is a relatively deep and liquid market. In addition, trading spreads (the difference between the asking and the bidding prices) are narrow.

[1] See Chapter 1 for a breakdown of the origin of this gold.
[2] See Chapter 3 for a breakdown of the different types of gold bars manufactured.
[3] Commericial banks that deal in bullion.
[4] Each of these terms is defined in the glossary and discussed in more detail in this apendix
[5] Which, from 5 May 2005, no longer happens in the London offices of N.M Rothschild but is now conducted via telephone.

A4.1 THE OVER-THE-COUNTER MARKET (OTC)

The over-the-counter gold market (OTC) is a principal-to-principal market which means trading occurs privately between the individual clients, free of the rigidity of an exchange[6]. All risks, including those of credit, are between the two parties to a transaction. The flexibility of the OTC market, in contrast to the relative rigidity of transactions on the exchanges, means that OTC trading accounts for the greatest portion of global trading in gold by far. It also provides confidentiality since transactions are conducted solely between the two principals involved.

The main centres for OTC dealings are London, New York and Zurich, which are wholesale markets, with the lowest transaction size typically not less than 1,000oz. In general, mining companies and central banks tend to transact their business OTC through counterparty banks in London and New York. These markets also service manufacturers of jewellery and industrial products, as well as investment and speculative business. Zurich specialises in supplying physical gold to manufacturers of jewellery and industrial products. Centres such as Dubai and several cities in the Far East also transact important OTC business, typically involving jewellery and small bars (of one kilogram or less) for private investment in that region. A number of bullion dealers have offices around the world. Most of the major bullion dealers are either members or associate members of the London Bullion Market Association (LBMA).

The LBMA, a collective organisation geared to meet the needs of the global bullion industry, is at the centre of the OTC market. It has a number of functions. Primarily, it applies requirements for the assay and quality control of gold bars and maintains an inventory of gold and silver refiners that meet these standards, known as the Good Delivery List[7].

The LBMA has also developed and introduced a number of standard agreements for transactions in gold. These cover the terms and conditions for forward, option and gold interest rate derivative transactions in the OTC market. The major advantage of standard documentation is that it defines market practice. Its utilisation by members of the LBMA avoids the need to continually negotiate and agree terms involved in bilateral agreements, and its broad acceptance also provides comfort to clients of the market.

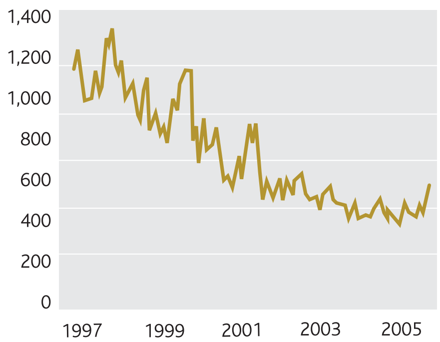
Additionally, the LBMA maintains statistics, issues gold-related publications and runs an annual international gold conference.

The nine market-making bullion banks[8] are members of the LBMA. These are:

- The Bank of Nova Scotia – ScotiaMocatta;
- Barclays Bank PLC;
- Deutsche Bank AG;
- HSBC Bank USA London Branch;
- J Aron & Company;
- JP Morgan Chase Bank;
- Royal Bank of Canada;
- Société Générale; and
- UBS AG.

In recent years the amount of gold cleared per day by the LBMA has fallen (see chart), although it remains the largest OTC market in the world. This decline has been a function of many factors such as the reduction in producer hedging (which is conducted on the OTC market), the declining profitability of bullion banking in the bear market years and the withdrawal of several banks from this business. Recently there has been a small upturn, reflecting the more positive mood in the gold market, although it is too soon to say whether this is a trend that will continue into the future.

LBMA clearing statistics
Tons per day transferred



Data source: LBMA.

[6] See later for a full discussion of the exchange futures contract.
[7] Refer to Chapter 3 on gold refining for further information on Good Delivery status and requirements.
[8] Market-making bullion banks are those institutions which quote two-way prices of the metal to customers rather then being merely price takers.

A4.2 THE FUTURES EXCHANGES

A gold futures contract is a standard agreement for a fixed amount of gold (usually 100oz), that allows the buyer or seller to establish a price for future receipt/delivery. It is offered by an exchange and provides market participants with a means of minimising transaction costs and maximising profit potential on commodities. The exchanges are non-profit making and self-governing organisations[9] that operate under a set of regulations which must be adhered to by their members and by those who buy and sell their contracts. Membership is limited and has to be purchased and renewed annually.

The exchanges do not trade in the commodities in which they offer contracts, but instead provide market participants with the facilities and infrastructure to trade. The exchange operates as a clearing-house, playing the role of the buyer when a participant wants to sell and of the seller when he wants to buy. This eliminates the risk of the other side to the transaction failing to meet his/her obligations (known as 'counterparty risk'). The exchange ensures that it is able to meet the obligations by requiring margin deposits from participants and payments which cover a portion of the outstanding obligations.

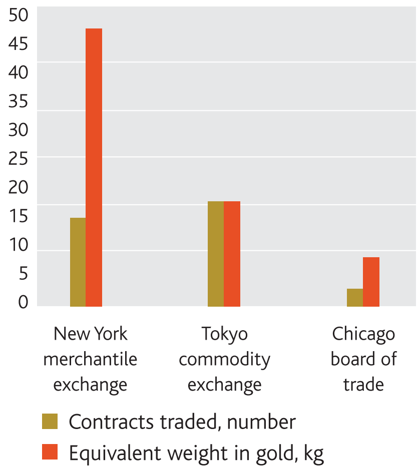
Each futures contract traded has a buyer and seller, and all trades must be matched, processed and offset against each other – and with the trading members – before dealing can start on the next day of trading.

A margin is payable on all open positions on an exchange as a deposit or security against any adverse movement in the gold price during the life of the contract.

The exchange reports daily turnover and open interest, which is the total number of futures contracts that have been entered into and are as yet not liquidated by an offsetting transaction, or fulfilled by delivery.

As the accompanying chart shows, the largest gold futures trading exchange is the Commodity Exchange in New York (COMEX), which began trading gold in December 1974. COMEX merged with the New York Mercantile Exchange (Nymex) in 1994. The next largest is the Tokyo Commodity Exchange (TOCOM) in Japan. Some other mainly spot-trading exchanges, such as the Shanghai Gold Exchange and the Istanbul Gold Exchange, offer limited futures contracts.

Gold futures contracts volume traded – 2004
Contracts/kg, millions



Data source: Virtual Metals.

Note: The contract size on TOCOM is 1 kg, whereas on COMEX/Nymex and CBOT it is 100 oz, equivalent to over 3 kg. Hence the equivalent weight in gold of contracts traded is larger for COMEX/Nymex and CBOT than the number of contracts.

[9] As at September 2005 Nymex/COMEX was considering an initial public offering.

A4.3 GOLD HEDGING AND PRICE PROTECTION

Mining companies in South Africa, as elsewhere, may use the futures or forwards markets in their metals (derivatives markets) to 'hedge' prices for future production, often for many years into the future. The primary motivation behind hedging is to manage or reduce risk of unfavourable moves in revenue. By securing the price of its gold production, a company achieves greater certainty of revenue for the company, and avoids the risk of adverse gold price or currency movements.

Gold mining companies make use of a range of products provided by bullion banks, including plain forward sales and exotic contracts.

The majority of future hedge commitments tend to be plain forward sales. In this, the producer contractually agrees to sell a fixed amount of gold at a fixed price for delivery on a fixed date in the future. In this way, therefore, the miner gains more certainty over future revenues and/or cashflow.

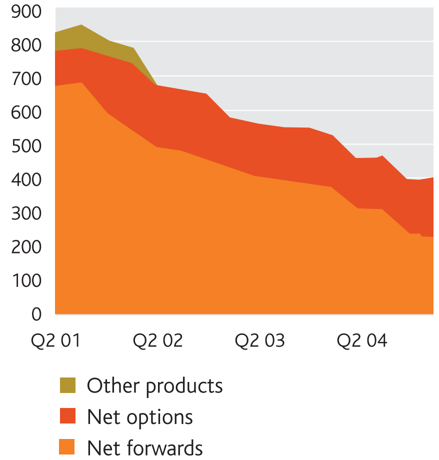
Hedging is also put in place by mining companies, when required by a lending bank to reduce risk in the development (and hence project financing) of a new mine or expansion.

The practice of hedging is not universal, and often controversial. Many mining companies do not hedge, arguing that their shareholders own gold mining shares for their exposure to the gold price. This argument is strengthened in a bull market (one of rising prices) as hedging's advantage of reducing the risks of a low price also works the other way, reducing the gains from a high price.

There have been well-publicised cases (though not in South Africa) where a company's hedge book has increased risk, by extending the company's exposure to credit beyond its capacity to service or manage that credit exposure in times of gold price or interest rate votality.

For these reasons and others, the extent of gold hedging globally and in South Africa has reduced significantly in the past four years[10]. In global terms, total global hedge exposures/commitments decreased from a peak of 3,175t in the third quarter of 2003 (2.2 years of global production) to 1,651t in second quarter of 2005 (1.1 years of production). Similarly, South African miners' hedging has declined over the same time period from 848t to 385t.

South African gold miners' hedging
Tons per day transfered



Data source: The Mitsui Precious Metal Hedge Book

[10] According to data from Virtual Metals/Mitsui Precious Metals/Haliburton Mineral Services