# Africa: The commodity warrant

**THEME**

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In this report, we analyse the investment theme of Africa and the related opportunities. Historically, African growth has lagged the global average. Between 1960 and 2001, according to the IMF, average African growth was just 3.2% compared to the global average of 4.1%. However, more recently (2002–07E), Africa has enjoyed much healthier growth rates in absolute and relative terms. Aggregate regional GDP growth looks likely to have topped 5% for the fourth year in a row in 2007E, based on IMF data.

In our view, the current growth rate looks much more sustainable given political and institutional improvements and greater economic stability. However, Africa is likely to remain something of a 'warrant' on commodity performance, given significant oil and mining dependence. But, given a positive view on commodities, our forecasts for aggregate growth in Africa remain well above forecasts for global growth. We forecast average African GDP growth of 5.3% p.a. between 2008 and 2011 compared to 3.4% at the global level.

From an equity perspective, African markets have displayed a low correlation to other markets and in that respect offer diversification benefits. We see value in considering this as an indirect investor. We thus consider the prospects for eight broad sectors and, in particular, how international companies might benefit from African growth. We identify 111 international stocks that offer exposure to Africa. We specifically present the Credit Suisse African 20: Alstom, Aurobindo, CAMEC, Cipla, ENI, Equinox, Hess, Hikma, Illovo Sugar, Isuzu, Marathon Oil, MTN, Orascom, SABMiller, Sasol, Tav, Total, Tullow Oil, Vivendi, Zain.

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Prices in this report as at the close on 2 April 2008.

# Executive summary

## Introduction

Much of what has historically been said about potential growth in Africa has been negative. This report seeks to re-examine this story. We find that average African GDP growth between 1960 and 2001 was indeed lower than for the rest of the world at 3.2%, according to the IMF, compared to the global average of 4.1% p.a. However, more recently (2002–07E), Africa has enjoyed much healthier growth rates in absolute and relative terms. Aggregate regional GDP growth looks likely to have topped 5% for the fourth year in a row in 2007E, based on IMF data. Compared to other global economic regions, average GDP growth in Africa has been second only to Asia in the current decade.

However, there is a long way to go for Africa to develop in a manner akin to that seen in Asia. In 2007, Africa accounted for 13% of global population (857m out of 6.5bn people) but only 2% of global GDP (US$1,041bn out of US$53,352bn). GDP per capita was just US$1,215, compared to the global average of US$8,183, according to IMF data.

The spark that has ignited African growth in recent years arguably stems from the significant increase in commodity prices (57% of Africa's exports are fuels; 23% are metals and raw materials). This is akin to the experience of Africa during the 1960s. African GDP growth averaged 4.6% over the 1960s as the region benefited from the global upturn in commodity prices. However, growth back then proved hard to sustain as political conflicts developed, macro policy was unsupportive and institutions were weak. The question for us now is whether or not the growth this time can prove to be more resilient.

In this report, we consider the macro and micro developments in Africa so far and consider the potential for investors from the revival in Africa's fortunes. From a macro perspective, we attempt to gauge to what extent the current growth rate is sustainable relative to Africa's own history and the experience of other developing economies. From a micro perspective we look at the growth prospects for eight sectors and specifically consider which international companies look set to benefit from an ongoing reversal in Africa's fortunes. African markets have themselves displayed a low correlation with global equities and to that extent offered a diversification benefit for investors. The indirect investor may be able to achieve a similar aim within developed markets. In this report, we identify international stocks that offer the highest exposure to Africa (based on our and company guidance for 2007E percentage revenue from Africa).

## The macro backdrop: Fundamentals improving, but heavily dependent on commodities

We consider six factors that help determine the sustainability of growth: politics, institutions, macro-stability, diversification, health and education. Wherever possible we have compared the current statistics for Africa to its own history and that of Asia 20–30 years ago, when that region began a period of sustained growth. Generally, the good news is as follows.

1. The political situation is much improved. Although Kenya, Zimbabwe and Darfur have dominated headlines in recent months, civil unrest has declined significantly in Angola (the 27-year-long civil war ended in 2002), Mozambique (since the end of the civil war in 1992 after 17 years of fighting) and Uganda (the government and the main rebel group signed a peace deal in August 2006 after 18 years of conflict). Data on political freedom suggests that 11 out of 50 countries (representing 33% of total African GDP) are now classified as "fully-free" political systems compared to only four countries classified as "fully-free" 10 years ago. 84% of Latin American GDP and 41% of emerging Asian GDP are classified as "fully free".
2. Meanwhile, significant advances have been made in terms of the institutional framework (for example, the IMF measure of economic institutional risk allocates an

average score of 31.3 out of 50—the higher the level, the better—to Africa, which is in line with the Asian score [31.7] in 1984, when Asia underwent a period of sustained growth).

3. Macro indicators suggest greater stability. African inflation has dropped from an average of 19% in the 1980s to 6% now. Our global strategists find that falling inflation is the single most important driver of market re-rating and falling real interest rates. Reserves have risen from 3.7 months of imports at the start of the decade to over six months. External debt (largely thanks to the efforts of the HIPC, MDRI and Paris Club) has fallen by US$73bn over the past three years to 20% of GDP. A regional budget deficit of 2.7% of GDP at the start of the decade is a 1.9% surplus now.

4. Education levels are now much better than were historically the case (according to UNESCO). 98% of children were enrolled at primary school in 2005 vs 78% in 1990; and 37% made it to secondary school vs 22% in 1990). This is in line with the statistics for Asia in the 1970s. The latest data (2004) from UNESCO shows that 4.4% of African GDP is spent on education compared to 3% in Asia in 1991.

5. Africa looks likely to benefit significantly from the commodity boom. It benefits directly because overall for the continent 47% of GDP is commodity-related and net commodity exports are 32% of GDP. Thus, a 10% rise in commodity prices overall boosts net exports by 3.2%. As important is the indirect effect. In a bid to secure access to resources, China, in particular, has been investing more in Africa, which has often involved improving the infrastructure as well as boosting extractive capacity. Net FDI to Africa has risen 10-fold (US$27.1bn in 2007 vs US$2.4bn average over the 1980s and 1990s). Relative to GDP, net FDI into Africa is now second-highest among the emerging market regions, after Emerging Europe and the Middle East, and much of the FDI is concentrated on the resources sector (the IMF estimate that 70% of the gross direct investment flows to sub-Saharan Africa in 2006 went to oil exporters Angola, Equatorial Guinea and Nigeria). In addition, the tax take on resource projects in Africa tends to be very high, thus boosting fiscal revenues more than elsewhere in the world. Africa is a net food importer, 55% of employment and 17% of GDP comes from agriculture. High agri-prices should spur improvements in agricultural productivity.

6. There appears to be significant scope for vertical integration, especially now that there has been substantial easing of trade barriers through the EBA and AGOA schemes, and in many cases this is being enforced by legislation that mandates minimum local content. For instance, in Botswana, one of the world's biggest diamond producers, cut diamonds represented less than 1% of total diamond exports in 2006. Most of the grading and polishing was undertaken in Europe and India. African oil is exported in raw form for refining in another country and then re-imported for retail sale. Angola, for instance, only has capacity to refine 4.9% of its total oil production, Gabon can refine only 6.8% of its total oil production.

However, against these positives we have to face up to three very significant problems.

1. The massive appreciation of the terms of trade has taken exchange rates in many African markets to levels that may adversely affect long-term current account prospects by restricting export diversification. Fuel exports made up 51% of total African exports in 1985 and still accounted for 57% of exports in 2005. Africa has lost market share over the last 30 years (to 2.4% of global trade vs 4% in 1970).

2. Health issues are still a major problem. Africa (based on WHO data, average life expectancy of 49 years) clearly lags behind even the historical record set by Asia (where the population has seen an improvement in life expectancy from 65 years in 1982 to 70 years currently, according to the WHO). Nevertheless, population (and labour force) growth is high in Africa (2.4% p.a.) given double the female fertility rate of Asia.

3. The volatility of political regimes, partly as a result of country borders that in many cases were drawn up irrespective of tribal boundaries.

**We reach four broad macro conclusions.**

1. African growth is more sustainable than it has been in the past but much more reform is needed before Africa can decouple from the global cycle.
2. Given number 1, the outlook for commodities still appears to be the key to African growth performance over the next five years. However, we remain very positive on commodity prospects (see Figure 40 detailing our view on resources). Hence, our forecasts for aggregate growth in Africa remain well above expectations for average global growth. We forecast average African growth of 5.3% p.a. between 2008 and 2011 compared to 3.4% at the global level.
3. From a top-down perspective, given the bias towards commodity-driven investment and growth in the region, it seems likely that those countries with relatively greater natural resources, as well as improving political situations, are most likely to deliver the fastest growth rates over the next 3–5 years. We would group Botswana, Nigeria, Angola and Zambia in this bracket, as well as (albeit with somewhat higher risk ratings) DR Congo, Equatorial Guinea, Libya and Mozambique. South African growth prospects are somewhat lower than for other parts of Africa since the current account deficit (6.4% of GDP) is a more difficult financing proposition than the surpluses recorded elsewhere and since many of the more straightforward changes and improvements in terms of political and institutional reform have already been made (as illustrated by the much higher private sector credit to GDP ratio of 86% than for the rest of Africa). Indeed, the apparent lack of choice for the electorate in the forthcoming 2009 presidential elections is a concern. In addition, the severe, ongoing power shortage is already undermining output in key parts of the economy (e.g. gold mining).
4. Globally, one of the most successful strategies for making money out of the commodity boom has been to buy domestic plays in those countries that are big commodity exporters (e.g. OPEC banks; Russian banks and telecoms). This, of course, applies to Africa as well and thus, from a top-down perspective, we would focus on telecom, infrastructure and bank names with exposure to the large commodity exporters, particularly in those markets that are enjoying current account surpluses. Examples from our screen include MTN, Orascom, Zain Group, PZ Cussons, Cimpor, BPI, Guangzhou Shipyard, Hikma, Lafarge, Heineken, Coca-Cola Hellenic.

## Equity themes: Mining and more

In this report, our global equity research teams have put together a view of Africa from an equity investment perspective. This has centred around eight major sectors. While we have included analysis of South African exposed companies, we are mainly concentrating here on the relevance of this investment theme for companies that are listed outside of the continent.

In this process, we have identified a total of 111 internationally (rather than South African) listed companies that offer exposure to African growth potential. Eighteen of these companies have exposure in excess of 40% of revenues; 15 have exposure of between 20% and 40%; and 23 have exposure of 10–20%. Other companies are included in our study despite having African exposure that is currently low, as they may have plans in place for significant future growth (e.g. International Power, which is contracted to build and run the 3600MW power plant in Mmamabula, Botswana, which the company expects to come on stream around 2012). We would highlight the following as key to the investment story:

**(1) Mining and commodities**

The opportunities in the **mining sector** are very significant given the lack of investment to date and the size of the resource. DR Congo hosts some of the world's richest known copper and cobalt ore-bodies but is only producing at 5–10% of their potential, on our estimates. Zambia is rich in copper and appears to be quickly returning to its former productive capacity but is still only operating at 60% of its potential, on our estimates. Mozambique hosts an estimated 10% of global coal resources, according to consultants Brook Hunt, but accounts for less than 2% of world coal production. Angola has significant copper, diamond and oil prospects that are attracting attention from China. *As a ballpark estimate, we think these countries could see investments of over US$100bn in the coming five years as the commodity bull market continues.*

The major miners have been slow to invest in Africa and most of the early moves have come from either Chinese/Indian consortiums or small-cap miners listed on the AIM, TSX, JSX or the ASX indices. Significant exposure to African commodities can be accessed via Canada-listed **First Quantum** (mining for copper and coal and gold in DRC, Zambia and Mauritania; 100% of revenues from Africa in 2007); Australia-listed **Anvil Mining** (copper in DRC; 100% revenues from Africa in 2007); London-listed **African Copper** (focusing on Botswana; 100% revenues from Africa in 2007); Canada-based **Teal Exploration and Mining** (mining copper and gold in Zambia, Namibia and DRC; 100% of revenues from Africa in 2007); and Canada-listed **Platmin Ltd** (PGM resources in South Africa; 100% revenues from Africa in 2007). We estimate that CAMEC will make 100% of its revenues from Africa in 2008. Of the SA-listed miners, the pure-play platinum and gold stocks offer much greater African exposure than the dual-listed big-cap names. Zimbabwe appears to be the key to long-term growth at **Impala Platinum; Anglo Platinum** is much more focused on South Africa, as is **AngloGold Ashanti. Gold Fields** has been expanding operations in Ghana (which made up 19% of production in 2007).

**(2) Oil and energy**

The potential in the **oil and energy sector** in Africa appears to be as impressive as for mining. Africa ranks as the third-largest region in terms of remaining proved liquid and gas reserves (9% of the global total) and this looks set to rise with recent finds in Uganda and offshore Ghana. There has, of course, been less intensive exploration than elsewhere. Proven oil and gas reserves for Africa have risen by 15% over the last 10 years compared to only 8% for the world. The key resource holders are Nigeria, Libya, Algeria, Egypt and Angola, which combined account for 92% of total proved African reserves, according to ENI.

Of the internationally listed companies we have focused on in this report the greatest exposure to Africa is offered via **Afren** (over 95% of revenues from Africa in 2007), **Tullow Oil** (58% of revenues from Africa in 2007), **ENI** (49% of reserves in Africa in 2007), **Marathon** (46% of reserves in Africa in 2007) and **Total** (29% of reserves in 2007). Asian corporates have also made major investments in African oil. **Petro-China** has made upstream investments in Sudan and **Sinopec** has invested in Angola (although the contribution to revenues is so far minimal). **CNOOC** has made a meaningful commitment (c.US$4bn) in Nigeria (we believe this will account for c.13% of total revenues by 2010). India's **ONGC** has invested in exploratory blocks in Libya, Sudan and Egypt and has a stake in the GNOP field in Sudan (but accounting for less than 10% of total revenues for now). In a joint venture, **ONGC Mittal** has committed US$6bn to infrastructure development in Nigeria and has stakes in two oil blocks. Japan's **Itochu** holds a 20% interest in an LNG project in Namibia; the total project cost is estimated at c.US$6bn by the company. The major South African oil stock is **Sasol**. Around 90% of Sasol's near-term revenues are generated through the sale of oil and chemical products from its 150kbd Secunda plant in South Africa. Sasol also has upstream acreage in Mozambique and is building a gas to liquids plant in Nigeria.

**(3) Infrastructure investment**

Growth in the commodity sector is likely to fuel significant growth in African **infrastructure** for three reasons: (a) because some governments are demanding the expense as part of granting oil and mining concessions; (b) since infrastructure is so poor, growth in extraction or cost-effective exporting requires the upgrade; and (c) because the significant improvement in fiscal accounts means some countries can easily fund improvements directly (Libya announced in late 2007 that it would spend US$123bn [186% of GDP] over five years building roads, ports, schools and housing on the back of rising oil revenues). It is clear to us that Africa is suffering a major power shortage. The World Bank financed African power projects worth US$1bn in 2007 and US$660m in 2006. This investment should deliver c.1000MW of additional generating capacity p.a., yet the World Bank estimate 2000MW p.a. or more is needed to keep pace with demand. There is huge hydro (as well as coal-fired) power potential. Expanding the Inga hydro project on the Kinshasa (also known as the Congo) River could provide enough power for the whole of Africa, according to the development team.

International power generators have so far been reluctant to invest much in African power supply given political instability and problems defining long-term contracts. UK-listed **International Power** is the only generating company with a major Africa power project in its pipeline.

The other major shortage is the supply of fresh water. The major investment so far has come from **Hyflux** through its desalination project in Algeria. We estimate the revenue contribution will be around 40% of the total for Hyflux in 2008 and 2009. Revenue exposure of the capital goods companies is not that high for now but the growth forecasts are strong: at **Alstom,** African orders account for around 10–15% of total order intake in the past 12 months, but, courtesy of the power shortages, demand appears to be accelerating. **ABB** (5% in sales to Africa in 2007) is another way to play power capex in Africa.

Away from purely power generation, at **JGC** (a Tokyo-listed engineering and construction company) African projects accounted for 3% of the order book at the end of 1H 3/08, but could rise sharply to over 20% with the expected (by the company) award of a major gas development project in 3/09. At **Daewoo Engineering and Construction,** 11% of 2007 revenues were generated through sales of LNG and power plant equipment to Nigeria and Libya. We expect African revenue growth of c.33% in 2008 versus 10% growth in group sales. Only 2% of **GS Engineering and Constructio**n revenues were generated in Africa in 2007 but nearly 10% of the current order backlog is for Africa. We expect 150% growth in African sales in 2008 compared to group sales growth of just 12%.

Alternatively, infrastructure growth in Africa can be played via the cement and steel sectors. For **Cimpor**, Africa accounted for nearly a third of total profits in 2007. We estimate sales exposure at **Lafarge** of c.16% in 2007 and project African growth of c.10% p.a. (roughly twice the group average) over the next three years. About 6% (7mt) of **ArcelorMittal**'s crude steel production for 2007 was in Africa, with the company stating plans to increase production by a further 2mt. But, all in, we estimate that Africa accounted for less than 10% of total revenues last year.

**(4) Agriculture and soft commodity prices**

African **agriculture** has huge unrealised potential, in our view. According to the Food and Agriculture Organization (FAO) of the UN, Africa accounts for 15% of global arable land but uses only 13% of the global average in fertilizer and has only one tractor for every 868 hectares compared to the global average of 1 per 56 hectares (i.e. just over 6% of the tractor density per hectare). It is not even an issue of poor rainfall: (a) Africa could significantly increase the area of irrigated land (the FAO suggest that the irrigated area in Africa is only 14% of the potentially irrigated area); and (b) Africa is using only 43% of the arable land with sufficient rain-fed potential (according to the UN). The cumulative effect is that African agricultural yields are 66% below the global average and Africa is a net food importer. Climate change could negatively impact African agricultural production over the medium to long term, but, in the short term, better fiscal balances, higher agricultural prices and more lenient import policies from the US and EU (under the AGOA and EBA initiatives) *should* facilitate and incentivise the required investment, in our view.

Those exposed to this trend could include South Africa-listed **Illovo Sugar** (the largest sugar producer in Africa), **Tongaat Hulett** (which produces a range of products from sugar cane and maize), **Omnia Holdings** (not covered, which offers exposure to demand growth for fertilisers across sub-Saharan Africa) and Norway-based **Yara International** (not covered, another fertiliser producer that could benefit from increased African demand: Africa accounted for 8.5% of revenues in 2006).

**(5) Telecommunications**

Africa has the lowest global penetration rate in **telecoms** but is currently enjoying the fastest growth rate. 2006 data shows that Africa had only 3.1 fixed lines per 100 inhabitants compared to the global average of 19.4. In 2006, 21% of Africans were mobile subscribers compared to 41% globally. Growth in African fixed line connections was 2.8% (2006 vs 2001) versus the global average of 2.0%; growth in African mobile subscribers was 51% (2006 vs 2001) versus the global average of 23%. Four factors support the growth: 1) rising GDP per capita, 2) clearer and more benign regulation (by mid-2007, 83% of African economies had established an independent regulatory authority), 3) falling costs and 4) a more efficient service. We expect strong growth in African telecommunications. Clearly, mobile could be a winning application given that there is far less wireline or cable competition than elsewhere. Specifically, we forecast mobile penetration to increase from 28% in 2007 to 46% by 2010. Coupled with an increase in the addressable market (greater affordability and income redistribution) this implies growth in the number of African mobile subscribers of 76% between 2007 and 2010 compared to global growth of 36%.

There are two ways to access this investment theme: through the equipment suppliers or the service providers. **Ericsson** and **Alcatel Lucent** should be beneficiaries by virtue of their dominance in the wireless infrastructure market, but China-based **ZTE** has been aggressively expanding its footprint in Africa. As of 2006, Africa contributed 11% of total revenue to ZTE. Of the service providers, the greatest exposure to Africa is offered via **Orascom** (60% of 2007 revenues were from North Africa), **Zain Group** (operations in 14 sub-Saharan countries contributing 47% of total group revenues in 2007) and **Vivendi** (20% of 2007A EBITA comes from Maroc Telecom, which operates in Morocco, Gabon and Burkina Faso). Of the SA-listed telcos, mobile operator **MTN** has the largest continental operations (present in 16 African markets) and is particularly strong in Nigeria (45% market share in 2007).

**(6) Healthcare**

The main issue regarding African **healthcare** is financing. The basic statistics are that Africa accounts for the second-largest share of the global burden of disease and 13% of the world's population, but spends only 1% of the world's resources on health, according to the WHO. Life expectancy in Africa (49 years) is well below the global average (67 years). The good news is that improved fiscal balances, higher GDP per capita and international donations are boosting healthcare financing. However, this is mainly a market for cheaper drugs provided by the generic companies than for the big pharma names, in our view.

Africa contributed 8% of **Ranbaxy's** overall revenues in CY07 and we expect a CAGR of 21% in the next three years (vs 13% for the group). **Cipla** (one of the largest generic ARV suppliers) derived 14% of its overall revenues from Africa in 2007. **Aurobindo** derived about 25% from Africa in 2007; we expect this to increase to 30% by FY10. London-listed **Hikma** derived an estimated 18% of group revenues from Africa in 2007. **Aspen** is the largest SA-listed generics producer: in 2007, 75% of revenues come from SA, 5% from Other Africa and the rest from Australia and Latin America.

**(7) Financials**

For the **financial sector**, Africa poses a fairly challenging environment. Credit to the private sector (24%) is low not just because GDP per capita is low but because the region generally suffers poor credit information and ill-defined property rights. As the IMF points out, enforcing a commercial contract through the courts is more difficult in sub-Saharan Africa than most other places in the world: on average, creditors must go through 35 steps and wait 15 months before receiving payment. The incentives generated by the HIPC (Heavily Indebted Poor Countries) and MDRI debt relief schemes have meant moving ahead with reforms to assist in the growth of the private sector (including banking) in some countries. However, the reforms are far from uniform and progress is patchy. In our view, it is a case of identifying countries that are taking significant steps to address institutional shortfalls. Egypt, Nigeria, Ghana, South Africa and Botswana stand out. With this background, it is not surprising that international exposure to African banking is lower than it is for other sectors.

**Barclays** offer one of the largest exposures to Africa (following the takeover of ABSA in 2005, just under 10% of overall earnings come from African operations). Around 6% of **Standard Chartered** earnings currently come from Africa, but c.75% of that comes from wholesale rather than consumer business, which has benefited from increased Asia/African trade flows. **Santander** has a 14.6% stake in Atijari Wafa Bank (Morocco), but the contribution is negligible at the corporate level. The ex-Portuguese colonies (Angola, Mozambique) both contribute to the bottom line of the Portuguese banks. For **BPI,** Angola represented 20% of net income in 2007. The company owns the largest bank in the country, with a 30% market share (earnings grew 60% last year). For **BES,** net income from Angolan operations represented 3.5% of the total in 2007. **BCP** has the largest bank in Mozambique, which accounted for 5% of group earnings in 2007. By far the greatest exposure investors can find to Africa through the SA banks is **Standard Bank**, present in 15 African countries, with takeovers in Nigeria and Kenya recently completed.

**(8) Consumer goods**

Higher GDP per capita for the average African consumer is translating into better sales for various internationally listed consumer goods providers, although at this point we feel that growth in Africa is probably more about investment than rapidly growing consumption. Indeed, one added consideration at present is that rising food prices is obviously a particular drain on resources for low-income groups given the large share of expenditure on food in income.

However, in terms of a growing consumer, within the beverage sector, Africa accounted for c.40% of **SABMiller**'s sales, 11% for **Heineken** and a smaller proportion (<5%) for **Diageo** in 2007. Africa accounted for 4–5% of revenues and about 5% of operating profit at **Coca-Cola** (last quarter Coke singled out South Africa [+9% volumes] and Nigeria specifically as great performers).

The main international operator in the tobacco sector in Africa is **British American Tobacco** (BAT). BAT has cornered 90% market share in South Africa. South Africa and the Middle East contributed 16% to BAT's mid-year profit in 2007. With the acquisition of Altadis, **Imperial Tobacco** also has exposure to Morocco. Along with its majority stake in Tobaccor (the second-biggest tobacco manufacturer and distributor in sub-Saharan Africa) Africa made up c.5% of sales at Imperial Tobacco in 2007.

In the household goods sector, **PZ Cussons** offers the greatest exposure to Africa (42% of sales and 40% of operating profit in 2007). Within autos, many of the major European car manufacturers (**Mercedes, BMW, Audi**) retail and assemble their product lines in Africa, but the contribution to the bottom line is minimal. More meaningful African exposure is via the Asian car manufacturers. We estimate **Toyota** generated 3–5% of its total profits from Africa in 2007A and this should steadily increase (we forecast 10–20% growth p.a. from Africa over the next few years). **Isuzu Motors** has enjoyed revenue growth in excess of 25% to Africa in recent years: African sales accounted for c.16% of total in 2007. **Tata Motors'** presence in South Africa has been expanding rapidly: Africa accounts for c.3.5% of group revenues in 2007.

# Stock picks: The Credit Suisse Africa 20

We are highlighting 20 stocks that (a) we expect to benefit from strong African growth and/or (b) are Outperform or Neutral rated by Credit Suisse/Credit Suisse Standard Securities analysts.

The 20 stocks are presented in Figure 1 and are sorted according to exposure to Africa.

**Figure 1: Credit Suisse Africa 20**

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E PE | 2008E EV/EBITDA |
|---|---|---|---|---|---|---|---|---|
| EQN.AX | Equinox | Canada/Australia | Cu and uranium in Zambia | 97% | O | 2,597 | 16.2 | 11.5 |
| ILVJ.J | Illovo Sugar | Jburg | The largest sugar producer in Africa, operates in 6 African markets | >90% | N | 1,326 | 20.8 | 7.8 |
| SOLJ.J | Sasol | Jburg | Around 90% of revenues are generated through the sale of oil and chemical | 90% | N | 30,771 | 11.6 | 8.3 |
| MTNJ.J | Mtn Group | Jburg | Operations in 16 African countries, dominant in Nigerian mobile (45% mkt share) and the main competition to Vodacom in SA | 87% | O | 31,751 | 16.0 | 7.6 |
| ORTEq.L | Orascom | Egypt | Operates in Tunisia, Algeria and Egypt. 60% of revenues are from North Africa | 60% | O | 16,568 | 17.4 | 7.0 |
| TLW.L | Tullow Oil | London | 58% of revenues from Africa | 58% | O | 9,104 | 20.2 | 9.0 |
| ZAIN.KW | Zain Group | Kuwait | Zain operates in 14 sub-Saharan African countries. African revenues account for 47% of the group total. | 47% | N | 29,652 | 19.4 | 10.7 |
| SAB.L | Sabmiller | London | Dominant brewer and soft-drinks provider in South Africa with exposure to sub-Saharan Africa as well as Colombia, eastern Europe and parts of Western Europe. Africa accounts for c.40% of sales | 40% | O | 33,144 | 16.4 | 9.7 |
| ENI.MI | Eni | Milan | 49% reserves in Africa | 28% | N | 138,430 | 7.9 | 3.6 |
| MRO | Marathon Oil | NY | 46% reserves in Africa | 28% | O | 33,655 | 8.7 | 4.6 |
| CFM.L | CAMEC | London | Cu and coal in DRC, coal in Mozambique (holds one of the largest exploration concession areas in Mozambique) | 27% | O | 1,352 | 27.6 | 19.4 |
| ARBN.BO | Aurobindo | India | Aurobindo gets about 25% from Africa mainly from sales of ARV formulations; we expect this to increase to 30% by FY10E | 25% | O | 392 | 7.0 | 8.5 |
| TOTF.PA | Total | Paris | 29% reserves in Africa | 21% | N | 181,365 | 8.7 | 3.9 |
| HES | Hess Corp | NY | 26% reserves in Africa | 21% | O | 29,931 | 11.9 | 4.7 |
| VIV.PA | Vivendi | Paris | 20% of 2007E EBITA comes from Maroc Telecom (which operates in Morocco, Gabon and Burkina Faso) | 20% | O | 47,164 | 12.3 | 7.1 |
| TAVHL.IS | Tav Havalimanlari | Turkey | Operates an airport in Tunisia as of Jan 08 and is building another. We expect these airports to generate (including retail and food) c.19% of total revenues in 2008. | 19% | O | 1,469 | 16.7 | 5.2 |
| HIK.L | Hikma | London | Multinational generics player. c.18% of group revenues come from Africa | 18% | N | 1,715 | 22.1 | 11.4 |
| 7202 | Isuzu Motors | Tokyo | Vehicle assembly and sales, African division growing at c.25% in recent years | 16% | O | 8,559 | 9.2 | 6.9 |
| CIPL.BO | Cipla | India | Africa accounts for 28% of Cipla's exports and 14% of its overall revenues; the company is one of the largest generic ARV suppliers | 14% | N | 4,263 | 24.1 | 19.5 |
| ALSO.PA | Alstom | Paris | 10–15% of total order intake in the past 12 months, power shortages in Africa bode well for future orders. | 12% | O | 30,064 | 25.6 | 13.5 |

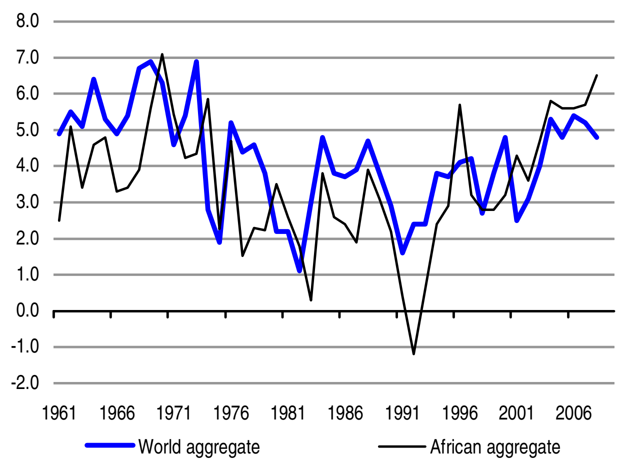
*Source: Credit Suisse estimates and research, CSSS estimates and research for Illovo Sugar, MTN Group, Sasol*

# Growth in Africa

Conventional wisdom on growth in Africa has long been negative. The consensus has been that the region is destined to remain poor due to its geography (characterised by arid areas with poor soils or disease burden), fractionalisation and corruption.

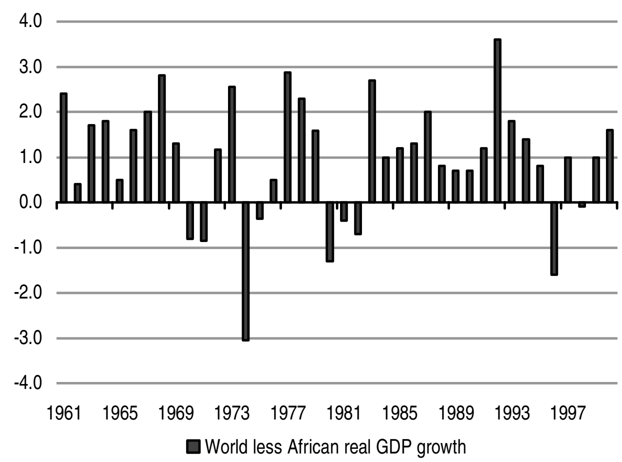
In relative GDP terms, Africa has faired badly over the long term. As we illustrate in Figure 2 and Figure 3, African real GDP growth has averaged 3.2% p.a. between 1961 and 2001 compared to the global growth rate of 4.1%.

**Figure 2: Global and African real GDP growth**




*Source: World Bank, IMF*

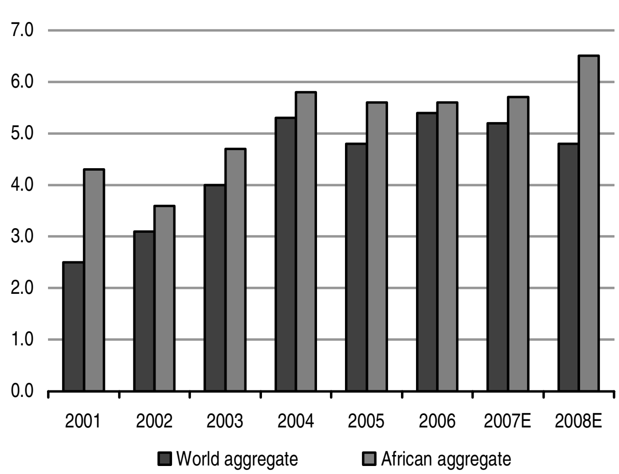
**Figure 3: Global less African real GDP growth**




*Source: World Bank, IMF*

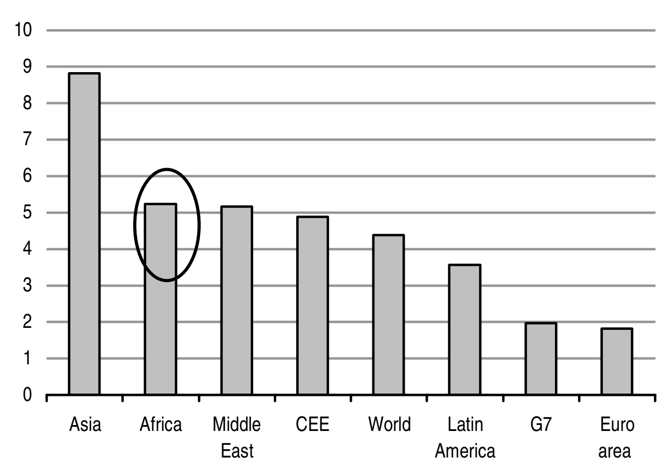
More recently (2002–07), Africa has enjoyed much healthier growth rates in absolute and relative terms. The aggregate regional GDP growth looks likely to have topped 5% for the fourth year in a row in 2007E. Compared to other global economic regions, average growth in Africa is second only to Asia in the current decade.

**Figure 4: Global and African real GDP growth**




*Source: World Bank, IMF*

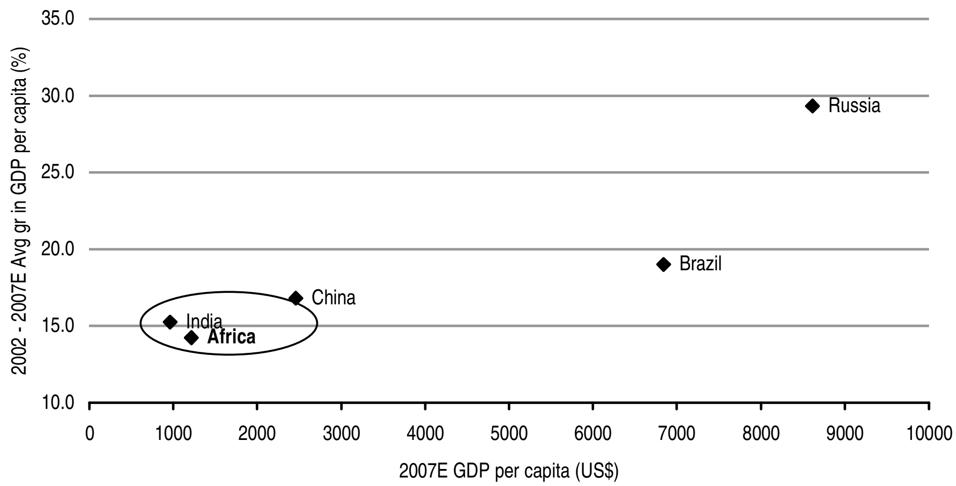
**Figure 5: Average real GDP growth (2002–07E)**




*Source: World Bank, IMF, Credit Suisse research*

Relative to BRICs (Brazil, Russia, India and China), African growth is not quite as strong but is still fairly healthy. GDP per capita growth in Africa in the last five years has averaged 14.2% p.a., compared to India at 15.3% and China at 16.8%.

Figure 6: **GDP per capita and growth in GDP per capita in BRIC and Africa**




*Source: World Bank, IMF, Credit Suisse research*

GDP per capita growth in Africa in the last five years has averaged 14.2% p.a., compared to India at 15.3% and China at 16.8%

Is this a new phase? What indications are there that Africa can sustain growth at these kind of rates and lift itself out of poverty (as East Asia did from the 1960s onwards)?

The spark that has ignited African growth in recent years arguably stems from the significant increase in commodity prices (57% of Africa's exports are fuels; 23% are metals and raw materials as at year end 2006). So far, this is akin to the experience of Africa during the 1960s. African GDP growth averaged 4.6% over the 1960s as the region benefited from the global upturn in commodities. However, growth back then proved hard to sustain as, amongst other things, political conflicts developed, macro policy was unsupportive and institutions were weak. The issue for us now is whether or not the growth this time can prove to be more resilient.

The spark that has ignited African growth in recent years stems from the increase in commodity prices

We consider six factors that arguably determine the sustainability of growth: politics, institutions (legal systems), macro-stability, diversification, health and education. We consider how Africa stacks up on these factors now compared to two benchmarks:

Can the growth be sustained?

(i) As far as the data allow, we contrast the current African situation to conditions prevailing in the 1960s–1970s; and

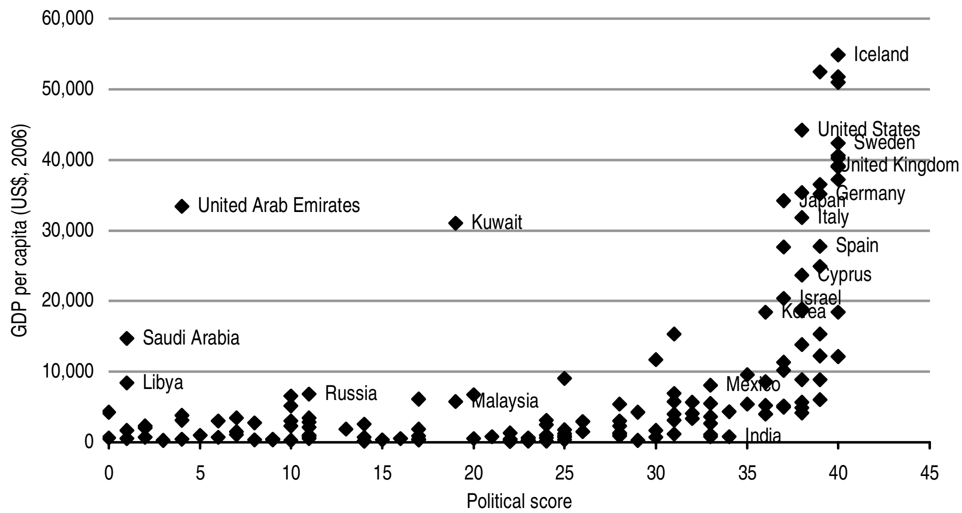
(ii) We compare the current African conditions to those of the East Asian nations 20–30 years ago when this region began a period of sustained economic growth.

The short conclusion is that there is room for optimism but also significant room for improvement. On many parameters Africa stacks up reasonably well compared to the Asian benchmark of 20–30 years ago and is certainly much improved compared to its own historical performance. However, on several key measures (exchange rate valuation, economic and export diversification, and health) there is still a wide gulf between African attainment and international or Asian standards.

**Determinants of growth: (a) Politics**

Markets operating under "political freedom" (usually in the guise of fully functioning democracies) appear, on average, to have delivered and sustained higher rates of GDP per capita than other political systems. We illustrate the point in Figure 7.

**Figure 7: Political freedom vs GDP per capita**




*Source: IMF, Freedom House, Credit Suisse research*

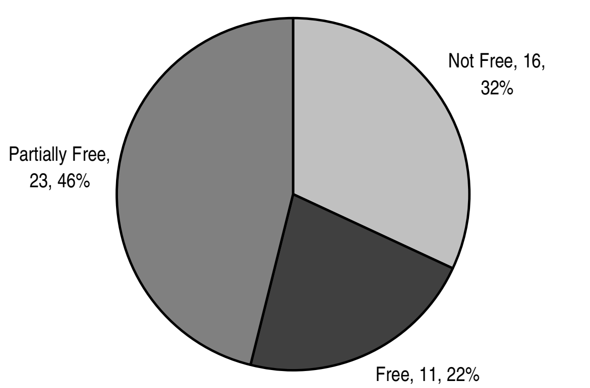
The greater the degree of political freedom, the higher the GDP per capita

Here we have plotted GDP per capita against a "political" score, which is calculated by Freedom House, a non-governmental organisation that tracks democratic processes around the world. The score ranges between 0 and 40, the higher the reading, the greater the degree of political freedom. The data suggest that a high political score is not sufficient, by itself, to deliver high GDP per capita. However, a low political score is almost always associated with low GDP per capita. The few exceptions to this are the oil-rich, sparsely populated countries of the Middle East (UAE, Kuwait and Saudi Arabia).

We note that GDP per capita is probably understated across much of Africa due to the size of the informal economy as well as tax avoidance (which is probably much greater than in developed markets due to the limited banking sector). However, the same criticism of the official statistics can be levelled at several other emerging markets as well.

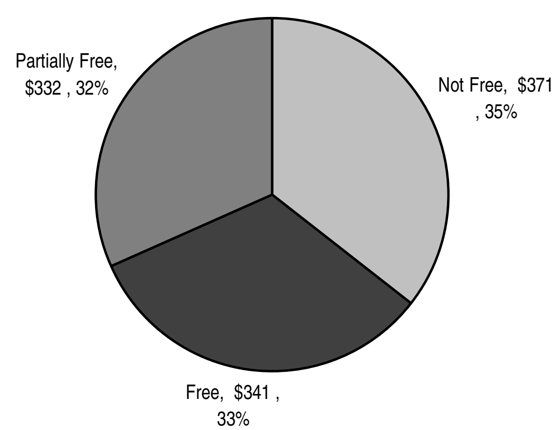
The good news in Africa is that Freedom House now rates 11 of the 50 African nations (accounting for US$341bn 2007E GDP, or 33% of the regional total) as "fully free" political systems; 23 countries are classified as "partly free"; and the remainder as "not free".

**Figure 8: African political freedom: number of countries**




*Source: Freedom House, Credit Suisse research*

**Figure 9: African political freedom: GDP (US$bn)**




*Source: IMF, Freedom House, Credit Suisse research*

Ten years ago, only four countries were classified as “fully free”. As at the end of the 1960s, we estimate that no African countries would have been classified as “fully free”. Appendix 1 tabulates the results by country.

Political freedom is much improved in Africa, but is still a very new concept in several major markets

Political freedom is still a very new concept across much of Africa. It was only on 27 April 1994 that South Africa held its first democratic elections. Other major advances have been much more recent. In January 2005, the Government of Sudan and the Sudan People's Liberation Movement signed a comprehensive peace agreement after more than two years of negotiations. This agreement (between the North and South of Sudan) ended the world's longest-running civil war. Across the border in northern Uganda, the government and the main rebel group (the Lord’s Resistance Army) signed a truce in August 2006 that brought an end to their 18-year conflict (albeit, many Ugandans are still sceptical that the peace deal will last, according to BBC reports). The Intergovernmental Authority on Development (IGAD) has achieved several major breakthroughs in efforts to restore peace to Somalia. In Burundi, the first elections since the start of the civil war were held in mid-2005; a ceasefire was finalised between the government and the last active rebel group in September 2006. The tragedy in Darfur, instability in Cote d'Ivoire and recent violence in Kenya are reminders, nonetheless, that peace can remain very fragile.

Botswana is one example of greater political freedom aiding relative prosperity, particularly when contrasted with DRC

One of the most successful cases has been Botswana. Since gaining independence from the British Commonwealth on 30 September 1966, Botswana has held democratic elections every five years (albeit the party platform has been dominated by the Botswana Democratic Party). The President of Botswana is both head of state and head of government. Legislative power is vested in both the government and the Parliament of Botswana. The judiciary is independent of the executive and the legislature. Botswana now has one of the highest GDP per capita across the continent (US$7,269 2007E, according to the IMF), which contrasts sharply with DRC (US$161 2007E, on IMF data), which is equally imbued with ample natural resources (especially diamonds) but has been blighted by political turmoil for much of the last 50 years.

### (b) Institutions

Weak economic institutions do not prevent growth but are associated with the derailment of growth. Good leaders can make a difference for a while, but when they leave office, countries with weak institutions will often suffer a relapse. Why? Because (i) weak institutions are characterised by high levels of income inequality, which tends to leave a country less flexible in the face of external shocks, and (ii) weak institutions propagate a greater propensity for conflict or civil strife.

Strong institutions create effective property rights and promote investment

On the other hand, strong institutions create effective property rights for most people, including protection against expropriation by the state and enforceable contracts between private parties. In other words, strong institutions foster a healthy environment that promotes higher levels of private sector investment.

“Institutional risk” is not easy to measure, but the IMF has developed a system for gauging relative strength. Figure 10 shows the broad results for Africa on average and the developing Asian markets as they looked just over 20 years ago on four measures of institutional risk.

**Figure 10: Survey of economic institutional risk**

| | | Economic risk | Investment risk | Control of corruption | Costs of entry |
|---|---|---|---|---|---|
| | | Score out of 50, higher score = lower risk | Score out of 12, higher score = lower risk | Score out of 6, higher score = lower corruption | % per capita income |
| African mkts | with GDP gr per capita >2.0% over the last 10 yrs | 31.7 | 8.0 | 2.5 | 123 |
| African mkts | with GDP gr per capita <2.0% over the last 10 yrs | 29.9 | 7.2 | 2.1 | 154 |
| Developing Asia | as per 1984 | 31.7 | 7.1 | 3.4 | 25 |

*Source: World Bank, IMF*

"Economic risk" is a composite indicator that contains the leading dimensions of economic institutions, such as corruption and rule of law. This score is given out of 50: the higher the score, the lower the risk. "Investment risk" is an alternative measure: this is a score out of 12. Similarly, the higher the score, the lower the risk. We also consider a gauge of corruption by using the Kaufmann-Kraay index, which allocates a score out of six: the higher the score, the lower the level of corruption. Finally, we look at one measure of the cost of doing business in the form of the cost of entry, i.e. the cost of registering a new business relative to annual per capita income.

On the whole, Africa stacks up relatively well compared to the historical picture for Asia: economic and investment risk are in line, and corruption in Africa is only slightly higher. Costs of entry, however, are a factor that probably warrant significant improvement. Registering a new business in Africa is likely to cost well in excess of 100% of annual per capita income compared to just 25% in Asia in the mid-1980s.

On the whole, Africa measures relatively well compared to the historical picture for Asia

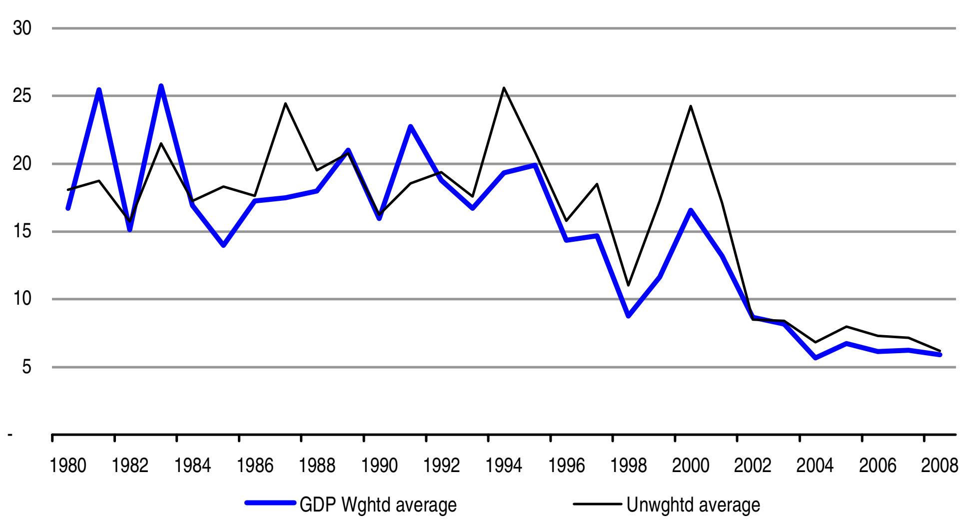
Appendix 2 gives the full results of economic institutional risk by country.

**(c) Macro policy**

Stable macro-economic policy is another typical pre-condition (although not necessarily a determinant) of higher average GDP per capita. Gauging the success of macro-policy is made reasonably straightforward by considering a basic set of parameters:

First, we consider inflation. In aggregate, Africa has made significant advances in controlling inflation. This is particularly important for a region where income disparities are still relatively acute given that high inflation usually serves to accentuate the real differences between the rich (who own inflation hedges in the form of real assets) and the poor (who do not). As we illustrate in Figure 11, African inflation has fallen from 18.8%, on average (GDP weighted), in the 1980s to 6.2% estimated by the IMF for 2008.

**Figure 11: Aggregate African inflation (annual average, % change y/y)**




African inflation has fallen from 18.8% on average (GDP weighted) in the 1980s to 6.2% for 2008E

*Source: IMF, Credit Suisse research*
*Note : Zimbabwe excluded from 2000 onward. Angola and DRC excluded between 1991 and 1996*

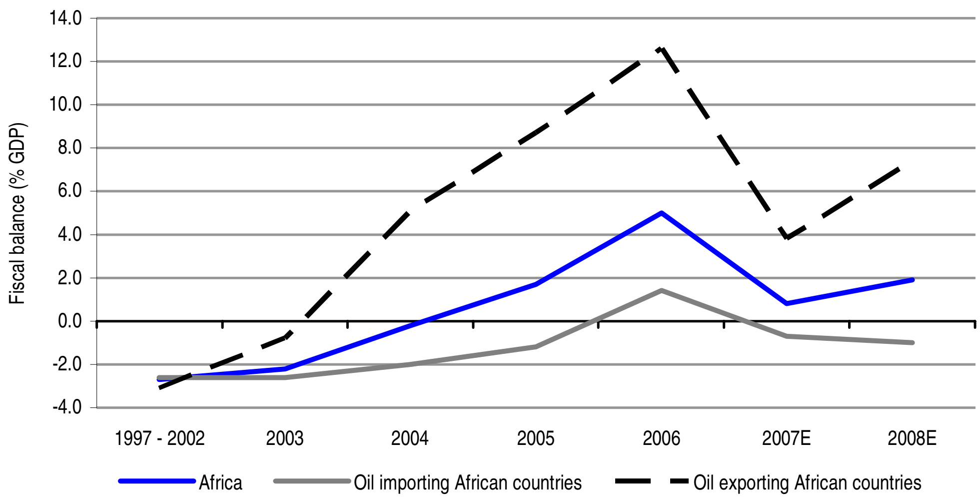
This compares favourably with the average 26% rate of inflation for Africa in 1970 and is roughly in line with the 7.2% average rate of inflation that Asia experienced over the 1970s. At the country level, there are few outliers: 38 out of 50 African markets reported average CPI of less than 10% in 2007. In 1980, only 16 out of 50 African markets had inflation below 10%. (Of course, inflation falling below 10% has typically been associated with equity market re-ratings.)

This compares favourably with the average 26% rate of inflation for Africa in 1970

Second, we look at the fiscal accounts. In aggregate, the African fiscal position has improved from a 2.7% of GDP deficit at the start of the decade to a 1.9% surplus estimated for this year by the IMF. The key driver has been better revenues for the oil exporting countries . . .

In aggregate, the African fiscal position has improved from a 2.7% of GDP deficit at the start of the decade to a 1.9% surplus estimated by the IMF for this year

Figure 12: **Aggregate African fiscal balance (% GDP)**

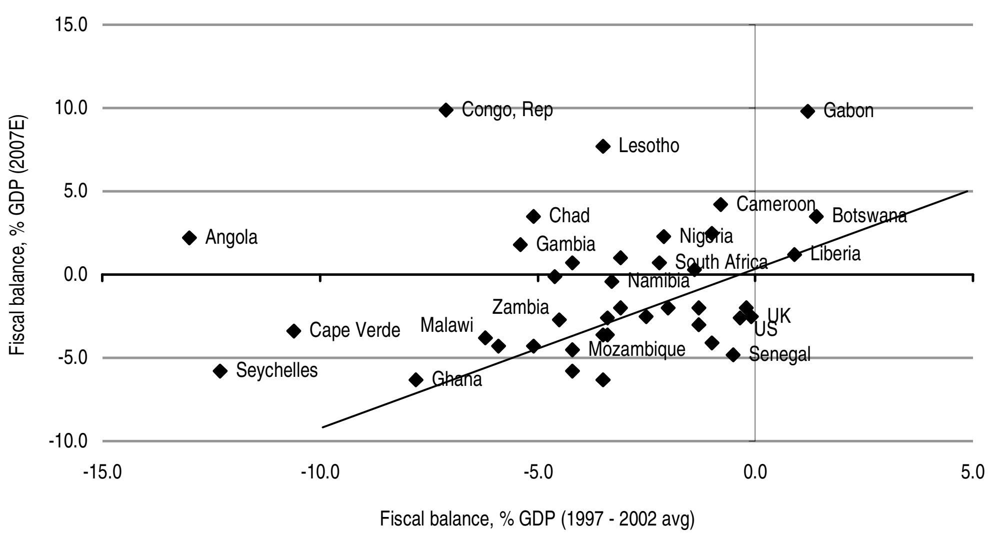



*Source: IMF, Credit Suisse research*

. . . but even disaggregating the data down to the country level, we can see that in the majority of cases, there has generally been some improvement in the fiscal position. 30 out of 44 African markets (where data is available) have improved their fiscal position compared to turn of the century.

30 out of 44 African markets (where data is available) have improved their fiscal position compared to turn of the century

Figure 13: **African countries: fiscal balance (as % GDP)**




*Source: IMF, Credit Suisse research*

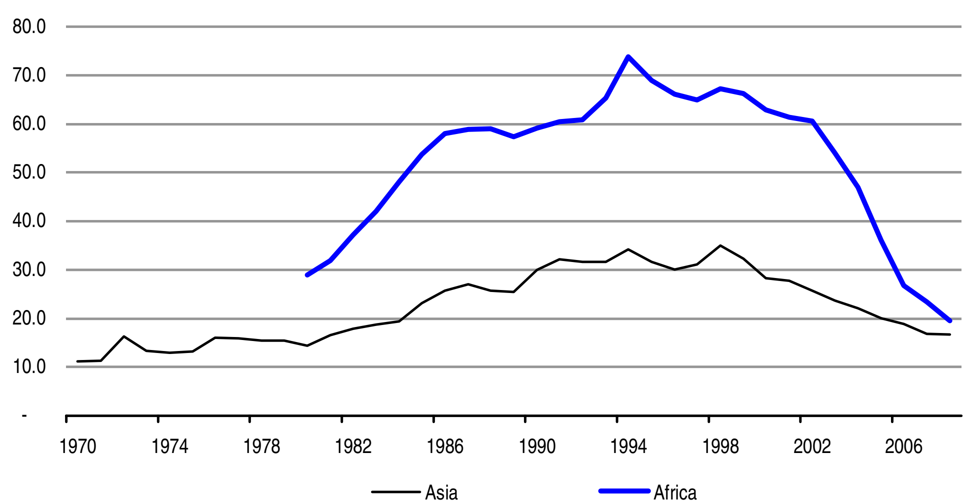
This is, of course, in sharp contrast to developed markets. The US fiscal position as a proportion of GDP has moved from a 0.4% deficit on average between 1997 and 2002 to a 2.6% deficit in 2007. The UK has seen a very similar rate of deterioration.

Fiscal accounts in the US and UK meanwhile have been deteriorating

Third, on external debt to GDP ratios, Africa has made very significant progress in aggregate over the last five years. The IMF projects that Africa's external debt will fall to 23% of GDP in 2007, a three-decade low, thanks to strong growth, comprehensive debt relief, and debt repayment by Angola, Malawi, Nigeria and others. Debt relief has been delivered through the enhanced Heavily Indebted Poor Countries (HIPC) initiative and the Multilateral Debt Relief Initiative (MDRI), and the Paris Club agreement with Nigeria (which meant a total debt write-off of US$18bn).

The HIPC initiative was launched in 1996 by the IMF and World Bank. It entails coordinated action from the international financial community to reduce external debt to sustainable levels in the world's poorest countries. In return for the debt write-off, HIPCs have had to deliver on a package of reform and policy programmes under the guidance of the IMF and IDA (International Development Association). So far, debt reduction packages have been approved for 32 countries, 26 of them in Africa, providing US$46bn in debt-service relief over time. In 2005, the HIPC initiative was supplemented by the Multilateral Debt Relief Initiative (MDRI). The MDRI allows for debt write-offs owed to three multilateral institutions—the IMF, IDA and the African Development Fund (AfDF). As of December 2007, US$3.3bn of the estimated US$4.1bn of MDRI relief had been delivered, mostly to African nations (US$2.6bn in total).

Figure 14: **Aggregate African and Asian external debt (% GDP)**




*Source: IMF, Credit Suisse research*

External debt (largely thanks to the efforts of the HIPC, MDRI and Paris Club) has fallen by US$73bn over the past three years to 20% of GDP currently

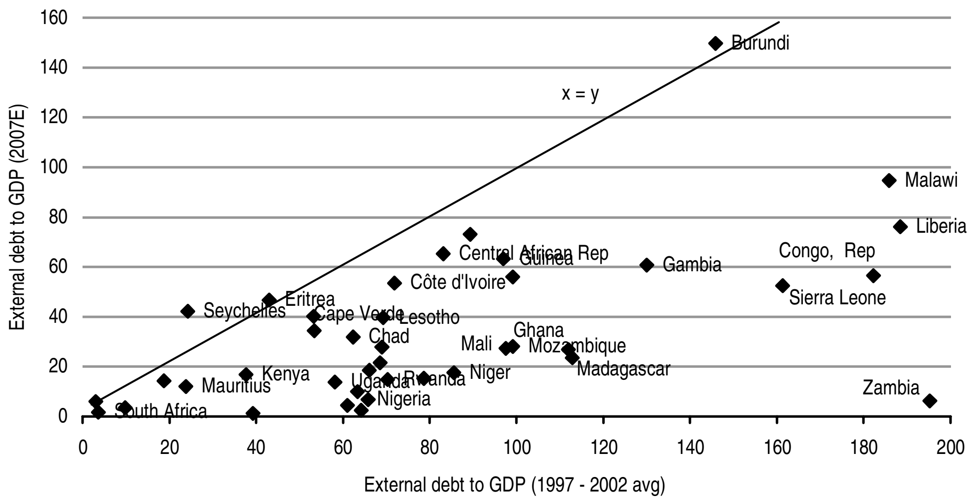
The extent of debt repayment and write-offs has brought the aggregate African external debt to GDP ratio (19.6% 2008 estimated by the IMF) down to levels similar to Asia today, although still slightly higher than the 14% that Asia averaged in the 1970s.

Africa has shifted from a completely unsustainable debt path to a much more manageable situation

We can work out the net aggregate benefit in debt reduction: the annual cost of external debt of 74% of GDP at a real rate of 10% in 1994 was equivalent to 7.4% of GDP. Since average GDP growth in the 1990s was just 2.2%, this put Africa on a completely unsustainable debt path. Reducing external debt to GDP to just 20% (2008E) at a real rate of 7% means the cost is 1.4% of GDP now (well below the current or recent average rate of GDP growth).

At the country level, debt ratios (with the exception of the Seychelles) have declined across the board. However, several countries are still burdened with high debt levels (Guinea-Bissau, Burundi, São Tomé and Príncipe).

**Figure 15: African countries: external debt to GDP**

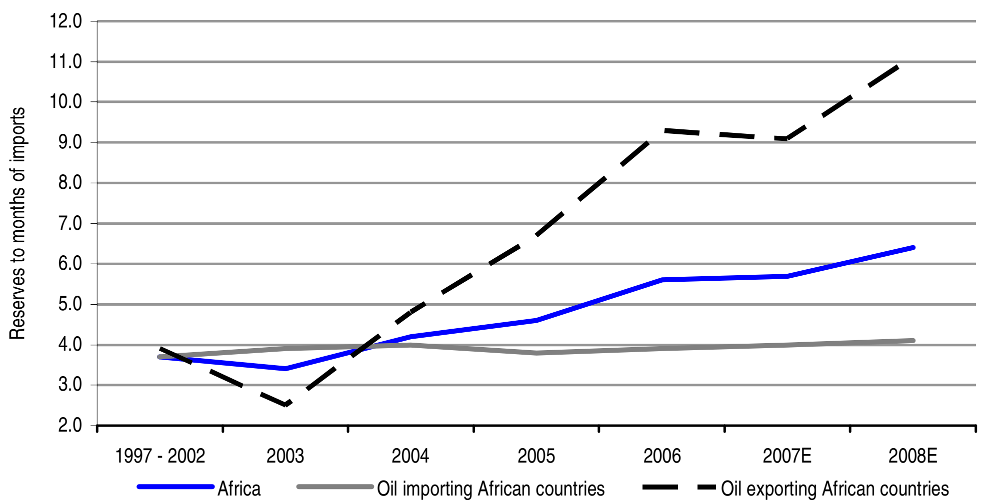



*Source: IMF, Credit Suisse research*

At the country level, debt ratios (with the exception of the Seychelles) have declined across the board

Fourth, the corollary of this decline in external debt has been a build-up in international reserves. Reserves relative to imports have increased to just over six months of import cover in aggregate (a level that the IMF considers adequate).

**Figure 16: Africa: Reserves to months of imports**

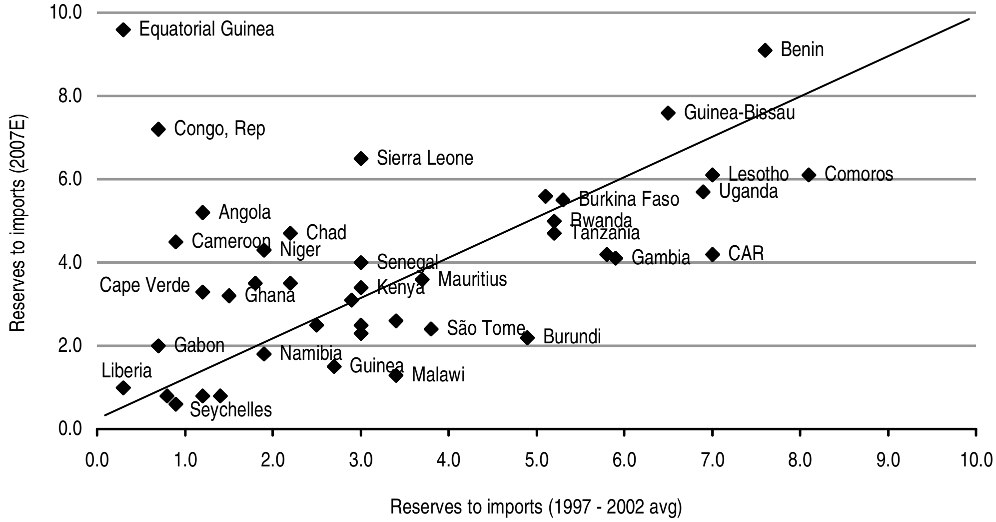



*Source: IMF, Credit Suisse research*

Reserves have risen from 3.7 months of imports at the start of the decade to over six months 2008E

However, the country-level data again suggests there are some key areas of weakness, notably the Seychelles, DRC, Eritrea and Zimbabwe.

Figure 17: **African countries: Reserves to months of imports**

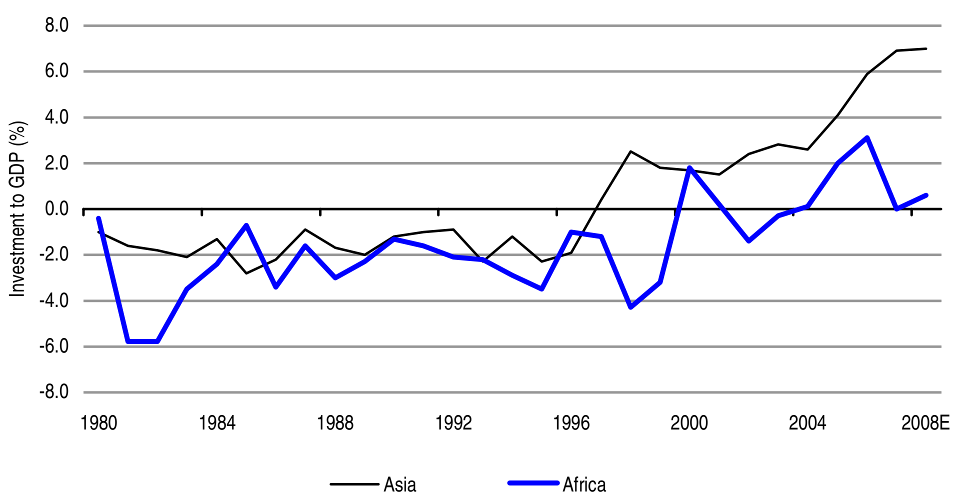



*Source: IMF estimates, Credit Suisse research*

Fifth, the regional current account position has also shown considerable improvement over the last seven years. Over the 1980s and 1990s, Africa averaged a deficit of 2.6% of GDP. We calculate that the African current account was in balance in 2007, which is roughly in line with the Asian picture of the 1970s.

Figure 18: **Aggregate African and Asian current account balance (% GDP)**

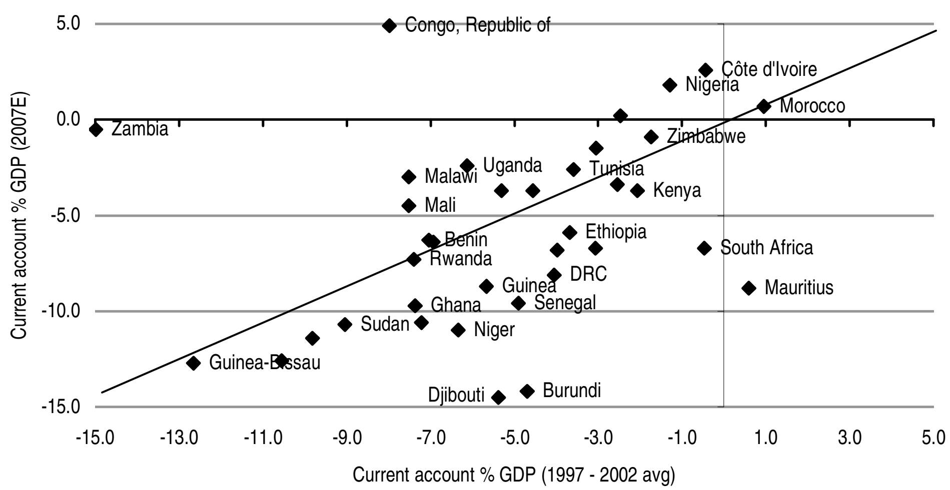
Over the 1980s and 1990s, Africa averaged a current account deficit of 2.6% of GDP, but is roughly in balance on 2008E




*Source: IMF, Credit Suisse research*

However, the aggregate masks considerable divergence in performance at the national level. The extremes are a 20.6% of GDP current account surplus estimated for 2007 by the IMF for Botswana and a 42% deficit in the case of São Tomé and Príncipe. This potentially leaves key areas of the continent very vulnerable to external shocks.

**Figure 19: African countries: current account balance as % GDP**



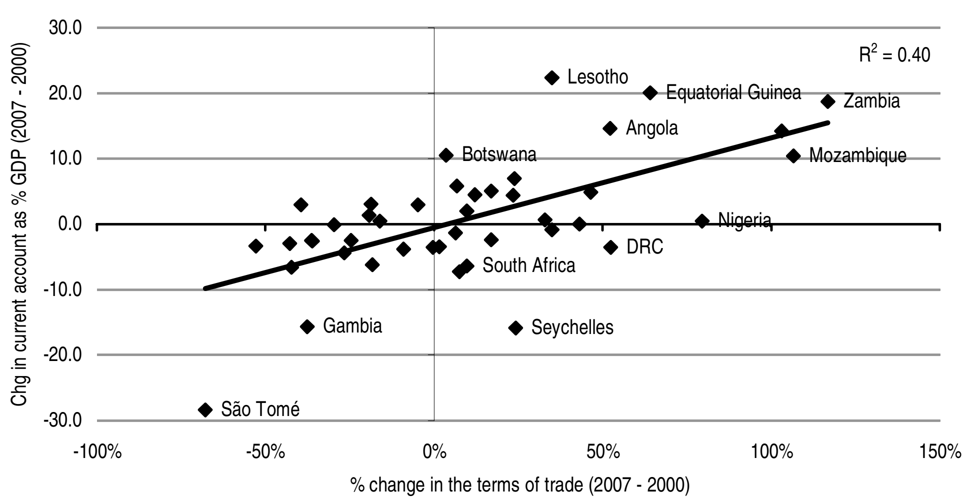

*Source: IMF, Credit Suisse research*

The aggregate African current account may have improved but there has been very significant divergence in performance at the country level

One of the key drivers of this divergence in current account performance has been the terms of trade. Oil and metal exporters have generally improved their current account positions; oil importers have been less fortunate. As we illustrate in Figure 20, there is a reasonable fit between the change in the current account position and the change in the terms of trade index for each country over the last seven years.

**Figure 20: African countries: terms of trade drives current account performance**

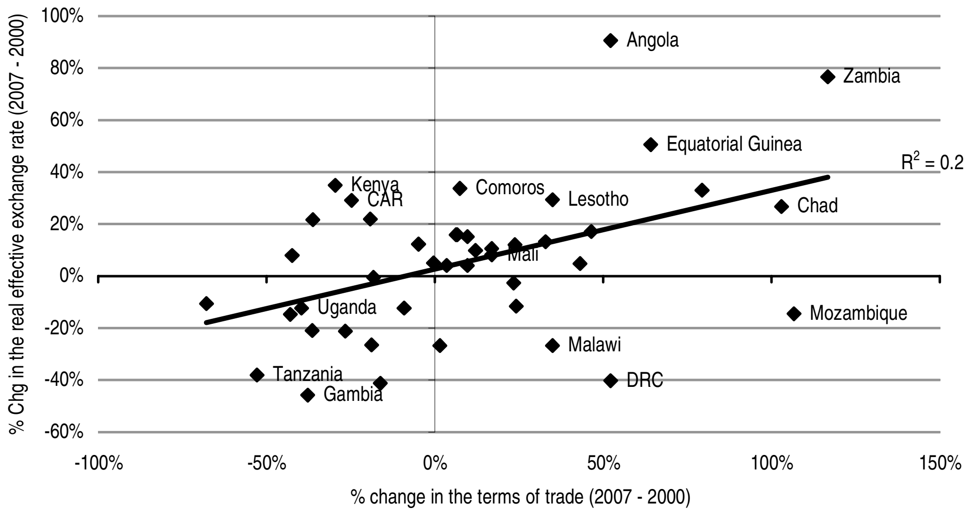
A key driver of current account performance has been the terms of trade




*Source: IMF, Credit Suisse research*

In some respects, this is the curse of economies dominated by natural resources: as commodity prices rise, fiscal and current accounts improve, which reduces the incentive for government to work towards improving institutions. In addition, significant shifts in the terms of trade (as Africa has experienced over the last seven years) typically incurs a commensurate shift in the real effective exchange rate.

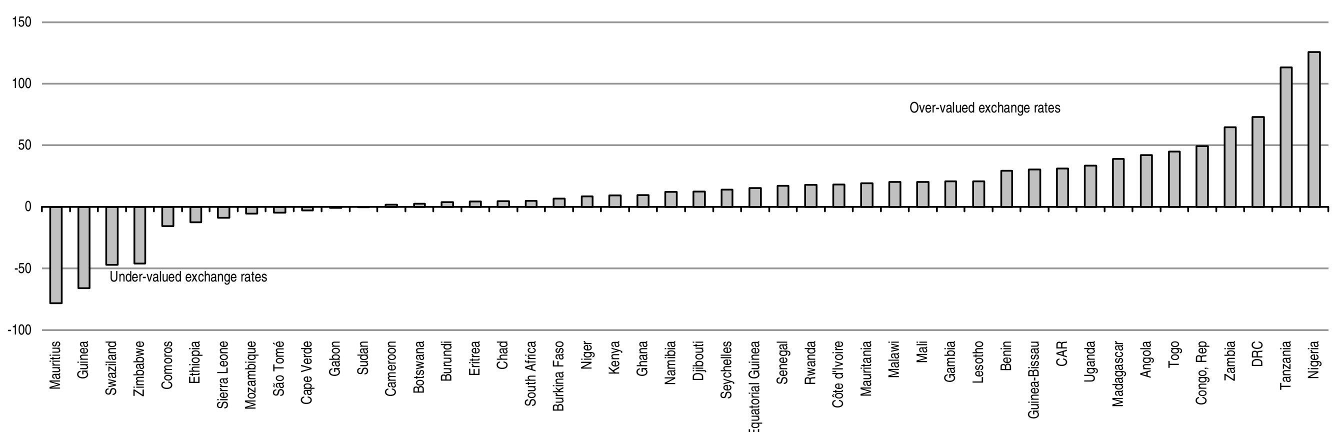
**Figure 21: African countries: terms of trade drives real effective exchange rates**




*Source: IMF, Credit Suisse research*

In a recent survey, the IMF found that 34 out of 46 African countries (where the data were sufficient) were suffering exchange rate over-valuation.

**Figure 22: Exchange rate valuation***




*Source: IMF*

** Exchange rate valuation defined as the percentage difference between the predicted and actual exchange rate as determined by the country's per capita GDP in PPP terms relative to the US. This captures the Balassa-Samuelson effect, which predicts that as countries grow richer their real exchange rate should appreciate. Data refers to 2006.*

The key risk is that overvalued exchange rates choke off growth in the non-resource, tradable goods sector. This makes it harder to spread profits throughout the economy or draws resources towards imports, which eventually proves unsustainable. It is notable that almost all the East Asian and other success stories avoided any episode of significant over-valuation during the entire period of sustained growth.

**(d) Export performance**

This brings us round to a look at trends in Africa's economic diversification. We look in more detail at this from a micro perspective in the following sections discussing the sectoral outlook. Below, we present the macro data. Generally, the picture is not that encouraging.

First, we note that Africa has suffered a declining share of world trade over the last 35 years. From 4% over the 1970s and at the start of the 1980s, Africa's share in global trade had dropped to approximately 2.5% by 2007.

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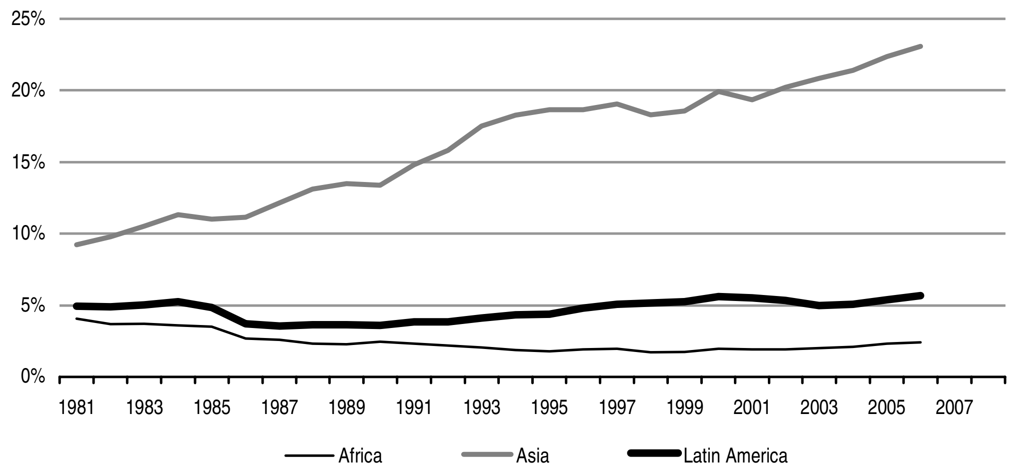
**Figure 23: Regional exports as % total world exports**

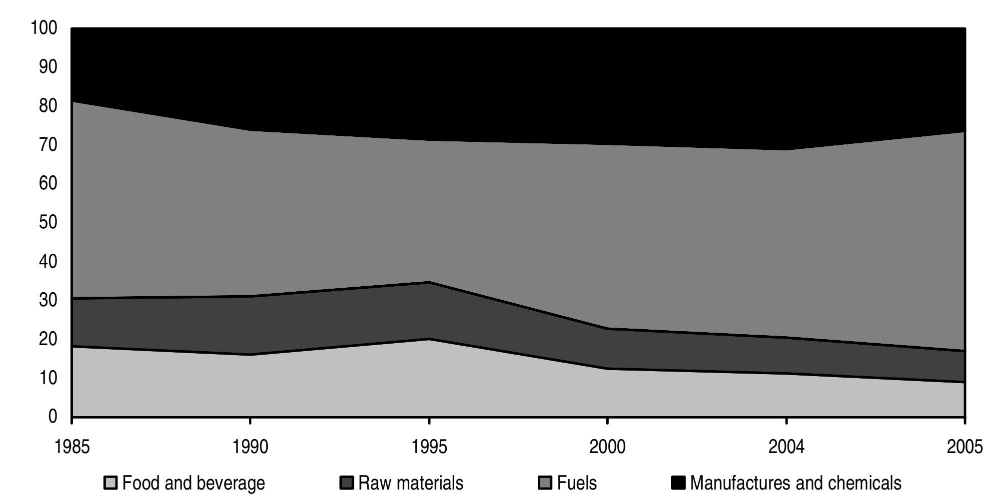



*Source: IMF, Direction of Trade Statistics, Credit Suisse research*

Second, looking at a breakdown of the type of exports it is clear that there has been little by way of diversification. Fuel exports made up 51% of total African exports in 1985 and still accounted for 57% of exports in 2005.

Fuel exports made up 51% of total African exports in 1985 and still accounted for 57% of exports in 2005

**Figure 24: Sectoral composition of African exports (% of total)**




*Source: IMF, UN Comtrade, Credit Suisse research*

**Figure 25: Annualised growth in African exports**

| | 1985–1990 | 1990–95 | 1995–2000 | 2000–04 | 2004–05 |
|---|---|---|---|---|---|
| Food and beverage | 1.4 | 6.5 | -0.7 | 9.1 | -1.8 |
| Raw materials | 8.1 | 1.3 | 1.8 | 9.1 | 4.8 |
| Fuels | 0.6 | -1.2 | 15.0 | 12.4 | 42.4 |
| Manufactures and chemicals | 11.2 | 3.9 | 10.0 | 13.2 | 3.9 |
| **Total** | **4.0** | **1.9** | **9.2** | **11.9** | **22.0** |

*Source: IMF, UN Comtrade, Credit Suisse research*

Over the last 20 years, African export growth has averaged 7% p.a. (compared to 9% growth in world exports). 59% of African export growth has been driven by greater fuel exports. "Manufacturing" has accounted for another 29% of the growth, but given the definition of "manufactured" products, we are sceptical that this represents much in the way of export diversification. As we show in Figure 26, growth in African manufactured products is dominated by processed raw materials with very limited value-added.

59% of the growth in African total exports since 1985 has come from fuel

Figure 26: **African manufactured export products (% of total non-fuel exports)**

| | 1985 | 1995 | 2005 |
|---|---|---|---|
| Pearls and precious stones | 3.9 | 10.6 | 14.1 |
| Silver and platinum | 4.8 | 4.9 | 8.4 |
| Iron blocks | 3.6 | 4.0 | 4.7 |
| Aluminium | 0.8 | 1.6 | 4.1 |
| Clothing | 1.3 | 4.0 | 3.8 |
| Vehicles | 0.2 | 0.8 | 3.6 |
| Non-electrical machinery | 0.1 | 0.8 | 2.5 |
| Copper | 7.7 | 3.6 | 1.6 |
| Iron sheets | 0.8 | 0.6 | 1.4 |
| Ships | 1.7 | 0.4 | 1.3 |
| Wood boards | 0.7 | 1.1 | 1.3 |
| Inorganic chemicals | 0.8 | 0.6 | 1.1 |
| Iron (pre-shaped) | 0.4 | 0.9 | 1.0 |
| | **26.8** | **33.9** | **48.9** |

*Source: IMF, UN Comtrade, Credit Suisse research*

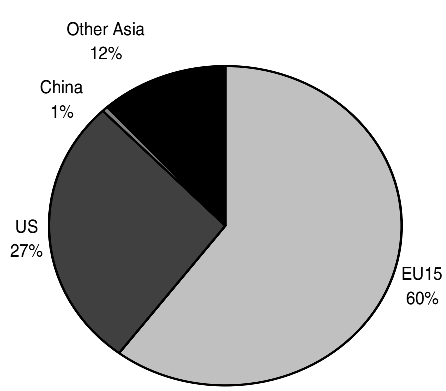
Even the limited growth in African manufactured products has been dominated by processed raw materials with very limited value-added

Diamonds are shipped from Southern Africa to Europe and India for grading and polishing. For instance, in Botswana (one of the world's biggest diamond producers), cut diamonds represented less than 1% of total diamond exports in 2006. African oil is exported in raw form for refining in another country and then re-imported for retail sale. Angola, for instance, only has capacity to refine 4.9% of its total oil production; Gabon can refine only 6.8% of its total oil production. Nigeria is refining just 1% of its oil currently. The Nigerian government expects the two refineries that have been out of commission to start refining within the next two months, which we estimate will increase refining to 14% of total production. *This clearly means that the most straightforward move for Africa is vertical integration in resource industries.*

From a very low base, the most straightforward move for Africa is vertical integration in resource industries

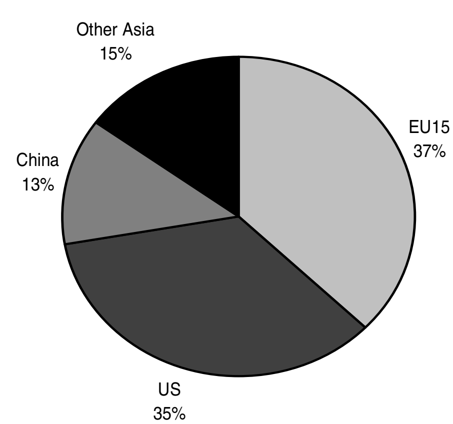
Finally, we note that although there is little evidence of export diversification, African exports are much more widely disseminated now. African exports to developing markets have doubled since 1990. About a quarter of African exports now go to Asia.

Figure 27: **1990: African export destinations**




*Source: UN Comtrade, IMF*

Figure 28: **2005: African export destinations**




*Source: UN Comtrade, IMF*

The bulk of Asian demand for African exports is for fuel and raw materials. Growth in food and beverages or manufactured products to Asia has been very limited.

The bulk of Asian demand for African exports is for fuel and raw materials

**Figure 29: Export types by destination (% of total category)**

| | EU15 | US | China | Other Asia | Other markets |
|---|---|---|---|---|---|
| **Food and beverage** | | | | | |
| 1990 | 78.9 | 7.6 | 0.7 | 10.9 | 1.9 |
| 2005 | 77.5 | 9.9 | 1.8 | 8.3 | 2.5 |
| **Raw materials** | | | | | |
| 1990 | 69.6 | 8.2 | 2.6 | 13.2 | 6.4 |
| 2005 | 48.6 | 7.3 | 25.5 | 10.6 | 8.0 |
| **Fuels** | | | | | |
| 1990 | 48.6 | 48.6 | 0.0 | 2.8 | 0.0 |
| 2005 | 21.5 | 52.0 | 16.3 | 5.8 | 4.4 |
| **Manufactures and chemicals** | | | | | |
| 1990 | 63.8 | 17.1 | 0.4 | 15.2 | 3.5 |
| 2005 | 52.4 | 19.3 | 5.7 | 17.7 | 4.9 |

*Source: UN Comtrade, IMF*

EBA and AGOA have paved the way for greater non-resource exports

What next? We think there is scope for some optimism. EBA (Everything But Arms) and AGOA (African Growth and Opportunities Act) have paved the way for greater non-resource exports. EBA is an EU initiative under which all imports (apart from armaments) to the EU from the Least Developed Countries are duty free and quota free. EBA entered into force on 5 March 2001. There are transitional arrangements for sugar and rice until July 2009 and September 2009, respectively.

AGOA is US legislation approved by Congress in May 2000 that exempts the eligible countries from US import duties and quotas. The legislation authorises the US President to determine which sub-Saharan African countries are eligible for AGOA on an annual basis. Currently, there are 38 AGOA-eligible countries. Initially, AGOA was set to expire in 2008, but Congress passed the AGOA Acceleration Act of 2004, which extended the legislation to 2015. A special provision for apparel, which permits countries to use foreign fabric in their garment exports, was due to expire in September 2007 but has been extended through to 2012.

AGOA has been a boost for the textile industry

AGOA has resulted in limited success in some countries. Notably, the textile industry has benefited in Mauritius, Madagascar, Lesotho and Swaziland (despite the dismantling of the Multi Fibre Agreement's world quota regime for textile and apparel trade in January 2005, which gave China much broader access to international textile demand).

Agriculture has significant potential but significant investment is required to boost output

In theory, the EBA and AGOA initiatives should facilitate greater agricultural exports (at least of certain products) given the large stock of land and labour that implies Africa does have a natural comparative advantage. In practice, there is yet to be much progress here for three reasons: (a) the phased nature of the EBA sugar quotas, (b) safety and quality issues that have been particular stumbling blocks for African agricultural exports to the US, and (c) poor production from Africa itself (Africa is a net food importer). However, the significant rise in agricultural prices over recent years (along with better fiscal balances) should be a catalyst for change. Protectionism is no longer the priority it has been in Western markets now that farm revenues have improved: in fact, we believe we are more likely to see moves to encourage greater agricultural trade in order to keep a lid on food inflation. The bigger issue is whether or not African farmers can respond to stronger demand with higher output. As we discuss in the section on Agriculture there are some obvious avenues (greater use of fertiliser and pesticides) that could significantly enhance African output. In its recent report (*Crop Prospects and Food Situation report*), the FAO noted that above-average harvests are forecast for most countries in the African region, but poor seasonal rain in the large northern Nigerian market has brought a drop in regional food production and forced prices higher. The general response has been a cut in food import tariffs and, in some instances, a ban on exports (the Zambian government has reinstated a ban on any new export contracts; the Ethiopian government is stockpiling grain and has banned exports of the main cereals).

Some countries are taking the initiative and following South Africa's lead on beneficiation policies

There are also moves in several (especially Southern African countries) to follow the lead set by South Africa with its Black Economic Empowerment (BEE) agenda to improve the degree of 'beneficiation'. This term is used in the BEE charter to describe the practice of adding value to raw materials before export. It is on this quest that De Beers has formed the Diamond Trading Company (DTC) of Botswana to manufacture over US$550m of rough diamonds a year by 2010 (up from US$30m in 2006). Following his election in September last year, President Koroma of Sierra Leone has pledged to introduce legislation to similarly ensure that most of the country's annual diamond production is cut and polished before being exported. In South Africa, the country's first platinum beneficiation centre, for the design and manufacture of jewellery, was launched in Rustenburg in December 2006. In October 2007, the Governor of Katanga in DRC banned most raw ore exports from the region in order to force businesses to process metals (mostly copper and cobalt) in DRC itself rather than abroad.

All in all, however, African export diversification has a long way to go (in the face of serious Asian competition and over-valued exchange rates) before the continent can hope to be less sensitive to swings in commodity prices.

### (e) Education

African primary and secondary average enrolment ratios are at least in line with Asian standards of the 1970s

Another potential constraint on sustained growth is the level and extent of education: there can be temporary booms (on the back of higher commodity prices) but collapses when prices fall because skills have not developed further. Education has clearly been extended to encompass a greater proportion of the eligible population across much of Africa. Although we cannot compare the quality of education, African primary and secondary average enrolment ratios are at least in line with Asian standards of the 1970s. In terms of overall expenditure on education, the latest data on Africa (2004) from UNESCO shows that roughly 4.4% of total African GDP is dedicated to public sector spending on education. This compares with only 3.0% of GDP on average for the emerging Asian nations in 1991 (and 4.2% in 2004). On a per capita basis (i.e. public expenditure per pupil as a % of GDP per capita), Africa spends slightly more (c.20% in 2004) than Asia (c.16% in 2004). Obviously, though, with per capita GDP that much higher in Asia than Africa this translates into much greater absolute flows in the former.

Figure 30: **Primary and secondary education ratios in Asia and Africa**

| | 1970 | 1990 | 2000 | 2005 |
|---|---|---|---|---|
| **Gross enrolment ratio*. Primary. Total** | | | | |
| Asian average | 95.3 | 105 | 100 | 105 |
| African average | - | 78 | 88 | 98 |
| | | | | |
| **Gross enrolment ratio*. Secondary. Total** | | | | |
| Asian average | 35.9 | 49 | 65 | 76 |
| African average | - | 22 | 32 | 37 |

*Source: UNESCO, IMF, Credit Suisse research. * Enrolment ratio equal to number of children enrolled at each stage divided by number of children within the eligible age group. i.e. Enrolment ratio in excess of 100% reflects re-sits and repeat years.*

### (f) Health

Health indicators in Africa are still much less robust today than they were in most of the benchmark Asian counties when they started to grow. We set out some of the statistics in Figure 31.

Figure 31: **Health indicators in Africa and Asia**

| **Under 5 mortality rate (per 1000 births)** | **1960** | **1990** | **2000** | **2005** | | **1960** | **1990** | **2000** | **2005** |
|---|---|---|---|---|---|---|---|---|---|
| Africa | 267 | 159 | 149 | 144 | Asia | 159 | 56 | 40 | 33 |

| **Life expectancy** | **1982** | **2005** | | **1982** | **2005** |
|---|---|---|---|---|---|
| Africa | 50.3 | 49.0 | Asia | 64.7 | 70.4 |

| **Physicians (density per 1 million population)** | **2000** | **2005** | | **1970** | **2000** | **2005** |
|---|---|---|---|---|---|---|
| Africa | NA | 221 | Asia | 523 | NA | 770 |

| **Per capita government expenditure on health at avg ex rate (US$)** | **2000** | **2005** | | **2000** | **2005** |
|---|---|---|---|---|---|
| Africa | 25 | 41 | Asia | 70 | 97 |

| **Per capita total expenditure on health at avg ex rate (US$)** | **2000** | **2005** | | **2000** | **2005** |
|---|---|---|---|---|---|
| Africa | 43 | 68 | Asia | 166 | 221 |

| **Total expenditure on health as percentage of GDP** | **2000** | **2005** | | **2000** | **2005** |
|---|---|---|---|---|---|
| Africa | 4.7 | 5.3 | Asia | 3.6 | 3.9 |

*Source: WHO, IMF, Credit Suisse research*

In Africa, life expectancy has stagnated, largely as a result of the HIV/AIDS pandemic, and now stands at just 49 years, on average

In 1982 (before the AIDS epidemic became widespread), life expectancy in Africa was 50.3 years, 22% shorter than the prevailing life expectancy in Asia at the same time. Over the last 20-plus years, life expectancy has increased nearly everywhere around the world except in Africa. Average Asian life expectancy is now a little over 70 years. In Africa, life expectancy has stagnated, thanks largely to the HIV/AIDS pandemic, and now stands at just 49 years, on average. Some African markets have managed to reverse this trend through comprehensive AIDS awareness programmes—notably, Uganda (which recorded life expectancy of 50 years in 1982) saw levels drop to just 43 years as of 2000 but has brought this back up to an estimated 52 years as of 2007 by reducing infection rates in the adult population from an estimated 15% in the early 1990s to c.6% now (source: WHO). However, other markets are still struggling: according to WHO data, in Mozambique, life expectancy is only 40 years; in Malawi, it is just 43 years. In Zimbabwe, the UN put female life expectancy at just 34 years, as bad as Roman England.

Malaria is still a huge problem

Malaria is an equally serious threat to the population, particularly children. According to the UN, 80% of malaria deaths occur in Africa, where around 66% of the population is thought to be at risk. In contrast, less than 15% of total malaria deaths occur in Asia, despite an estimated 49% of the people in the region living under threat from the disease.

Figure 32: **Causes of child mortality, 2000**

| | Causes of death among children under 5 years of age, for both sexes (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Region** | **Neonatal causes** | **HIV/AIDS** | **Diarrhoeal diseases** | **Measles** | **Malaria** | **Pneumonia** | **Injuries** | **Other** |
| African Region | 26.2 | 6.8 | 16.6 | 4.3 | 17.5 | 21.1 | 1.9 | 5.6 |
| Region of the Americas | 43.7 | 1.4 | 10.1 | 0.1 | 0.4 | 11.6 | 4.9 | 27.9 |
| South-East Asia Region | 44.4 | 0.6 | 20.1 | 3.5 | 1.1 | 18.1 | 2.3 | 9.9 |
| European Region | 44.3 | 0.2 | 10.2 | 0.1 | 0.5 | 13.1 | 6.2 | 25.4 |
| Eastern Mediterranean Region | 43.4 | 0.4 | 14.6 | 3.0 | 2.9 | 19.0 | 3.2 | 13.5 |
| Western Pacific Region | 47.0 | 0.3 | 12.0 | 0.8 | 0.4 | 13.8 | 7.3 | 18.4 |

*Source: WHO, 2000*

The disease is so prevalent in Africa for two reasons: (i) Environmental and ecological conditions are favourable for the *Anopheles* mosquito, especially the *Anopheles gambiae*, the most effective at carrying the malaria parasite. Africa is also host to the *Plasmodium falciparum* malaria parasite, the most deadly variety and main cause of cerebral malaria. (2) Poverty and lack of good-quality healthcare hinder the control and treatment of the disease, and Africa has both of these factors.

The main form of prevention in endemic areas is to increase the usage of bed nets, impregnated with insecticide, and also the spraying of houses. In 2000, numerous African countries agreed to a series of malaria targets, including insecticide treated net (ITNs) penetration of 60% in the highest risk areas. However, by 2005, according to the UN World Malaria Report 2005, only some headway had been made towards these goals.

Increased efforts are being made to develop reliable, but cheap detection kits that allow for a diagnosis of malaria infection to be made by anyone trained to use them and to provide early treatment (without the need for empirical blood testing, which requires sophisticated laboratories and trained technicians).

Very effective treatment is available but costs are still too high to facilitate widespread usage

Increasing treatment resistance to chloroquine and sulphadoxine-pyrimethamine based medications has led to a global push to utilise artemisinin-based combination therapies (ACTs) that are highly effective in killing the malaria parasite. However, they are more expensive than the older forms of treatment, costing between US$0.75 and US$2.75 per treatment, and this makes them unaffordable for many developing countries.

However, despite the twin threat of HIV/AIDS and malaria, growth in the labour force in Africa is not under significant pressure. As our demographics expert (Amlan Roy) sets out in the next section, fertility rates in Africa are so much higher than other economic regions (including Asia) that labour force growth prevails despite the terrible health statistics. However, poor health is obviously a drain on productivity (directly with workers off sick and indirectly given increased dependency ratios) and resources (given the cost of caring for the sick).

**Conclusion**

To re-cap, we have looked at six broad factors that are likely to influence the sustainability of stronger African growth. We judge that:

Of the factors we have considered, Africa appears to have made headway on four fronts but is still struggling to deliver greater economic diversification or improve average health

- The political situation is on the whole much improved (not withstanding the current unrest in Kenya and Zimbabwe).
- The institutional framework again is more advanced and not dissimilar to the prevailing situation in Asia in the 1970s.
- Macro indicators suggest much greater stability (lower inflation, higher reserves, less external debt).
- We are concerned that the massive appreciation of the terms of trade has taken exchange rates in many African markets to levels that adversely effect long-term current account prospects by restricting export diversification.
- Education levels are much better than history and akin to the experience of Asia in the 1970s.
- Health issues are still a major problem. Africa clearly lags behind even the historical record set by Asia. Set against this, population growth in Africa of 2.4% is still well ahead of Asia at 1.7% p.a.

We have four broad conclusions:

Growth is probably more sustainable but commodity performance is still crucial

(1) Growth is more sustainable than it has been in the past but much more reform is needed before Africa can decouple from the global cycle.

(2) Given this, the outlook for commodities is still key to African growth performance over the next five years. However, we remain very positive on the outlook for commodities, as detailed by our commodity team in Figure 40. Hence, our forecasts for aggregate growth in Africa remain well above expectations of average global growth.

**Figure 33: Global and African real GDP growth forecasts (% chg y/y)**

| | 2007E | 2008E | 2009E | 2010E | 2011E |
|---|---|---|---|---|---|
| Global | 4.7 | 3.2 | 3.6 | 3.5 | 3.4 |
| Africa | 6.1 | 5.0 | 5.6 | 5.4 | 5.2 |
| Sub-Saharan Africa | 6.0 | 5.7 | 5.6 | 5.3 | 5.3 |

*Source: Credit Suisse estimates for global growth, Global Insight and, Standard Bank estimates for Africa. For forecasts for individual African markets see Appendix 3.*

Resource-rich markets with improving politics should have the edge

(3) From a top-down perspective, given the bias towards commodity-driven investment and growth in the region, it seems likely that those countries imbued with relatively greater natural resources, as well as improving politics, are most likely to deliver the fastest growth rates for now. We would group Botswana, Nigeria, Angola and Zambia in this bracket, as well as (albeit with somewhat higher risk ratings) DR Congo, Equatorial Guinea, Libya and Mozambique.

In Figure 34, we have ranked all the African markets on a series of forward looking (2008E) macro parameters as well as prevailing political scores. For brevity, we have shown the markets with GDP in excess of US$10bn. The full list is included in Appendix 4.

Botswana and Nigeria top the list with large current account and fiscal surpluses, reasonable political scores and low debt to GDP. South Africa also ranks highly on this scorecard, but on a relative basis is not a market that we are particularly keen on: growth prospects are lower than other parts of Africa given the large current account deficit (6.4% GDP) and since many of the easy gains in terms of political and institutional reform have already been made (as illustrated by the much higher private sector credit to GDP ratio, 86%, than the rest of Africa). Indeed, the apparent lack of choice in the forthcoming 2009 presidential elections is a concern. Finally, the severe power shortage is already undermining output in key parts of the economy (e.g. gold mining).

**Figure 34: African market scorecard**

| | GDP, US$bn (2007E) | Current account as % GDP (2008E) | External debt to GDP, 2008E | Political score, higher the better | Rule of Law, higher the better | Fiscal position, as % GDP (2008E) | GDP growth, 2008E | S&P/IFC trailing PE, End Jan 08 | Rank of ranks* |
|---|---|---|---|---|---|---|---|---|---|
| Botswana | 12.4 | 10.0 | 3.2 | 31 | 13 | 3.8 | 5.2 | 23.5 | 1 |
| Nigeria | 148.6 | 6.0 | 2.3 | 21 | 5 | 7.9 | 8.0 | 57.8 | 2 |
| South Africa | 299.6 | -6.4 | 1.7 | 35 | 12 | 0.1 | 4.2 | 17.6 | 3 |
| Angola | 88.7 | 10.7 | 5.0 | 8 | 4 | 6.1 | 27.2 | NA | 4 |
| Zambia | 11.9 | -2.0 | 6.6 | 25 | 8 | -2.0 | 6.2 | NA | 5 |
| Equatorial Guinea | 11.0 | 6.3 | 1.0 | 1 | 1 | 20.9 | 8.1 | NA | 9 |
| Algeria | 139.5 | 18.4 | 3.9 | 11 | 5 | 11.5 | 5.2 | NA | 10 |
| Ghana | 16.9 | -7.7 | 25.3 | 37 | 12 | -5.8 | 6.9 | 10.4 | 13 |
| Libya | 79.5 | 30.7 | 7.0 | 1 | 0 | 31.4 | 6.9 | NA | 14 |
| Kenya | 31.1 | -5.1 | 17.5 | 25 | 8 | -3.8 | 6.5 | 22.8 | 15 |
| Tanzania | 15.6 | -10.8 | 17.9 | 22 | 10 | -4.0 | 7.5 | NA | 16 |
| Morocco | 79.7 | 0.2 | 20.2 | 17 | 6 | -2.0 | 5.9 | 33.2 | 19 |
| Ethiopia | 17.8 | -3.0 | 11.9 | 14 | 4 | -3.8 | 9.6 | NA | 20 |
| Gabon | 11.4 | 16.7 | 28.0 | 10 | 6 | 10.8 | 4.2 | NA | 22 |
| Senegal | 11.8 | -9.8 | 19.6 | 33 | 9 | -4.5 | 5.7 | NA | 23 |
| Uganda | 12.2 | -6.3 | 15.6 | 15 | 7 | -3.6 | 6.5 | NA | 26 |
| Cameroon | 22.9 | -3.1 | 5.1 | 11 | 2 | 3.1 | 5.3 | NA | 27 |
| Egypt | 149.7 | 0.8 | 19.8 | 7 | 5 | -6.9 | 7.3 | 29.3 | 32 |
| DRC | 10.9 | -10.9 | 46.7 | 14 | 0 | -0.2 | 8.4 | NA | 36 |
| Côte d'Ivoire | 21.4 | 1.3 | 31.3 | 5 | 3 | -0.2 | 3.8 | NA | 39 |
| Tunisia | 37.8 | -2.7 | 56.2 | 6 | 4 | -2.6 | 6.2 | 20.9 | 40 |
| Sudan | 55.9 | -8.5 | 57.5 | 7 | 0 | -2.9 | 10.7 | NA | 42 |

*Source: IMF, Freedom House, S&P/IFC, Credit Suisse research. * Ranks based on macro parameters as shown excluding valuation due to lack of data.*

(4) Globally, one of the most successful strategies for making money out of the commodity boom has been to buy domestic plays in those countries that are big commodity exporters (e.g. OPEC banks; Russian banks and telecoms). This, of course, applies to Africa and thus we would focus on telecom, infrastructure and bank names with exposure to the large commodity exporters, particularly in those markets that are enjoying current account surpluses. The macro data supports this view. For instance, Nigeria has seen a shift in the consumption pattern from food to durables. Total food expenditure has fallen from 63.6% in 1996 and 69.1% in 1985 to just 47.3% in 2004 (the latest living standards survey). Figure 35 highlights some of the examples of the (mostly) internationally listed domestic plays exposed to the commodity exporters.

**Figure 35: Domestic plays exposed to markets dominated by commodity exports**

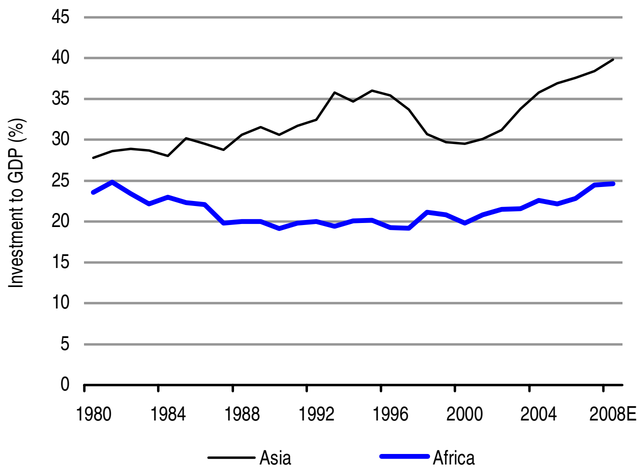
| Ticker | Name | Main listing | Sector | Concern | % revenues from Africa (2007E) | CS rat |
|---|---|---|---|---|---|---|
| MTNJ.J | MTN | Jburg | Telcos | Operations in 16 African countries, dominant in Nigerian mobile (45% mkt share in 2007) and the main competition to Vodacom in SA | 87% | O |
| ORTEq.L | Orascom | Egypt | Telcos | Operates in Tunisia, Algeria and Egypt. 60% of revenues are from North Africa. | 60% | O |
| ZAIN.KW | Zain Group | Kuwait | Telcos | Zain operates in 14 sub-Saharan African countries. African revenues account for 47% of the group total. | 47% | N |
| PZC.L | PZ Cussons | London | Household Products | 42% of sales (and 40% of operating profit) is earned in Africa. The largest country by some distance is Nigeria, with interests also in Ghana and Kenya. | 42% | NR |
| CPR.LS | Cimpor | Portugal | Infrastructure | Cement operations in Morocco, Tunisia, Mozambique, Egypt, Cape Verde and South Africa. | 30% | NR |
| BBPI.LS | BPI | Portugal | Banks | Angola represents 14% of the total revenues and 20% of the net income. | 20% | NR |
| 600685.SS | Guangzhou Shipyard | China | Infrastructure | 19.2% of total revenue came from Liberia in 2006. As business ties between China and Africa are strengthened there is plenty of growth potential but Africa is not the corporate focus. | 20% | NR |
| HIK.L | Hikma | London | Healthcare | Multinational generics player. C.18% of group revenues from Africa. The biggest exposure is to Algeria and North Africa. | 18% | N |
| LAFP.PA | Lafarge | Paris | Infrastructure | Sales exposure of c.16% in 2007A. Expect growth of c.10% p.a. (twice the group average). Distribution across Africa is fairly widespread (including South Africa, Kenya, Nigeria, Cameroon, Zambia, Benin, Zimbabwe, Tanzania, Uganda, Morocco, Egypt). | 16% | U |
| HEIN.AS | Heineken | Netherlands | Beverages | Key markets are Nigeria and Egypt, which make up c.20% of the continent's beer consumption. Africa = c. 11% of group sales. | 11% | R |
| HLB.AT | Coca-Cola Hellenic | Greece | Beverages | Derives c.10% of its overall sales volumes from Nigeria. | 10% | N |

*Source: Company data, Credit Suisse estimates*

To a large extent, trends in investment support these conclusions. As higher average rates of GDP growth are a function (to some extent) of preceding investment, we find it encouraging that:

a) African investment to GDP has risen from 21%, on average, over the 1980s and 1990s (one of the lowest regional rates in the world) to 24.5% estimated by the IMF for 2007.

**Figure 36: African and Asian investment to GDP ratios**




*Source: IMF, Credit Suisse research*

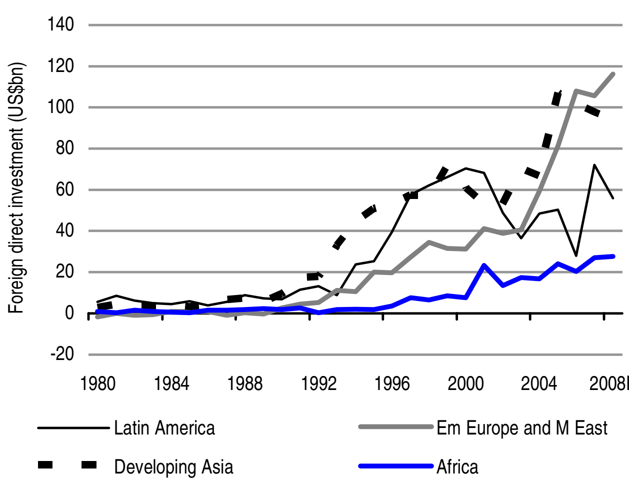
**Figure 37: Investment to GDP (%)**

| | 1980 - 1999 | 2007E |
|---|---|---|
| World | 22.5 | 23.3 |
| Euro area | 21.6 | 22.0 |
| **Africa** | **21.0** | **24.5** |
| Central and eastern Europe | 26.0 | 25.5 |
| Developing Asia | 31.2 | 38.4 |
| Middle East | 23.3 | 26.4 |
| Latin America | 19.8 | 20.9 |

*Source: IMF, Credit Suisse research*

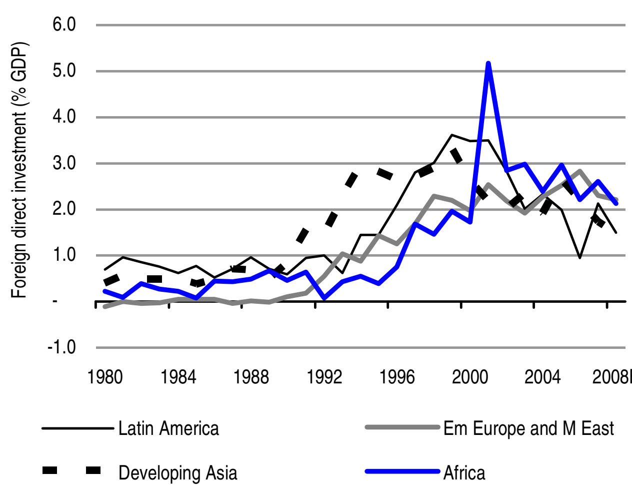
b) Net foreign direct investment has also picked up. Annual net FDI into Africa averaged US$2.4bn over the 1980s and 1990s, but in 2007 came in at over 10x that amount at US$27.1bn. Relative to GDP, net FDI into Africa is now the second highest among the emerging market regions.

**Figure 38: Net foreign direct investment (US$bn)**




*Source: IMF, Credit Suisse research*

**Figure 39: Net foreign direct investment as % GDP**




*Source: IMF, Credit Suisse research*

c) FDI inflows continue to be directed mainly to extractive industries: the IMF estimates that 70% of the gross direct investment flows to sub-Saharan Africa in 2006 went to oil exporters Angola, Equatorial Guinea and Nigeria.

d) The Asian share of Africa's FDI has picked up. Traditionally, FDI flows from developing Asia to Africa were mainly from the Asian newly industrialising economies (Hong Kong, Korea, Singapore and Taiwan). More recently, China and India have become more significant sources. According to UNCTAD (UN Conference on Trade and Development), Singapore, India and Malaysia currently top the table in terms of the stock of Asian FDI in Africa, with investment stocks of US$3.5bn (cumulative approved flows from 1996 to 2004), US$2bn and US$1.9bn, respectively. These three are closely followed by China, Korea and Taiwan. China´s FDI stock in Africa had reached US$1.6bn by 2005, with Chinese companies present in 48 African markets, although Africa still accounted for only

3% of China´s outward FDI. A few African countries have attracted the bulk of China´s FDI: Sudan is the largest recipient (and the ninth-largest recipient of Chinese FDI worldwide), followed by Algeria (18th) and Zambia (19th).

**Figure 40: Credit Suisse commodity price forecasts**

| | | 2008E | 2009E | 2010E | L/T | Outlook |
|---|---|---|---|---|---|---|
| **Copper** | US$/lb | 3.00 | 3.00 | 2.00 | 1.35 | We continue to believe that the miners will struggle to produce anywhere near full capacity. Inventories in the US and Europe continue to draw down; LME inventories are down almost 30% since end of 2007. This de-stocking, along with the strong demand from China and the industrial action in Peru and Chile, means, we believe, that copper has the potential to spike to US$12,000/tonne this year as supply remains constrained at 1.9% and demand grows by at least 2.9%. |
| **Iron ore** | US cents /Fe unit | 131.29 | 157.54 | 165.42 | 50.00 | We have been bullish on iron ore for a long time and have been calling for further increases in prices. The iron ore price has settled up 65–71% for Jan FY08. We expect the price to rise by a further 20% in 2009 and should not come down before 2013, after which it will decline to a long-term price of US$40/t. In 2007, we believe the market experienced a deficit, resulting in queues building up at loading ports, a similar picture to 2004–05. Strong steel production in China and potential supply constraints may aggravate our scenario. We forecast very tight conditions in the iron ore market until at least 2012. |
| **Coal** | - | - | - | - | | |
| Thermal coal | US$/t (JFY) | 80 | 77 | 77 | 60 | The coal market is equally as compelling as the iron ore market, although in this case with a shorter duration. Supply is perhaps more elastic in this space and should benefit over the next two to three years as infrastructure bottlenecks and other one-off items are addressed. The internal coal balance within China should continue to be important to the global market balance. Recent price gains have been fuelled by strong demand due to severe weather conditions and coal output affected by the power shortages and heavy rains in Queensland, Australia. |
| Met Coal | US$/t (JFY) | 145 | 145 | 125 | 80 | |
| **Precious metal** | | - | - | - | | |
| Gold | US$/oz | 950 | 1035 | 1068 | 700 | Upward pressure on the price of precious metals and PGMs is likely being driven by the US economic environment (US$ weakness), ongoing power disruptions in South Africa, high oil and commodity prices, and a change in the dynamics surrounding supply and demand. We believe none of these factors will prove to be very short term, which in turn suggests continued upward pressure on most of the precious metals. |
| Silver | US$/oz | 17.25 | 19.00 | 19.68 | 11.67 | |
| Platinum | US$/oz | 1700 | 1846 | 1902 | 825 | |
| Palladium | US$/oz | 381 | 427 | 434 | 400 | |
| Rhodium | US$/oz | 6800 | 6901 | 7005 | 2500 | |
| **Cobalt** | US$/lb | 30.0 | 18.5 | 14.0 | 13.5 | Demand for cobalt given its strength and lightweight properties continues to accelerate from the aerospace, rechargeable battery applications, HEVs and GTL industries. We believe consumption, particularly from China, shows no signs of slowing and global demand for cobalt could grow as much as 7% p.a. from 2007 to 2009. We expect short-term supply to disappoint. We forecast the cobalt market to be in deficit of c.1680 tonnes through to the end of 2008. We then forecast the cobalt market to move into surplus of around 5,000 tonnes in 2009, given potential new cobalt supply. |
| **Mang anese** | US$/ dmtu | 7.50 | 7.00 | 6.65 | 4.00 | The manganese outlook is very positive in the short term as prices are driven by tight market supply and further supported by a forecast deficit in the steel market (on the back of strong Chinese demand). Ore shortages reflect consolidation in manganese production and the recent power crisis in South Africa. |

*Source: Credit Suisse commodities and oil team estimates and research*

# Will Africa reap its demographic 'dividend'?

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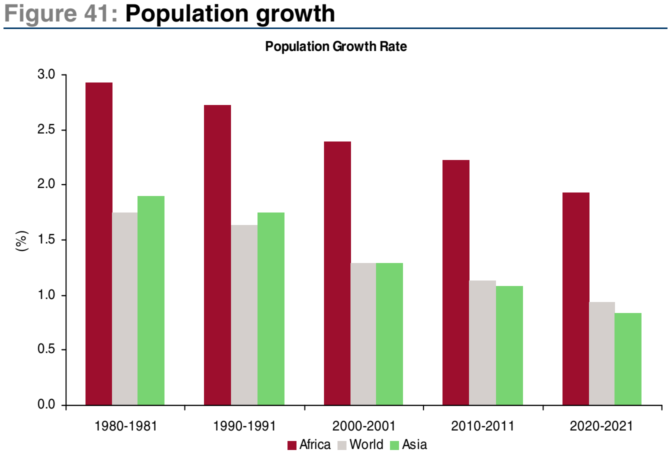
Demographics is a critical factor that affects future prospects for Africa. Demographic change affects the socio-economic, legal, health and political aspects of a country in the short, medium and long term[1]. Any study of economic growth and its sustainability (whether historical, classical or modern neo-classical growth) must focus on the direct and indirect implications of demographics. Demographics affects both the demand and supply side of the economy, the demand side through the total population of consumers and the supply side through labour force size and composition. The $64 million dollar question is: Will Africa reap the demographic 'dividend' like the new Asian economies in the 1980s and 1990s? We argue that it depends on health more than wealth across Africa, notwithstanding the extant huge disparities in wealth. We take a macro perspective in this section by discussing aggregate population and labour force trends and projections for Africa. We focus on comparing Africa with Asia on a regional basis as well as conducting intra-African country comparisons.

### Population trends

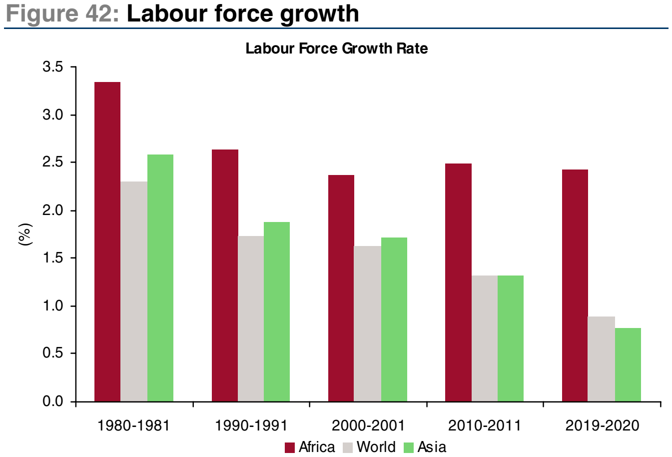
Figure 41 shows past and projected population growth rates by the UN for the world, Asia and Africa over the 1980–2021 period. The broad observation is that African population growth rates have exceeded Asian population growth rates significantly in the past and will likely continue to do so in the future. The decrease in African population growth rates is projected by the UN to be less than that of the Asian population growth rates. In the 1950s, the population growth rates for both Africa and Asia were increasing. While Asian population growth has experienced a slowdown since the 1970s, Africa started displaying a slowdown only in the late 1980s. In 2005–06, Africa's population growth rate was 2.31% p.a. while Asia's was only 1.16% p.a. Asia's growth rate lies close to the world population growth rate, but both are dwarfed by Africa's population growth rate. We shall focus on why that is so later in this section.

**Figure 41: Population growth**




*Source: Credit Suisse Demographics research, UN*

**Figure 42: Labour force growth**




*Source: Credit Suisse Demographics research, UN*

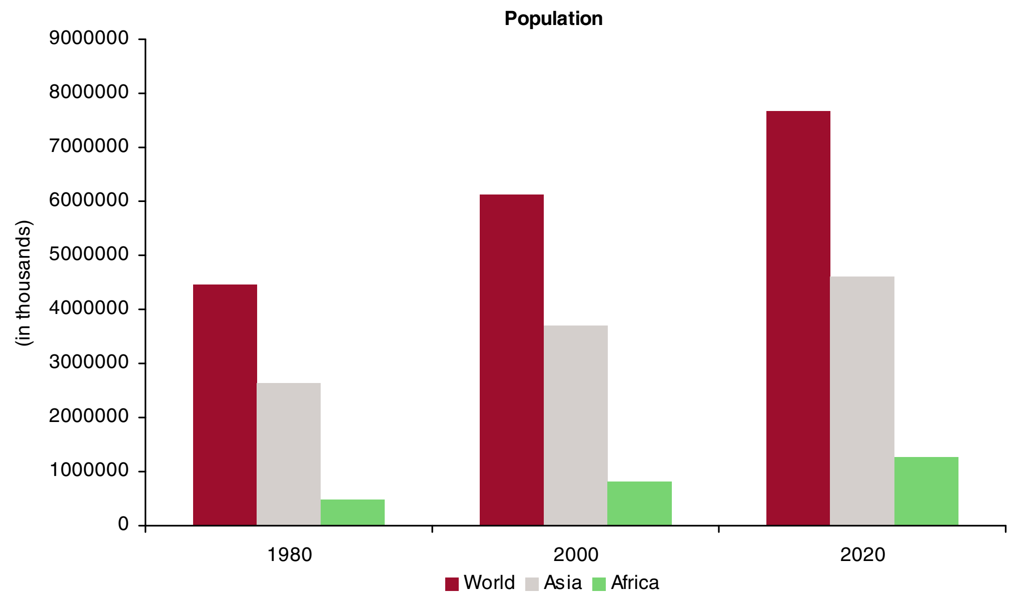
Figure 42 displays the relative growth rates for the labour forces of Asia, Africa and the world. The relative magnitudes are not as different as population growth differences to begin with, but over time they seem to widen. Africa's labour force growth is set to slow down much less rapidly than that of Asia or the world. But what are the actual population sizes of Asia, Africa relative to world population?

[1] *Please refer to Credit Suisse Demographics Research (2006), "Why Demographics Matters? And How?"*

Figure 43 presents the relative shares of the world population constituted by Africa and Asia. In combination with the earlier charts, we note that Africa has a smaller share of world population that is projected to grow faster than Asia's, according to the UN.

**Figure 43: Population sizes: World, Africa and Asia**

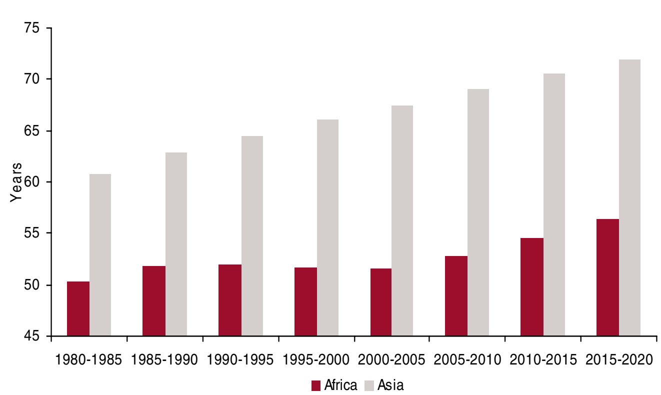
1980, 2000, 2020




*Source: Credit Suisse Demographics research, UN*

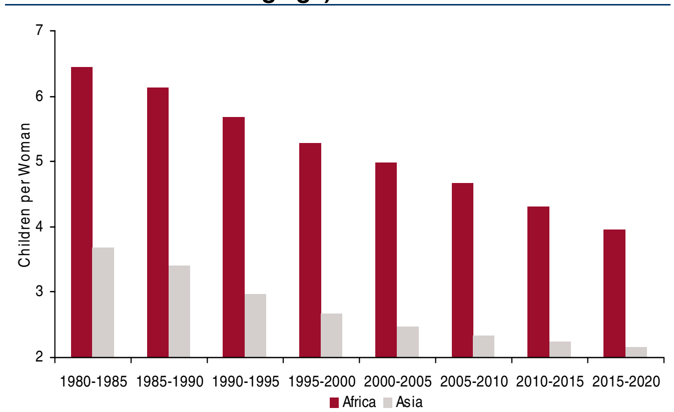
Population growth is derived from the underlying interaction of three factors—life expectancy, fertility rates and migration rates. Of these three factors, migration rates are normally the least important in driving population growth. In the charts below, we depict the life expectancy and total fertility rates for Africa and Asia. While life expectancy in Africa is nearly half Asia's, the fertility rates are much higher.

**Figure 44: Life expectancy at birth (years)**




*Source: Credit Suisse Demographics research, UN*

**Figure 45: Total fertility rate (number of children per woman of child-bearing age)**




*Source: Credit Suisse Demographics research, UN*

This is reflected in Africa's much higher child (or youth) dependency ratio than Asia's. In 2000, Africa had a ratio of 78 children per 100 persons of working age population compared with Asia's 48. By 2020, Africa's ratio is projected (by the UN) to decline to 66 whereas Asia's is projected to reach 35. These numbers tell the story of relative ageing of the younger (relative to Europe and North America) continents of Africa and Asia over next

12 years. Migration has the potential to change any or most of these ratios and is very hard to project as the future could look significantly different from past trends.

We focus next on the regional and country-specific demographic differences.

**Figure 46: Africa: Regional and country-specific comparisons**

| | Life Expectancy | Total Dependency Ratio | Median Age | Net Migration Rate | Total Fertility Rate | Population Growth Rate |
|---|---|---|---|---|---|---|
| **Regions** | **2000-2005** | **2005** | **2005** | **2000-2005** | **2000-2005** | **2000-2005** |
| Africa | 51.6 | 81 | 19 | -0.5 | 4.98 | 2.32 |
| Eastern Africa | 48.4 | 90 | 17.5 | -0.1 | 5.6 | 2.57 |
| Middle Africa | 45.8 | 94 | 17 | 0.2 | 6.21 | 2.81 |
| Northern Africa | 67.1 | 61 | 22.9 | -1.8 | 3.16 | 1.66 |
| Southern Africa | 52.5 | 59 | 23.4 | 0.2 | 2.9 | 1.1 |
| Western Africa | 49.4 | 89 | 17.8 | -0.5 | 5.77 | 2.58 |
| Sub-Saharan Africa | 48.8 | 87 | 18 | -0.3 | 5.48 | 2.47 |
| **Countries** | **2000-2005** | **2005** | **2005** | **2000-2005** | **2000-2005** | **2000-2005** |
| Algeria | 71 | 52 | 24 | -0.9 | 2.53 | 1.48 |
| Angola | 41 | 95 | 16.6 | 2.3 | 6.75 | 2.89 |
| Cameroon | 49.9 | 83 | 18.7 | 0.1 | 4.92 | 2.3 |
| Congo | 53 | 82 | 18.8 | -0.6 | 4.78 | 2.39 |
| Egypt | 69.8 | 62 | 22.9 | -1.5 | 3.17 | 1.82 |
| Ethiopia | 50.7 | 90 | 17.5 | -0.4 | 5.78 | 2.59 |
| Ghana | 58.5 | 74 | 19.9 | 0.1 | 4.39 | 2.24 |
| Kenya | 51 | 83 | 18.1 | 0.2 | 5 | 2.61 |
| Morocco | 69.6 | 55 | 24.3 | -3.7 | 2.52 | 1.13 |
| Nigeria | 46.6 | 90 | 17.6 | -0.3 | 5.85 | 2.5 |
| S. Africa | 53.4 | 57 | 23.9 | 0.3 | 2.8 | 1.09 |
| Tunisia | 73 | 48 | 26.7 | -0.6 | 2.04 | 1.1 |
| Uganda | 47.8 | 108 | 15.3 | 0 | 6.75 | 3.18 |
| Zimbabwe | 40 | 76 | 19 | -1.2 | 3.56 | 0.72 |

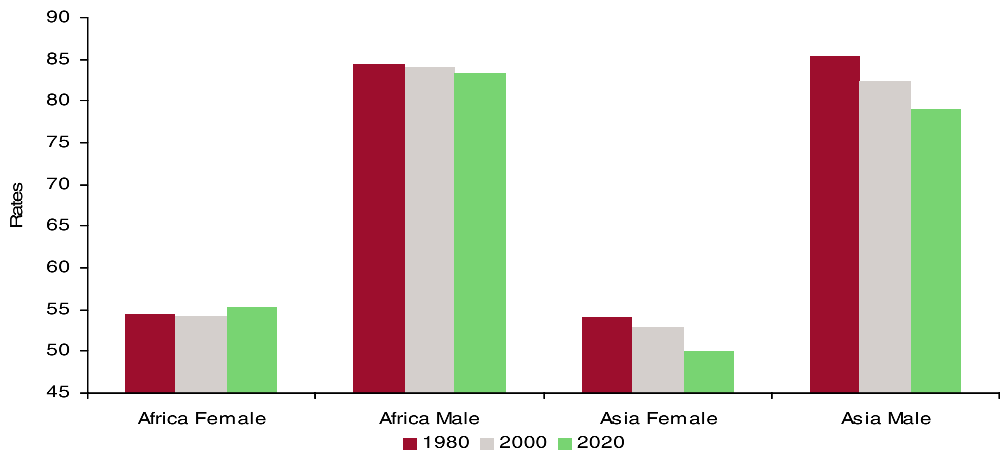
*Source: Credit Suisse Demographics research, UN*

There are very significant differences in life expectancy across the African regions, with North Africa leading the league tables by a significant margin whereas Middle Africa is the laggard. Similarly, there are stark differences in total fertility rates, with the lowest being 2.9 for Southern Africa and the highest being 6.21 for Middle Africa. In terms of population growth rates also, the highest Middle African region is growing at nearly 2.7x the Southern African region. The table also highlights vast differences between countries with regard to life expectancy, fertility rates, population growth rates and total dependency ratios.

Economic activity rates are a measure of employment conditions: a higher number represents a higher percentage of the available labour force employed or unemployed looking for work. The chart below depicts the wide divergence in employment activity of males versus females in both Africa and Asia. While female economic activity rates lag behind those for males even in many of the most developed countries of the world, the disparities between males and females in Asia and Africa is noticeable and represents significant potential in terms of labour market growth. The differences for Africa and Asia are of the magnitude of 30%, whereas in the developed world countries they are of a magnitude of 15% to 25% (e.g. in Europe, 66.5% of males are classified as active compared to 49.3% of females).

Figure 47: **Economic activity rates: Males and females**

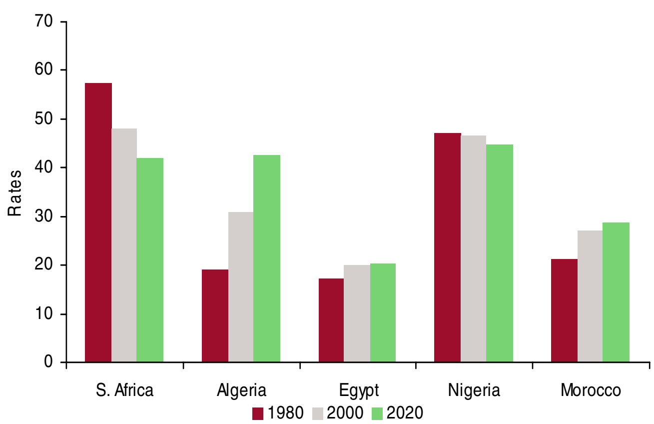
Africa and Asia




*Source: Credit Suisse Demographics research, ILO*

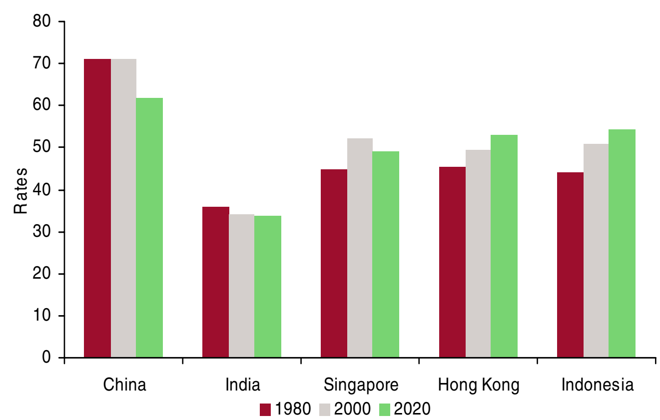
There are differences within both Africa and Asia among countries' female economic activity rates, as can be seen in Figure 48 and Figure 49. Here, we display the female activity rates, which exhibit greater divergences across countries. There exists great potential to raise these rates by enhancing the role and participation of women in the labour markets.

Figure 48: **African female econ. activity rates**




*Source: Credit Suisse Demographics research, ILO*

Figure 49: **Asian female econ. activity rates**




*Source: Credit Suisse Demographics research, ILO*

GDP and economic growth are affected by labour, capital and total factor productivity. On the labour front, the size of the labour force, the utilisation of the labour force as well as labour productivity influence economic growth.

Demographics affects labour force size, family structure, utilisation and productivity, both directly and indirectly. Africa's challenge is to garner and fully exploit the labour potential of both males and females in the 40+ age group. In addition to increased life expectancy, we believe good health, strong human capital and a vibrant labour market are essential to fruitfully employ and engage the 40+ population.

Migration may provide a partial solution to filling the skills gap. However, Africa faces a drain on its talent pool of workers due to 'brain drain'. It is estimated that each professional leaving Africa costs the region US$184,000[2]. Some African countries that are severely affected due to brain drain are Ethiopia, Ghana, Nigeria, Zimbabwe and South Africa. Apart from international migration, there is a lot of migration within the continent too. According to the South African Census, there are 1.1m illegal immigrants. These immigrants come from all over the continent—Zimbabwe, Mozambique, Somalia, the Democratic Republic of Congo and Kenya. This creates problems for the poorer countries, which have severe skill shortages.

If African countries are to develop and expand the value-add in their manufacturing sectors, they will need to deliver rapid increases in labour productivity. But productivity increases hinge on boosting the skills of the labour force along with greater access to capital and technology in a dynamic labour market. Adult literacy rates in Sub-Saharan Africa are 60% of those in Central Asia[3]. Education expenditures and training are key to developing a strong labour force base. South Africa stands out with high literacy rates, but most of the other countries have a much lower literacy rate, with a tough race to achieve the Millennium Development Goals[4]. We believe Sub-Saharan Africa needs to devote a higher percentage of its GDP to education and ensure that the resources are effectively deployed in physical and human resources to improve educational access and attainment across the board. But expenditures on education need to go hand in hand with expenditures on health.

Sub-Saharan Africa remains the worst HIV/AIDS affected region in the world, with 22.5m people infected by the virus[5]. HIV/AIDS is the top killer of people aged 5+ in Africa and among the top five for those age 0–4 (HIV/AIDS deaths may well be higher than the reported statistics since TB and pneumonia are often implicated and identified as the cause of death when, in fact, it was the breakdown of the immune system from HIV that caused the onset of another disease). HIV/AIDS patients are in their majority women, and many babies are born HIV-affected. One of the eight Millennium Development Goals is to halt the spread of HIV/AIDS while halving extreme poverty. Education is key to helping women, children, youth and the future of Africa to live and lead a healthy life.

Crime, civil wars and genocide are sadly a frequent occurrence in Africa and, if controlled, would vastly improve the potential of Africa, which is commodity rich and weather-positive, with hundreds of millions of people desperate to break out of a life of ill-health and poverty. Another important feature is the rapid growth of larger cities like Lagos, Cairo, Kinshasa, Khartoum, Cape Town, Johannesburg, Nairobi and Kampala, leading to overcrowding in parts accompanied by noise and air pollution. That, however, leads to a need for new infrastructure, particularly in over-crowded cities.

Africa's future economically and financially depends on the health of the population, labour force and, most importantly, the children. Wealth, legal structure, institutions and education are also important factors which, along with human capital, will determine the magnitude and sustainability of its economic progress and its prospects of earning its 'demographic dividend'.

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2 *Southern Africa Migration Project (2006).*

3 *EFA Global Monitoring Report (2008) by UNESCO.*

4 *Please see UN site http://www.un.org/millenniumgoals/*

5 *See www.unaids.org for latest updates on the Global HIV/AIDS epidemic.*

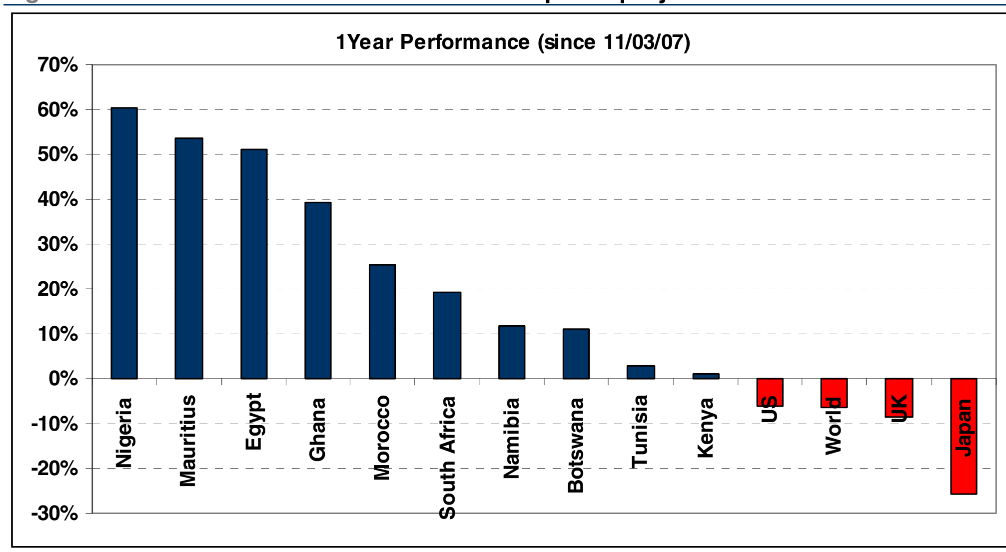
# Equity implications: A low correlation story?

In the sections that follow, we analyse the bottom-up industry stories that underlie this top-down theme. As highlighted earlier, this focuses on the indirect company beneficiaries from the growth story rather than African companies themselves. In many respects, many of the companies we look at offer more liquid and "investable" qualities in the context of this story.

However, while not focusing on Africa in a direct asset allocation context, we would flag the diversification that Africa has actually offered for direct investors in the region due to their low correlation with the developed markets. This provides an added context in which to view the relevance of the theme that we are seeking to play through the indirect beneficiaries listed in non-African markets.

At the most simplistic level, Figure 50 first shows that the weakness in developed markets in the last year has not been mirrored across a number of the principal global equity markets. A number of the local indices displayed price increases of 20% plus over the last 12 months despite weak global markets.

Figure 50: **Performance of African and developed equity markets – 12 months to date**




*Source: BLOOMBERG PROFESSIONAL™ service*

To analyse this performance and statistically examine the strength and direction of the linear relationship of these new African frontier markets to the rest of the world, Figure 51 displays three-, six- and 12-month correlations between the daily returns of the local African indices and the global world indices. As you can see in the table, the correlation between African equity markets and the developed regions is low and in some cases negative, suggesting higher return expectations and diversification. As much as the low correlations displayed by a number of these markets, we would note the far higher correlations that exist between South Africa and the global indices. In this respect, South Africa does not appear to offer a proxy on the rest of Africa in equity market terms.

Figure 51: **Correlation of African markets with MSCI World**

| | Market cap ($bn) | 3m-correl | 6m-correl | 12m-correl |
|---|---|---|---|---|
| Botswana | 4,614 | -16.42% | -9.30% | 3.63% |
| Nigeria | 96,791 | -1.46% | -14.64% | 11.23% |
| Kenya | 11,622 | 0.00% | -10.54% | -10.60% |
| Morocco | 88,706 | 6.49% | -4.49% | -4.40% |
| Ghana | 1,567 | 6.86% | -2.70% | 1.90% |
| Tunisia | 5,567 | 14.28% | 17.42% | 17.20% |
| Mauritius | 7,002 | 14.29% | 9.17% | 8.62% |
| Egypt | 139,236 | 22.51% | 12.17% | 15.94% |
| Namibia | n.a | 45.54% | 4.60% | 4.90% |
| South Africa | 474,202 | 57.53% | 59.80% | 61.78% |

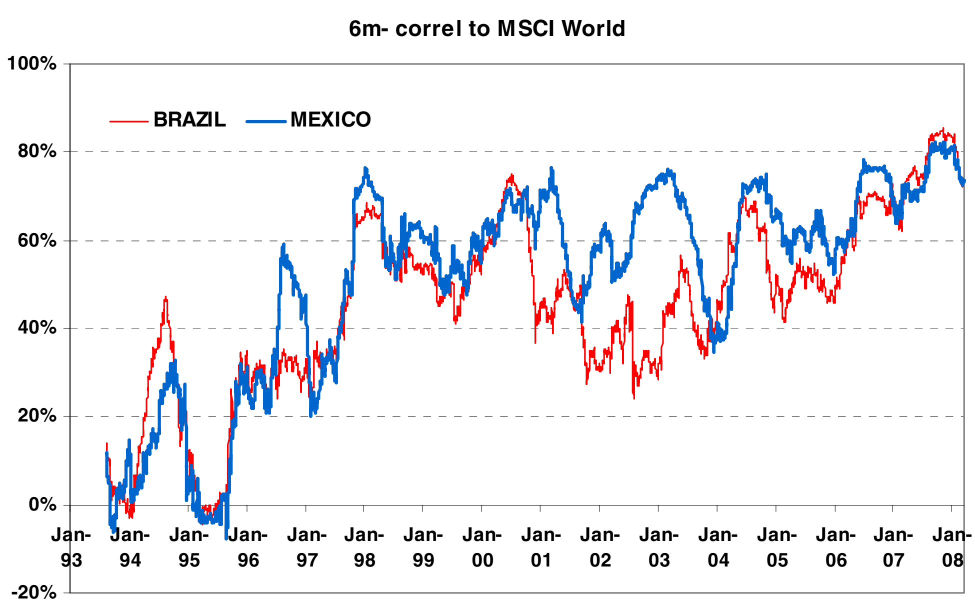
*Source: BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

The characteristic of low correlation of emerging or frontier markets is a typical feature of their development. Figure 52 and Figure 53 illustrate this point with references to Latin America, Brazil and Mexico, and Eastern Europe, Poland and Hungary. In both cases, correlations began at similarly low levels to those seen in the major African indices today, before rising steadily as the markets were "discovered" by a wider range of investors.

Figure 53, for example, displays the experience of Poland and Hungary. Five years ago, they had the same correlation level to the developed market as have the African frontier markets today. Since then the equity markets in these two countries have started to mature and correlations increase.

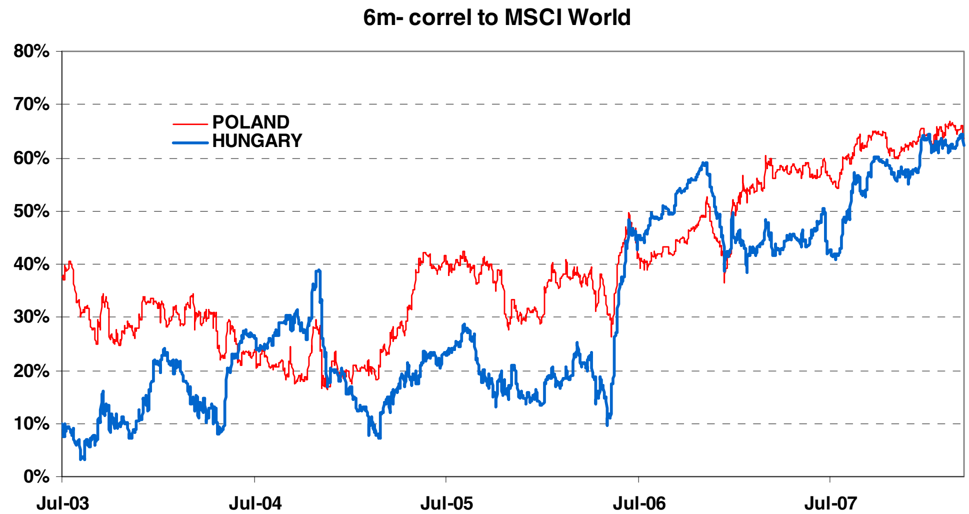
In July 2004, correlation of Poland and Hungary to developed market was around 24%, very close to the current correlation of Egypt to MSCI World. Now, Hungary and Poland are more than 65% correlated to the MSCI World. In 1993, Brazil and Mexico had a low, 20–25% correlation level to the S&P 500 and MSCI World while now they are at 70%. Clearly, if African markets display a similar trend, it would seem investors benefit from early exposure to the theme before the markets mature, the correlations increase and the diversification benefits fall away.

Figure 52: **Brazil and Mexico 6m correlation to MSCI World**




*Source: Credit Suisse research*

**Figure 53: Poland and Hungary 6m correlation to MSCI World**




*Source: Credit Suisse research*

# Sector growth in Africa

# Mining: Significant growth potential

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After years of under-investment, the Asian-led commodity boom has re-focused the global mining industry's attention on Africa. The current hotspots for investment are DR Congo, Zambia, Mozambique, Botswana, Namibia, Angola, Mali, Guinea and Sudan. DR Congo hosts some of the world's richest known copper and cobalt ore-bodies that are currently producing at only 5–10% of their potential. The country also has vast diamond, uranium, coal and oil sand deposits that are still relatively untouched. Guinea has huge iron ore and bauxite deposits and currently ranks as one of the largest bauxite and alumina producers in the world. Mozambique has some of the largest undeveloped coal reserves, which could power all of Africa's future energy needs and still feed the European and Asian market. In Zambia, the country is quickly returning to its former glory in copper but is still operating at only 60% of its production potential, on our estimates. Angola has rich copper, diamond and oil prospects, which are now attracting significant attention from China. Mali could be a major producer of bauxite and alumina in the future. Sudan has some of the richest undeveloped oil deposits, which could one day rival output in Angola and Nigeria. *As a ball-park estimate, we think these countries could see investments of over US$100bn in the coming five years as the commodity bull market continues.*

Figure 54: **Africa's share of global production (in 2005 and 2015E)**

| Commodity | | 2005 production | | | 2015E production | | | Major countries |
|---|---|---|---|---|---|---|---|---|
| | | Africa | World | % of world | Africa | World | % of world | |
| Platinum | 000 ounces | 5,115 | 6,640 | 77% | 6,100 | 7,800 | 78% | South Africa, Zimbabwe |
| Cobalt | tonnes | 32,100 | 57,500 | 56% | 48,000 | 80,000 | 60% | DR Congo, Zambia, Morocco |
| Manganese | 000 t | 4,010 | 10,400 | 39% | 8,000 | 14,000 | 57% | South Africa, Gabon |
| Diamonds | 000 carats | 90,400 | 196,000 | 46% | 120,000 | 210,000 | 57% | Botswana, Namibia, DR Congo, S Africa |
| Palladium | 000 ounces | 2,605 | 8,405 | 31% | 3,100 | 9,000 | 34% | South Africa, Zimbabwe |
| Gold | 000 kgs | 522 | 2,470 | 21% | 550 | 2,550 | 22% | South Africa, Mali, South Africa, Tanzania |
| Uranium | tonnes | 8,150 | 50,900 | 16% | 12,000 | 55,000 | 22% | Namibia, Niger |
| Bauxite | 000 t | 15,900 | 172,000 | 9% | 30,000 | 200,000 | 15% | Guinea, Mali |
| Copper | 000 t | 730 | 15,500 | 5% | 2,000 | 23,461 | 9% | DR Congo, Zambia |
| Zinc | 000 t | 410 | 9,560 | 4% | 800 | 11,165 | 7% | Morocco, Namibia, South Africa |
| Coal | million tonnes | 249 | 5,886 | 4% | 425 | 8,857 | 5% | South Africa, Mozambique, Zimbabwe |
| Alumina | 000 t | 675 | 66,733 | 1% | 780 | 94,673 | 1% | Guinea |

*Source: USGS, Brook Hunt, Credit Suisse estimates*

The major miners have been slow to invest in Africa

Somewhat surprisingly, in our view, the major miners have generally been slow to invest in Africa, and most of the recent moves have come from either Chinese/Indian consortiums or small-cap miners listed on AIM, TSX, JSX or the ASX.

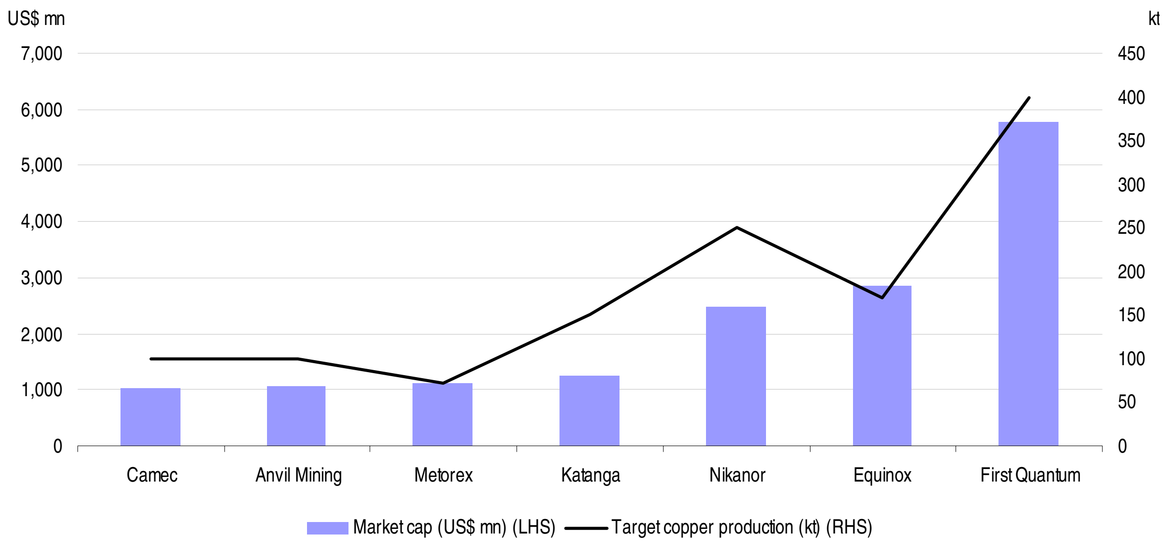
- **Anglo American** exited Zambia in 2001 when the copper price was just US$0.80 per pound. Vedanta acquired all of Anglo's Zambian copper assets and has enjoyed a very significant recovery in copper prices to US$3.20 per pound. Zambia was one of the key building blocks for Anglo American in the 1950s under the management of Harry Oppenheimer. These assets were later lost during the Zambian nationalisation in the late 1970s. When Anglo returned in 1999, it invested heavily in the Konkolla copper mines only to leave two years later.

- **BHP Billiton** was one of the early movers in the region with its investment in the Mozal aluminium smelter in Mozambique in 1998. Mozal currently produces over 400,000 tonnes of aluminium and ranks as one of the lowest-cost smelters in the world. BHP has substantial exploration ground in the Katanga copper belt in DR Congo but is not producing anything currently. Outside of Mozambique and DR Congo, the group has a 33% interest in the Guinea Alumina Project that is likely to cost US$1bn to develop and is set to commence production in 2011 with capacity of some 3.2m tonnes. However, relative to some of BHP's other development projects in Australia, Chile and the US, Africa is still a tiny part of its future capital expenditure programme.

- **Rio Tinto's** only African producing assets are its Richards Bay titanium operations and the Palabora copper mine, which are both in South Africa. The group's major growth focus in the last 10 years has been in its iron ore operations in Australia. However, management recently presented its plans to potentially develop an iron ore operation at Simandou in Guinea. Management believes the Simandou resource could contain between 8bn–11bn tonnes of ore, representing a mine life of 50–100 years.

- **Xstrata** has also been slow to become involved in Africa. While having substantial assets of chrome and coal in South Africa, it has never ventured north of the border. We think Xstrata could become more involved in DRC, given that its largest shareholder, Glencore, has a stake in Nikanor Plc and also the offtake agreement for the neighbouring Katanga mine in DR Congo. Early movers in copper in DR Congo include Glencore, Central African Mining, Nikanor, Katanga Mining, Freeport and Anvil Mining. The combined market caps of the pure-play DR Congo copper producers (excluding Freeport) is only US$7bn now.

Figure 55: **African copper miners: Market cap and target (for 2012) copper production**

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DRC has very significant reserves of copper, cobalt and diamonds that are more likely to be tapped now the political landscape appears to be improving

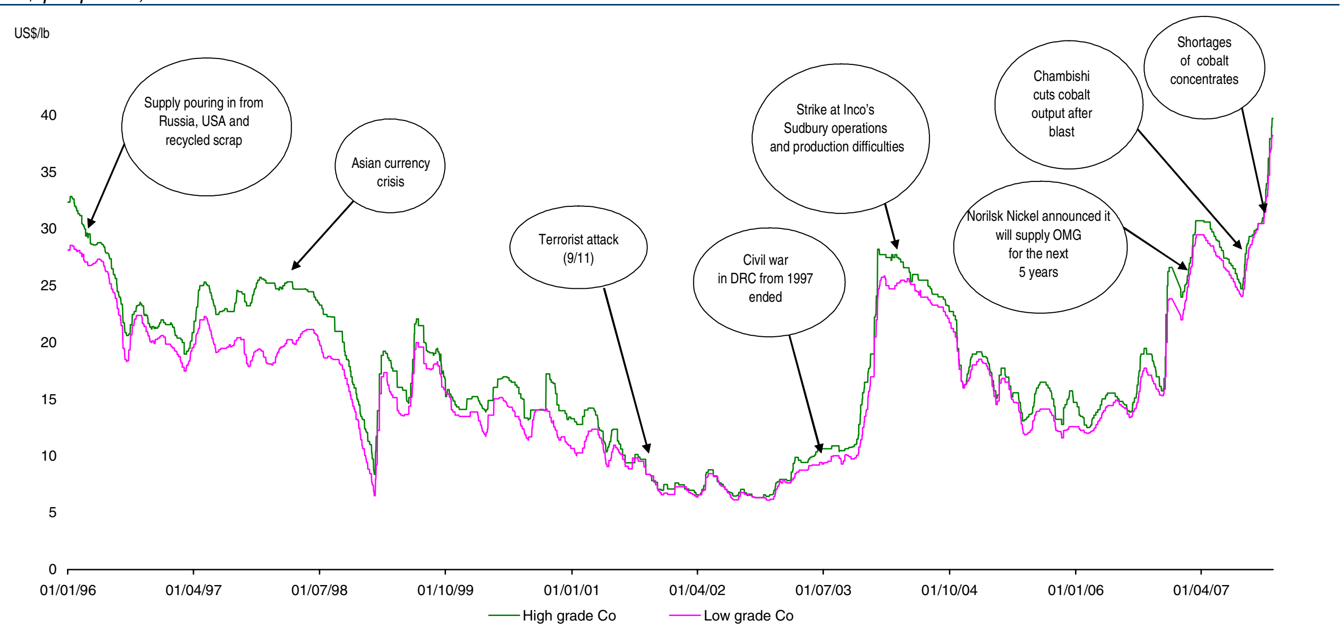
We think the majors have been slow to invest in DR Congo given the high political risks associated with the country. Child labour has become a big problem amongst illegal artisanal mining operations. Fortunately, the political landscape in DR Congo appears to be slowly improving. Elections were held in late 2006, and the mining licence review appears to be on track. DR Congo currently produces only 150,000 tonnes of copper in the Katanga copper belt. We have visited this region four times in the last 18 months and although production appears to be delayed for now due to poor infrastructure, we think the region could host an industry of 1m–1.5m tonnes of copper by 2012. Much of this expansion will likely depend on DR Congo rebuilding its potentially massive hydro power industry.

In the meantime, companies are nevertheless investing.

- **First Quantum Minerals Limited** is a Toronto-listed company with principal mining activities in Africa. The company currently owns three operating mines: Kansanshi (Zambia), Lonshi (DR Congo) and Guelb Moghrein (Mauritania). According to the company, these three mines are expected to produce more than 200,000 tonnes of copper and 110,000 ounces of gold in 2007. The company aims to achieve a production capacity of 400,000 tonnes of copper with the commissioning of the Frontier and Kolwezi projects in DR Congo. The company brought the Frontier project into production in November 2007 and we expect it to achieve its design capacity of 75,000 tonnes of copper in 2008. We expect the deposit to contain 182m tonnes of ore resources at 1.16% copper or 2.1m tonnes of contained copper metal. The project would cost US$226m to develop and has a mine life of 19 years. The company has said it believes that the Kolwezi Tailings project could come onstream by 2009 with an initial capacity of more than 100,000 tonnes of copper per annum. First Quantum also estimates the resource at the Kolwezi Tailings project at 112.8m tonnes grading 1.49% copper and 0.32% cobalt.

- The flagship project of **Katanga Mining**, another Toronto-listed company, is the Kamoto project in DR Congo. The project produced its first copper in December 2007 and we expect it to produce 35,000 tonnes of copper and 2,100 tonnes of cobalt in 2008. The company has said it aims to achieve full production of 141,000 tonnes of copper and 8,000 tonnes of cobalt by 2011. The company estimates the initial cost for the development of the project at US$424m. According to the feasibility study completed by the company, the deposit is estimated to contain 162m tonnes of ore resources grading 3.5% copper and 0.38% cobalt.
- Recently, **Katanga's** shareholders approved the acquisition of **Nikanor**. According to the terms of the deal, shareholders will get 0.613 Katanga share and US$2.16 cash for each Nikanor share. Nikanor's flagship project is the Kov deposit, which is estimated to contain 172m tonnes of ore resources at 5.1% copper and 0.5% cobalt. The company expects to produce 250,000 tonnes of copper and 30,000 tonnes of cobalt per annum. However, it expects the project to come onstream not earlier than 2011.

Figure 56: **Performance of cobalt prices (1996–to date)**
*in US$ per pound, unless otherwise stated*

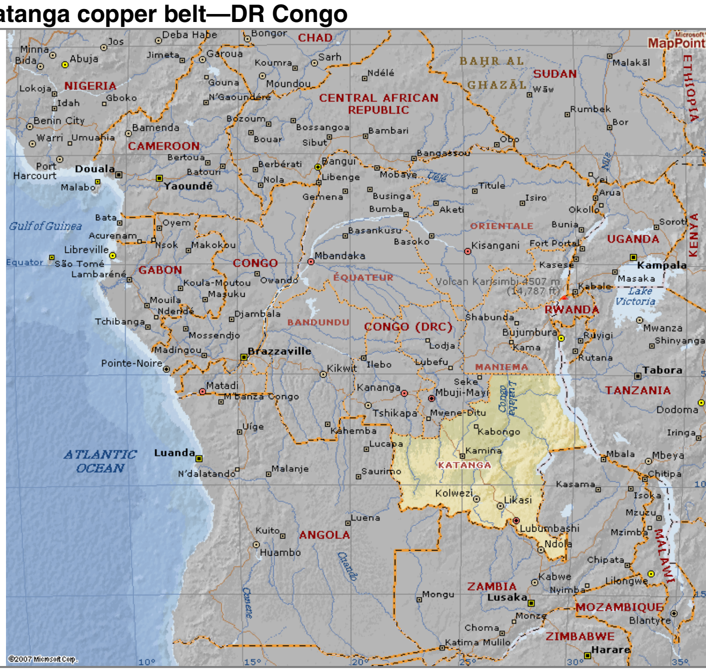



*Source: © Datastream International Limited ALL RIGHTS RESERVED, Credit Suisse research*

Although DR Congo is a small producer with regard to copper, the country's production represents over 45% of the world's cobalt output. Currently most of this output is sold as a low-quality concentrate to the Chinese and European cobalt refineries. For the last 10 years, China has built up its cobalt refining capacity from 2,000 tonnes to 14,700 tonnes. Although this sounds small, the total cobalt market is only 65,000 tonne globally. China relies heavily on DR Congo cobalt to feed its downstream refineries. On paper, DR Congo has up to 30,000 tonnes of potential new cobalt supply (from the likes of CAMEC, Nikanor, Katanga and Freeport), which is equivalent to 45% of current global capacity. However, supply from DR Congo has almost dried up since a permanent ban was imposed on all raw materials and concentrates leaving Katanga in DR Congo in October 2007. According to *Metal Bulletin* on 13 December 2007, a new Directive in DR Congo requires that each truck must pay a certification fee of US$550 and carry no more than 40 tonnes of concentrate. This will likely lead buyers of cobalt concentrate to continue bidding up prices as they struggle to source their feed for the downstream smelters while deliveries of the raw materials are held up in DR Congo. This ban has been imposed by the Katanga Governor in order to force through vertical integration and allow the raw ore (which can no longer be exported) to be processed in DRC itself rather than being processed abroad.

We think cobalt demand is likely to remain robust from the superalloys, battery industry, HEV and GTL industries. Total consumption, particularly from China, shows no signs of slowing down and global demand for cobalt could grow as much as 7% p.a. from 2007 to 2009. China is still one of the world's largest consumers of cobalt, accounting for c.23% of forecast global demand in 2007A, and we believe Chinese consumption could further increase by c.20% to 18kt p.a. in 2010. Clearly, this growth will be highly dependent on DR Congo increasing exports of cobalt. In the meantime, we expect cobalt prices to continue to rally.

**Figure 57: Katanga copper belt—DR Congo**



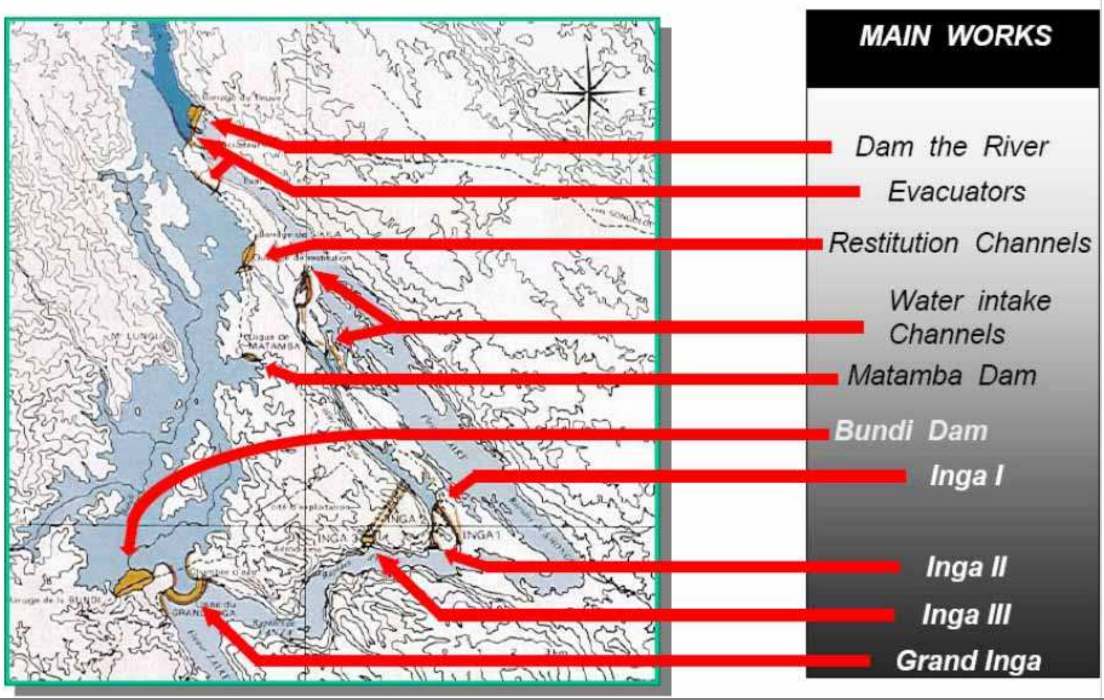

*Source: World maps*

The Congo River provides abundant opportunities for hydro power

DR Congo not only has huge resources of copper and cobalt, but also one of the largest river systems in Africa. The Kinshasa River (also known as the Congo River), which runs through the country, provides abundant opportunities for hydro power. Phase I of the Inga project was commissioned in 1972 with a capacity of 351 MW per annum. Phase II of the project came onstream in 1982 with 1,424 MW of power-generation capacity. However, mismanagement and poor administration has led to under utilisation of these power plants. The recent surge in mining activities in DR Congo has required an increased supply of electricity and this has led to the rehabilitation of Inga II. We expect the rehabilitation programme, which will likely cost US$110m, will be carried out by MagIndustries from Canada. The company completed the feasibility studies of the rehabilitation programme in 2006, and the first of the four turbines should be operational in 2008. All of the other turbines are due to become operational, with the project achieving full capacity by 2011.

Currently, studies are also being conducted for the construction of Phases III and IV. Phase III of the Inga project comprises the construction of 3,500MW of power generation capacity at a capital cost of US$5bn. The project is scheduled to be commissioned in 2012. The project is developed by Western Power Corridor (WESTCOR), a joint venture of the national power firms of DR Congo, Angola, Namibia, Botswana and South Africa. Conceptual studies are underway for the development of the phase IV or the Grand Inga power station. The project comprises of 52 power generators of 750MW each, amounting to 39,000 MW of total capacity. The capital cost of the project, which will be sufficient to provide electricity for the entire African continent, is estimated by the consortium at US$80bn. Initial studies completed by WESTCOR indicate that the excess power generated could even be exported to Europe. One step at a time, but we believe this project clearly has significant potential and would be a cornerstone of DR Congo re-development—not least since a much greater power supply is a prerequisite for greater vertical integration of the metals and mining industry across Africa.

Figure 58: **Location of hydro power projects along the Congo river—DR Congo**




*Source: World Energy Council*

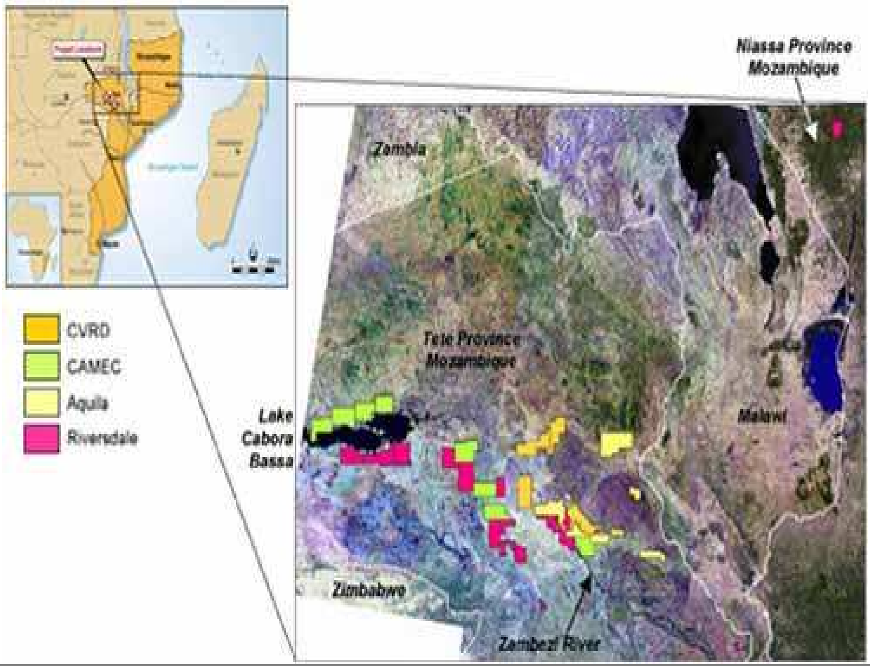
DR Congo is also very rich in diamonds and home to some of the largest stones found in Africa. We anticipate DR Congo to become a bigger player in the diamond industry as the likes of Gem Diamonds Plc invest more heavily in the country.

Mozambique has a vast coal resource that is relatively untouched

While DR Congo has hydro potential, Mozambique has a vast coal resource that is relatively untouched. We have visited this coal basin twice in the last 18 months and are always amazed by the vast scale of the resource that can be observed from the air. The resource appears to host all grades: steaming coal (for power stations), coking coal (for steel production) and middlings (lower-grade brown coal for local power stations and not for export). With South Africa now experiencing blackouts, Mozambique could become an ideal source of power generation to feed both South Africa and its neighbouring countries. We think spending on both power plants and coal mines in Mozambique could reach US$30bn over the next ten years, which would provide a major lift for the country. So far, tourism has been the country's biggest earner, although going forward with rising coal prices, Mozambique acreage is likely to become more and more valuable both to Africa and to other fast-growing regions like India and China.

- **CAMEC** (Central African Mining Plc) holds one of the largest exploration concession areas in Mozambique. Through its subsidiary, Zambesi Coal, CAMEC holds 20 concessions, spread over 368,000 hectares. According to management, early estimates indicate that these deposits hold as much as 3.4bn tonnes of coal. RSG Global has been hired to complete a feasibility study to develop a 20m-tonne per-annum mine producing export-quality anthracite, coking and steaming coal. Assuming the project goes ahead, first production is envisaged by management to start in early 2010.

Figure 59: **Coal tenements in Mozambique**




*Source: Riversdale website*

In our view, Mozambique could be the next hotspot for coal projects, with the country hosting more than 10% of global coal resources but producing only 40,000 tonnes p.a. currently. To put that in perspective, Mozambique produces less coal per annum than any of the major miners currently produce in just one day. The opportunity is huge, but there is still very little known about coal in Mozambique. The government's official statistics indicate a resources of over 25bn tonnes in the country situated in four coal basins, including Tete (Moatise), Mefedeze, Mucanha-Vusi and Cahora Bassa North.

*In Mozambique, the mining laws are simple and attractive for new entrants, requiring no state participation or any minority participation.* Exploration licences have a duration of five years, with automatic extension of another five years and 25 years thereafter. Mineral royalties are 3% of sales. Foreign exchange is freely imported and exported. Growth in tourism, farming and new mining projects should significantly lift the GDP of the country after the 20-year civil war (fought between FRELIMO and RENAMO from 1975 to 1992; the first free elections were held in 1994). We view logistics as the key to the success of coal in Mozambique. The 310-kilometre Tete to Beira rail link that was destroyed during the war is now being reconstructed using financing from the World Bank. We expect this to be completed by the end of 2009, opening up the Tete coal basin for mining. Savana is north of Beira and could be suitable for a jetty that would convey the coal out to deeper water for loading onto larger ships.

- **Riversdale Mining** owns 290,000 hectares of coal-bearing tenements and is currently trading at an enterprise value of US$518m. Riversdale also has a small operation in Zululand, north KZN, South Africa which produces 800,000 tonnes per year (as at 2007).

- **CVRD** is one of the first majors to set foot in Mozambique with its Moatize coal project, which has a 2.4bn-tonne resource and was acquired from the Mozambique government in 2004 for US$122.8m. CVRD intends to build a 14m tonne coal mine for exploiting the deposit over its estimated life of 36 years. The company estimates the initial capex for the project at US$1bn.

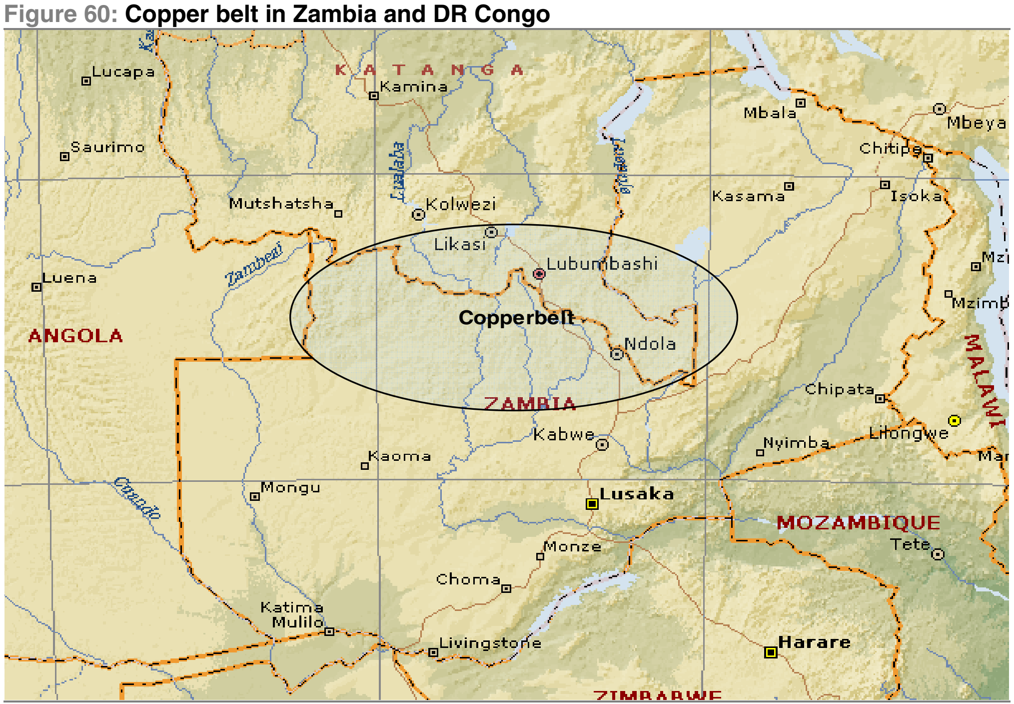
- Moatise was hotly contested during its tender, with other bidders including several of the major mining houses. **CAMEC** applied for the surrounding licences shortly after CVRD announced its acquisition of Moatise. Why the majors did not secure the surrounding areas is unknown, although the lack of drilling data on these concessions may have been part of the reason. The investment by CVRD is the first in the coal basin and we believe is likely to open the floodgates of more developments from companies such as Camec and Riversdale. Time will tell how long it takes for the other major miners to become involved in the region, but we think both Camec and Riversdale could be potential takeover targets in the coming years ahead, given they have secured such large areas of the region.

Zambia is a major African player in copper and cobalt

Zambia primarily produces copper and cobalt, which constitute more than 60% of the country's merchandise exports. In 2005, the country produced 9,300 tonnes of cobalt, or 16% of world supply. Zambia also produced 450,000 tonnes of copper (3% of global supply) in 2005. Mopani Copper mines, a joint venture between Glencore and First Quantum Minerals, is the major producer of copper and cobalt in Zambia. According to company projections, the venture should produce 2,500 tonnes of cobalt and 270,000 tonnes of copper in 2007. Vedanta's Konkola mine is another major copper producer in the country. The operation has an annual capacity to produce 100,000 tonnes of copper. Zambia also produces a significant amount of emeralds, gold and silver.

Zambian copper-cobalt projects coming onstream in the next eight years are Lumwana (Equinox—160,000 tonnes copper), Mwambashi (TEAL—15,000 tonnes), Konkola Deep (Vedanta—170,000 tonnes) and Muliashi (Cunico—60,000 tonnes).

Figure 60: **Copper belt in Zambia and DR Congo**




*Source: MSN maps,*

- **Equinox Minerals** (Australia-listed) owns the Lumwana project in Zambia. Equinox estimate the Lumwana deposit contains 321m tonnes of ore reserves grading 0.73% copper. The company has commenced the construction and the project is scheduled to produce its first copper by mid-2008. The project, which has a mine life of 37 years, has an annual capacity to produce nearly 169,000 tonnes of copper on average. The company estimate initial capex to bring the project into production is US$1bn.

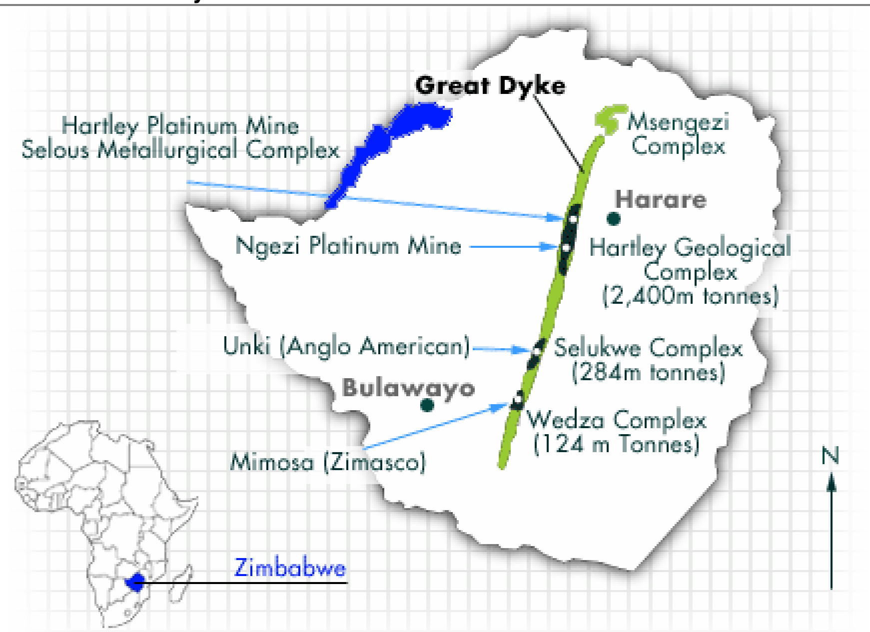
The mineral industry of Angola, located in south-west Africa, is dominated by petroleum. Petroleum production contributes 52% of the country's 2005 GDP and 96% of the exports. The country has an annual capacity to produce 456m barrels of oil from its offshore wells in 2005. The country has proven reserves of 5.4bn barrels of oil and 1.6trn cubic feet of natural gas. Each of the oil majors—BP, Chevron, Exxon and Total—has oil mining rights in Angola.

Angola hosts huge, untapped oil reserves

Although there are serious political and economic issues in Zimbabwe, there is no doubting this country has vast diamond, platinum, coal and nickel resources. The platinum belt in Zimbabwe is known as the Great Dyke, which is a linear feature running north-south through the centre of the country. The PGM resources of the Great Dyke are second only to the Bushveld complex in South Africa. In comparison, the Great Dyke hosts lower pgm content at 4g/t and higher nickel and copper content than that of its South African counterpart.

The political and economic landscape in Zimbabwe is very serious, but there is no doubt the country has vast diamond, platinum, coal and nickel resources

**Figure 61: The Great Dyke in Zimbabwe**




*Source: Zimplats website*

A key advantage of the Great Dyke is that many of the prospects are open cuttable (mined with open-cut techniques as opposed to underground) and do not require deep shafts and caving, which is a common feature of the operations in South Africa. This is because the South African platinum industry is some 80 years old and has mined out most of the near-surface prospects. Unlike South Africa, the Zimbabwean platinum industry is relatively undeveloped and hosts many near-surface deposits.

- Zimbabwe has the potential to be a key growth area for South Africa-listed **Impala Platinum**. The main Zimbabwean platinum producer, Zimplats, is 86.9% owned by Impala Platinum and currently contributes roughly 7% to Impala's production. In FY2007, Zimplats produced 96,500 ounces of platinum in matte and the company has approved development plans to increase production to 160,000 ounces of platinum by 2010. Zimplats represents roughly 28% of Impala's reserves and 42% of its known resources. Impala's future expansion projects are largely reliant on its operations in Zimbabwe, but this exposes the company to significant risk. The Zimbabwean local ownership bill was passed by parliament in late September 2007 and seeks indigenisation of 51% of foreign-owned firms. The government has also threatened foreign-owned firms with nationalisation. This, together with growing political and economic instability, electricity shortages and the lack of skilled workers, will make growth prospects risky, in our view. However, the company remains positive about its prospects in Zimbabwe and is continuing its expansion plans.

- The operations of **Anglo Platinum** (74.5% owned by Anglo American) is mainly focused in the Bushveld Complex in South Africa. Currently the company envisages a 51% holding in the Unki project in Zimbabwe. This project is situated near Gweru, on Zimbabwe's Great Dyke. The project is still subject to certain Zimbabwean and South African regulatory and fiscal approvals, and development costs are under review in light of the economic and exchange-rate environment in Zimbabwe. A feasibility study for a 120,000 ton per month mine has been completed. Development of certain mine surface infrastructure continued in 2007, with completion of the Lucilliapoort dam, roads and housing infrastructure achieved. The company has indicated that it is reviewing its development costs in light of the political and economic situation in the country. We think Anglo Platinum will be exposed to the same risks as mentioned above for Impala Platinum.

Botswana is rich in diamonds

Botswana is rich in diamonds and has one of the highest GDPs per capita in the continent (US$7,300 in 2007, according to the IMF). The Botswana Government holds a 10% interest in De Beers, which is the world's largest diamond producer. Some 67% of De Beers' production comes from Botswana, more than from South Africa, which has been in decline for the last 20 years due to rising costs and limited new ore-bodies. Debswana, a 50:50 joint venture between DeBeers and the Government of Botswana, currently controls all the diamond production in Botswana through its four mines. The country produces 34.2m carats of diamonds every year. A few other companies like **African Diamonds Plc, Helio Resources, Tsodilo Resources** and **Rio Tinto** are currently exploring for diamonds in Africa.

Similarly, Namibia has significant diamond reserves

Namdeb (not listed), a 50:50 joint venture between De Beers and the government of Namibia, is the only company taking advantage of the rich diamond ores of Namibia. The company produces 1.7m tonnes of carats from its onshoring and offshoring mining operations.

Uranium was discovered in the Namib Desert in 1928, but it was not until exploration during the 1950s that much interest was shown. The first commercial uranium mine began operating in 1976. Currently, Namibia has two significant uranium mines capable of providing 10% of global output. There is strong government support for expanding uranium mining to six mines (from the current two) and some apparent interest in using nuclear power.

- **Paladin Energy Ltd.** operates the Langer Heinrich mine in Namibia. The project is contained within a single mining licence covering an area of 4,375 hectares which expires in 2030. The mining method employed at the Langer Heinrich is conventional open-pit excavator-truck operation with all production operations (drilling, blasting, loading, hauling and dumping) carried out by mining contractors. Compared to other uranium-mining regions of the world (Athabasca Basin, Canada), uranium mining in Namibia offers a reliable source of global production. Langer Heinrich is the first new uranium mine and mill to be constructed in the world in 25 years.

Guinea is the fourth-largest bauxite producer in the world

Guinea is the fourth-largest bauxite producer in the world. **Rusal, Rio Tinto, BHP Billiton** and **Alcoa** have a presence in Guinea. In 2007, the country produced nearly 16m tonnes of bauxite. The bauxite resources in Guinea are estimated by Brook Hunt at 7.5bn tonnes (the largest in the world), which gives a mine life of more than 450 years at current production levels.

Gold is still very important to South Africa, but costs are typically high compared to other producers

Finally, a word on gold mining. Much of the world production of mined gold still comes from South Africa (12% of 2006 production). According to GFMS statistics, South Africa produced an estimated 272 tonnes of gold in 2007 but has now been replaced by China as the world's largest gold producer (276 tonnes estimated 2007 production). Given the long history (and depth) of many of the mines in South Africa, production costs are generally much higher than elsewhere. 95% of South Africa's gold mines are underground operations, reaching depths of over 4.0 km. Coupled with declining grades and increased depth of mining, production has been on a long-term declining trend. Nevertheless, the gold reserve in South Africa is still substantial (estimated the World Gold Council at 40,000t, representing 40% of global reserves). South Africa's main gold-producing area is concentrated in the Witwatersrand Basin. The Witwatersrand basin, which has been mined for more than a century and has produced more than 41,000t of gold, remains the largest source of gold in the world. The three major South-African listed gold mining stocks are AngloGold Ashanti, Gold Fields and Harmony.

South African gold production is being negatively effected by power shortages

- **AngloGold Ashanti** (17.3% owned by Anglo American) makes 43% of its total revenues in South Africa. Earnings are negatively affected by AngloGold's hedge book, which has a net delta of 2.24m ounces, representing some 46% of its production. We believe AngloGold Ashanti should take steps to accelerate the reduction of its hedge book. Going forward, we expect to see reduced production from AngloGold Ashanti due to the electricity shortage in South Africa.

- **Gold Fields Limited** is one of the world's largest unhedged producers of gold, providing investors with maximum leverage to the gold price. Gold Fields has attributable production of 4.0m ounces per annum. Most of its production is concentrated in South Africa, but Ghana makes up 19% of production, according to the latest quarterly results. The current power shortage in South Africa has led the DME (Department of Minerals and Energy) to request that mining companies reduce their electricity consumption by 10%. In order to achieve this reduction in energy consumption, we believe the company will have to take drastic measures, including the closure of marginal mines, retrenchment of staff and restructuring of its operations. Gold Fields has announced that it will likely have to close down six shafts as a result of the proposed power-supply reduction from Eskom. During FY 2007, Gold Fields spent US$47m on near mine exploration and US$41m on greenfields exploration. Going forward, we expect GFI to further expand its operations in Ghana and at South Deep in South Africa.

- **Harmony** is the fifth-largest gold producer in the world, with operations and projects in South Africa, Australasia and Papua New Guinea (PNG). Harmony operates 24 shafts, one project shaft and one opencast mine in the Witwatersrand Basin of South Africa. South Africa makes up the bulk of production (90%), followed by operations in Australia. The company produced 2.33m ounces of gold in FY 2007. As with AngloGold Ashanti and Gold Fields, we expect the current electricity shortage to negatively affect the company's earnings and growth projects going forward.

**Figure 62: Mining sector stocks and their exposure to Africa**

| Ticker | Company | Main listing | Concern | % revs from Africa | Rat | Mkt Cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| FM.TO | *First Quantum | Canada | Cu and coal in DRC and Zambia, Cu and gold in Mauritania | 100% | NR | 5,602 | 6.6 | 2.6 |
| MRFJ.J | *Merafe Resources | Joburg | Xstrata Merafe Chrome venture in SA with 6 mines and 5 smelters, production of Ferrochrome | 100% | NR | 981 | 11.2 | 4.5 |
| AVL.AX | *Anvil Mining | Australia | Cu in DRC | 100% | NR | 867 | 5.7 | 2.7 |
| KAT.TO | *Katanga-Nikanor | Canada | Cu and coal in DRC | 100% | NR | 2,827 | 25.9 | 8.5 |
| ACU.L | *African Copper | London | Cu in Botswana (Mowana mine) | 100% | NR | 140 | 7.5 | 2.8 |
| TL.TO | *Teal Exploration & Mining | Canada | Cu & Gold in Zambia, Namibia and the Democratic Republic of Congo | 100% | NR | 210 | 15.2 | 7.0 |
| PPN.TO | *Platmin Ltd | Canada | PGM resources in Eastern limb of Bushveld Complex, Limpopo Province, SA | 100% | NR | 758 | -76.2 | 344.4 |
| IMPJ.J | Implats | Joburg | PGMs in SA and Zimbabwe | 100% | N | 26,067 | 14.7 | 5.1 |
| FIU.TO | *First Uranium Co | Canada | Uranium and gold mining near Johannesburg mines | 100% | NR | 864 | -1344.0 | 32.9 |
| PDN.AX | *Paladin | Australia | Uranium in Namibia | 100% | NR | 2,217 | 14.5 | 9.8 |
| AMSJ.J | AngloPlatinum | Joburg | Platinum, Palladium, Rhodium & Nickel in South Africa | 100% | N | 36,338 | 14.4 | 4.5 |
| EQN.AX | Equinox | Canada/Australia | Cu and uranium in Zambia | 97% | O | 2,597 | 12.2 | 5.5 |
| PAMJ.J | *Palabora Mining | Joburg | Cu & vermicutile in Limpopo Province, South Africa | 92% | NR | 724 | 5.6 | - |
| HARJ.J | Harmony | Joburg | Harmony is the fifth-largest gold producer in the world, with operations and projects in South Africa, Australasia and Papua New Guinea (PNG) | 90% | O | 4,802 | 42.6 | 3.2 |
| GFIJ.J | Gold Fields | Joburg | Gold mining in South Africa and Ghana | 81% | O | 8,984 | 20.4 | 3.1 |
| MTXJ.J | *Metorex | Joburg | Cu and coal in DRC and Zambia, gold in Mozambique | 62% | NR | 967 | 15.0 | 3.7 |
| ARIJ.J | *African Rainbow | Joburg | Nickel, ferrous metals and coal in northern cape, Sishen, Modikwa Mine | 46% | NR | 6,186 | 19.2 | 5.1 |
| ANGJ.J | Anglogold Ashanti | Joburg | One of the biggest gold miners in Africa, with exposure in six African countries: South Africa, Ghana, Guinea, Mali, Namibia and Tanzania | 43% | N | 9,380 | 26.6 | 2.8 |
| AAL.L | Anglo American | London | PGMs, gold, coal, iron ore and diamonds in SA, plus 45% stake in De Beers, small stake in Anglogold Ashanti, majority stake in AngloPlats | 41% | O | 79,056 | 10.6 | 2.6 |
| CFM.L | Central African Mining Plc | London | Cu and coal in DRC, coal in Mozambique (holds one of the largest exploration concession areas in Mozambique) | 27% | O | 1,352 | 21.6 | 4.4 |
| AFE.L | *African Eagle Resources | London | CU & Gold in Tanzanina, Zambia & Mozambique | 25% | NR | 36 | -17.0 | - |
| UUU.TO | *Uranium One Inc | Canada | Uranium in South Africa | 20% | NR | 2,425 | 13.5 | 20.2 |
| ASRJ.J | *Assore Ltd | Joburg | Iron Ore, Manganese Ore, Synthetic Diamonds in Linbro Park, Johannesburg, North cape. | 11% | NR | 2,221 | 11.1 | - |
| XTA.L | Xstrata | London | Chrome and coal in South Africa | 9% | O | 69,616 | 10.2 | 2.2 |
| KIOJ.J | *Kumba Iron Ore | Joburg | Iron ore in Sishen, Saldanha, Faleme Mine of South Africa | 8% | NR | 13,021 | 13.9 | 5.2 |
| RIO.L | Rio Tinto | London | Titanium and Cu in SA, uranium in Namibia | 6% | R | 105,962 | R | R |
| VED.L | Vedanta Resources | London | Cu in Zambia | 6% | N | 12,279 | 13.8 | 1.6 |
| BLT.L | BHP Billiton | London | Cu in DRC, Aluminium in Mozambique & South Africa, Coal in South Africa | 5% | R | 66,814 | R | R |
| VALE5 | CVRD | Sao Paulo | Moatize coal project in Mozambique—initial capex for the project is estimated at US$1bn | 5% | O | 57,182 | 8.9 | 1.3 |
| ERA.PA | Eramet | Paris | Manganese in Gabon | 3% | N | 20,202 | 15.0 | 2.7 |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

# Important region for oil & gas

Africa ranks as the third-largest region in terms of remaining proved liquid and gas reserves. With the Middle East and Russia effectively closed shops for many of the global oils, Africa remains one of the most attractive potential growth regions for the oil industry.

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**Figure 63: Global total proved reserves, bn boe**

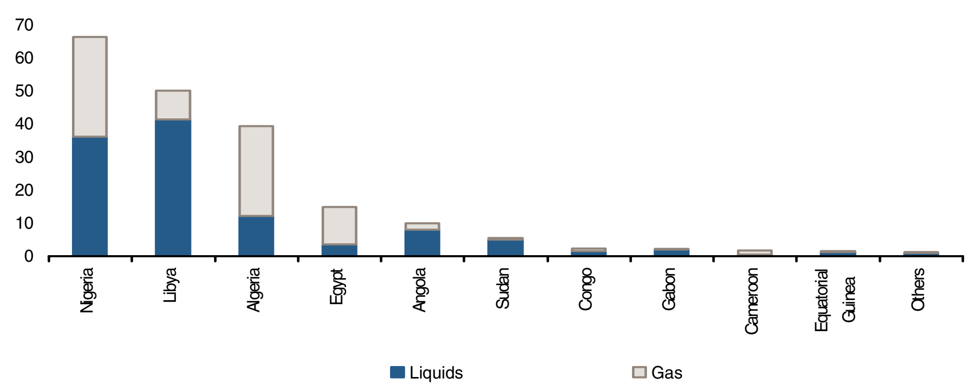
| | Liquids* | Gas* | Total | % of total |
|---|---|---|---|---|
| Middle East | 737 | 430 | 1167 | 53% |
| FSU | 99 | 337 | 435 | 20% |
| Africa | 113 | 85 | 198 | 9% |
| Latin America | 103 | 41 | 143 | 6% |
| Asia Pacific | 33 | 94 | 128 | 6% |
| North America | 47 | 47 | 94 | 4% |
| Europe | 16 | 35 | 51 | 2% |
| **Global** | **1148** | **1068** | **2216** | **100%** |

*Source: ENI World Oil & Gas Review 2006. *Gas reserves are based on YE05, liquids YE06*

The key resource holders across Africa are Nigeria, Libya, Algeria, Egypt and Angola, which combined account for 92% of total proved African reserves (Figure 64). Nigeria now ranks as having the ninth-largest proven oil and gas reserve in the world (with a proved reserve that is 22% the size of Saudi Arabia's). Libya is the 11th largest and Algeria the 13th largest.

Nigeria now ranks as having the ninth-largest proven oil and gas reserve in the world

**Figure 64: Africa: Top 10 reserve holders by country, bn boe**




*Source: ENI World Oil & Gas Review 2006, Credit Suisse estimates. Note: Gas as at YE05. Liquids as at YE06*

However, recent major discoveries in Uganda and offshore Ghana by UK independent **Tullow Oil**, plus continued exploration in such countries and others, have the potential, we estimate, to add several billion barrels of resources in the coming years from newcomers to the African oil scene. According to ENI, proven oil and gas reserves for Africa have risen by 14.6% over the last 10 years compared to only 7.9% for the rest of the world.

Recent major discoveries have the potential to add several billion barrels of resources in the coming years

In Nigeria, for instance, ENI data shows that oil production has increased by 9.8% over the last five years and proven reserves have increased by 51%. However, production could have been significantly higher if the politics had been less turbulent (e.g. the 2007 Presidential elections were condemned by the EU Election Observation Mission as highly flawed) and violence in the Niger Delta had not disrupted operations so much. It took Shell nearly four months to extinguish a series of fires started along the major export pipeline in H2 2007. Looking forward, Nigerian offshore oil fields are likely to be a major growth area for production, while prospects for onshore remain distinctly mixed. Large investors in Nigeria include Royal Dutch Shell, ExxonMobil, Chevron, Total, ENI plus other smaller players.

Libya has been one of the fastest-growing oil producers since sanctions were fully lifted in May 2006. The state-owned National Oil Corporation (NOC) dominates Libya's oil industry, and accounts for around 50% of the country's oil output. Financial terms are tough (see below), with the government take in the 80–95% range. Among Libya's NOC's subsidiaries, the largest oil producer is the Waha Oil Company (WOC), which is part-owned by ConocoPhillips, Marathon Oil and Hess Corporation of the US. Occidental Petroleum was the first US oil company to re-enter Libya following the lifting of sanctions, and is now the country's largest single acreage holder at 30m acres. The principal non-US foreign investors in Libya include Repsol YPF, OMV, Total and StatoilHydro. We expect there to be an active exploration programme in Libya in 2008 and 2009, both in the offshore and onshore zones with most of the above-named companies taking part.

Libya has been one of the fastest growing oil producers since sanctions were fully lifted in May 2006

Angolan oil production has increased dramatically (up 91%) over the last five years since the end of the civil war in 2002 (which started in 1975). On 1 January 2007, Angola became a member of OPEC and, according to SONANGOL, the state oil company, oil production is forecast to be double the 2006 output by 2010 with the development of deep-water offshore fields. The offshore Block Zero, operated by Chevron, provides the majority of Angola's current crude oil production at 370,000 b/d. Chevron has a 39.2% stake in Block Zero, with SONANGOL, Total, and ENI owning the rest. Chevron also operates Angola's first producing deepwater section, Block 14, with 57,000 b/d of output. Other IOCs operating current or prospective developments in Angola include StatoilHydro, ExxonMobil, Petrobras and BP, with Marathon Oil and others also involved as non-operating partners.

Angolan oil production is up 91% over the last five years

DRC, Equatorial Guinea and Gabon are all up and coming African oil producers. These smaller countries, including Sao Tomé and Principe, are likely to see more active exploration programmes in 2008 and 2009, we think.

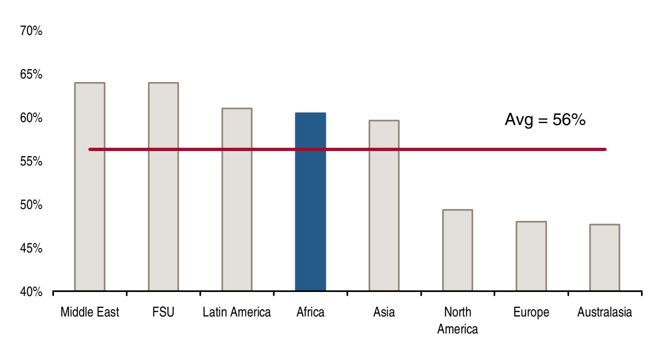
## Africa is a key growth region, but the integrated oils face some near-term headwinds

Although Africa is a key source of production growth, western oil companies face several headwinds across the African upstream industry:

- **Threat of higher fiscal rent**: On average, the marginal tax rate in Africa stands at 60%, placing it ahead of the global average of 56%. Key growth countries, such as Libya and Nigeria, are in the process of increasing (or have already increased in the case of Libya) the government's share of future revenues either directly or indirectly (e.g. Libya has been increasing the level of government take, in some cases to 90%, in the latest exploration licensing rounds while the Nigerian government is currently attempting to renegotiate legacy contracts both on and offshore).

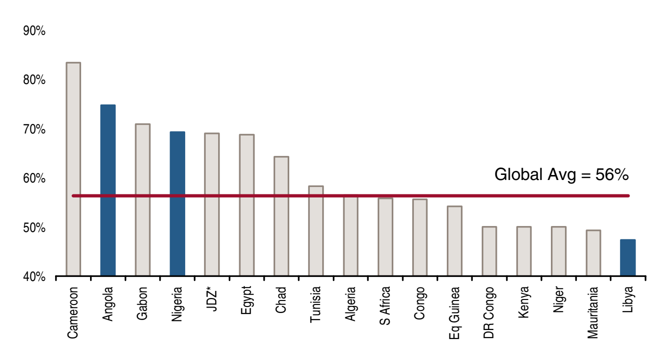
Some countries are in the process of increasing (or have already increased) the government's share of future revenues

**Figure 65: Global regions: NPV of remaining govt take* by region**




*Source: Company data, Credit Suisse estimates. Wood Mackenzie. *NPV of government share of future gross revenues from all commercial oil & gas projects as a proxy for fiscal burden*

**Figure 66: Africa: NPV of remaining govt take* by country**




*Source: Company data, Credit Suisse estimates. Wood Mackenzie. *NPV of government share of future gross revenues from all commercial oil & gas projects as a proxy for fiscal burden*

- **Necessity for increased local content:** As part of an overall drive to capitalise on Africa's deep resource base, many governments are now enforcing minimum local content rules in terms of the construction, installation and running of oil & gas developments. For example, Shell has had to ensure that topside structures at its installations in Bonga, South West Nigeria, have 50% local content. While this is healthy from a local standpoint, it is gradually sapping the intellectual/technical competitive advantage that has left the major oil companies largely unchallenged for several decades. A number of domestically domiciled exploration (E&P) and manufacturing companies (oil services) have already started up in recent years, sharply increasing competition levels for the IOCs.

Governments are enforcing minimum local content rules in terms of the construction, installation and running of oil & gas developments

- **Infrastructure investment commitments** As part of a broader effort to improve the infrastructure landscape across oil-rich African Nations, host governments are selectively (for now) insisting that oil companies wishing to gain access to oil & gas reserves commit to investment in other projects, such as the construction of power plants, roads and hospitals. Overall, this is serving to reduce typical industry returns on stand-alone oil and gas fields. Indeed, the reluctance of many of the major oil companies to cede to this new requirement has opened the door to state-owned oil companies from China, Malaysia, Russia and the Middle East where shareholder returns are arguably less of an immediate concern.

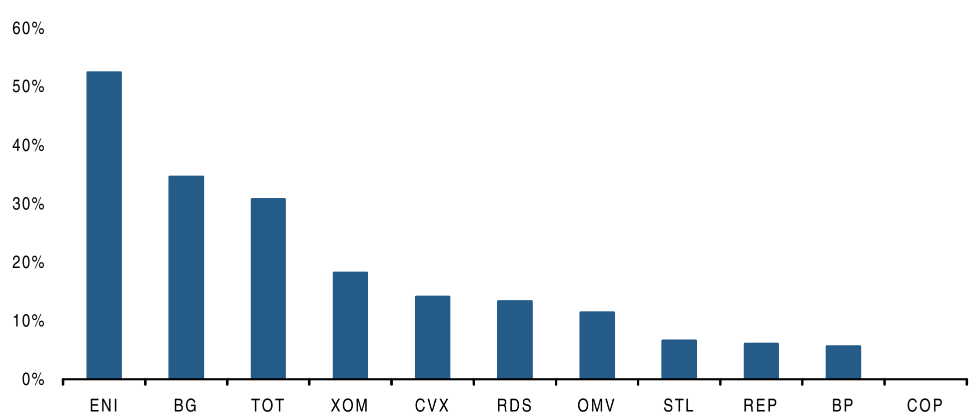
Infrastructure investment commitments common practice

- **Continued political disruption and the threat of nationalisation**: Attacks on both onshore and offshore oil facilities have not abated in Nigeria in the last two years. The net result has been the shut-in of some 550,000 b/d of oil production since June last year, equivalent to more than 20% of the country's theoretical production capacity in 2006, according to the IEA. Royal Dutch Shell, ENI, Chevron, ExxonMobil and Total have all been affected by these shut-ins. Frontier areas, such as Kenya and Sudan, are continuing to struggle with political instability, which is likely to discourage significant investment from Western oil companies, although it has not put off the likes of Petronas of Malaysia and CNOOC of China.

Threat of political disruption

Overall, ENI, BG, TOT, XOM, CVX and RDS are most exposed amongst the international major oil companies in terms of current headline production in Africa. This should facilitate growth, but with attendant fiscal and execution risks. It is worth highlighting that the above risks are not all equal across Africa. ENI's production base is split evenly between North Africa and West Africa; BG's volumes are focused primarily in Egypt (seen as relatively stable); Total has a relatively higher proportion of its hydrocarbon production sourced from West Africa; Chevron is concentrated more heavily in Angola and Nigeria; Hess Corp's activities are taking place in Equatorial Guinea, Libya and Egypt; while Marathon's holdings are split between Libya, Equatorial Guinea and deep water Angola.

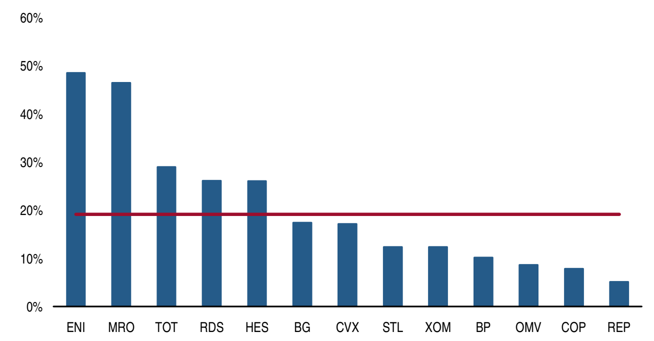
Figure 67: **Global oils: % exposure to oil & gas production vs group production, 2006**




*Source: Company data, Credit Suisse research*

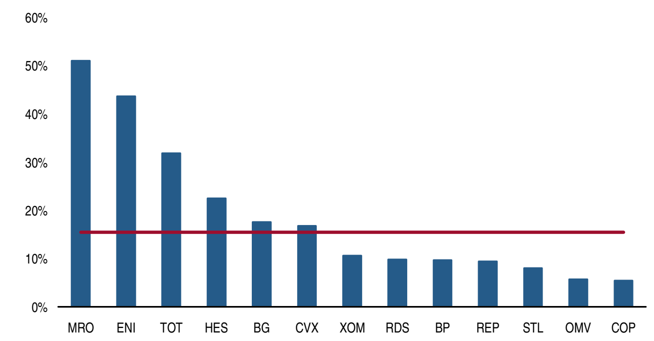
However, looking to the future potential exposure, MRO and HES show a relatively high exposure to future value (upstream EV) and remaining reserves, generally a good barometer for long-term growth (Figure 68 and Figure 69).

Figure 68: **Global oils: % group reserves in Africa, 2007E**




*Source: Company data, Credit Suisse estimates*

Figure 69: **% total upstream EV in Africa, 2007E**




*Source: Company data, Credit Suisse estimates*

# No longer just the oil majors

Aside from the big-cap names in the oil sector, there are various smaller-cap names that offer significant African exposure. These are mostly European names:

- **Tullow Oil** generated 58% of 2007E revenues from oil & gas production operations in Gabon, Cote d'Ivoire, Congo (Brazzaville), Equatorial Guinea and Mauritania. We expect exposure to Africa to have grown significantly by 2015 as exploration successes in both Ghana and Uganda are commercialised. The risked NPV of exploration prospects and discoveries in Africa is reflected in our risked NAV making up 87% of the total group NAV.

Tullow Oil generated 58% of revenues from oil & gas production in Africa in 2007E

- The board of **Burren Energy** accepted a cash offer of 1230p per share from ENI on 30 November 2007, or US$3.4bn. Through this acquisition, ENI will gain access to the producing M'boundi asset in Congo (Brazzaville), which contributed approximately 62% to Burren's 2007E revenues according to our estimates.
- **Lundin Petroleum** has producing assets offshore Tunisia that made up 20% of the company's 2007E revenue base. We think exposure to Africa has the potential to increase if exploration activity in Sudan is successful. An extensive drilling programme in Sudan block 5B is due to commence in 2008, with the potential to unlock over 2bn bbls of gross unrisked resource. Lundin's previous successes in Sudan include the Ryer/Thar Jath discovery in Sudan Block 5A, which were sold to Petronas in 2003.

Lundin Petroleum garnered 20% of 2007E (Credit Suisse estimate) revenues from Tunisian offshore assets

- Afren (not covered) is a UK-listed independent E&P with a unique play on West Africa. Afren has said it is seeking to access significant reserve potential in the onshore and shallow water regions of Nigeria where some 500 discoveries have already been made. However, most of the resource is held by major oil companies that are unwilling to develop the reserves given the marginal economics. However, the Nigerian government is incentivising local companies to develop these assets by providing better economic terms. In return, the larger oil companies can offload the assets that are largely immaterial within their global portfolios and crystallise at least some value. Afren's strength lies in the management team, where a blend of African-based businessmen and deep technical expertise could result in the company winning more opportunities over time. Afren currently holds 42m bbls of 2P reserves and 123mnbbls of un-risked resources across Nigeria, Gabon, DRC and Angola. The company represents an emerging breed of leaner, locally-biased E&P companies that could capitalise on a broader rationalisation of mature assets in Africa.

# A key area of rising spend for the service industry

The oil field service operators are benefiting from the boom in African oil production. Since these companies are generally (but not always) contracted through other (usually internationally registered) oil producers, there is arguably less risk to profits from production shortfalls, FX volatility or civil unrest. Figure 70 lists the main operators.

Figure 70: **Oil field service operators in Africa**

| Company | Ticker | Exposure to Africa | Product line exposure |
|---|---|---|---|
| Baker Hughes | BHI | 9% of 2006 consolidated revs; Algeria and Libya could grow 30%+ and 71%+, respectively, in 2007E; Identify 45 top projects in Africa out of 170 total worldwide | Completions, Artificial Lift, Logging Services, Directional Drilling, MWD/LWD, Fluids |
| Halliburton | HAL | 5.2% of 2006 consolidated revs, likely growing 20% p.a. | Completions, Pressure Pumping, Seismic Interpretation, Logging Services, Directional Drilling, MWD/LWD, Fluids |
| Schlumberger | SLB | We estimate 5–10% of global revenue, growing mid teens | Completions, Artificial Lift, Production Testing, Pressure Pumping, Seismic Interpretation, Logging Services, Directional Drilling, MWD/LWD, Fluids |
| Weatherford | WFT | Probably near 5% of revenue in 2007E, but very strong growth, we expect | Completions, Artificial Lift, Logging Services, Directional Drilling, MWD/LWD, Fluids |
| Smith International | SII | Similar to SLB, 10% of revenue in 2007E, strong potential growth | Fluids, Drill Bits |
| B.J. Services | BJS | Some presence, less than 10% of revenue in 2007E | Pressure Pumping, Completions |
| Cameron International | CAM | 12.6% of 2006 consolidated revs | Subsea Trees/Completions, Valves, Surface Trees |
| FMC Technologies | FTI | Maybe a bit more than CAM, around 15% of 2007E revenue | Subsea Trees/Completions, Surface Trees |
| Technip | TECF.PA | Low today but large Nigerian LNG potential in the future | Offshore installation |
| Saipem | SPMI.MI | Low today but large Nigerian LNG potential in the future. Strong North Africa gas | Offshore installation |
| Acergy | ACY.OL | 45% of 2008E revenues | Offshore installation |
| Subsea | SUB.OL | 23% of 2008E revenues | Offshore installation |
| Oil States International | OIS | Small exposure in offshore products for deepwater production | Offshore Products |
| Bristow Group | BRS | 16.9% of 2006 consolidated revs | Helicopter Transportation |

*Source: Company data, Credit Suisse estimates*

# Asia comes to town

The oil majors are also being potentially negatively affected by resource competition from Asia entrants, keen to secure their share of the region's resource wealth. Asian companies that do not yet offer significant exposure to Africa but are making reasonably large investments include:

Petro-China and Sinopec have invested in Sudan and Angola

- Hong Kong-listed **Petro-China**. The company has made upstream investments in Sudan, as well as refinery and pipeline construction. Sudan accounted for 7% of China's crude oil imports in 2007. However, production in Sudan (and Chad) still accounts for a minimal proportion of total production volumes at Petro-China.
- **Sinopec**. The company has invested in upstream projects in Angola (which accounted for 14% of China's crude oil imports in 2007E), Sudan, Algeria and Gabon. Again, as a proportion of overall production, African exposure is still very small.

We estimate CNOOC's Nigerian investment should make a significant contribution to the group level by 2010

- **CNOOC** has made a more meaningful investment in Africa through its 90% stake in OML130 (Akpo) in Nigeria, which is due to start up in 2009. We estimate this will account for 14% of total CNOOC production volume and 13% of total revenue in 2010. We estimate this is a US$4bn investment and that US$1.6bn has been paid so far.
- India's **ONGC**, through its subsidiary OVL, has invested in exploratory blocks in Libya, Sudan and Egypt, and has a stake in the producing GNOP field in Sudan. OVL paid

US$669m for this stake plus another US$115m for fields 5A and 5B also in Sudan. A joint venture, ONGC Mittal, has committed infrastructure development in Nigeria and has stakes in two blocks. This is a US$6bn commitment in pipelines, refineries and a railway: US$125m was paid upfront; capex to date is not known. With little upside expected by the company from producing fields in India, ONGC is looking at its overseas exploration acreage to form a larger portion of its production going forward.

- **Reliance Industries** has established a presence in the petroleum retailing business in East Africa through the acquisition of majority stake in GAPCO. While this is likely to form a very small portion of the company's revenues (we estimate the investment is c.US$100m–200m), the company has said it is looking at both upstream and downstream opportunities in the region to expand.

- Itochu. The company's LNG Project in Namibia has not launched yet. Its proven reserve is approximately 1.4trn cubic feet and the estimated deposit is about 4trn cubic feet. Total project cost is estimated by the company at c.US$6bn. Itochu holds a 20% interest.

Itochu's LNG project in Namibia has significant potential, in our view

- Mitsui and Marubeni. The companies have a joint LNG project in Equatorial Guinea. Mitsui holds 8.5%, Marubeni 6.5% and Sonagas (the Equatorial Guinean national natural gas company) holds 25% of interests, respectively. The lead operator is Marathon Oil, which owns 60%. Production is estimated by the consortium at 3.4m tonnes of LNG. The company has said a second tranche is also planned, setting a target of 4.4m tonnes of total production from 2010–11.

- **Mitsubishi.** Via wholly-owned subsidiary MPDC Gabon, Mitsubishi is investing in exploitation, production and sales of oil in Gabon. Mitsubishi owns about 50% of the interest in the field and currently produces 7,000bbl/day. Its operation has been ongoing since 1974 and has continued to renew contracts in order to maintain the business. Besides this project, Mitsubishi also exploits fields in Angola with INPEX, producing approximately 9,000bbl/day.

## Sasol: strong growth in Africa; internationalising unique technology

### Strong growth in Africa

The major South African oil company is **Sasol**. Around 90% of Sasol's near-term revenues are generated through the sale of oil and chemical products from the Fischer Tropsch conversion of coal/natural gas at its 150kbd Secunda plant in South Africa, the largest of its kind in the world. Africa will still be important for future growth. South Africa is becoming short of transportation fuels in the face of rising local demand. This may support a new 80kbd coal-to-liquids plant in the country (Project Mafutha). Sasol also has interesting upstream acreage in Mozambique and is building a gas-to-liquids plant in Nigeria.

Sasol is South Africa's major oil company

### Internationalising

As well as taking advantage of local market growth, Sasol is diversifying outside Africa. It has petrochemical assets in Iran and has just started a 34kbd gas-to-liquids plant in Qatar, both of which should drive above-sector-average EPS growth over the next 3-5 years. We think Sasol's coal-to-liquids and gas-to-liquids technology could open up significant business development activities in resource-rich Australia and China.

Figure 71: **Oil sector stocks and their exposure to Africa 2007E**

| Ticker | Company | Main listing | Concern | % EV or revs from Africa | Rat | Mkt Cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| AFR.L | *Afren | London | Seeking to access significant reserve potential in the onshore and shallow water regions of Nigeria | >95% | NR | 686 | 7.7 | 3.5 |
| SOLJ.J | Sasol | Joburg | Around 90% of revenues are generated through the sale of oil and chemical products from the Fischer tropsch conversion of coal/natural gas at their 150kbd Secunda plant in South Africa | 90% | N | 30,771 | 11.2 | 1.9 |
| TLW.L | Tullow Oil | London | 58% of revenues from Africa | 58% | O | 9,104 | 29.7 | 6.7 |
| MRO | Marathon | NY | 46% reserves in Africa | 28% | O | 33,655 | 7.5 | 0.4 |
| ENI.MI | ENI | Milan | 49% reserves in Africa | 28% | N | 138,430 | 8.2 | 0.9 |
| TOTF.PA | Total | Paris | 29% reserves in Africa | 21% | N | 181,365 | 8.4 | 0.8 |
| HES | Hess | NY | 26% reserves in Africa | 21% | O | 29,931 | 12.9 | 0.8 |
| LUPE.ST | Lundin Petroleum | Sweden | 20% of revenues from offshore Tunisian oil | 20% | O | 4,536 | 24.4 | 4.6 |
| BRS | Bristow Group | NY | 16.9% of 2006 consolidated revs | 17% | N | 1,320 | 15.7 | 1.3 |
| FTI | FMC Technologies | NY | Maybe a bit more than CAM - around 15% of revenue | 15% | N | 7,739 | 20.6 | 1.4 |
| BG.L | BG | London | 17% reserves in Africa | 14% | O | 74,543 | 16.5 | 4.0 |
| CVX | Chevron | NY | 17% reserves in Africa | 13% | N | 181,730 | 9.0 | 0.7 |
| CAM | Cameron International | NY | 12.6% of 2006 consolidated revs | 13% | N | 9,516 | 17.1 | 1.8 |
| 0883.HK | CNOOC | HK | 90% stake in OML130 (Akpo) in Nigeria, which is due to start up in 2009. We estimate this will account for 14% of total CNOOC production volume and 13% of total revenue in 2010 | 13% | N | 68,247 | 11.5 | 4.2 |
| BHI | Baker Hughes | NY | 9% of 2006 consolidated revs; Algeria and Libya growing 30%+ and 71%+, respectively, in 2007; Identify 45 top projects in Africa out of 170 total worldwide | 12% | N | 22,292 | 13.7 | 2.0 |
| SII | Smith International | NY | Similar to SLB, 10% of revenue, strong growth in high teens | 10% | N | 14,039 | 18.6 | 1.4 |
| BJS | B.J. Services | NY | Some presence, less than 10% of revenue | <10% | N | 8,601 | 13.2 | 1.7 |
| RELI.BO | Reliance Industries | India | Established presence in the petroleum retailing business in East Africa through the acquisition of majority stake in GAPCO | <10% | N | 85,222 | 22.8 | 2.7 |
| ONGC.BO | ONGC | India | Invested in exploratory blocks in Libya, Sudan and Egypt and has a stake in the producing GNOP field in Sudan | <10% | N | 54,099 | 10.0 | 2.3 |
| SLB | Schlumberger | NY | Estimate 5-10% of global revenue, growing mid teens | 5-10% | O | 108,752 | 18.8 | 4.1 |
| BP.L | BP | London | 10% reserves in Africa | 8% | N | 194,661 | 8.8 | 0.6 |
| STL.OL | Statoil | Norway | 12% reserves in Africa | 7% | O | 97,151 | 9.1 | 0.8 |
| XOM | Exxon | NY | 12% reserves in Africa | 6% | O | 473,584 | 10.7 | 0.9 |
| HAL | Halliburton | NY | 5.2% of 2006 consolidated revs, likely growing 20%/year | 6% | O | 35,365 | 14.1 | 2.1 |
| OMVV.VI | OMV | Austria | 9% reserves in Africa | 6% | U | 19,931 | 7.5 | 0.6 |
| REP.MC | Repsol YPF | Spain | 5% reserves in Africa | 5% | R | 44,767 | 9.6 | 0.5 |
| WFT | Weatherford | NY | Probably near 5% of revenue, growing 30% | 5% | O | 25,432 | 17.6 | 2.7 |
| OIS | Oil States International | NY | Small exposure in offshore products for deepwater production | <5% | N | 2,271 | 10.7 | 1.0 |
| 8001 | Itochu | Tokyo | LNG Project in Namibia | <5% | O | 15,125 | 7.2 | 0.1 |
| 8002 | Marubeni | Tokyo | Joint LNG project with in Equatorial Guinea with Mitsui | <5% | O | 11,881 | 8.1 | 0.1 |
| 8058 | Mitsubishi | Tokyo | Via wholly owned subsidiary (MPDC Gabon) is investing in exploitation/production/sales of oil in Gabon | <5% | O | 49,824 | 11.4 | 0.2 |
| 8031 | Mitsui | Tokyo | Joint LNG project with in Equatorial Guinea with Marubeni | <5% | O | 36,305 | 8.6 | 0.2 |
| RDSa.L | Royal Dutch Shell | Neth | 26% reserves in Africa | 4% | N | 128,157 | 8.2 | 0.3 |
| COP | Conoco | NY | 8% reserves in Africa | 4% | N | 123,000 | 7.6 | 0.6 |
| 0857.HK | Petro-China | HK | Upstream investments in Sudan, but a minimal contribution to revenues | <3% | N | 27,631 | 10.6 | 0.2 |
| 0338.HK | *Sinopec | HK | Upstream investments in Angola, Sudan, Algeria and Gabon, but a minimal contribution to revenues | <3% | NR | 829 | 10.8 | 0.1 |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

# Infrastructure: strong growth

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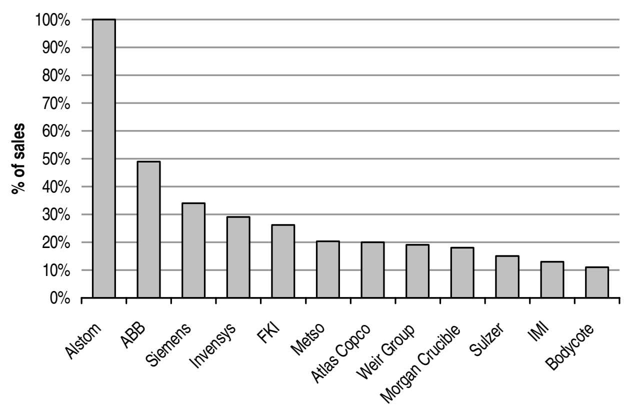
For capital goods companies, Africa is not an area which at present is a major focus, with Asia and the Middle East (and to some extent North Africa) being the two main emerging regions where management teams are looking to grow market share via acquisitions and, more importantly, organic growth. However, we do anticipate that Africa will slowly become a more important driver of growth for companies we cover, although the relatively low GDP in many African economies means that the addressable market will remain quite small on a three-year view.

There are two main sources of likely increased capital investment: domestically-driven spending (i.e. policy-related) and the activity in the mining and oil sectors. Hence, we would expect to see two main drivers, which are related, of investment in areas relevant for capital goods companies:

1. *Infrastructure.* If we do see GDP growth start to accelerate in sub-Saharan economies, this will likely spur growth in demand for infrastructure initially, and increase the demand for capital equipment necessary for electricity, roads, ports, rail networks, airports (off a very low base, as illustrated in Figure 73), which, as we have seen in China and India, are critical if rapid GDP growth is to be sustained. This is on the assumption that the economic growth will be at least to some extent based on industrialisation. We show below the stocks with high infrastructure exposure in our coverage universe (Figure 72).

Figure 72: **Infrastructure exposure, 2007**




Source: Company data, Credit Suisse estimates

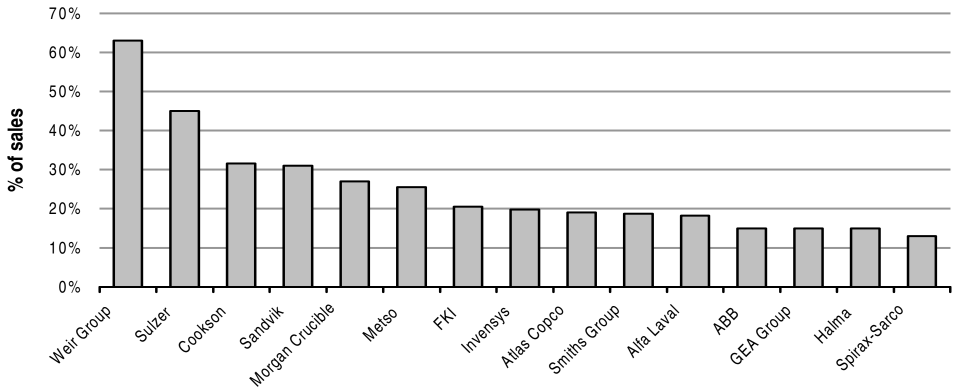
Figure 73: **Total roads per surface area**

| | | Total roads per Surface Area (in km) |
|---|---|---|
| **African mkts** | with GDP gr per capita >2.0% over the last 10 yrs | 166.4 |
| **African mkts** | with GDP gr per capita <2.0% over the last 10 yrs | 154.7 |
| **Developing Asia** | as per 1990 | 203.9 |
| **Developing Asia** | Current | 378.8 |
| **US** | Current | 654.4 |
| **EU** | Current | 553.7 |

Source: IMF, CIA World Factbook, Credit Suisse research

2. *Extractive industries.* Parts of Africa are clearly rich in natural resources, particularly mining. As Western and Asian governments look to extract these natural resources for export purposes to their home economies, and natural resource companies look to sell these assets on world markets, they will clearly need to invest in, for instance, mining equipment for this purpose. We show in Figure 74 the stocks with high exposure to natural resources (oil and gas, metals and mining).

Figure 74: **Extractive industry exposure, 2007**

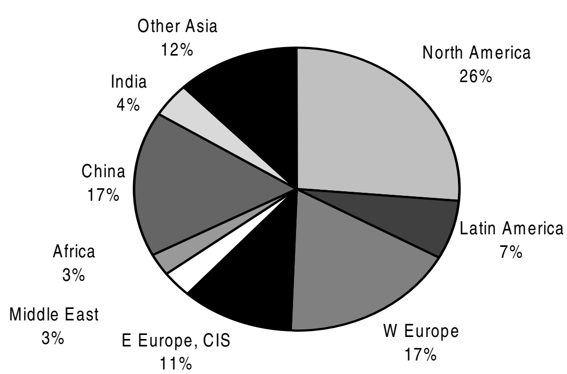



*Source: Company data, Credit Suisse estimates*

These two points are clearly related, in two main ways. First, having extracted the relevant minerals, the need to transport these goods out of Africa will in turn drive investment in infrastructure, e.g. roads and ports. In addition, indirectly, substantial investment in mines and oil exploration and high commodity prices should boost the budgets of African governments, enabling them to spend more on the domestic economy, which should fuel infrastructure spend. We note, for instance, that Libya announced in late 2007 that it would spend US$123bn over five years (on an annualised basis, that is equivalent to 37% of GDP) building roads, ports, schools and housing due to rising revenues from high oil prices.

The assumption that most of future economic activity will be dependent on electricity (i.e. is not purely agrarian) clearly implies the need for an upgrade to Africa's power networks in particular, and this is likely to offer some of the most compelling growth rates when compared with other end-markets for capital goods companies. We show in Figure 75 the split of global power generation demand by region: Africa is around 3% of the total at present, compared to 2% of world GDP and 13% of the global population.

Figure 75: **Installed base of power generation capacity, GW, 2007E**



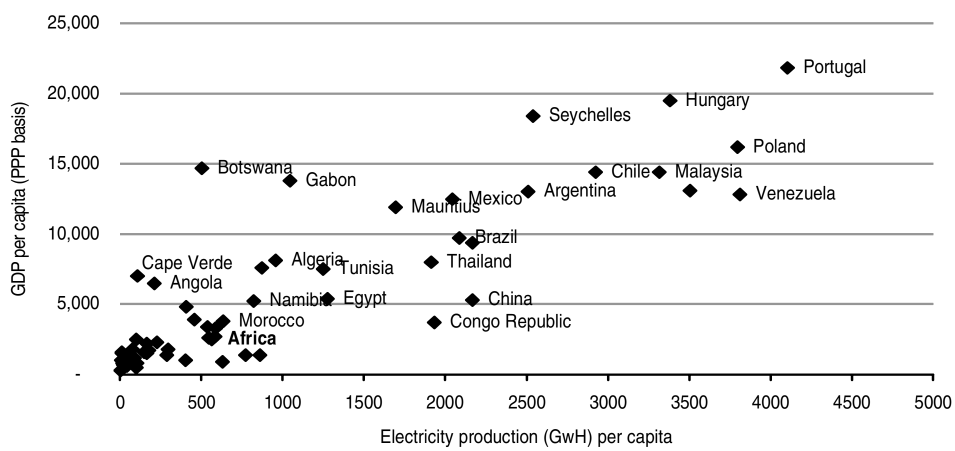

*Source: Credit Suisse estimates*

The majority of electricity is currently generated in South Africa, Egypt and the North African states of Morocco, Algeria and Tunisia. On average, according to the World Bank, fewer than one in four sub-Saharan Africans is linked to national electricity grids and some grids are so poorly maintained that electricity generators often lose money on power generated. Generation is mainly through coal (46%), then gas (23%), hydro (18%), oil

(11%) and finally nuclear (2%) (data for 2006). Renewables, such as solar or wind, are in their infancy.

As a whole then, current electricity supply levels are inadequate to meet ever-increasing demand for electricity. Consequently, African countries (in particular, Nigeria and South Africa) are seeking to expand installed capacity. South Africa, for example, is planning c.US$21bn in upgrades over the next five years (mainly to be carried out by state utility Eskom). The recent brownouts in South Africa, and the announcement from Eskom in January that it will shortly cease power exports to neighbouring Zimbabwe, Botswana and Namibia, illustrates the scale of the problem.

**Figure 76: GDP per capita vs electricity production per capita, 2006**




*Source: CIA World Factbook, IMF, Credit Suisse research*

The World Bank financed power projects worth US$1bn in 2007, after expenditure of US$660m in 2006, in the sub-Saharan area. This investment should deliver c.1,000MW of additional generating capacity p.a., yet the World Bank estimates 2,000MW p.a. or more is actually needed to keep pace with demand.

For foreign players seeking to enter the African market, political instability and lack of security cause serious concerns about investments. As a result, European utilities have barely considered the continent for future growth plans.

Of the European utilities, only International Power has announced firm plans in Africa

- UK-listed **International Power** is the only generating company with a major Africa power project in its pipeline. This project is a 3,600MW plant in Mmamabula, Botswana. Output is to be sold under a power-purchase agreement, on which the terms have yet to be agreed due to pricing disagreements and construction has yet to start (although we believe the plant could come online in 2012). In our IPR model, we assume £2.85bn of capex for the full 3,600MW, or £792/kW, but no value for this project in our 537p price target. Interestingly, Eskom (previously a significant exporter to Botswana) is expecting to purchase the majority of the 2,100–2,460 MW potentially generated in the first phase of the project (although ongoing pricing disagreements mean this contract has yet to be confirmed).
- **Suez** currently has a contract to renovate 20 gas-compression stations in Algeria (for Sonatrach), small operations in Togo (generation and distribution) and a public lighting contract in Morocco, but all are not important to our valuation.

The other way to play this theme, of course, is via the equipment suppliers. We note increased order activity for new plant construction (largely at the northern and southern ends of the continent), which suggests to us that the power market should see a meaningful acceleration in the coming years. We forecast GW additions will move from an annual run-rate of 0–3GW to 10–15GW in the medium term.

We show in Figure 77 some of the major order wins recently in Africa for capital goods companies. Note that most orders are driven by power or extractive industries.

**Figure 77: Recent Africa orders for capital goods companies**

*€ in millions, unless otherwise stated*

| ABB | Division | € millions | Details | Country |
|---|---|---|---|---|
| 09/11/2007 | Power Systems | 123 | Transmission link | Namibia |
| 29/08/2007 | Power Systems | 17 | NA | Kenya |
| 05/02/2007 | Process Automation | 22 | Switchgear, motor control, drives | South Africa |
| **Alstom** | **Division** | **€ millions** | **Details** | **Country** |
| 04/12/2007 | Power Systems | 800 | Gas fired power plant | Algeria |
| 13/11/2007 | Transport | 300 | Tramway systems for cities of Oran and Constantine | Algeria |
| 13/11/2007 | Power Systems | 1,400 | 6 Turbine islands | South Africa |
| 22/10/2007 | Power Systems | 205 | gas combined cycle power plant using solar energy | Morocco |
| 09/10/2007 | Transport | 240 | Citadis tramways | France/Turkey/Algeria |
| 26/06/2007 | Power Systems | 48 | Two GT11N2 gas turbines for new 230MW plant | Ghana |
| 16/06/2007 | Power Systems | 300 | Turnkey CCGT power plant | Algeria |
| 12/01/2007 | Transport | 55 | Signalling and electromechanical equipment | Egypt |
| 08/01/2007 | Power Systems | 80 | 2 * 350MW steam turbine generator units | Egypt |
| **Atlas Copco** | **Division** | **€ millions** | **Details** | **Country** |
| 27/11/2006 | NM | 11 | Supply underground mining equipment | DRCongo |
| **BHEL** | **Division** | **€ millions** | **Details** | **Country** |
| 07/12/2006 | NM | NA | 600MW gas turbine power project COMMISSIONED | Libya |
| 09/05/2006 | NM | 13.9 | Transformers orders | Egypt |
| **Doosan Heavy** | **Division** | **€ millions** | **Details** | **Country** |
| 31/12/2007 | NM | 178.4 | Oil fired 1400MW power plant to be built | Libya |
| 13/12/2007 | NM | 182.4 | Oil fired power Plant- built by Dec 2011 | Libya |
| **GE** | **Division** | **€ millions** | **Details** | **Country** |
| 10/07/2007 | Energy | 75.7 | Two Frame 9FA+e gas turbine generators | Egypt |
| 29/05/2007 | Water | 150.0 | Reverse osmosis seawater desalination plant | South Africa |
| 13/12/2005 | Energy | NA | Gas-fired power plants | Nigeria |
| **GEA** | **Division** | **€ millions** | **Details** | **Country** |
| 13/11/2007 | Energy Tech | NA | Cooling towers for Eskom coal power plant | South Africa |
| **Metso** | **Division** | **€ millions** | **Details** | **Country** |
| 03/10/2007 | Metso Minerals | <9m | Crushing and screening equipment | Angola |
| 12/09/2007 | Metso Minerals | 15 | Grinding equipment for platinum mine | South Africa |
| 12/09/2007 | Metso Minerals | 17 | Bulk materials handling equipment | South Africa |
| **Siemens** | **Division** | **€ millions** | **Details** | **Country** |
| 19/06/2007 | I&S | 8 | Electrical equipment for new kiln line at cement plant | Libya |
| 26/03/2007 | I&S | 40 | Electrical equipment for open-case mine haulage trucks | Gambia |

*Source: Company data, Credit Suisse research*

We would highlight the following.

- **Alstom.** We estimate that announced orders from Africa totalled just under €3.5bn in calendar 2007, and therefore account for around 10–15% of total order intake in the past 12 months. This compares with an annual average order intake for the Middle East and Africa overall of €1.5bn in the past five years—i.e. there does seem to be evidence of an acceleration, although we note that almost half the 2007 order intake was related to one very large coal plant order from electric utility Eskom in South Africa. Given the ongoing power shortages in this market (Alstom is the global number one in coal-fired power), we believe power capex is likely to be very strong in the next 5–10 years.

- **ABB.** ABB is also a natural way of playing power capex in Africa, given that power transmission and distribution (where is ABB is the global number one) accounts for 50% of group sales. We estimate that Africa accounted for around 5% of ABB's order intake in 2007.

- **Weir Group.** In terms of the ways to play the mining/extractive industries theme, we would highlight Weir Group in the UK. We note that the company recently acquired the CH Warman Pump Group, which is a specialist pump business focussed on serving the mining and minerals processing industry throughout Africa. We estimate that Africa accounted for c.10% of Weir's order intake in 2007.

- **JGC.** This Tokyo-listed engineering and construction company has been involved in virtually every major energy project in Algeria since the country gained independence from France in 1962. It is also the only Japanese company to have been involved in large-scale hydrocarbon projects in Libya. African projects accounted for 3% of the order book at the end of 1H 3/08, but this figure could rise sharply to over 20% given the companies' expectations of the award of a major gas development project in 3/09. Other Japanese companies that do not have direct exposure but which are exposed to Africa-related demand are **Komatsu, Chiyoda Corp and IHI.**

- **GE**'s investment in Africa is concentrated in Algeria, Egypt, Kenya, South Africa, Ghana, Nigeria and Angola. As a proportion of aggregate GE revenues, African earnings are relatively small (the Middle East is more important as a revenue centre). Recent large projects for GE in Africa include: (a) GE Energy – supply of 18 gas turbines, equipment and services for five power plants in Nigeria (adding >2,000 megawatts to the electric grid) in December 2005; (b) GE Energy – two gas turbine generators and auxiliary equipment in Egypt (July 2007); (c) GE Energy – supplied three biogas generator sets for GTL refinery in South Africa (September 2007); (d) GE Water – reverse osmosis (RO) desalination plant in South Africa (May 2007); (e) GE Water – construction and equipment for Hamma Water Desalination plant in Algeria (Africa's largest desalination plant) undertaken in June 2005. Other revenues from Africa stem from smaller scale projects in water (i.e. treatment rather than desalination plants), oil and gas and healthcare. African revenues are not reported separately by GE but added in with Middle East revenues. These appear to be growing strongly, although it is very hard to decipher what proportion of that growth is attributable to Africa.

- Roughly 5% of **SPX Corporation** revenues are generated in Africa. Key contracts include a US$235m contract with Hitachi Power Africa for South Africa's new Medupi power station (SPX will be providing pulse jet fabric filters, air pre-heaters and pressure parts) and a US$11m contract to supply Botswana Telecommunications Authority with signal processing equipment.

- Among Korean companies, **Daewoo Engineering and Construction** offers the most significant exposure. 11.4% of 2007 revenues were generated through sales of LNG and power plant equipment to Nigeria and Libya. In 2008, we expect revenue growth from the Africa division of some 33%, significantly stronger than group sales of 10%.

- Only 2% of **GS Engineering and Constructio**n revenues were generated in Africa (principally Egypt) in 2007, but nearly 10% of the current order back-log derives from Africa. Revenue growth in 2008 should be very strong, on our estimates: up 150% in terms of sales to Africa compared to sales growth at the group level of just 12%.

- Aside from the shortage in power generation, another major problem in Africa is the scarcity of fresh water resources. Desalination plants look increasingly essential for survival. At present, desalination capacity is found mainly in the Middle East, where integrated power and water projects are becoming standard. These developments set good precedents for development in African countries such as Morocco, Algeria, Tunisia, Libya, Egypt and South Africa. **International Power** has stated that it is willing to consider opportunities in all these countries. **Suez** and **Veolia Environment** have also indicated that they are also likely to show interest in bidding for contracts of this nature as and when they arise. **Hyflux** has significant exposure to Algeria through its desalination project (a 25-year concession) at Tlemcen along with its JV partner, **Malakoff International** of Malaysia. We estimate the revenue contribution will be around 40% of the total for Hyflux in 2008 and 2009. **Doosan** (Korean construction) has been very successful at winning Middle East MSF contracts, but has yet to venture too far into the African markets. The company appears to be concentrating on establishing its reputation in reverse osmosis in the Middle East and in power plant projects in India and SE Asia for the time being.

- Finally, among the European stocks it is worth mentioning that **TAV**, the leading airport operator in Turkey, and **Lonrho** (listed on the London AIM exchange) are also exposed to the African market. TAV started to operate an airport in Tunisia in January 2008 and is building another. We expect these airports to generate (including retail and food) c.19% of total revenues in 2008. Lonrho is a diversified African investment company that offers exposure to a range of businesses and markets (water bottling in Mozambique and DRC; international shipping along the east coast of Africa; air cargo around the hub of Africa; an interest in Brinkley Mining; uranium and molybdenum prospects in the Karoo; a majority stake in Luba Freeport - a deep water port and oilfield service logistics base in Bioko; the four-star Hotel Cardoso in Maputo; as well as developing new hotel projects in Equatorial Guinea and DRC). All revenues are generated in Africa. The investment split to date is 47% infrastructure, 34% transport, 9% hotels and leisure, 7% support services and 3% natural resources.

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In pursuit of oil and other natural resources, China has established itself as a leading force in African infrastructure. Chinese state-owned companies have been involved in African infrastructure previously. In the 1960s and 1970s, China sent out agricultural engineers, funded hospitals and built the 1,800km Tanzania–Zambia railway. However, compared to the ideologically-driven investment last time, China's role is much wider, more sophisticated and business-oriented this time. In Figure 78, we show some of the major Chinese companies' exposure to Africa. Exports to Africa are relatively small. **Guangzhou Shipyard** and **Shanghai Zhenhua Port Machinery** offer the greatest exposure.

Figure 78: **Chinese infrastructure companies' exposure to Africa**

| Ticker | Company | Export to Africa | % of total revenue (2006A) | Exports as % total revenue | Remarks |
|---|---|---|---|---|---|
| 600031 | Sany Heavy Industry | Y | | 10% | |
| 600761 | Anhui Heli | Y | 2.5% | 25% | Major markets are Europe, US |
| 000680 | Shantui | Y | | 13% | Exports to 60 countries in total |
| 000425 | Xugong Science & Technology | Y | | 16% | |
| 1133 | Harbin Power | Y | | 12% | Southeast Asia |
| 600550 | Tiaowei baobian | Y | | ~10% | US |
| 600089 | Teba | Y | | 11% | Middle Asia (Kazakhstan, etc.) |
| 600312 | Henan Pinggao Electric | Y | | ~10% | Southeast Asia, South Africa |
| 000758 | China Non-ferrous Metal Industry's Foreign Engineering and Construction Co., Ltd | Y | ~4% | 49% | Stable market share in the ME, especially Iran |
| 600320 | Shanghai Zhenhua Port Machinery | Y | 5.2% | 84% | |
| 600685 | Guangzhou Shipyard | Y | 19.2% | 86% | |
| 568 | Shandong Molong | Y | | 39% | |

*Source: Credit Suisse research*

- For **Shanghai Zhenhua Port Machinery**, a world leading manufacturer of cranes and large steel structures, the orders from Africa have been on a sharp rise since 2003 and accounted for c.5% of total revenue in 2006. The exported products concentrate on quayside container cranes and rubber-tyre gantry cranes; all of the orders come from Egypt. According to the forecast by the industrial research institute, OneStone Consulting Group, between 2006 and 2010, the global container throughput will deliver an average annual growth rate of 9.4%. Steady growth of container transportation in sea shipping implies as much growth in demand for port machinery. As a result, although the exposure to Africa is still small compared to 20% in Asia and 17% in Europe, we believe, following the global trend, there will be strong growth in Africa's sales given the closer trade relationship between China and African countries.

- For **Guangzhou Shipyard**, 19.2% of total revenue came from Liberia in 2006. As business ties between China and Africa are strengthened, there should be plenty of potential for growth in the port machinery market. However, the target markets for Guangzhou Shipyard remain Europe and America, and the business from Liberia may prove to be transient.

# Cement demand growing much faster than the global average

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An alternative way to play the growth in African infrastructure is via the cement companies, of which four stand out: Lafarge, Italcementi, Holcim and Cimpor.

- **Lafarge** produces cement, aggregates and concrete used in housing, commercial and industrial construction, and infrastructure. Distribution across Africa is fairly widespread (including South Africa, Kenya, Nigeria, Cameroon, Zambia, Benin, Zimbabwe, Tanzania, Uganda, Morocco and Egypt), with listings on several local stock exchanges (Zambia, Zimbabwe and Morocco). We estimate sales exposure of c.16% in 2007 and project growth of c.10% p.a. (organically) in Africa, which is roughly twice the group average. Capital investment in Africa came to €2.0bn, or 8% of group total, for 2006.

- **Italcementi** is another major European cement producer. African exposure is concentrated in the North (Egypt and Morocco). We estimate sales exposure of c.12% in 2007 (23% of EBITDA) and expect future sales growth of c.6–7% (+4% for volumes and +2–3% for prices). Capital investment in Africa was €1.5bn, or 23% of group total, for 2006.

- **Holcim**, on our forecasts, will derive about 10% of group profit in 2008 from its Africa Middle East division, of which we believe about 8% will come from its operations in Africa. Holcim's primary business is the manufacture of cement, although in many regions it complements this with the downstream operations of aggregates and concrete. Holcim operates in the following countries across Africa: Morocco, Guinea, Ivory Coast, Nigeria, Namibia, South Africa, Tanzania, Madagascar and Egypt. In 2007, the group did, however, sell a majority stake in its South African operations to a government-sponsored Black Empowerment organisation, significantly reducing its exposure to that market. Trading conditions across the region were, on the whole, robust in 2007, with Morocco and Egypt delivering the highest rates of growth. Holcim is a globally diverse cement group, operating across all continents. While the group has established a significant portfolio of assets across the developing countries, where the long-term need for construction materials is significant, it balances this exposure with its operations in developed markets, which offer more stable cash flows. We believe that Holcim plans to continue to grow the business on a global basis, and as such would expect further investment in Africa in coming years, either by acquiring existing players in the market or by building new cement plants.

- **Cimpor** is the $10^{th}$ largest cement producer in the world. Portugal, the group's domestic market, is the top contributor to group profits, although the group operates in a further eight countries, six of them in Africa (Morocco, Tunisia, Egypt, Mozambique, South Africa, Cape Verde). The group is a market leader in Mozambique (1% of group profit in 2006) with about 80% market share and Cape Verde (1% of profit) with 70% market share. Cimpor had 25% market share in Tunisia (3% profit) in 2006, and had 10% market share in each of Morocco (6% profit), Egypt (11% of profit) and South Africa (9% profit). In total, the African contribution to profit was 31% in 2006. The group's strategy is to "consolidate current positions", while maintaining a balance between emerging and mature markets, and thus we would suggest that further investment in Africa is likely going forward. The current shareholder list is dominated by three major shareholders; Teixeira Duarte (20%), Manuel Fino (20%) and Lafarge (17%).

From a South African perspective, there are several locally listed plays (not rated by Credit Suisse) on the infrastructure theme that also offer some exposure to growth in the rest of Africa:

- **PPC** is a JSE–listed cement producer with operations in South Africa, Botswana and Zimbabwe. PPC also exports to other southern African countries (Namibia, Mozambique, Mauritius and Seychelles).

- **Aveng** is a JSE-listed construction and steel company. Construction projects include power stations, pipelines, mining contracting, casinos, shopping malls, property development, roads, dams, and a range of other commercial and industrial installations across sub-Saharan Africa, parts of Asia, Australasia, the UAE and Azerbaijan.

- **Murray and Roberts** is a South Africa-based construction and engineering company focussed on sub-Saharan Africa, the Middle East, Southeast Asia and Australasia. The majority of revenues are generated in South Africa (c.70% in 2006).

- **Barloworld** sells and services equipment and vehicles, and provides short- and long-term rental and leasing solutions. Caterpillar is a key brand for Barloworld in South Africa and Africa generally, which has been a major beneficiary of growth in the metals and mining industry.

## Steel demand also showing strong growth

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In 2000, apparent steel use in Africa stood at a mere 15m tonnes. Six years on, this had risen to almost double (see Figure 79). For 2007, we estimate 24m tonnes of apparent steel use in Africa, growing to 27m tonnes in 2009E. Key drivers are infrastructure spend driven by a wealth of resources, which could ultimately (as it has in China) lead to domestic wealth creation and more consumer-driven steel usage.

Figure 79: **Forecasts for global steel apparent use (in m tonnes)**

| | 2006 | 2007E | 2008E | 2009E | Avg growth 2000–06A | 2000–09E | 2003–09E |
|---|---|---|---|---|---|---|---|
| **Africa** | **22** | **24** | **25** | **27** | | | |
| **Change % y/y** | **10%** | **8%** | **7%** | **6%** | **7%** | **6%** | **8%** |
| Asia | 595 | 637 | 701 | 750 | | | |
| Change % y/y | 6% | 7% | 10% | 7% | 10% | 9% | 10% |
| **World** | **1,116** | **1,185** | **1,274** | **1,347** | | | |
| **Change % y/y** | **8.8%** | **6.2%** | **7.5%** | **5.7%** | **6.7%** | **6.0%** | **7%** |

*Source: Company data, Credit Suisse estimates*

Indirectly, the whole global steel market benefits, as demand in developing nations tends to outstrip supply growth, and as such the very significant structural shift we have seen in the global steel industry of demand outstripping supply (and eliminating excess capacity over the last 6–7 years) should continue, in our view. This would keep pricing power for the global steel industry at levels not seen within the last 30 years. Long product producers globally would likely benefit the most as the more commoditised products see the greatest early-cycle uplift from an infrastructure boom.

- One of the most direct beneficiaries of African steel demand has been **ArcelorMittal,** which has around 7mt of direct steel exposure in Africa (specifically in South Africa, Mozambique and Algeria). This represents about 6% of the company's total crude steel production (at year-end 2006). The company has pointed to around 2mt of expansion plans (1mt in South Africa and another 1mt in Mozambique). Plans to increase iron ore production (around 20mt worth) are focussed on Senegal and Liberia. Precise numbers are difficult to discern given divisional groupings, but all in, we estimate that Africa accounted for less than 10% of total group revenues in 2006.

- **Acerinox** of Spain owns 76% of Columbus Stainless, which contributed roughly 26% of group sales in 2006. This is a South Africa-based (privately-owned) company providing input to a full range of stainless steel products from sinks to watches. Roughly 25% of Columbus' products are sold locally, with the rest exported to Europe, the Americas, the Middle East and the Far East. Stainless products are typically targeted at consumers (hence, later cycle play) versus industry for carbon steel (which is the more obvious way to play the infrastructure theme).

**Figure 80: Utility and Infrastructure providers and their exposure to Africa**

| Ticker | Company | Main listing | Concern | 2007E % revs from Africa | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| LONR.L | *Lonrho | London | Pan-African conglomerate but with a focus on transport and infrastructure | 100% | NR | 340 | - | - |
| AEGJ.J | *Aveng | Joburg | Cement producer and construction engineer | 100% | NR | 3,416 | 16.6 | 1.0 |
| GRFJ.J | *Group 5 | Joburg | Infrastructure projects, strong in housing developments | 100% | NR | 830 | 15.7 | 0.7 |
| MURJ.J | *Murray and Roberts | Joburg | Cement producer and construction engineer | 100% | NR | 4,033 | 18.7 | 1.1 |
| PPCJ.J | *PPC | Joburg | Cement producer | 100% | NR | 3,033 | 14.8 | 3.8 |
| BAWJ.J | *Barloworld | Joburg | Infrastructure projects | 70% | NR | 2,957 | 13.4 | 0.5 |
| HYFL.SI | Hyflux | Singapore | Exposure to Algeria through their desalination project (a 25-year concession) at Tlemcen. | 40% | N | 1,074 | 16.5 | 5.6 |
| CPR.LS | *Cimpor | Portugal | Cement operations in Morocco, Tunisia, Mozambique, Egypt, Cape Verde and South Africa. | 30% | NR | 6,079 | 12.4 | 1.9 |
| ACX.MC | Acerinox | Spain | Owns 76% of Columbus Stainless (based in South Africa) | 26% | U | 6,260 | 12.5 | 0.6 |
| 600685.SS | *Guangzhou Shipyard | China | Focussed on Liberia. As business tie between China and Africa are strengthened there is plenty of growth potential but Africa is not the corporate focus. | 20% | NR | 474 | 8.8 | 0.5 |
| TAVHL.IS | TAV | Turkey | Operates an airport in Tunisia as of Jan 08 and is building another. We expect these airports to generate (including retail and food) c.19% of total revenues in 2008. | 19% | O | 1,469 | 15.9 | 1.5 |
| LAFP.PA | Lafarge | Paris | Sales exposure of c.16% in 2007. Expect growth of c. 10% p.a. (twice the group average). | 16% | U | 30,372 | 10.2 | 1.0 |
| ITAI.MI | Italcementi | Milan | Sales exposure of c.12% in 2007. Expect growth of c.6–7% p.a. | 12% | N | 3,752 | 9.5 | 0.4 |
| ALSO.PA | Alstom | Paris | 10–15% of total order intake in the past 12 months, power shortages in Africa bode well for future orders. | 12% | O | 30,064 | 23.6 | 1.2 |
| 047040.KS | Daewoo E&C | Korea | 11.4% of 2007 revenues were generated through sales of LNG and power plant equipment to Nigeria and Libya | 11% | O | 7,270 | 14.2 | 0.6 |
| WEIR.L | Weir | London | The company recently acquired the CH Warman Pump Group, which is a specialist pump business focussed on serving the mining and minerals processing industry throughout Africa. | 10% | N | 3,135 | 15.3 | 1.3 |
| MT.N | ArcelorMittal | NY | Flat steel producer operating in South Africa, Mozambique and Algeria. | <10% | O | 98,887 | 9.0 | 0.9 |
| 1963.T | JGC | Tokyo | Involved in every major energy project in Algeria since the country gained independence, as well as interests in Libya | <10% | O | 4,021 | 14.8 | 0.7 |
| HOLN.VX | Holcim | Zurich | 10% of group profit in 2008E from its Africa Middle East division, of which we believe about 8% will come from its operations in Africa | 8% | U | 28,177 | 10.7 | 1.1 |
| 900947.SS | *Shanghai Zhenhua Port Machinery | China | Manufacturer of cranes and large steel structures, the orders from Africa have been on a sharp rise since 2003 and accounted for c.5.2% of total revenue in 2006 | 6% | NR | 1,702 | 11.6 | 0.5 |
| SPW | SPX Corporation | NY | Roughly 5% of SPX Corporation revenues are generated in Africa. Key contracts include a US$235m contract with Hitachi Power Africa for SAfrica's new Medupi power station. | 5% | N | 5,750 | 17.4 | 0.9 |
| ABBN.VX | ABB | Zurich | Power transmission & distribution (where is ABB is the global #1) account for 50% of group sales. | 5% | O | 62,658 | 17.1 | 1.9 |
| 006360.KS | GS E&C | Korea | Only 2% of GS Engineering and Construction revenues were generated in Africa (principally Egypt) in 2007 but nearly 10% of the current order back-log derives from Africa. | 2% | N | 7,432 | 16.7 | 1.1 |
| GE | GE | NY | Low % of revs but a large range of services including turbines, equipment for power plants in Nigeria and Egypt, GTL equipment to SA, desalination in Algeria (Africa's largest desal plant). | <2% | O | 379,655 | 15.7 | 2.0 |
| IPR.L | International Power | London | Plans to build and operate a 3600MW plant in Mmamabula, Botswana, due 2012 | <1% | O | 12,387 | 14.0 | 2.1 |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

# Agriculture: unrealised potential

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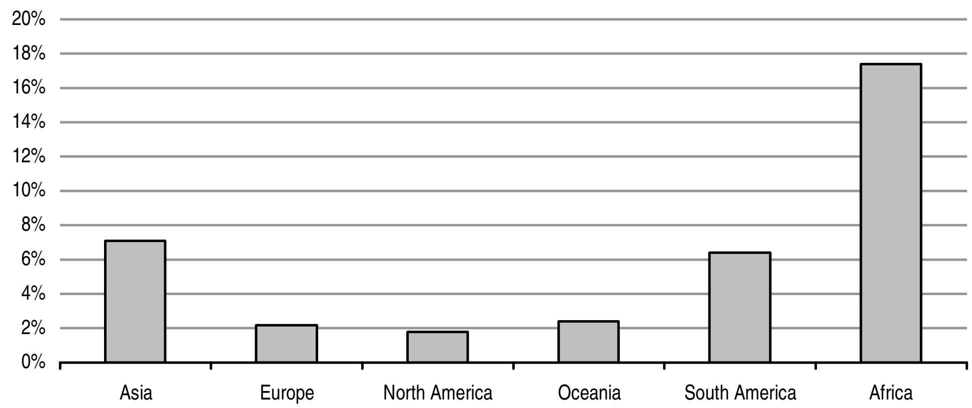
Agriculture is by far the dominant contributor to African GDP…

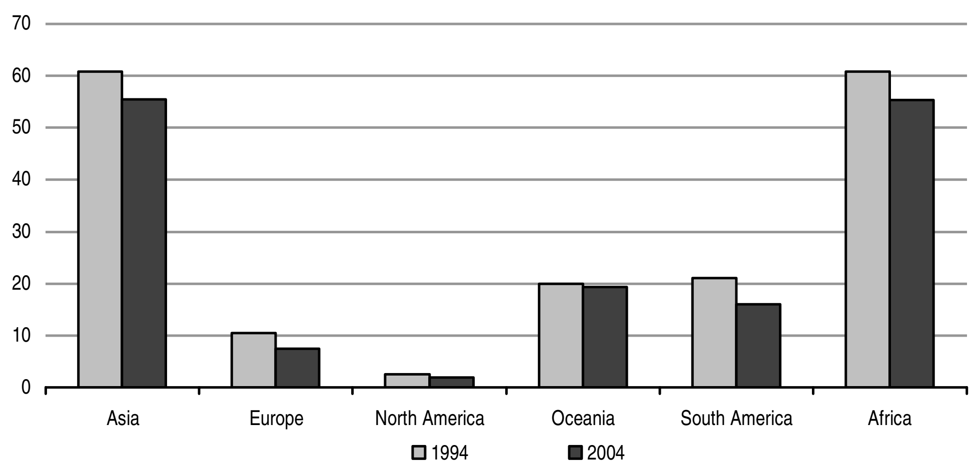
**Figure 81: Agriculture share of GDP, 2003**




*Source: FAO, Credit Suisse research*

…and accounts for the greatest proportion of the labour force.

**Figure 82: Agricultural labour as % total**



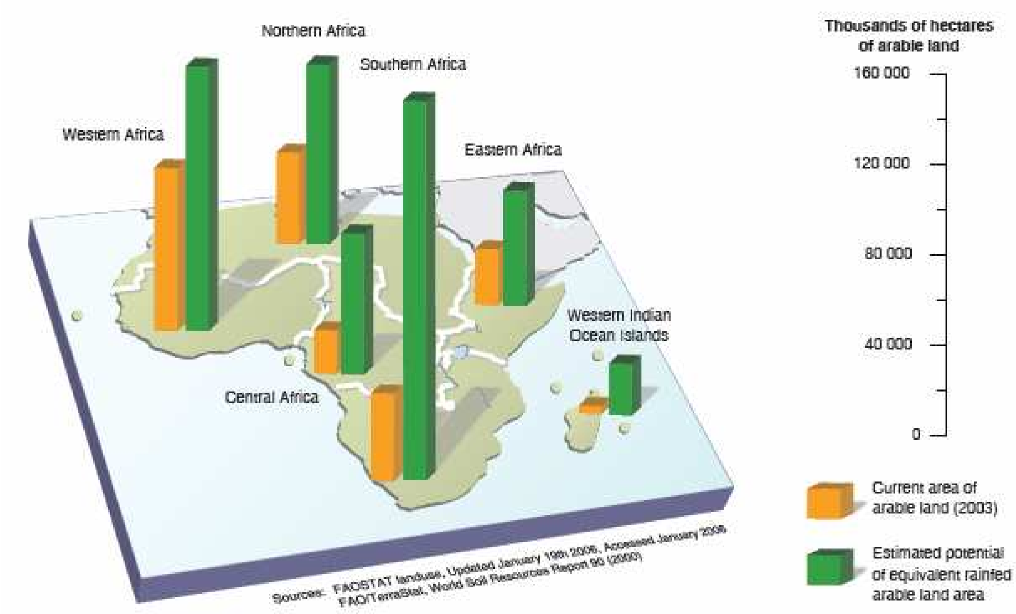

*Source: FAO, Credit Suisse research*

Agriculture may be the largest contributor to GDP but Africa is still a net agricultural importer

However, despite the relative size of the sector, Africa is a net importer of agricultural produce. Over the past 20 years, African food and beverage exports have grown at an annualised rate of just 3.5% compared with total growth in African exports of 7% and global export growth of 9%.

African agriculture has huge unrealised potential. According to the FAO, Africa (North and sub-Saharan) accounts for 14.6% of total global arable land but uses only 13% of the amount of fertiliser per hectare used at the global level and has only one tractor for every 868 hectares compared with the global average of one per 56 hectares. It is not even an issue of poor rainfall: (a) Africa could significantly increase the area of irrigated land (the FAO suggests that the irrigated area in Africa is only 14% of the potentially irrigated area compared with the global average of 49%); and (b) Africa is using only 43% of the arable land with sufficient rain-fed potential (as illustrated in Figure 83).

**Figure 83: Current and potential arable land use in Africa**




*Source: UNEP : http://maps.grida.no/go/graphic/current_and_potential_arable_land_use_in_africa*

According to the UN, Africa is using only 43% of the arable land with sufficient rain-fed potential

African agricultural yields are 66% below the global average

The cumulative effect is that African agricultural yields are 66% below the global average, as measured by the FAO in terms of kilograms of cereal output per hectare.

According to the International Panel on Climate Change (IPCC), Africa's drought regions could become structurally drier, and flood-prone areas (such as Mozambique and Swaziland) could suffer higher rainfall levels in the future. This is likely to negatively affect farming over the medium/long term. However, in the short term, the FAO highlights the significant potential to increase Africa's agricultural production through greater use of fertiliser and pesticides, irrigation and machinery.

Higher agricultural prices are a mixed blessing for Africa. They are obviously bad news for a vast number of low income individuals whose main expense is food. But, higher agricultural prices (along with better fiscal balances) could prove to be the catalyst that facilitates and incentivises the required investment. One way or the other, food production should increase in Africa.

Those exposed to greater agri-production in Africa include Illovo Sugar, Tongaat Hulett, Omnia Holdings and Yara International.

- **Illovo Sugar** is the largest sugar producer in Africa. It currently has operations in South Africa, Malawi, Zambia, Swaziland, Tanzania and Mozambique, and is constructing a factory in Mali. In 2007 Illovo Sugar generated R 1,034m in EBIT, with 80% being derived from its operations outside South Africa. Less developed countries (LDCs) in Africa are positioned to benefit from the reform to EU regime, and as a result Illovo has invested heavily in its LDC operations.

- **Tongaat Hulett** is an agri-processing business which includes land management, property development and agriculture. Through its sugar and starch operations in Southern Africa, Tongaat Hulett produces a range of refined carbohydrate products from sugar cane and maize. Tongaat has subsidiaries in Zimbabwe, Swaziland and Mozambique. The company recently increased its investment in Mozambique, to take advantage of Mozambique's LDC access into the EU under the new sugar reform. Tongaat expects Mozambique to make up 20% of their revenue from sugar by 2009.

- South African-listed **Omnia Holdings** (not covered) offers exposure to demand growth for fertilisers across sub-Saharan Africa (as well as Madagascar, Australia and New Zealand). Results for the six months ending 30 September 2007 showed revenue growth of 26% and operating profit growth of 33%. The agriculture division made up 40% of group operating profit. The mining division, which specialises in explosives, and chemical division accounted for 29% and 31% of group operating profit, respectively.
- Norwegian-based **Yara International** (not covered) is another fertiliser producer that could benefit from increased African demand. The group's downstream division (a fertiliser distribution network) accounted for 69% of 2006 revenues while its upstream division (converting natural gas into nitrogen chemicals, nitrogen, phosphorus and potash) made up 12% of total revenues. Yara mineral fertiliser products are sold in Cameroon, Egypt, Ghana, Ivory Coast, Kenya and South Africa. Africa accounted for 8.5% of total revenues in 2006.

## Silviculture

Silviculture is another area where Africa has significant potential.

At present, Africa's two major paper companies, **Sappi** and **Mondi**, are largely satisfying its African wood needs from plantation forests in South Africa. South Africa offers good growth conditions especially for eucalyptus. However, growth has been impaired by low rain fall or is coming at relatively higher costs as plantations need to be irrigated. Angola and Mozambique offer significant potential for establishment of fast-growing plantation forests, with similar growth conditions to Brazil, i.e. good soil conditions, even temperatures and regular precipitation.

Wood from such plantations could enable establishment of a very cost-competitive pulp industry that would be well-positioned to compete with current cost leaders in Latin America. Global fibre needs appear to be growing strongly, thanks to increased demand from a fast-growing Chinese paper industry (China has very limited domestic fibre resources), increasing demand from the energy sector and the potential for the cellulose fibre to replace oil polymers in man-made fibres and in certain areas of plastic manufacturing. We believe both Sappi and Mondi are well positioned to tap into this potential from the respective company's South African base, and they have indicated an interest in such projects.

Such projects would be long term: as a guide, from start-up decision to first revenues would be approximately 7–10 years, in our view. Investment including land purchases, establishing plantations and build of pulp mill would potentially cost US$1.2bn–1.5bn, on our estimates. Return on capital employed could be 30–40%. Expansion of pulp mills could be significantly cheaper and less time-consuming as infrastructure would then be in place.

We estimate revenues from a modern pulp line would be in the range US$700m–800m and EBITDA margins for a low-cost producer 45–55%. We estimate yield per hectare should bein the range of 35–55 m3/hectare (and increasing as faster-growing species are developed). This compares to 4–6 m3/hectar in Scandinavia.

At present, African production makes up less than 10% of total for both Mondi and Sappi. As a general guide, feeding this analysis through to our estimates, by 2012, expansion into Mozambique and Angola would increase sales from Sappi by about 13% and Ebitda using our 2009 estimate as a base by 35–45%. At Mondi, we would expect a sales increase of 8% through African expansion and an increase in EBITDA of 20–25% relative to our 2009 estimate.

# Telecoms: off a low base

Telco penetration in Africa is still well below the global average.

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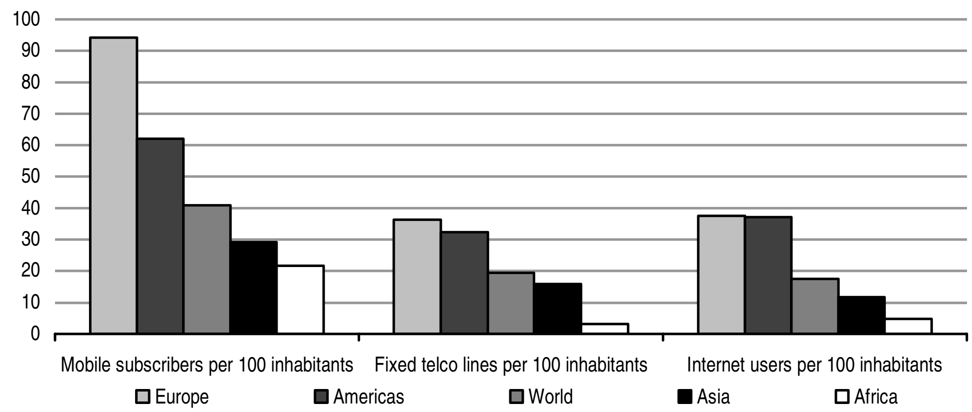
Figure 84: **Regional mobile, mainline and internet penetration rates, 2006**




*Source: International Telecommunications Union (ITU), Credit Suisse research*

There were 1,270m main (fixed) telephone lines worldwide in 2006, but less than 2% of these were in Africa. Relative to the population, there were only 3.1 fixed lines per 100 inhabitants compared with Asia at 15.9 and the global average of 19.4.

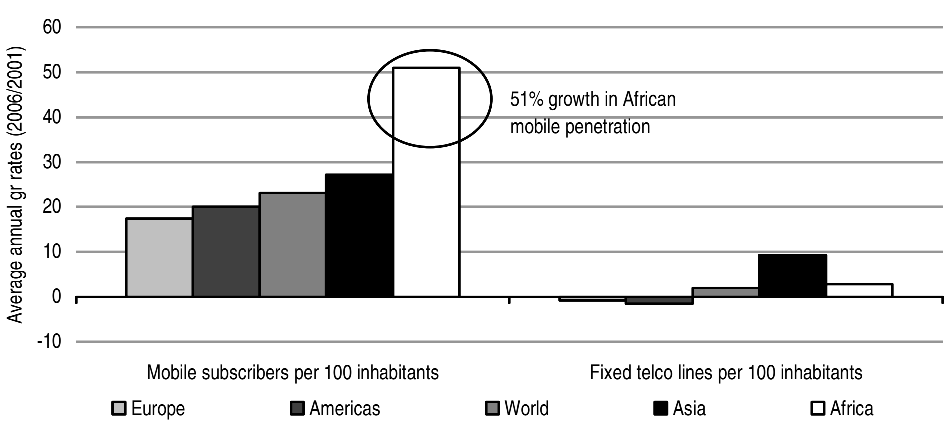
Africa still has significantly lower telco penetration rates than the rest of the world…

Mobile cellular technology has been more successful but again is still well below the international standard. In 2006, Africa had a penetration of mobile cellular subscribers of 21.0 per 100 inhabitants, compared with Asia at 29.3 and the world at 41. Cheaper infrastructure, cheaper handsets, competitive markets and business models oriented towards low income groups (e.g. prepaid cards) have meant mobile penetration rates well in excess of fixed lines. Interestingly, internet penetration is estimated to be higher in Africa than fixed-line usage due to the popularity of public access points or internet cafés. In 2006, 4.8% of Africans used the internet, compared with 11.8% in Asia and 17.4% worldwide.

Growth in African telecommunications has been much stronger than most other economic regions over the past five years.

…despite much stronger growth

Figure 85: **Growth in regional mobile and mainline rates, 2006/2001**



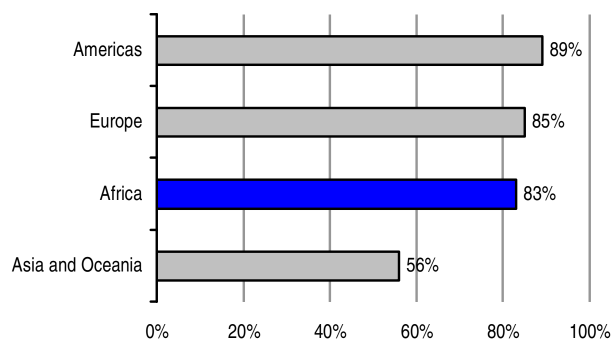

*Source: ITU, Credit Suisse research*

Telecommunication growth has been driven by four broad factors:

1. **Higher GDP per capita:** There is obviously a good fit between the two, more so in markets where income disparities are less remarkable.

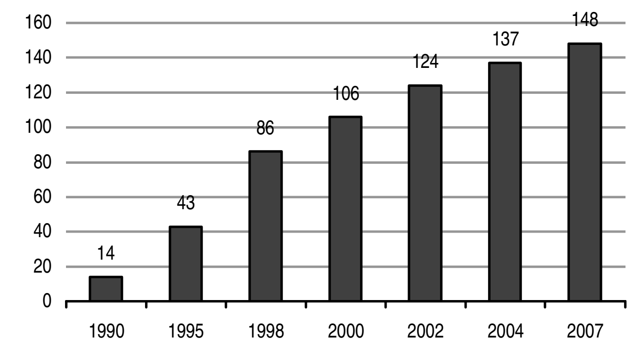
2. **A better regulatory environment:** The International Telecommunications Union (ITU) calculates that, by mid-2007, 83% of the African economies had established an independent regulatory authority, which compares reasonably well with 85% in Europe. The caveat is that the quality of staff training and knowledge is probably not as effective as it is in Europe or other developed markets.

Figure 86: **% of countries with established regulatory authorities**




*Source: ITU*

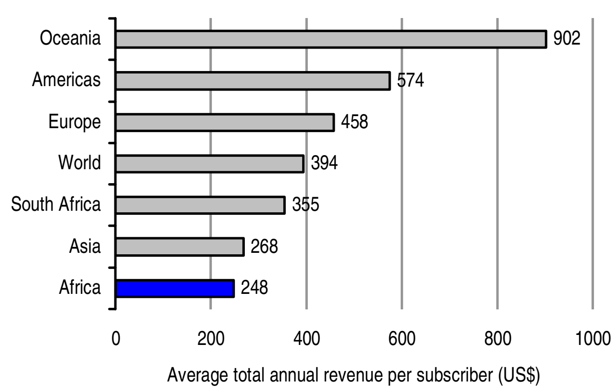
Figure 87: **Regulatory agencies, world total (cumulative)**




*Source: ITU*

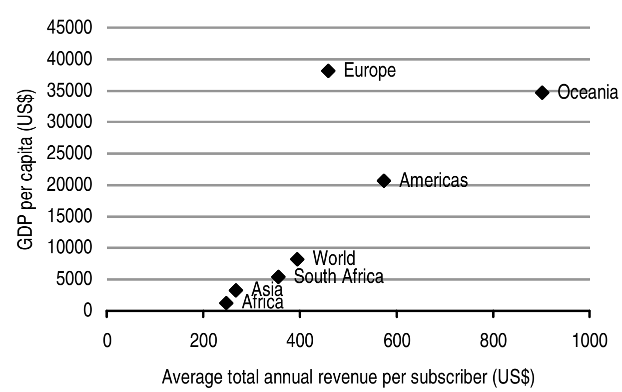
3. **Lower tariffs:** Tariffs have fallen dramatically across Africa as services have been rolled out, competition has picked up and the regulator has taken on a greater role. In Nigeria, for instance, the ARPU at MTN (45% market share) has fallen by 75% since 1Q02 to c.US$18 now. In terms of the total average revenue per telephone subscriber (fixed and mobile), the African average in 2005 amounted to US$248 according to the ITU (only marginally less than the Asian average), reflecting the high proportion of prepaid subscribers with limited resources. ARPUs are likely to remain low given the low GDP per capita, although a compensating factor could be the lower competition from fixed line.

Figure 88: **Average revenue per telephone subscriber, 2005 (US$)**




*Source: ITU*

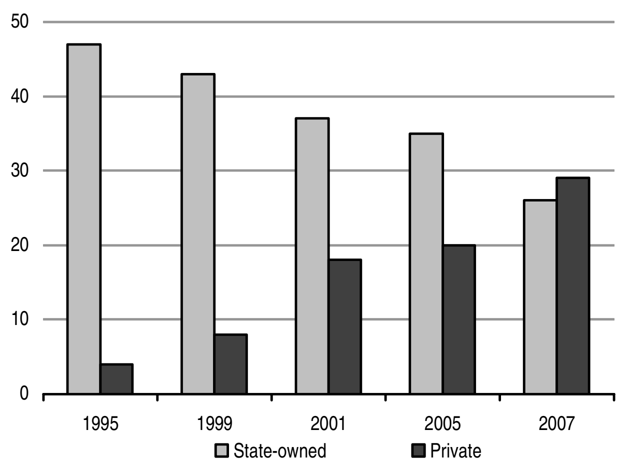
Figure 89: **Average revenue per telephone subscriber vs GDP per capita, 2005**




*Source: ITU, IMF, Credit Suisse research*

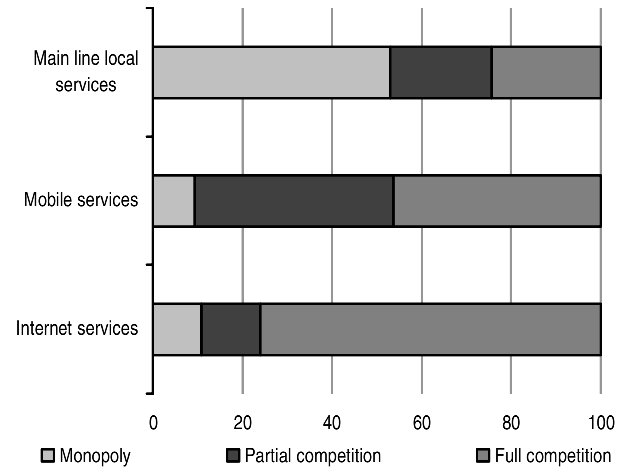
4. **Greater efficiency with the service:** This is part of the reason tariffs have been able to fall so much. Fixed-line incumbents have had to improve their performance in response to competition from mobile operators, tighter regulation and privatisation.

Figure 90: **Number of private and state-owned main fixed-line operators in Africa**




*Source: ITU*

Figure 91: **Level of competition, Africa, 2006**




*Source: ITU*

The bottom line is that we expect growth in African telecoms (particularly mobile) to continue to be very strong. Specifically, we forecast African mobile penetration to increase from 27.6% in 2007 (72.7% effective penetration) to 45.5% (effective penetration of 79.6%) by 2010E.

Figure 92: **Mobile penetration forecasts: Africa versus global averages**

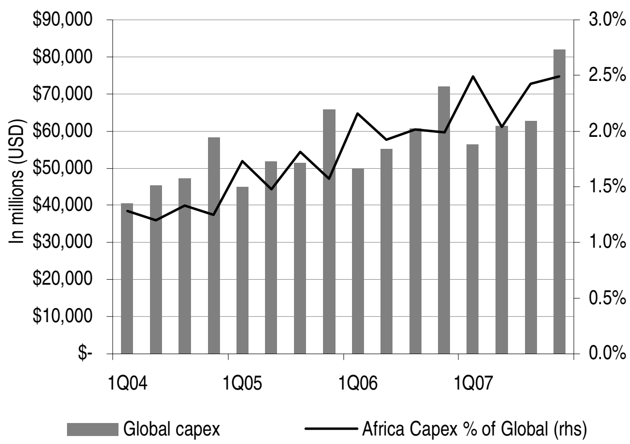
| Country | Subscribers (m) | Total population (m) | Addressable population (m) | Reported penetration (%) | Effective penetration (%) |
|---|---|---|---|---|---|
| **2007E** | | | | | |
| Africa | 260 | 943 | 358 | 27.6% | 72.7% |
| Total emerging | 2,228 | 5,353 | 2,811 | 41.6% | 79.3% |
| Developed markets | 928 | 965 | 965 | 96.2% | 96.2% |
| Global total | 3,156 | 6,318 | 3,775 | 50.0% | 83.6% |
| **2010E** | | | | | |
| Africa | 457 | 1,003 | 574 | 45.5% | 79.6% |
| Total emerging | 2,849 | 4,954 | 3,108 | 57.5% | 91.7% |
| Developed markets | 1,448 | 976 | 976 | 148.3% | 148.3% |
| Global total | 4,297 | 5,930 | 4,084 | 72.5% | 105.2% |

*Source: Credit Suisse estimates*

In addition, we think the addressable market (allowing for greater affordability and income redistribution) could be 574m in 2010E (358m in 2007). This implies growth in the number of African mobile subscribers of 76% between 2007 and 2010 compared with global growth of 36%.

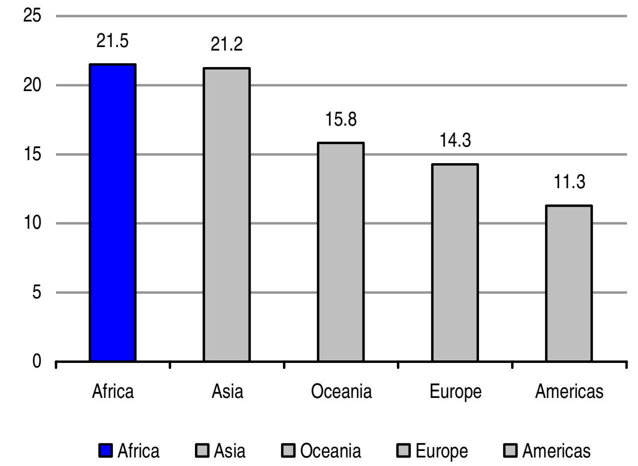
Investment levels are still small in absolute terms. However, (i) African relative to global capex is growing more quickly, and (ii) relative to the prevailing revenue stream, Africa accounts for a greater slice of the pie than any other region.

Figure 93: **Global telco capex and African relative to global capex spend**




*Source: ITU, Credit Suisse research*

Figure 94: **Investment in telecommunication services, 2005 (% revenue)**




*Source: ITU*

We think there are two ways to play the growth in the African telecoms market via international stocks: either through the equipment providers or the telecom operators with direct business exposure.

In 2006, we believe that Africa had a handset penetration level of 20.6%, which suggests that the region had some 190m subscribers. We believe that this penetration level will increase to 45.5% by 2010E, which suggests an increase to 457m subscribers. According to our estimates, this subscriber growth accounts for some 26% of the subscriber growth that we expect in the top seven emerging markets (China, India, Indonesia, Brazil, Mexico, Russia and Africa) and is some 16.5% of global subscriber growth between 2006 and 2010E. This significant increase will lead to new rollouts in the region which is supported by recent press articles stating that operators are intending to spend US$50bn on telecommunications equipment in Africa over the next five years, which clearly suggests a secular growth story.

Given that **Ericsson** is the global leader in the wireless infrastructure market, with **Alcatel Lucent** holding the number three position, we believe that both these companies will benefit from the increased investment in the region even though sales from Africa account for less than 10% of revenues for both companies. Assuming 50% of the targeted US$50bn is invested in the region, this would still result in an incremental US$5bn p.a. (i.e. a total US$25bn spend spread over five years), which accounts for some 10% of revenues for the global wireless infrastructure market going forward.

We also highlight the opportunity this presents for:

- Both **Huawei** and **ZTE**, two major telecom equipment suppliers in China, which have been aggressively expanding their footprint in Africa. As of 2006, Africa contributed 11% of total revenue to ZTE through equipment sales to many African markets as well as its joint venture mobile operation in the DRC with a local operator and 51% stake in Niger Telecommunications. Sales to sub-Saharan African countries exceeded US$1bn for privately owned Huawei Company in 2006 (c.12% of total). Huawei is now the largest wireless technology CDMA product provider in the region.

Of the telecom operators reasonable exposure to the African story can be captured via:

Vodafone owns 50% of the African mobile operator Vodacom

- **Vodafone**, which owns 50% of Vodacom, the mobile operator co-owned by Telkom SA and which has operations in South Africa, DRC, Lesotho, Mozambique, and Tanzania. Vodacom is also being encouraged by its two shareholders to expand into new markets on the continent. Vodacom is the leading mobile operator in South Africa and is also building a successful money transfer service for its mobile customers. Vodafone was widely reported in the press to be negotiating to buy Telkom's 50% stake in Vodacom as part of a break-up of its partner, but talks apparently ended due to a lack of a satisfactory bid for Telkom's wireline asset. We expect Vodafone to continue to pursue a purchase of this interest.

20% of Vivendi's 2007A EBITA comes from Maroc Telecom

- **Vivendi:** 20% of Vivendi's proportionate 2007A EBITA comes from Maroc Telecom. Maroc operates mainly in Morocco, and recently acquired Gabon Telecom and Onatel (which operates in Burkina Faso, West Africa). Vivendi's stated acquisition strategy is to pursue M&A opportunities in countries not far from Europe, with a lot of growth left in them. Management's stated intention is for Maroc to continue to make tactical acquisitions in 'black Africa' (in other words, sub-Saharan Africa).
- **Portugal Telecom**, which owns 33% of Meditel (in Morocco) and also has interests in Unitel (Angola, 25% stake), Namibia (MTC, 34% stake) and Cape Verde (CVT, 40% stake). Management has stated that it might consider other assets in the region, and sold a stake in its African assets to Helios investment partners. Since these investments are consolidated as associates, there is no contribution to revenues. As a proportion of earnings, Africa probably contributes less than 10%.
- **France Telecom**, which has interests in Africa and is present in 12 countries. The group recently won a licence in Niger for fixed and mobile and is also the strategic investor in the privatisation of Telkom Kenya.

Orascom is a key player in North Africa

- **Orascom Telecom**, which is listed in Egypt and London and is a key player in North Africa, with a presence in Tunisia, Algeria and Egypt. It has about 30m cellular subscribers in these three countries (close to half of the total), and revenues from these markets represent around 60% of the total (all 3Q07). While other key growth markets (Pakistan and Bangladesh) should increase their contribution to the total, we think North Africa is likely to remain a material contributor for years to come.

Kuwait-listed Zain Group makes 47% of group revenue from Africa

- **Zain Group** (previously MTC), which is a major player in the telecommunication sector in Africa. Through its subsidiary, Celtel, Zain operates in 14 sub-Saharan African countries. The addition of the newly acquired licence in Ghana will expand its presence in Africa to 15 countries. Zain's subscriber base in Africa grew 62% y/y to 24.7m, the highest in Africa as of 3Q07. Revenues from Africa reached US$2bn, equal to 47% of total group revenue. Going forward, we expect increasing African mobile penetration to be the engine of growth for Zain, increasing the African contribution to the group's consolidated results. Zain is listed on the Kuwait Stock Exchange and has a market cap of c.US$28bn.
- **Reliance Communications:** While the home market (India) for Reliance still has a lot of growth potential left, the company is keen to enter new markets using its expertise acquired in India (a highly competitive and low income market). Reliance participated in a bid for a telecom licence in Kenya, but was unsuccessful. Following this it won the telecom licence for Uganda in December 2007 and has also bid for a telecom licence in Morocco. RCOM plans to launch GSM services in Uganda by September 2008 with an initial investment of US$200m. It also plans to leverage its FLAG cable system to offer long-distance services from Africa. While Africa is a small portion of RCOM's current value, this could increase going forward as management aggressively attempts to expand to other countries in the continent.
- **Tata Communications:** A leading Indian long-distance communications provider, the company (previously known as VSNL) bought a 26% stake in the Second National Operator (SNO) in South Africa. The entity, under the name Neotel, launched wholesale international services for voice and IP transit in August 2006 and national and international leased line services in early 2007. Tata plans to invest close to US$230m over three years into the entity. While the current revenue run rate is

negligible, the company has said that it is looking at Neotel as a strategic investment to expand to other countries in Africa soon.

- **Telenor:** In a recent interview with Reuters, Telenor's CEO, Jon Fredrik Baksaas, said for the first time that Telenor is now ready to enter markets in Africa south of the Sahara. This is a notable change in emphasis from the company which already generates 65% of its operating profit in Central European and Asian developing markets. Previously Telenor had seen risks in sub-Saharan Africa as too great but now says its longer track record in Asia (Bangladesh, Pakistan, Thailand in particular) has given it the experience to be able to handle those risks. To date its only major move in Africa was an unsuccessful bid for the third mobile licence in Egypt in 2006. We believe Telenor's new approach also reflects the fact that competition to establish a presence in many of the Asian markets that Telenor has previously said it would like to enter (Vietnam, Indonesia, Philippines) has increased substantially and could make the cost of entry in these markets too expensive. Mr Baksaas said in the same interview that he is now prepared to be more flexible on the issue of ownership and control in Telenor's international assets. Previously Telenor's position was that an investment must give it a clear path to control. The position now is that Telenor is prepared to accept a minority ownership position in its international investments.

Telenor has no presence in Africa at the moment but recent comments from the company suggest it may be looking for opportunities

- **Deutsche Telekom:** The group has no significant interest in Africa currently, and its M&A strategy is more focused on in-market consolidation and Central and Eastern Europe. However, CEO, Rene Obermann, has said that he does want to change the shape of DT's asset mix over time to include more growth markets, so we think a move in this or any region cannot be excluded.

Deutsche Telekom, similarly, has limited African presence for now, but future acquisitions cannot be ruled out

African expansion is a key goal of both South African listed telecommunications companies, MTN and Telkom SA. With increasing competition in the South African landline market and approaching saturation in the SA mobile market, both of these operators have looked to expand into Africa to drive growth.

- **MTN** was one of the first mobile operators globally to recognise the African opportunity, with its initial expansions beyond South Africa, into Uganda, Rwanda and Swaziland in 1998. MTN, along with Orascom, was the first mover into the African space, and this has facilitated its strong return on capital as (a) the company was able to secure licences in most markets prior to these becoming prohibitively expensive as late entrants bid up prices, and (b) MTN has been able to build leading market share positions in most of its African operations as a result of its first-mover advantage. MTN currently has operations in 21 countries, with five in the Middle East and the remainder in Africa. At September 2007 MTN had 54m subscribers, 14m of which in South Africa, 9m in the Middle East, and 31m in 'other Africa'. MTN's African effort is spearheaded by Nigeria where the company has 15m subscribers and 45% of the fast-growing Nigerian mobile market. MTN might be seen to represent the perfect investment vehicle for investors looking to gain exposure to Africa given: (1) that Africa is the majority of its business; (2) its proven track record in Africa; (3) the high quality of the company in terms of corporate governance and its leading market position in the majority of its African markets; and (4) that mobile may represent the best opportunity in Africa to monetise the spending power of African businesses and consumers on a pan-African basis.

South Africa-listed MTN offers significant exposure to growth in the South African and Nigerian mobile markets

- Integrated incumbent, **Telkom SA**, until recently had focused its Africa efforts via its 50% stake in leading South African mobile operator Vodacom, which has operations in South Africa, Lesotho, Mozambique, Tanzania and DRC. This changed in 2007, when Telkom indicated its intention to expand into Africa in the fixed-line space, and followed through with the acquisition of MultiLinks, a Nigerian Unified Licence CDMA operator, and Africa Online, a pan-African ISP. Vodacom's reasonably early African expansion was stymied by its shareholder agreement (between Telkom SA and Vodafone), which prevented Vodacom from expanding north of the equator. While this clause of the

Telkom SA offers African exposure via its 50% holding in Vodacom and has recently started to expand its wireline business outside South Africa shareholder agreement no longer holds, it prevented Vodacom's expansion at a critical time, with the net result that only 8.3m of Vodacom's 31.6m customers are outside of South Africa.

- Because of Vodacom's relatively limited exposure to Africa (as a percentage of subscribers) and the fact that MultiLinks and Africa Online will take some years before they begin to contribute meaningfully to Telkom's bottom line, we do not see Telkom SA as an ideal vehicle to gain exposure to Africa, despite Telkom management's strong focus on building this business.

- Also worth a mention is **Naspers**. Naspers is South Africa's leading media company, with diversified media interests in Africa, Brazil, China, India and Eastern Europe. The company's primary African focus is pay-TV, although it also provides internet access and print media. Pay-TV subsidiary MultiChoice Africa accounts for c.13% of Naspers' value. The company had 500,000 subscribers at September 2007, across c.40 African countries, with most subscribers concentrated in Nigeria and Angola. We believe African pay-TV is a secular growth opportunity largely unrecognised by international investors, and forecast strong growth for Naspers in this space.

Naspers is a leading South African media company with a strong base in pay-TV across 40 African countries

**Figure 95: Telco providers and their exposure to Africa**

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt Cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| TKGJ.J | Telkom SA | Joburg | SA fixed-line monopoly and key player in the SA mobile mkt via 50% holding in Vodacom | 100% | O | 8,835 | 8.2 | 1.3 |
| MTNJ.J | MTN | Joburg | Operations in 16 African countries, dominant in Nigerian mobile (45% mkt share) and the main competition to Vodacom in SA | 87% | O | 31,751 | 16.7 | 2.7 |
| ORTEq.L | Orascom | Egypt | Operates in Tunisia, Algeria and Egypt. 60% of revenues are from North Africa | 60% | O | 16,568 | 17.1 | 2.5 |
| ZAIN.KW | Zain Group | Kuwait | Zain operates in 14 sub-Saharan African countries. African revenues account for 47% of the group total. | 47% | N | 29,652 | 19.2 | 4.0 |
| VIV.PA | Vivendi | Paris | 20% of 2007 EBITA comes from Maroc Telecom (which operates in Morocco, Gabon and Burkina Faso) | 20% | O | 47,164 | 10.0 | 1.3 |
| 0763.HK | ZTE | China | Chinese telco equipment supplier, aggressively expanding into Africa. c.11% of revenues from Africa in 2006 | 13% | O | 806 | 20.2 | 0.1 |
| VOD.L | Vodafone | London | Owns 50% of Vodacom, the mobile operator co-owned by Telkom SA which has operations in South Africa, DRC, Lesotho, Mozambique and Tanzania | <10% | O | 166,731 | 13.6 | 2.4 |
| PTC.LS | Portugal Telecom | Portugal | Owns 33% of Meditel (in Morocco) and also has interests in Unitel (Angola, 25%), Namibia (MTC, 34%) and Cape Verde (CVT, 40%) | <10% | U | 13,937 | 14.8 | 1.3 |
| FTE.PA | France Telecom | France | Present in 12 countries and recently won a licence in Niger for fixed and mobile. Strategic investor in the privatisation of Telkom Kenya | <5% | N | 91,405 | 11.5 | 1.1 |
| ALU | Alcatel Lucent | NY | Key beneficiary of wireless infrastructure spend | <5% | O | 14,156 | 18.6 | 0.5 |
| PWAV | *Powerwave | NY | Wireless subsystems and antennas but less than 5% of revenues from Africa | <5% | NR | 342 | 34.3 | 0.4 |
| ERICb.ST | Ericsson | Sweden | Key beneficiary of wireless infrastructure spend | <5% | N | 30,650 | 11.5 | 1.0 |
| RLCM.BO | Reliance Communications | India | Has won a telco licence in Uganda and bid for one in Morocco | <5% | U | 32,173 | 24.4 | 6.5 |
| TATA.BO | Tata Comm | India | Bought a 26% stake in the Second National Operator (SNO) in South Africa. Entity called Neotel | <5% | N | 3,826 | 40.0 | 3.2 |
| MOT | *Motorola | NY | Handsets, GSM and WiMAX infrastructure but only 1–2% of sales from Africa | 1–2% | NR | 21,669 | 95.1 | 0.6 |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

# Healthcare: a question of financing

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Africa accounts for the second-largest share of the global burden of disease and 13% of the world's population, but spends only 1% of the world's resources on health. Life expectancy in Africa (49 years) is well below the global average (67 years).

**Figure 96: Life expectancy at birth (years)**

| Region | Male | Female |
|---|---|---|
| African Region | 48 | 50 |
| Americas | 72 | 77 |
| South East Asia | 62 | 65 |
| European Region | 69 | 77 |
| Eastern Mediterranean Region | 62 | 64 |
| Western Pacific Region | 71 | 75 |
| Global | 64 | 68 |

*Source: WHO*

More than half of the expenditure on health in Africa is on the private sector, which is much greater than the European or global average.

**Figure 97: African health expenditure in a global context**

| | Total expenditure on health as % of GDP | General government expenditure on health as % of total expenditure on health | Private expenditure on health as % of total expenditure on health | Out of pocket expenditure as a % of private expenditure on health |
|---|---|---|---|---|
| African Region | 6.0 | 43.9 | 56.1 | 49.2 |
| European Region | 8.6 | 74.2 | 25.8 | 70.1 |
| Global averages | 8.7 | 55.9 | 44.1 | 52.2 |

*Source: WHO*

As the GDP of African nations increases, we expect health expenditure (be it publicly or privately funded) to increase commensurately.

Generic drugs companies are likely to be the key beneficiaries as pressures to reduce healthcare costs are particularly acute. Moves by countries like South Africa to introduce fixed prices for medicines (particularly the dispensing fee) and to pressurise health care providers to utilise generic formulations, are an indication of the pressures to reduce costs. The Competition Tribunal in South Africa has become increasingly proactive in limiting consolidation in the market and investigating anti-competitive behaviour so as to curtail pricing power. This is true for both the hospital providers and generic drug providers.

In some African countries the private sector is becoming increasing involved in the provision of health services, through either voluntary work or public-private partnerships (PPPs). In others the governments actively encourage the population to utilise the private sector, such as in South Africa where private medical insurance costs are tax deductible.

One of the biggest risks for future growth in healthcare in Africa is the shortage of skilled professionals. While this is a global phenomenon, the attractive remuneration packages available in developed countries for healthcare professionals means there is a constant drain of resources from Africa. This has led to spiralling wage inflation— we expect nursing salaries in South Africa will rise by 20–80% in 2008 alone—and increased attempts by African countries to limit the recruitment of professionals into developed countries.

International exposure to growing healthcare expenditure in Africa is mainly limited to the Indian-listed generic drugs companies (although the big Western pharma companies also have a presence—including **Sanofi-Aventis, Pfizer, Novartis, Glaxosmithkline, Merck and Roche**—although Africa typically accounts for a very small percentage of their sales).

We highlight:

- Africa contributed 8% of **Ranbaxy's** overall revenues in CY07 and we expect a CAGR of 21% in the next three years compared with an overall CAGR of 13% for the group.
- Africa accounts for 28% of **Cipla's** exports and 14% of its overall revenues; the company is one of the largest generic ARV suppliers. In addition, its partner Cipla-Medpro (acquired by Enaleni) is a large South African generics company that sources all its products from Cipla.
- **Aurobindo** derives about 25% from Africa mainly from sales of ARV formulations; we expect this to increase to 30% by FY10E.
- Several other companies including **Strides Arcolab** and **Dr. Reddy's** are ramping up their presence in South Africa.
- London-listed **Hikma** (a multinational generics player) derives a significant proportion of its group revenues from Africa (we estimate c.18%). Its greatest exposure is to Algeria and North Africa.

There are numerous African-listed healthcare and pharmaceutical companies. The largest by market capitalisation are all based in South Africa. Namely:

- **Aspen:** A large generics producer with operations in South Africa, Australia, and Latin America. Over 25% of revenues come from outside South Africa (with 5% coming from the rest of Africa). The company has aggressive plans to expand its international operations and is looking particularly into other emerging countries in Africa and South America (where it recently announced a JV with Strides). Aspen should continue to benefit as a manufacturer of generics and ARVs as African governments push for cheaper drugs and extend treatment schemes for HIV/Aids. Aspen is expanding its manufacturing capacity in South Africa (and South America) to ensure competitive pricing in this arena. In 2007 ARVs made up 11% of revenue (up from 8% in 2006). Indian companies Astrix, Ranbaxys, Cipla-Medpro and Strides Arcolab all compete to provide ARV APIs for Aspen (almost 50% of Astrix's revenues come from this).

  The main risks for Aspen in South Africa include the continued sub-inflation cap on drug pricing through the Single Exit Pricing mechanism, wage inflation and the electricity crisis in the country: all good reasons for diversifying its manufacturing base.

- **Medi-Clinic:** A large private hospital provider with operations in South Africa, Namibia, UAE and Switzerland. In 2008 just under half of its revenues are forecast by the company to come from the international operations following the recent Swiss acquisition.
- **Network Healthcare Holdings:** A large private hospital provider with operations in South Africa and the UK. Just over 50% of its revenues in 2008 will be derived from its UK division according to the company.

For both **Medi-Clinic and Netcare**, company guidance suggests growth in their South African operations is likely to be between 10% and 18% p.a., as opposed to 5–8% in the European operations; thus over time (barring further acquisitions) their African operations will continue to dominate revenues. Growth is being driven by the increasing incidence of communicable diseases like HIV and TB, and lifestyle conditions like obesity and hypertension. Public partnerships with governments provide opportunities for further geographic expansion in sub-Saharan Africa (South Africa and more recently Lesotho have started proceeding down this route), although Netcare has said it is unlikely it will try to enter other African markets for now.

Risks for both companies include the increasing regulatory environment in South Africa, which is placing downward pressure on pricing and thus squeezing margins, the increase in wage inflation and more recently the electricity crisis in the country.

Figure 98: **Healthcare providers and their exposure to Africa**

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| APNJ.J | *Aspen | Joburg | Large generics producer with operations in South Africa, Australia, and Latin America. 80% of revenues from Africa | 80% | NR | 1,551 | 12.9 | 2.5 |
| MDCJ.J | Medi-Clinic | Joburg | Private hospital provider with operations in South Africa, Namibia, UAE and Switzerland | 60% | U | 1,481 | 15.9 | 1.3 |
| NTCJ.J | Network Healthcare | Joburg | Private hospital provider with operations in South Africa and the UK. | 50% | N | 1,960 | 12.0 | 0.7 |
| ARBN.BO | Aurobindo | India | Aurobindo gets about 25% from Africa mainly from sales of ARV formulations; we expect this to increase to 30% by FY10E | 25% | O | 392 | 6.8 | 0.6 |
| HIK.L | Hikma | London | Multinational generics player. c.18% of group revenues come from Africa | 18% | N | 1,715 | 21.5 | 2.8 |
| CIPL.BO | Cipla | India | Africa accounts for 28% of Cipla's exports and 14% of its overall revenues; the company is one of the largest generic ARV suppliers | 14% | N | 4,263 | 25.0 | 4.3 |
| RANB.BO | Ranbaxy | India | Africa contributed 8% of Ranbaxy's overall revenues in CY07 and we expect a CAGR of 21% in the next three years compared with an overall CAGR of 13% for the group | 8% | N | 4,157 | 22.7 | 2.2 |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

# Finance: low financial intermediation

## Banking

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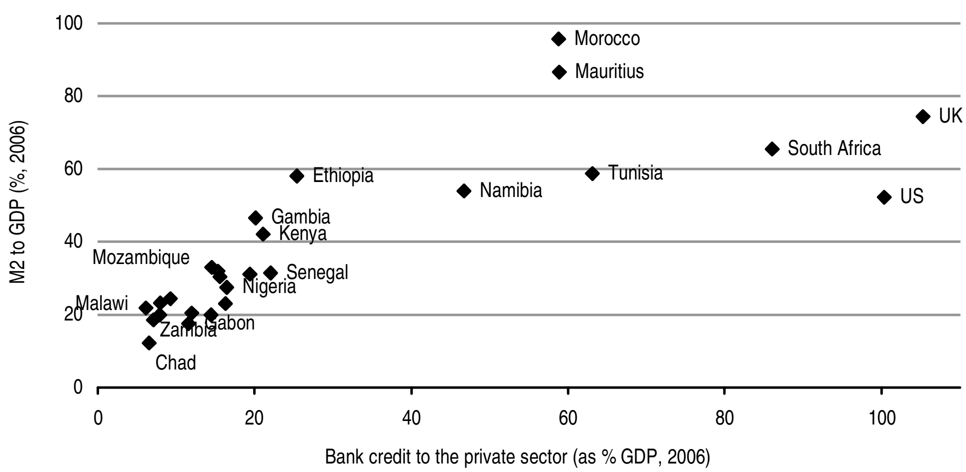
Bank credit to the private sector remains very low across most of Africa relative to the rest of the world (the North African nations and South Africa and Mauritius are the only notable exceptions). This reflects low financial intermediation, as measured by the ratio of broad money (M2) to GDP. M2 to GDP is associated with the overall economic development of a country. As we illustrate in Figure 99 there is a clear relationship between M2 to GDP and credit to GDP.

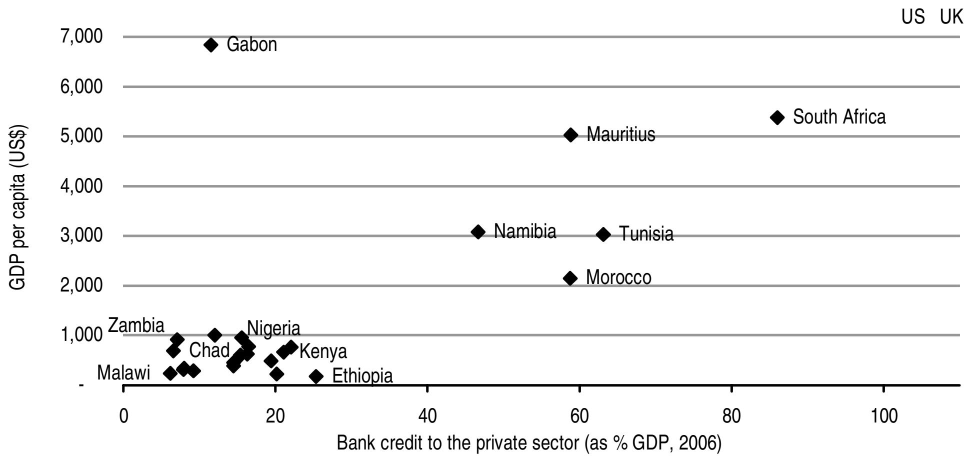
**Figure 99: Africa: credit to the private sector as % GDP and M2 to GDP**




*Source: IFS, Credit Suisse research*

On average, Africa has a ratio of M2 to GDP of 37% and credit to the private sector (including non-financial public enterprises) of 24%. It does not appear to be a case of public sector crowding out (as it has been in South America) that has stymied bank lending to the private sector but a combination of (a) low GDP per capita (Figure 100), (b) a lack of physical infrastructure (branches and ATMs), (c) a lack of data (e.g. poor accounting standards, poor credit information and poor recourse to credit recovery), (d) poor education (lack of qualified staff to run branches), and (e) a very low risk threshold adopted by the banks. Across Africa, banks have tended to finance the most solid enterprises, and rather than incurring risks by providing credit to SMEs, they have maintained large deposits at central banks, or with counterparts abroad at low interest rates.

Figure 100: **Africa: credit to the private sector as % GDP and GDP per capita**




*Source: IFS, Credit Suisse research*

**Slowly changing for the better**

As GDP per capita rises, so does the degree of financial intermediation. Coupled with improvements in education (slowly coming through albeit off a low base) and the growth in infrastructure (mainly industrial but with visible benefits for social infrastructure in the resource rich countries), we can expect credit to the private sector to continue to increase. Moreover, the incentives generated by the HIPC, MDRI and Paris Club debt relief schemes have meant moving ahead with various institutional reforms to assist in the growth of the private sector (including banking, in some countries). For instance, initiatives to improve accounting standards: Western African Economic and Monetary Union (WAEMU), a uniform accounting system was adopted in 2001, while in Tanzania, the regulation of company accounting and auditing practices was modernised through the 2002 Company Act. Improvements in accounting standards have been introduced in Uganda and Zambia. In Sierra Leone the government is working on the development of a new Companies Act, a Bankruptcy Act, a Securities Act and a venture capital scheme.

However, it is a slow process off a low base. Accounting and auditing standards, on the whole, remain weak, and the legal, judicial and regulatory framework governing enforceability of claims and property rights are most often inadequate, and collateral and real estate registration at best limited and at worst non-existent. As the IMF has pointed out, enforcing a commercial contract through the courts is more difficult in sub-Saharan Africa than anywhere else: on average, creditors must go through 35 steps, wait 15 months, and spend 43% of country per capita income before receiving payments.

It is a case then of identifying regions (probably in the resource-rich countries) that are taking significant steps to address institutional shortfalls. Nigeria, Ghana, South Africa and Botswana stand out.

**Internationals making their presence felt**

International exposure to African banking has increased substantially over the past five years. We highlight:

- **Barclays:** Following its takeover in 2005, Barclays makes about 6% of total earnings from ABSA and just less than 10% overall from African operations. According to management, it is looking to integrate existing African businesses. We think the outlook is reasonable with strong volume growth tempered by rising impairment charges.

- **HSBC** has concentrated its African banking operations in Egypt with 43 branches. However, the contribution to earnings at the group level is not significant.
- Around 6% of **Standard Chartered's** earnings currently come from Africa, around 75% of that comes from the Wholesale rather than Consumer business which has benefited from increased Asia/African trade flows. The main operations in Africa are in Kenya, Zimbabwe, Ghana, Zambia, Botswana, Nigeria and Tanzania. The highest growth prospects in retail are currently being driven by Kenya, Ghana and Nigeria on the back of an increased push into wealth management. As at the latest interim stage, the Nigerian operation saw total profits up 40%. The bank is looking to grow organically here rather than by acquisition. Standard Chartered has a limited presence in South Africa and it is difficult to grow organically given the entrenched positions of the local banks. Management previously expressed an interest in expanding retail operations here and the group was widely linked with a potential acquisition of Nedbank last year but has since stated that it does not think the risk/reward stacks up.
- Of the Spanish banks, the only bank with any reported exposure to Africa is **Santander** with a 14.6% stake in Atijari Wafa Bank (Morocco), equity income accounted (negligible contribution at the corporate level). SAN has a €500m unrealised capital gain on its position, though. Santander has no major strategic plans regarding its investments in Africa. It is a completely marginal area so far.

Most listed French banks are active in Africa in retail banking, mainly the Mediterranean Basin and North Africa. They have developed franchises over the past 30 years, but have been accelerating their expansion since 2005 through organic growth. They have also been exploring acquisitions and took part in privatisations (Egypt and Algeria). Due to language and cultural similarities, French banks have been able to build extensive networks, on a relative basis. Additionally we note that some of French banks' CIB revenues (we assume 3–5%) have come from Africa in recent years as some countries are direct/indirect beneficiaries of the commodities boom. Project finance and trade finance in which French banks are big players have been areas of focus in the CIB divisions.

- **Société Générale** is the most exposed to Africa among the French banks. It generates about 3–4% of its pre-tax profit from Africa retail banking, in our view, mainly from Egypt and Morocco. It has about 450 branches, 1.3m clients and about 7,000 employees. Its loan book in the region amounted to about €7bn in 2Q07.
- In total **BNPP** has about 600 branches in Africa/Middle East and a loan book of c.€7bn on our calculations. We estimate that this area will account for about 1–2% of BNPP's pre-tax profit in 2008E (retail banking contribution), or 3–4% when adding the CIB contribution.
- **Crédit Agricole**'s international retail strategy is more focused on 'old Europe' and as a result African exposure is limited to a handful of countries with c.150–200 branches and about 1% of pre-tax earnings coming from the region.

Finally, the ex-Portuguese colonies (Angola and Mozambique) both contribute to the bottom line of the Portuguese banks.

- **BPI:** Angola represented 14% of total revenues and 20% of net income in 2007. The company owns the largest bank in the country, Banco de Fomento de Angola, with a 30% market share. The company has 72 branches in the country which might be increased to 177 in 2011 according to company guidance. The bank increased its earnings by 60% last year.
- **BES:** The company has 20 branches in Angola (2% of the total). Net income from the group's Angolan operations represents 3.5% of the total.

- **BCP:** BCP has the largest bank in Mozambique (30% market share), with 76 branches and 1,500 employees. Net income from the group's Mozambique operations (€39m) represents 5% of its bottom line. BCP also has seven branches in Angola (although this presence is irrelevant to the bottom line).

**South African banks expanding across the continent**

Of the South African banks, Absa, FirstRand and Standard Bank have all been increasing their presence in Africa over the past few years, and are all pursuing a strategy to make more acquisitions on the continent in future. Banking in Africa, while volatile, comes with fairly good ROEs and earnings growth potential as the markets open up. Retail banking in Africa also tends to come with high net interest margins. We are therefore encouraged by the prospects of banking growth in Africa and see expansion in the region as a positive factor longer term.

The percentages of group earnings that come from Africa (listed below) are slightly understated, as these are just the numbers for the disclosed African operations, and often do not include the project and infrastructure finance work that the banks do in Africa, which is usually booked under Corporate & Investment banking profits. Nevertheless, the split of total group profits made from the businesses sitting in other African countries is as follows: Standard (8.4%), FirstRand (3.8%), Nedbank (1.4%), and Absa (1.2%).

Of these four, the two to focus on are Standard and Absa. FirstRand is looking to make acquisitions in Africa, but is doing so slowly, and this split of earnings is not likely to change quickly. Nedbank has shown no major intent to expand its African operations.

- By far the best exposure that one gets to Africa through the South African banks is **Standard**, as it has a presence in 15 African countries, and a growing percentage of its revenue comes from its African operations. African revenues (8.4% of total in 2006) should be further augmented by the US$400m acquisition of IBTC Chartered Bank in Nigeria and CFC Bank in Kenya both in 2007. One of Standard's key strategies is to expand its presence in African and emerging markets, and it is looking to do this through a combination of organic and acquisitive growth. With Standard receiving R16bn of fresh capital from its new shares issued to Industrial & Commercial Bank of China (ICBC), it has indicated that it will be aggressively looking to make acquisitions to increase its offshore franchise, and Africa will certainly be a region that it will look at. Furthermore, given the trade links between China and Africa, the ICBC deal should accelerate Standard's African business if the synergy targets are met. Standard's biggest focus in Africa now is in Nigeria, post the acquisition it recently concluded there, but its other sizeable businesses are found in Namibia, Uganda and Botswana.

- Although only 1.2% of group earnings as at June 2007, ABSA is looking to aggressively increase its presence in Africa with the merger of Barclays' African network. This deal was supposed to have been done in 2007, but there are regulatory delays that are holding up the process. ABSA is reportedly now in discussions to buy Barclays' nine African operations one by one to avoid regulatory problems and the difficulty in dealing with minority shareholders. Although Barclays does not disclose exactly how much its African operations make, we think it is fair to assume that if ABSA buys Barclays' entire African operations, 'other' Africa would increase to 10–15% of ABSA group earnings. We expect ABSA to spend some time in 2008 bedding down the first few acquisitions from Barclays. At the moment, ABSA biggest operations in Africa are in Mozambique and Tanzania.

# Insurance: only slow growth

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Life insurance in Africa is concentrated in a few nodes, most importantly South Africa and Kenya (Kenya has a large Indian population which has driven much of the development there). That said, many South African life insurers (Old Mutual) are increasing activities in Africa as business tends to be capital efficient (mostly protection products) and profitable (protection mostly—little savings).

The key characteristics of insurance in Africa are:

- Many risk benefits are provided through state pension funds.
- In many African countries the state insurance company (or a company majority owned by the state) tends to have monopolistic powers—this is especially true for those that have recently (past 20–30 years) gained independence.
- With the exception of Kenya, Mauritius and Namibia, none of the markets have high levels of competition.
- Premium growth is expected to increase steadily but slowly over the next few years, in our view. Like many other consumables, insurance, in the end, should benefit from higher rates of GDP per capita but is unlikely to take priority over the likes of better food, healthcare, mobile phones and housing.
- Successful growth for foreign insurers in Africa will probably come down to a question of relationships. Foreign companies are not readily accepted; hence it can take a while for business to materialise. A good example of this is Metropolitan Life in South Africa, which has spread its wings to East Africa and growth has been slower than anticipated in its greenfield operations as it has set up a business with few links to local players.

We think the only obvious way to play growth in insurance in Africa is via **Old Mutual**. However, Old Mutual's African operations contribute only c.4% to South African APE or 0.8% of OML group APE, so clearly not much to write home about for now.

Figure 101: **Finance sector and exposure to Africa**

| Ticker | Company | Main listing | Concern | % earnings from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E |
|---|---|---|---|---|---|---|---|
| ASAJ.J | ABSA | Joburg | Largely a SA operation but in talks to acquire/consolidate Barclays' other African positions | 100% | N | 9,142 | 7.1 |
| FSRJ.J | FirstRand | Joburg | Looking to make acquisitions in Africa, but is doing so slowly, and this split of earnings is not likely to change quickly (3.8% from other Africa) | 95% | O | 12,316 | 7.8 |
| NEDJ.J | Nedbank Group | Joburg | Only 1.4% of earnings from ex-SA Africa and not looking to change the earnings mix for now | 95% | O | 7,181 | 7.5 |
| SBKJ.J | Standard Bank | Joburg | The biggest bank in SA by assets and the greatest % of other African revenues among the big 4 SA banks. | 90% | N | 18,446 | 8.7 |
| OMLJ.J | Old Mutual | Joburg | Old Mutual is SA's largest listed life insurer by market capitalisation | 60% | O | 12,932 | 6.8 |
| BBPI.LS | *BPI | Portugal | Angola represents 14% of total revenues and 20% of net income | 20% | NR | 4,111 | 7.4 |
| BARC.L | Barclays | London | 10% of earnings overall from African operations | 10% | N | 65,583 | 7.3 |
| STAN.L | Standard Chartered | London | 6% of earnings overall from African operations | 6% | O | 51,355 | 15.4 |
| BCP.LS | *BCP | Portugal | Has the largest bank in Mozambique (30% market share). Net income from Mozambique operations (€39m) represents 5% of the group's bottom line | 5% | NR | 12,374 | 12.0 |
| SOGN.PA | Soc Gen | Paris | Generates about 3–4% of its pre-tax profit from Africa retail banking | 3–4% | N | 63,166 | 7.8 |
| SAN.MC | Santander | Spain | 14.6% stake in Atijari Wafa Bank (Morocco), but a negligible contribution at the corporate level. | <1% | O | 131,216 | 9.1 |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

# Consumer goods

Higher GDP per capita for the average African consumer is translating into better sales for various internationally listed consumer goods providers. One concern, however, is that higher food prices may detract from the growth in other consumption given the very high proportion of expenditure on food from the low income groups that account for the bulk of Africa's population. However, for the resource-rich markets, where GDP per capita continues to climb at a rapid clip, consumption should be fairly strong across the board.

We look at exposure and growth rates under five sub-headings: beverages, tobacco, food and household goods, cars and other vehicles, and white goods.

## (1) Beverages

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- **SABMiller** is the biggest brewer in Africa and produced and sold an estimated c.50% of the 72m hl of beer consumed in Africa in 2007 according to the company. **Heineken** follows next and makes up c.20% of the continent's beer consumption. Heineken's main market is Nigeria, followed by Egypt (after the acquisition of El-Ahram Beverages in 2002) but the company also has a stake in breweries in Morocco and Ghana and controls Sierra Leone. **Diageo's** Guinness brand is enjoying strong growth in West Africa—particularly Nigeria and Ghana—and is now growing from a small base in South Africa as well. According to Diageo, Nigeria is now the second-biggest market for Guinness in terms of volume worldwide.
- South Africa is by far the biggest beer market in Africa and is six times the size, in volume terms, of the next biggest market which is Nigeria. Cameroon, Angola and Tanzania are continuing to grow from a small base. South Africa is also the world's fifth-largest Scotch market (Diageo reported that for the FY to June 2007, Johnnie Walker net sales grew by over 40% y/y).
- Africa (including South Africa) accounts for c.40% of SABMiller's sales and 11% of Heineken's sales. For Diageo, we estimate combined Guinness and spirits sales in Africa account for <5% of total group revenues.
- We expect beer in Africa overall to grow in the high single digits, with the mix shifting towards the countries growing from a smaller base. In South Africa, we expect low to mid single-digit volume growth in 2008 while we would expect high single-digit to low double-digit volume growth in West Africa (driven by Nigeria, Cameroon) and East Africa (Kenya, Tanzania). We expect the spirits market in South Africa to grow in the double digits as the emerging middle class continues to trade up.

Figure 102: **Forecast GDP growth (2007–2010E) and demographic growth (2007E–2010E)**

| | Demographics | GDP growth |
|---|---|---|
| Western Europe | -1.0% | 2.4% |
| US | 2% | 2.5% |
| Asia (excl. Japan) | 2% | 6.7% |
| Latin America | 4% | 4.4% |
| Eastern Europe | -2% | 5.0% |
| **Africa/Middle East** | **10%** | **5.8%** |

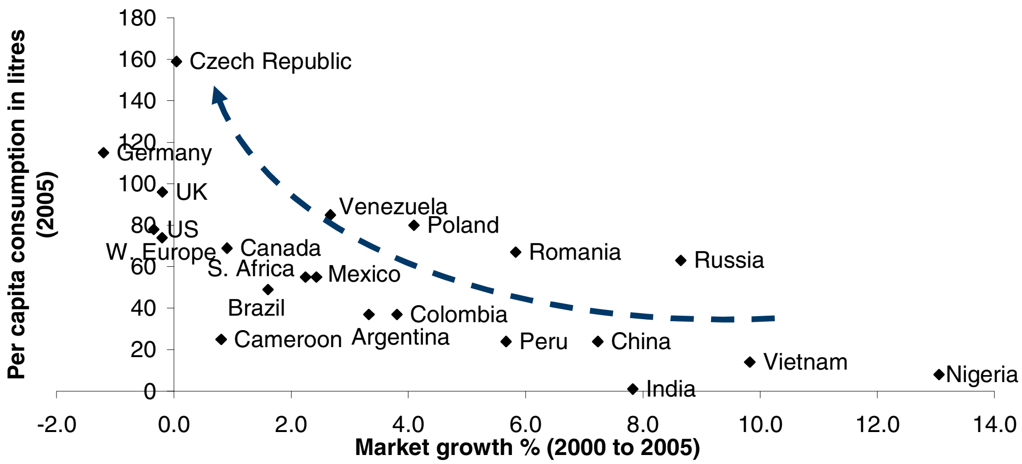
*Source: Euromonitor for GDP, US Census Bureau for demographics*

Africa screens very attractively on both demographic and economic growth fronts—underpinning our confidence in the continent's beverage market growth over the medium term.

**SABMiller: opportunities in beer**

For SABMiller, the growth opportunity in Africa is driven by low per capita consumption intersecting with attractive demographics and continuing economic growth. The three biggest beer markets in Africa significantly under-index developed world averages in terms of per capita consumption.

Figure 103: **Per capita consumption and market growth rates**




*Source: Canadean, Credit Suisse research*

- As the process of legalisation continues, SABMiller should continue to draw more value from the South African market. For example, the company has already made significant headway in reducing retailer mark-up from 26% to 21% in direct distribution accounts and has seen substantial volume upside from legalised shebeens (illegal pubs) that have passed the benefit of the reduced 'middleman' margin on to the consumer.
- Significant glass shortages in South Africa have meant SABMiller has had to import 80,000 tonnes of glass over the past few months. This has led to some contraction in margin.

From a strategic point of view, we think there is still significant upside for SABMiller South Africa in accessing new consumer segments and in pursuing its shebeen legalisation strategy.

The weight of the group's competitive advantage in South Africa has been made clear by its ability to recoup six percentage points of the nine percentage points of volume share lost as a result of the loss of the Amstel licence. Amstel demand over the past six months has been substituted by Hansa Pilsner as well as Hansa Marzen Gold.

On shebeen legalisation, the group ultimately sees the number of illegal outlets reducing from 200,000 to 100,000 as some outlets gain licences while others are forced to close. The group saw a 20% increase in the number of legal shebeens in the last financial year and anticipates another 20% becoming legal this year. All in all management estimates that the number of legal shebeens should grow from 30,000 to 60,000 over the medium term.

**Looking outside South Africa**

SABMiller is already the market leader in most of the nine countries in which it operates independently, and has led growth in consumption by both enhancing affordability as well as its own scale. It operates together with local operator Castel in 15 other countries in Africa. Over a six-year period, the group has been able to drive both volume as well as value growth—with organic EBITA growth in Africa (ex-South Africa which is classified separately) at 16% over a six-year period.

Figure 104: **Markets outside South Africa show strong growth potential from low base**

| | GDP per capita (2007E) | Beer PCC, litres |
|---|---|---|
| Angola | 3,738 | 20 |
| Botswana | 7,270 | 37 |
| Ghana | 682 | 7 |
| Mozambique | 397 | 6 |
| Tanzania | 362 | 6 |
| Uganda | 360 | 4 |
| Zambia | 895 | 5 |
| Zimbabwe | 1,378 | 10 |

*Source: IMF, Credit Suisse research*

The opportunity in these countries is to convert consumers from cheap wine and illicit liquor to beer. The two major SABMiller-owned profit centres in Africa remain Tanzania and Botswana. We estimate these two markets combined contribute over 40% of SABMiller's African profits (including Castel).

- In Tanzania, per capita consumption remains low (at around 6 litres p.a.). With the economy showing modest growth, the outlook for beer volumes is promising—current growth rate is mid to high single digits. Since the deal with Diageo in 2003, which effectively gave Diageo the monopoly in Kenya and SABMiller the monopoly in Tanzania, Tanzania has become an even more strategic part of the African portfolio. EBIT margins are already high, at around 29%, though management has said it believes there is plenty of scope for further enhancement.
- Notwithstanding the situation in Zimbabwe, the political and economic environment in the majority of SABMiller territories is at least stable and broadly improving. Two key growth markets include Angola (now the third-highest GDP in Southern Africa) and Mozambique.
- In Angola, SABMiller is moving to full ownership from a management contract. We are forecasting that with the uplift provided by its expanding oil industry we should see a marked acceleration in demand for both beer and carbonated soft drinks (CSDs). We forecast EBITA from Angola of US$30m in FY2008E. It has already overtaken Mozambique to become SABMiller's third-biggest profit centre in the sub-Saharan region after Botswana and Tanzania (excluding Castel).
- Several markets offer the significant benefits of joint beer and CSD production and distribution. The high profitability levels achieved by the Botswana business are a good example of this. At its African investor trip in 2001 the company identified several Coke bottling franchises in Southern Africa that would be attractive acquisition targets. Since then only the Zambian franchise has come its way (2002). Further complementary Coke bottling franchises (SABCO for example) would clearly be beneficial to regional profitability.
- We note **Coca-Cola Hellenic** derives c.10% of its overall sales volumes from Nigeria. The importance of Nigeria to the group in recent years has been eclipsed by consistent annual double-digit growth in Russia which is now the biggest individual country contributor to group volumes (c.20% of total). However, Nigeria offers significant demographic-driven consumption growth potential, alongside economic growth, similar to the SABMiller growth trajectory in Southern Africa. Plus, the company also believes that, in addition to CSD consumption, there is a significant opportunity for the group's packaged water and juice products.

- Coke Hellenic is well positioned to capture the dominant share of ongoing growth in non-alcoholic beverage consumption in Nigeria with a 57.2% share of the CSD category in 2006. Due in part to the fragmented nature of the retail sector and the absence of hypermarkets and supermarket chains, Coke Hellenic's distribution in Nigeria is largely managed directly by the company, although there are wholesalers and strategic supply depots. A priority for the group over the medium term is to improve the efficiency and reliability of its distribution network. CCHBC continues to expand its pre-selling system for high-volume outlets, strategic supply depots and key accounts with more than 60% of sales now generated through this system—which makes margins in Nigeria relatively more attractive than elsewhere within the Coke Hellenic system. To improve visibility in key Nigerian population centres, including Lagos and other large cities, Coke Hellenic has established approximately 530 independent strategic distribution centres, which has enabled the company to reach smaller outlets more efficiently. Due to the low availability of electricity in outlets in Nigeria, Coke Hellenic also manufactures and distributes ice to support the supply of cold drinks.

**US sales in Africa**

As for the US, **Coca-Cola** is the only name with material exposure to Africa: 4–5% of revenues and c.5% of operating profit. Last quarter Coke singled out South Africa (+9% volumes) and Nigeria specifically as great performers. In aggregate, volume and revenue growth in Africa (up 11% and 13%, respectively) has been solid in recent quarters, but profit growth has been much more subdued (operating profit up just 1%) on the back of restructuring costs, negative currency impacts and an investment in marketing (Coca-Cola Zero in Egypt, for example).

In terms of future profitability, we think Africa is likely to look like China with ample volume and revenue growth but more limited profit growth as these countries sort out their social, political and economic structural issues.

## (2) Tobacco

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The main international operator in the tobacco sector in Africa is **British American Tobacco** (BAT). BAT has cornered 89.9% market share in South Africa which puts it far ahead of its peers. Of the country's 48m population, 27m falls in the 18- to 65-year age group of which 27.7% or 7.5m use all tobacco products and 23.6% or 6.3m are regular cigarette smokers. South Africa and Middle East regions contributed 15.9% to BAT's mid-year profit from operations in 2007. Revenue and operating profit from the region were up more than 4% and 25% respectively over the last year, despite a dip in volumes of 3%. Excise duty and an increase in prices are pushing down the industry's volume. Yet, the total tobacco market in South Africa is growing.

BAT focuses on international and premium brands, and lights and adult smokers under the age of 30 (ASU30), where it has consistently gained share. Its 'global drive brand' portfolio—comprising brands like Dunhill, Kent and Lucky Strike—grew 57.8% in 2006. BAT's Peter Stuyvesant brand has been maintaining leadership through innovation and its Rothmans brand also enjoys improved brand equity. The company is increasingly outsourcing non-core operations, forming alliances for external expertise.

With the acquisition of Altadis early this year, **Imperial Tobacco** gained exposure to Morocco. This is an attractive market for tobacco companies in which Altadis had previously entered with the acquisition of the RTM state monopoly in 2003. With this deal, Altadis acquired strong local brands, including the market leader Marquise and, more importantly, it gained market monopoly until the end of 2010.

Morocco is a highly profitable market, where Altadis enjoys EBITDA margins of around 55% and which has generated double-digit growth in sales (11% CAGR 2003–06) and EBITDA (22% CAGR 2003–06) on the back of the following positive dynamics (which we expect to continue in the next few years):

- Official industry volume growth (c. 3% in both 2006 and 2007 according to the company);
- Price increases above inflation;
- Steady share gains (RTM now has 89% volume share and 75% value share);
- Strong mix gains as international brands (e.g. Fortuna) have been performing well;
- Increasing government efforts to reduce smuggling, which has historically been an issue (still accounts for about three billion cigarettes per annum on top of a total official market of 14bn);
- Imperial Tobacco also has African exposure via its majority stake in Tobaccor (the second-biggest tobacco manufacturer and distributor in sub-Saharan Africa) with operations in Madagascar, Ivory Coast, Chad, Mauritania and Senegal. Africa makes up c.5% of sales at Imperial Tobacco.

## (3) Food/HPC

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Although the major food manufacturers and HPC (household goods/personal care) companies have extensive emerging market exposure, typically ranging from 25% to 40%, their exposure to Africa is generally pretty low at around 2% of sales.

The single exception to this is **PZ Cussons** (PZC.L), not a company under our coverage, but from the report and accounts (year ending May 2007):

- The company earns 42% of sales (and 40% of operating profit) in Africa. The largest country by some distance is Nigeria, with interests also in Ghana and Kenya.
- The group's activities in these regions are principally the sale of HPC products under strong local brand names like Super Robb and Venus (health/beauty), Elephant detergent, Premier soap and Power fist energy drinks.
- EPS growth over the past five years has averaged close to 10% p.a. (in sterling).

## (4) Cars and other vehicles

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Many of the major European car manufacturers (Mercedes, BMW, Audi) retail and assemble their product lines in Africa. However, the African contribution to the bottom line is minimal. More meaningful success has been enjoyed by the cheaper product offerings from the (mostly) Asian car manufacturers:

- **Toyota:** In addition to the assembly plants in South Africa, Toyota exports a lot of SUVs and pickup trucks, such as Landcruisers and Hilux/Tacomas to Africa. The South African operation is relatively profitable, but these exports are even more profitable. We estimate that Toyota generates 3–5% of its total profits from Africa at this point and this should steadily increase from here. Toyota does not provide any specific growth forecasts for this region but we estimate somewhere between 10% and 20% annually over the next few years.
- **Isuzu Motors:** The African (and Middle East) region is one of the most important markets for Isuzu Motors. The outlook for truck demand looks particularly strong as road construction increases. In recent years, Isuzu has enjoyed revenue growth in excess of 25% to Africa, selling 4m trucks (equivalent to ¥110bn in sales) and 8m LCVs (equal to ¥150bn in sales) annually. This puts the African contribution to revenues at c.16% of total. Isuzu operates a KD plant (a plant that assembles main parts of vehicles, such as engines) in South Africa. The company assembles a little short of 3m vehicles (trucks) annually at this plant.

- **Tata Motors:** Tata Motors' presence in South Africa is meaningful and expanding. It is a significant player in both the truck and car market. Tata Motors made a foray into South Africa in 2004 (it has had a presence in other countries in Africa for over 30 years through Tata Africa) with its full product line (cars, UVs, trucks, buses). At this time, Tata Africa entered into a joint venture with Imperial Group (South African listed) for distribution and marketing of the pick-ups in this range. In 2007, Tata Africa acquired Nissan's Pretoria facility to set up a manufacturing and car assembly plant. Currently, South Africa is Tata Motors' largest export market. Tata's major products in Africa are: (1) passenger cars (Indica), (2) commercial vehicles (Telcoline), (3) an all-terrain vehicle suitable for both commercial and private use, (4) heavy commercial vehicles (Tata Novus's new range of Tata Daewoo tippers and tractors), and (5) Tata Ubuntu and other bus models. In terms of revenue share, Africa accounts for c.3.5% of the group total but growth is particularly strong.

## (5) White goods

**LG Electronics** has by far the number one market share in white good sales in Africa (particularly air-conditioning units). In 2007, Africa accounted for 5.5% of total group revenues. South Africa, Morocco, Egypt, Nigeria and Kenya are the main markets.

Figure 105: **Consumer sector exposure to Africa**

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| 7203 | Toyota | Tokyo | Vehicle assembly in South Africa, sales across Africa. We estimate 3–5% of total group profits from Africa but with very strong growth | 3–5% | O | 175,942 | 9.5 | 0.6 |
| TAMO.BO | Tata Motors | India | African sales estimated at c.16% but growing rapidly | 3.50% | O | 6,151 | 12.9 | 0.8 |
| 7202 | Isuzu | Tokyo | Vehicle assembly and sales, African division growing at c.25% in recent years | 16% | O | 8,559 | 10.7 | 0.4 |
| DGE.L | Diageo | London | We estimate combined Guinness + spirits sales in Africa contribute to <5% of its total group revenues. Nigeria is now the second-biggest market for Guinness volume worldwide | <5% | O | 53,742 | 17.5 | 3.1 |
| SAB.L | SABMiller | London | Dominant brewer and soft-drinks provider in South Africa with exposure to sub-Saharan Africa as well as Colombia, eastern Europe and parts of Western Europe. Africa accounts for c.40% of sales | 40% | O | 33,144 | 16.6 | 1.7 |
| HEIN.AS | Heineken | Netherlands | Key market is Nigeria, makes up c.20% of the continent's beer consumption. Africa = c.11% of group sales | 11% | R | 28,805 | - | - |
| HLB.AT | Coca-Cola Hellenic | Greece | Derives c.10% of its overall sales volumes from Nigeria | 10% | N | 17,642 | 20.9 | 1.6 |
| KO | Coca-Cola Company | NY | 4–5% of revenues and about 5% of operating profit from Africa. | 5% | O | 140,510 | 20.0 | 4.4 |
| 066570.KS | LG Electronics | Korea | By far the number one market share in white good sales in Africa. Africa accounted for 5.5% of group sales in 2007. | 5.50% | O | 19,371 | 10.1 | 0.0 |
| PZC.L | *PZ Cussons | London | 42% of sales (and 40% of operating profit) is earned in Africa. The largest country by some distance is Nigeria, with interests also in Ghana and Kenya | 42% | NR | 1,601 | 18.6 | 1.3 |
| NPNJn.J | Naspers | Joburg | Pay-TV provider across 40 African companies, as well as diversified media interests across Africa, Brazil, China, India and Eastern Europe | 80% | O | 7,386 | 13.9 | 2.6 |
| BATS.L | BAT | London | 90% mkt share in South Africa making up 16% of group profit | 16% | O | 75,526 | 15.5 | 3.4 |
| IMT.L | Imperial Tobacco | London | With the acquisition of Altadis, Imperial Tobacco has exposure to Morocco and through Tobaccor has large exposure to sub-Saharan Africa. | 5% | N | 35,167 | - | - |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

# Appendix 1: Political freedom

| | Not free | Free | Partially free | GDP (US$bn) 2007E | GDP per capita (US$) 2007E |
|---|---|---|---|---|---|
| Algeria | X | | | 125.9 | 3,702 |
| Angola | X | | | 61.0 | 3,738 |
| Benin | | X | | 5.4 | 691 |
| Botswana | | X | | 11.3 | 7,269 |
| Burkina Faso | | | X | 6.9 | 500 |
| Burundi | | | X | 1.0 | 127 |
| Cameroon | X | | | 20.9 | 1,110 |
| Cape Verde | | X | | 1.4 | 2,767 |
| Central African Republic | | | X | 1.6 | 386 |
| Chad | X | | | 6.4 | 677 |
| Comoros | | | X | 0.4 | 682 |
| Congo, Democratic Republic of | X | | | 9.9 | 161 |
| Congo, Republic of | X | | | 6.8 | 1,931 |
| Côte d'Ivoire | X | | | 19.5 | 1,042 |
| Djibouti | | | X | 0.8 | 1,090 |
| Equatorial Guinea | X | | | 9.5 | 7,894 |
| Eritrea | X | | | 1.4 | 293 |
| Ethiopia | | | X | 15.9 | 206 |
| Gabon | | | X | 10.3 | 7,217 |
| Gambia, The | | | X | 0.4 | 239 |
| Ghana | | X | | 15.0 | 682 |
| Guinea | X | | | 4.6 | 464 |
| Guinea-Bissau | | | X | 0.3 | 204 |
| Kenya | | | X | 29.5 | 851 |
| Lesotho | | X | | 1.6 | 648 |
| Liberia | | | X | 0.7 | 195 |
| Madagascar | | | X | 7.3 | 371 |
| Malawi | | | X | 3.4 | 257 |
| Mali | | X | | 6.9 | 531 |
| Mauritania | | | X | 2.7 | 928 |
| Mauritius | | X | | 7.0 | 5,571 |
| Morocco | | | X | 72.8 | 2,368 |
| Mozambique | | | X | 8.1 | 397 |
| Namibia | | X | | 6.7 | 3,248 |
| Niger | | | X | 4.2 | 316 |
| Nigeria | | | X | 126.7 | 825 |
| Rwanda | X | | | 2.8 | 303 |
| São Tomé and Príncipe | | X | | 0.1 | 871 |
| Senegal | | X | | 10.7 | 875 |
| Seychelles | | | X | 0.7 | 8,831 |
| Sierra Leone | | | X | 1.5 | 270 |
| South Africa | | X | | 274.5 | 5,724 |
| Sudan | X | | | 46.7 | 1,257 |
| Swaziland | X | | | 2.7 | 2,297 |
| Tanzania | | | X | 14.1 | 362 |
| Togo | X | | | 2.4 | 370 |
| Tunisia | X | | | 34.1 | 3,313 |
| Uganda | | | X | 11.1 | 360 |
| Zambia | | | X | 10.9 | 895 |
| Zimbabwe | X | | | 16.2 | 1,378 |
| **Total** | **16** | **11** | **23** | | |

*Source: Freedom House, IMF, Credit Suisse research*

# Appendix 2: Institutional risk

| | Economic risk Score out of 50, higher score = lower risk | Investment risk Score out of 12, higher score = lower risk | Control of corruption Score out of 6, higher score = lower corruption | Costs of entry % per capita income |
|---|---|---|---|---|
| Angola | 28.0 | 7.7 | 2.0 | 487 |
| Benin | NA | NA | 3.2 | 173 |
| Botswana | 39.3 | 10.8 | 3.0 | 11 |
| Burkina Faso | 28.3 | 9.0 | 2.0 | 121 |
| Burundi | NA | NA | 2.3 | 222 |
| Cameroon | 37.7 | 8.0 | 2.0 | 152 |
| Cape Verde | NA | NA | 3.8 | 46 |
| CAR | NA | NA | 2.1 | 209 |
| Chad | NA | NA | 2.4 | 226 |
| Comoros | NA | NA | 2.4 | 192 |
| DRC | 21.8 | 6.0 | 1.0 | 481 |
| Congo, Rep | 35.4 | 8.5 | 2.0 | 215 |
| Côte d'Ivoire | 34.3 | 5.0 | 1.5 | 134 |
| Djibouti | NA | NA | 2.6 | 222 |
| Equatorial Guinea | NA | NA | 1.9 | 101 |
| Eritrea | NA | NA | NA | 116 |
| Ethiopia | 32.5 | 7.0 | 2.0 | 46 |
| Gabon | 36.6 | 9.0 | 1.0 | 163 |
| Gambia | 34.6 | 8.5 | 2.5 | 292 |
| Ghana | 29.1 | 8.5 | 2.0 | 50 |
| Guinea | 34.0 | 5.0 | 2.5 | 187 |
| Guinea-Bissau | 26.0 | 7.5 | 2.0 | 261 |
| Kenya | 33.0 | 9.5 | 1.0 | 46 |
| Lesotho | NA | NA | 3.5 | 40 |
| Liberia | 31.6 | 5.0 | 2.0 | NA |
| Madagascar | 30.0 | 8.0 | 4.0 | 35 |
| Malawi | 27.7 | 8.0 | 2.0 | 135 |
| Mali | 24.0 | 7.5 | 2.0 | 202 |
| Mauritania | NA | NA | 3.5 | 122 |
| Mauritius | NA | NA | 3.8 | 8 |
| Mozambique | 25.5 | 8.7 | 1.5 | 86 |
| Namibia | 35.8 | 10.0 | 1.5 | 18 |
| Niger | 30.7 | 7.5 | 1.0 | 417 |
| Nigeria | 28.6 | 6.5 | 1.3 | 54 |
| Rwanda | NA | NA | 3.1 | 188 |
| São Tomé | NA | NA | 2.8 | 147 |
| Senegal | 35.2 | 8.0 | 2.5 | 113 |
| Seychelles | NA | NA | 3.5 | 9 |
| Sierra Leone | 25.5 | 8.0 | 2.0 | NA |
| South Africa | 36.3 | 2.0 | 1.0 | 7 |
| Sudan | 34.0 | 7.5 | 2.5 | 59 |
| Swaziland | NA | NA | 2.5 | 41 |
| Tanzania | 34.5 | 11.5 | 3.0 | 92 |
| Togo | 31.5 | 8.5 | 1.5 | 253 |
| Uganda | 33.5 | 8.0 | 2.5 | 114 |
| Zambia | 24.0 | 7.0 | 3.0 | 30 |

*Source: World Bank, IMF*

# Appendix 3: African real GDP growth forecasts

| % change y/y | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Angola | 22.4 | 13.1 | 8.3 | 6.8 | 6.6 |
| DRC | 6.6 | 7.3 | 6.2 | 5.5 | 5.3 |
| Tanzania | 6.7 | 7.1 | 7.0 | 6.5 | 6.0 |
| Botswana | 6.0 | 7.0 | 4.8 | 4.5 | 4.4 |
| Nigeria | 5.0 | 6.8 | 7.0 | 7.3 | 7.8 |
| Ghana | 5.9 | 6.1 | 6.5 | 6.7 | 6.9 |
| Zambia | 6.1 | 6.0 | 6.0 | 6.0 | 6.2 |
| Mauritius | 5.8 | 5.8 | 6.0 | 6.0 | 6.3 |
| Uganda | 5.6 | 5.8 | 5.5 | 4.8 | 4.4 |
| Malawi | 5.5 | 5.4 | 5.0 | 5.0 | 5.5 |
| South Africa | 4.8 | 5.1 | 5.4 | 5.5 | 5.6 |
| Kenya | 6.1 | 4.5 | 5.0 | 5.5 | 5.5 |
| Namibia | 4.2 | 4.0 | 4.0 | 4.0 | 4.0 |
| Swaziland | 1.2 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lesotho | 1.8 | 1.8 | 2.0 | 2.0 | 2.0 |
| Zimbabwe | -4.8 | -4.7 | -3.7 | -17.2 | -2.9 |

*Source: Global Insight, Credit Suisse estimates, Standard Bank estimates.*

# Appendix 4: African scorecard

| | GDP, US$bn (2007E) | Current Account (% GDP, 2008E) | External debt to GDP (2008E) | Political score Higher the better | Rule of law Higher the better | Fiscal position (% GDP, 2008E) | GDP growth (2008E) | Valuation trailing P/E | Rank of ranks |
|---|---|---|---|---|---|---|---|---|---|
| Botswana | 12.4 | 10.0 | 3.2 | 31 | 13 | 3.8 | 5.2 | 23.5 | 1 |
| Nigeria | 148.6 | 6.0 | 2.3 | 21 | 5 | 7.9 | 8.0 | 57.8 | 2 |
| South Africa | 299.6 | -6.4 | 1.7 | 35 | 12 | 0.1 | 4.2 | 17.6 | 3 |
| Angola | 88.7 | 10.7 | 5.0 | 8 | 4 | 6.1 | 27.2 | NA | 4 |
| Zambia | 11.9 | -2.0 | 6.6 | 25 | 8 | -2.0 | 6.2 | NA | 5 |
| Lesotho | 1.8 | 0.7 | 36.9 | 30 | 11 | 6.3 | 5.2 | NA | 6 |
| Namibia | 7.3 | 12.8 | 6.7 | 31 | 10 | -3.4 | 4.6 | 18.5 | 6 |
| Benin | 5.9 | -6.1 | 21.8 | 33 | 12 | -1.8 | 5.3 | NA | 8 |
| Equatorial Guinea | 11.0 | 6.3 | 1.0 | 1 | 1 | 20.9 | 8.1 | NA | 9 |
| Algeria | 139.5 | 18.4 | 3.9 | 11 | 5 | 11.5 | 5.2 | NA | 10 |
| Cape Verde | 1.5 | -16.7 | 38.7 | 37 | 14 | -3.2 | 7.5 | NA | 11 |
| Mauritius | 7.5 | -7.6 | 12.2 | 37 | 13 | -4.1 | 4.7 | 19.7 | 12 |
| Ghana | 16.9 | -7.7 | 25.3 | 37 | 12 | -5.8 | 6.9 | 10.4 | 13 |
| Libya | 79.5 | 30.7 | 7.0 | 1 | 0 | 31.4 | 6.9 | NA | 14 |
| Kenya | 31.1 | -5.1 | 17.5 | 25 | 8 | -3.8 | 6.5 | 22.8 | 15 |
| Tanzania | 15.6 | -10.8 | 17.9 | 22 | 10 | -4.0 | 7.5 | NA | 16 |
| Niger | 4.6 | -10.8 | 19.3 | 29 | 9 | -2.5 | 5.4 | NA | 17 |
| Congo, Republic | 7.9 | 6.8 | 48.3 | 11 | 2 | 15.2 | 7.3 | NA | 18 |
| Morocco | 79.7 | 0.2 | 20.2 | 17 | 6 | -2.0 | 5.9 | 33.2 | 19 |
| Ethiopia | 17.8 | -3.0 | 11.9 | 14 | 4 | -3.8 | 9.6 | NA | 20 |
| São Tomé & Príncipe | 0.2 | -42.0 | 96.8 | 33 | 12 | 9.3 | 6.0 | NA | 21 |
| Gabon | 11.4 | 16.7 | 28.0 | 10 | 6 | 10.8 | 4.2 | NA | 22 |
| Senegal | 11.8 | -9.8 | 19.6 | 33 | 9 | -4.5 | 5.7 | NA | 23 |
| Mali | 7.6 | -4.7 | 29.2 | 30 | 10 | -4.3 | 4.8 | NA | 23 |
| Mozambique | 8.8 | -8.8 | 29.7 | 25 | 7 | -3.3 | 7.0 | NA | 23 |
| Uganda | 12.2 | -6.3 | 15.6 | 15 | 7 | -3.6 | 6.5 | NA | 26 |
| Cameroon | 22.9 | -3.1 | 5.1 | 11 | 2 | 3.1 | 5.3 | NA | 27 |
| Malawi | 3.7 | -2.9 | 96.1 | 23 | 9 | -0.8 | 5.2 | NA | 28 |
| Liberia | 0.8 | -43.4 | 63.2 | 24 | 7 | -0.7 | 10.4 | NA | 29 |
| Madagascar | 8.7 | -23.5 | 26.6 | 23 | 9 | -4.4 | 7.3 | NA | 30 |
| Burundi | 1.1 | -11.4 | 33.6 | 22 | 4 | 86.6 | 5.8 | NA | 31 |
| Egypt | 149.7 | 0.8 | 19.8 | 7 | 5 | -6.9 | 7.3 | 29.3 | 32 |
| Comoros | 0.5 | -4.8 | 50.1 | 24 | 8 | -2.4 | 3.0 | NA | 33 |
| Sierra Leone | 1.7 | -10.0 | 50.4 | 23 | 8 | -4.3 | 7.0 | NA | 34 |
| Rwanda | 3.2 | -6.5 | 15.7 | 10 | 6 | -1.3 | 4.6 | NA | 35 |
| DRC | 10.9 | -10.9 | 46.7 | 14 | 0 | -0.2 | 8.4 | NA | 36 |
| Seychelles | 0.7 | -32.4 | 50.2 | 25 | 11 | -9.2 | 5.9 | NA | 37 |
| Gambia, The | 0.4 | -18.6 | 60.7 | 17 | 7 | -1.8 | 6.0 | NA | 38 |
| Côte d'Ivoire | 21.4 | 1.3 | 31.3 | 5 | 3 | -0.2 | 3.8 | NA | 39 |
| Tunisia | 37.8 | -2.7 | 56.2 | 6 | 4 | -2.6 | 6.2 | 20.9 | 40 |
| CAR | 1.8 | -4.3 | 61.3 | 17 | 3 | 0.7 | 4.3 | NA | 41 |
| Sudan | 55.9 | -8.5 | 57.5 | 7 | 0 | -2.9 | 10.7 | NA | 42 |
| Burkina Faso | 7.6 | -10.9 | 42.6 | 17 | 6 | -5.7 | 6.1 | NA | 42 |
| Swaziland | 2.8 | -1.1 | 14.5 | 2 | 4 | -3.7 | 1.0 | NA | 42 |
| Mauritania | 2.9 | -7.0 | 95.5 | 17 | 6 | -3.0 | 4.4 | NA | 45 |
| Guinea-Bissau | 0.4 | -5.0 | 66.9 | 22 | 8 | -9.9 | 2.1 | NA | 46 |
| Guinea | 4.6 | -12.0 | 62.9 | 9 | 4 | -1.2 | 5.1 | NA | 47 |
| Djibouti | 0.9 | -18.8 | 62.8 | 12 | 5 | -5.4 | 5.7 | NA | 48 |
| Chad | 6.4 | -3.1 | 33.3 | 6 | 1 | -8.8 | 4.1 | NA | 49 |
| Togo | 2.6 | -6.3 | 68.7 | 8 | 3 | -2.6 | 3.5 | NA | 49 |
| Eritrea | 1.8 | -1.9 | 39.8 | 3 | 2 | -18.4 | 1.3 | NA | 51 |

*Source: IMF, Freedom House, S&P/IFC, Credit Suisse research.*

# Appendix 5: African exposure by stock

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| ABBN.VX | ABB | Zurich | Power transmission & distribution (where is ABB is the global #1) account for 50% of group sales. | 5% | O | 62,658 | 17.1 | 1.9 |
| ASAJ.J | ABSA | Joburg | Largely a SA operation but in talks to acquire/consolidate Barclays' other African positions | 100% | N | 9,142 | 7.1 | - |
| ACX.MC | Acerinox | Spain | Owns 76% of Columbus Stainless (based in South Africa) | 26% | U | 6,260 | 12.5 | 0.6 |
| AFR.L | *Afren | London | Seeking to access significant reserve potential in the onshore and shallow water regions of Nigeria | >95% | NR | 686 | 7.7 | 3.5 |
| ACU.L | *African Copper | London | Cu in Botswana (Mowana mine) | 100% | NR | 140 | 7.5 | 2.8 |
| AFE.L | *African Eagle Resources | London | CU & Gold in Tanzanina, Zambia & Mozambique | 25% | NR | 36 | -17.0 | - |
| ARIJ.J | *African Rainbow | Joburg | Nickel, ferrous metals and coal in northern cape, Sishen, Modikwa Mine | 46% | NR | 6,186 | 19.2 | 5.1 |
| ALU | Alcatel Lucent | NY | Key beneficiary of wireless infrastructure spend | <5% | O | 14,156 | 18.6 | 0.5 |
| ALSO.PA | Alstom | Paris | 10–15% of total order intake in the past 12 months, power shortages in Africa bode well for future orders. | 12% | O | 30,064 | 23.6 | 1.2 |
| AAL.L | Anglo American | London | PGMs, gold, coal, iron ore and diamonds in SA, plus 45% stake in De Beers, small stake in Anglogold Ashanti, majority stake in AngloPlats | 41% | O | 79,056 | 10.6 | 2.6 |
| ANGJ.J | Anglogold Ashanti | Joburg | One of the biggest gold miners in Africa, with exposure in six African countries: South Africa, Ghana, Guinea, Mali, Namibia and Tanzania | 43% | N | 9,380 | 26.6 | 2.8 |
| AMSJ.J | AngloPlatinum | Joburg | Platinum, Palladium, Rhodium & Nickel in South Africa | 100% | N | 36,338 | 14.4 | 4.5 |
| AVL.AX | *Anvil Mining | Australia | Cu in DRC | 100% | NR | 867 | 5.7 | 2.7 |
| MT.N | ArcelorMittal | NY | Flat steel producer operating in South Africa, Mozambique and Algeria. | <10% | O | 98,887 | 9.0 | 0.9 |
| APNJ.J | *Aspen | Joburg | Large generics producer with operations in South Africa, Australia, and Latin America. 80% of revenues from Africa | 80% | NR | 1,551 | 12.9 | 2.5 |
| ASRJ.J | *Assore Ltd | Joburg | Iron Ore, Manganese Ore, Synthetic Diamonds in Linbro Park, Johannesburg, North cape. | 11% | NR | 2,221 | 11.1 | - |
| ARBN.BO | Aurobindo | India | Aurobindo gets about 25% from Africa mainly from sales of ARV formulations; we expect this to increase to 30% by FY10E | 25% | O | 392 | 6.8 | 0.6 |
| AEGJ.J | *Aveng | Joburg | Cement producer and construction engineer | 100% | NR | 3,416 | 16.6 | 1.0 |
| BJS | B.J. Services | NY | Some presence, less than 10% of revenue | <10% | N | 8,601 | 13.2 | 1.7 |
| BHI | Baker Hughes | NY | 9% of 2006 consolidated revs; Algeria and Libya growing 30%+ and 71%+, respectively, in 2007; Identify 45 top projects in Africa out of 170 total worldwide | 12% | N | 22,292 | 13.7 | 2.0 |
| BARC.L | Barclays | London | 10% of earnings overall from African operations | 10% | N | 65,583 | 7.3 | - |
| BAWJ.J | *Barloworld | Joburg | Infrastructure projects | 70% | NR | 2,957 | 13.4 | 0.5 |
| BATS.L | BAT | London | 90% mkt share in South Africa making up 16% of group profit | 16% | O | 75,526 | 15.5 | 3.4 |
| BCP.LS | *BCP | Portugal | Has the largest bank in Mozambique (30% market share). Net income from Mozambique operations (€39m) represents 5% of the group's bottom line | 5% | NR | 12,374 | 12.0 | - |
| BG.L | BG | London | 17% reserves in Africa | 14% | O | 74,543 | 16.5 | 4.0 |
| BLT.L | BHP Billiton | London | Cu in DRC, Aluminium in Mozambique & South Africa, Coal in South Africa | 5% | R | 66,814 | R | R |
| BP.L | BP | London | 10% reserves in Africa | 8% | N | 194,661 | 8.8 | 0.6 |
| BBPI.LS | *BPI | Portugal | Angola represents 14% of total revenues and 20% of net income | 20% | NR | 4,111 | 7.4 | - |
| BRS | Bristow Group | NY | 16.9% of 2006 consolidated revs | 17% | N | 1,320 | 15.7 | 1.3 |
| CAM | Cameron International | NY | 12.6% of 2006 consolidated revs | 13% | N | 9,516 | 17.1 | 1.8 |

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| CFM.L | Central African Mining Plc | London | Cu and coal in DRC, coal in Mozambique (holds one of the largest exploration concession areas in Mozambique) | 27% | O | 1,352 | 21.6 | 4.4 |
| CVX | Chevron | NY | 17% reserves in Africa | 13% | N | 181,730 | 9.0 | 0.7 |
| CPR.LS | *Cimpor | Portugal | Cement operations in Morocco, Tunisia, Mozambique, Egypt, Cape Verde and South Africa. | 30% | NR | 6,079 | 12.4 | 1.9 |
| CIPL.BO | Cipla | India | Africa accounts for 28% of Cipla's exports and 14% of its overall revenues; the company is one of the largest generic ARV suppliers | 14% | N | 4,263 | 25.0 | 4.3 |
| 0883.HK | CNOOC | HK | 90% stake in OML130 (Akpo) in Nigeria, which is due to start up in 2009. We estimate this will account for 14% of total CNOOC production volume and 13% of total revenue in 2010 | 13% | N | 68,247 | 11.5 | 4.2 |
| KO | Coca-Cola Company | NY | 4–5% of revenues and about 5% of operating profit from Africa. | 5% | O | 140,510 | 20.0 | 4.4 |
| HLB.AT | Coca-Cola Hellenic | Greece | Derives c.10% of its overall sales volumes from Nigeria | 10% | N | 17,642 | 20.9 | 1.6 |
| COP | Conoco | NY | 8% reserves in Africa | 4% | N | 123,000 | 7.6 | 0.6 |
| VALE5 | CVRD | Sao Paulo | Moatize coal project in Mozambique—initial capex for the project is estimated at US$1bn | 5% | O | 57,182 | 8.9 | 1.3 |
| 047040.KS | Daewoo E&C | Korea | 11.4% of 2007 revenues were generated through sales of LNG and power plant equipment to Nigeria and Libya | 11% | O | 7,270 | 14.2 | 0.6 |
| DGE.L | Diageo | London | We estimate combined Guinness + spirits sales in Africa contribute to <5% of its total group revenues. Nigeria is now the second-biggest market for Guinness volume worldwide | <5% | O | 53,742 | 17.5 | 3.1 |
| ENI.MI | ENI | Milan | 49% reserves in Africa | 28% | N | 138,430 | 8.2 | 0.9 |
| EQN.AX | Equinox | Canada/ Australia | Cu and uranium in Zambia | 97% | O | 2,597 | 12.2 | 5.5 |
| ERA.PA | Eramet | Paris | Manganese in Gabon | 3% | N | 20,202 | 15.0 | 2.7 |
| ERICb.ST | Ericsson | Sweden | Key beneficiary of wireless infrastructure spend | <5% | N | 30,650 | 11.5 | 1.0 |
| XOM | Exxon | NY | 12% reserves in Africa | 6% | O | 473,584 | 10.7 | 0.9 |
| FM.TO | *First Quantum | Canada | Cu and coal in DRC and Zambia, Cu and gold in Mauritania | 100% | NR | 5,602 | 6.6 | 2.6 |
| FIU.TO | *First Uranium Co | Canada | Uranium and gold mining near Johannesburg mines | 100% | NR | 864 | -1344.0 | 32.9 |
| FSRJ.J | FirstRand | Joburg | Looking to make acquisitions in Africa, but is doing so slowly, and this split of earnings is not likely to change quickly (3.8% from other Africa) | 95% | O | 12,316 | 7.8 | - |
| FTI | FMC Technologies | NY | Maybe a bit more than CAM - around 15% of revenue | 15% | N | 7,739 | 20.6 | 1.4 |
| FTE.PA | France Telecom | France | Present in 12 countries and recently won a licence in Niger for fixed and mobile. Strategic investor in the privatisation of Telkom Kenya | <5% | N | 91,405 | 11.5 | 1.1 |
| GE | GE | NY | Low % of revs but a large range of services including turbines, equipment for power plants in Nigeria and Egypt, GTL equipment to SA, desalination in Algeria (Africa's largest desal plant). | <2% | O | 379,655 | 15.7 | 2.0 |
| GFIJ.J | Gold Fields | Joburg | Gold mining in South Africa and Ghana | 81% | O | 8,984 | 20.4 | 3.1 |
| GRFJ.J | *Group 5 | Joburg | Infrastructure projects, strong in housing developments | 100% | NR | 830 | 15.7 | 0.7 |
| 006360.KS | GS E&C | Korea | Only 2% of GS Engineering and Construction revenues were generated in Africa (principally Egypt) in 2007 but nearly 10% of the current order back-log derives from Africa. | 2% | N | 7,432 | 16.7 | 1.1 |
| 600685.SS | *Guangzhou Shipyard | China | Focussed on Liberia. As business tie between China and Africa are strengthened there is plenty of growth potential but Africa is not the corporate focus. | 20% | NR | 474 | 8.8 | 0.5 |
| HAL | Halliburton | NY | 5.2% of 2006 consolidated revs, likely growing 20%/year | 6% | O | 35,365 | 14.1 | 2.1 |
| HARJ.J | Harmony | Joburg | Harmony is the fifth-largest gold producer in the world, with operations and projects in South Africa, Australasia and Papua New Guinea (PNG) | 90% | O | 4,802 | 42.6 | 3.2 |
| HEIN.AS | Heineken | Netherlands | Key market is Nigeria, makes up c.20% of the continent's beer consumption. Africa = c.11% of group sales | 11% | R | 28,805 | - | - |
| HES | Hess | NY | 26% reserves in Africa | 21% | O | 29,931 | 12.9 | 0.8 |

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| HIK.L | Hikma | London | Multinational generics player. c.18% of group revenues come from Africa | 18% | N | 1,715 | 21.5 | 2.8 |
| HOLN.VX | Holcim | Zurich | 10% of group profit in 2008E from its Africa Middle East division, of which we believe about 8% will come from its operations in Africa | 8% | U | 28,177 | 10.7 | 1.1 |
| HYFL.SI | Hyflux | Singapore | Exposure to Algeria through their desalination project (a 25-year concession) at Tlemcen. | 40% | N | 1,074 | 16.5 | 5.6 |
| ILVJ.J | Illovo Sugar Limited | Joburg | The largest sugar producer in Africa, operates in 6 African markets | >90% | N | 1,326 | 18.4 | 1.6 |
| IMT.L | Imperial Tobacco | London | With the acquisition of Altadis, Imperial Tobacco has exposure to Morocco and through Tobaccor has large exposure to sub-Saharan Africa. | 5% | N | 35,167 | - | - |
| IMPJ.J | Implats | Joburg | PGMs in SA and Zimbabwe | 100% | N | 26,067 | 14.7 | 5.1 |
| IPR.L | International Power | London | Plans to build and operate a 3600MW plant in Mmamabula, Botswana, due 2012 | <1% | O | 12,387 | 14.0 | 2.1 |
| 7202 | Isuzu | Tokyo | Vehicle assembly and sales, African division growing at c.25% in recent years | 16% | O | 8,559 | 10.7 | 0.4 |
| ITAI.MI | Italcementi | Milan | Sales exposure of c.12% in 2007. Expect growth of c.6–7% p.a. | 12% | N | 3,752 | 9.5 | 0.4 |
| 8001 | Itochu | Tokyo | LNG Project in Namibia | <5% | O | 15,125 | 7.2 | 0.1 |
| 1963.T | JGC | Tokyo | Involved in every major energy project in Algeria since the country gained independence, as well as interests in Libya | <10% | O | 4,021 | 14.8 | 0.7 |
| KAT.TO | *Katanga-Nikanor | Canada | Cu and coal in DRC | 100% | NR | 2,827 | 25.9 | 8.5 |
| KIOJ.J | *Kumba Iron Ore | Joburg | Iron ore in Sishen, Saldanha, Faleme Mine of South Africa | 8% | NR | 13,021 | 13.9 | 5.2 |
| LAFP.PA | Lafarge | Paris | Sales exposure of c.16% in 2007. Expect growth of c. 10% p.a. (twice the group average). | 16% | U | 30,372 | 10.2 | 1.0 |
| 066570.KS | LG Electronics | Korea | By far the number one market share in white good sales in Africa. Africa accounted for 5.5% of group sales in 2007. | 6% | O | 19,371 | 10.1 | 0.0 |
| LONR.L | *Lonrho | London | Pan-African conglomerate but with a focus on transport and infrastructure | 100% | NR | 340 | - | - |
| LUPE.ST | Lundin Petroleum | Sweden | 20% of revenues from offshore Tunisian oil | 20% | O | 4,536 | 24.4 | 4.6 |
| MRO | Marathon | NY | 46% reserves in Africa | 28% | O | 33,655 | 7.5 | 0.4 |
| 8002 | Marubeni | Tokyo | Joint LNG project with in Equatorial Guinea with Mitsui | <5% | O | 11,881 | 8.1 | 0.1 |
| MDCJ.J | Medi-Clinic | Joburg | Private hospital provider with operations in South Africa, Namibia, UAE and Switzerland | 60% | U | 1,481 | 15.9 | 1.3 |
| MRFJ.J | *Merafe Resources | Joburg | Xstrata Merafe Chrome venture in SA with 6 mines and 5 smelters, production of Ferrochrome | 100% | NR | 981 | 11.2 | 4.5 |
| MTXJ.J | *Metorex | Joburg | Cu and coal in DRC and Zambia, gold in Mozambique | 62% | NR | 967 | 15.0 | 3.7 |
| 8058 | Mitsubishi | Tokyo | Via wholly owned subsidiary (MPDC Gabon) is investing in exploitation/production/sales of oil in Gabon | <5% | O | 49,824 | 11.4 | 0.2 |
| 8031 | Mitsui | Tokyo | Joint LNG project with in Equatorial Guinea with Marubeni | <5% | O | 36,305 | 8.6 | 0.2 |
| MNDI.L | Mondi | London | Paper and forest products | 10% | O | 2,682 | 9.6 | 0.4 |
| MOT | *Motorola | NY | Handsets, GSM and WiMAX infrastructure but only 1–2% of sales from Africa | 1–2% | NR | 21,669 | 95.1 | 0.6 |
| MTNJ.J | MTN | Joburg | Operations in 16 African countries, dominant in Nigerian mobile (45% mkt share) and the main competition to Vodacom in SA | 87% | O | 31,751 | 16.7 | 2.7 |
| MURJ.J | *Murray and Roberts | Joburg | Cement producer and construction engineer | 100% | NR | 4,033 | 18.7 | 1.1 |
| NPNJn.J | Naspers | Joburg | Pay-TV provider across 40 African companies, as well as diversified media interests across Africa, Brazil, China, India and Eastern Europe | 80% | O | 7,386 | 13.9 | 2.6 |
| NEDJ.J | Nedbank Group | Joburg | Only 1.4% of earnings from ex-SA Africa and not looking to change the earnings mix for now | 95% | O | 7,181 | 7.5 | - |
| NTCJ.J | Network Healthcare | Joburg | Private hospital provider with operations in South Africa and the UK. | 50% | N | 1,960 | 12.0 | 0.7 |
| OIS | Oil States International | NY | Small exposure in offshore products for deepwater production | <5% | N | 2,271 | 10.7 | 1.0 |
| OMLJ.J | Old Mutual | Joburg | Old Mutual is SA's largest listed life insurer by market capitalisation | 60% | O | 12,932 | 6.8 | - |

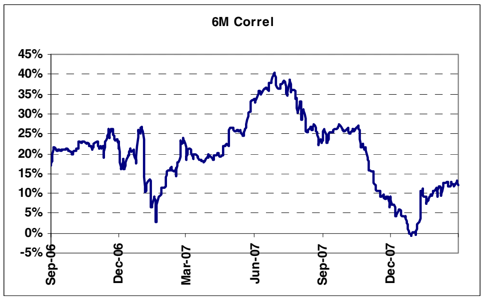
| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| OMNJ.J | *Omnia Holdings | Joburg | 40% of operating profit from fertiliser distribution mainly across sub-Saharan Africa; other profits from chemical and explosive sales to mainly African markets. | >90% | NR | 412 | 10.1 | 0.5 |
| OMVV.VI | OMV | Austria | 9% reserves in Africa | 6% | U | 19,931 | 7.5 | 0.6 |
| ONGC.BO | ONGC | India | Invested in exploratory blocks in Libya, Sudan and Egypt and has a stake in the producing GNOP field in Sudan | <10% | N | 54,099 | 10.0 | 2.3 |
| ORTEq.L | Orascom | Egypt | Operates in Tunisia, Algeria and Egypt. 60% of revenues are from North Africa | 60% | O | 16,568 | 17.1 | 2.5 |
| PAMJ.J | *Palabora Mining | Joburg | Cu & vermicutile in Limpopo Province, South Africa | 92% | NR | 724 | 5.6 | - |
| PDN.AX | *Paladin | Australia | Uranium in Namibia | 100% | NR | 2,217 | 14.5 | 9.8 |
| 0857.HK | Petro-China | HK | Upstream investments in Sudan, but a minimal contribution to revenues | <3% | N | 27,631 | 10.6 | 0.2 |
| PPN.TO | *Platmin Ltd | Canada | PGM resources in Eastern limb of Bushveld Complex, Limpopo Province, SA | 100% | NR | 758 | -76.2 | 344.4 |
| PTC.LS | Portugal Telecom | Portugal | Owns 33% of Meditel (in Morocco) and also has interests in Unitel (Angola, 25%), Namibia (MTC, 34%) and Cape Verde (CVT, 40%) | <10% | U | 13,937 | 14.8 | 1.3 |
| PWAV | *Powerwave | NY | Wireless subsystems and antennas but less than 5% of revenues from Africa | <5% | NR | 342 | 34.3 | 0.4 |
| PPCJ.J | *PPC | Joburg | Cement producer | 100% | NR | 3,033 | 14.8 | 3.8 |
| PZC.L | *PZ Cussons | London | 42% of sales (and 40% of operating profit) is earned in Africa. The largest country by some distance is Nigeria, with interests also in Ghana and Kenya | 42% | NR | 1,601 | 18.6 | 1.3 |
| RANB.BO | Ranbaxy | India | Africa contributed 8% of Ranbaxy's overall revenues in CY07 and we expect a CAGR of 21% in the next three years compared with an overall CAGR of 13% for the group | 8% | N | 4,157 | 22.7 | 2.2 |
| RLCM.BO | Reliance Communications | India | Has won a telco licence in Uganda and bid for one in Morocco | <5% | U | 32,173 | 24.4 | 6.5 |
| RELI.BO | Reliance Industries | India | Established presence in the petroleum retailing business in East Africa through the acquisition of majority stake in GAPCO | <10% | N | 85,222 | 22.8 | 2.7 |
| REP.MC | Repsol YPF | Spain | 5% reserves in Africa | 5% | R | 44,767 | 9.6 | 0.5 |
| RIO.L | Rio Tinto | London | Titanium and Cu in SA, uranium in Namibia | 6% | R | 105,962 | R | R |
| RDSa.L | Royal Dutch Shell | Neth | 26% reserves in Africa | 4% | N | 128,157 | 8.2 | 0.3 |
| SAB.L | SABMiller | London | Dominant brewer and soft-drinks provider in South Africa with exposure to sub-Saharan Africa as well as Colombia, eastern Europe and parts of Western Europe. Africa accounts for c.40% of sales | 40% | O | 33,144 | 16.6 | 1.7 |
| SAN.MC | Santander | Spain | 14.6% stake in Atijari Wafa Bank (Morocco), but a negligible contribution at the corporate level. | <1% | O | 131,216 | 9.1 | - |
| SAPJ.J | Sappi | Joburg | Paper and forest products | 10% | N | 2,551 | 11.9 | 0.5 |
| SOLJ.J | Sasol | Joburg | Around 90% of revenues are generated through the sale of oil and chemical products from the Fischer tropsch conversion of coal/natural gas at their 150kbd Secunda plant in South Africa | 90% | N | 30,771 | 11.2 | 1.9 |
| SLB | Schlumberger | NY | Estimate 5-10% of global revenue, growing mid teens | 5-10% | O | 108,752 | 18.8 | 4.1 |
| 900947.SS | *Shanghai Zhenhua Port Machinery | China | Manufacturer of cranes and large steel structures, the orders from Africa have been on a sharp rise since 2003 and accounted for c.5.2% of total revenue in 2006 | 6% | NR | 1,702 | 11.6 | 0.5 |
| 0338.HK | *Sinopec | HK | Upstream investments in Angola, Sudan, Algeria and Gabon, but a minimal contribution to revenues | <3% | NR | 829 | 10.8 | 0.1 |
| SII | Smith International | NY | Similar to SLB, 10% of revenue, strong growth in high teens | 10% | N | 14,039 | 18.6 | 1.4 |
| SOGN.PA | Soc Gen | Paris | Generates about 3–4% of its pre-tax profit from Africa retail banking | 3–4% | N | 63,166 | 7.8 | - |
| SPW | SPX Corporation | NY | Roughly 5% of SPX Corporation revenues are generated in Africa. Key contracts include a US$235m contract with Hitachi Power Africa for SAfrica's new Medupi power station. | 5% | N | 5,750 | 17.4 | 0.9 |
| SBKJ.J | Standard Bank | Joburg | The biggest bank in SA by assets and the greatest % of other African revenues among the big 4 SA banks. | 90% | N | 18,446 | 8.7 | - |

| Ticker | Company | Main listing | Concern | % revs from Africa (2007E) | Rat | Mkt cap (US$m) | 2008E P/E | 2008E P/Sales |
|---|---|---|---|---|---|---|---|---|
| STAN.L | Standard Chartered | London | 6% of earnings overall from African operations | 6% | O | 51,355 | 15.4 | - |
| STL.OL | Statoil | Norway | 12% reserves in Africa | 7% | O | 97,151 | 9.1 | 0.8 |
| TATA.BO | Tata Comm | India | Bought a 26% stake in the Second National Operator (SNO) in South Africa. Entity called Neotel | <5% | N | 3,826 | 40.0 | 3.2 |
| TAMO.BO | Tata Motors | India | African sales estimated at c.16% but growing rapidly | 4% | O | 6,151 | 12.9 | 0.8 |
| TAVHL.IS | TAV | Turkey | Operates an airport in Tunisia as of Jan 08 and is building another. We expect these airports to generate (including retail and food) c.19% of total revenues in 2008. | 19% | O | 1,469 | 15.9 | 1.5 |
| TL.TO | *Teal Exploration & Mining | Canada | Cu & Gold in Zambia, Namibia and the Democratic Republic of Congo | 100% | NR | 210 | 15.2 | 7.0 |
| TKGJ.J | Telkom SA | Joburg | SA fixed-line monopoly and key player in the SA mobile mkt via 50% holding in Vodacom | 100% | O | 8,835 | 8.2 | 1.3 |
| TONJ.J | Tongaat-Hulett Group Ltd | Joburg | Sugar and starch operations in Southern Africa. Has recently increased its investment in Mozambique, to take advantage of Mozambique's LDC access into the EU under the new sugar reform | >90% | U | 1,175 | 19.4 | 1.4 |
| TOTF.PA | Total | Paris | 29% reserves in Africa | 21% | N | 181,365 | 8.4 | 0.8 |
| 7203 | Toyota | Tokyo | Vehicle assembly in South Africa, sales across Africa. We estimate 3–5% of total group profits from Africa but with very strong growth | 3–5% | O | 175,942 | 9.5 | 0.6 |
| TLW.L | Tullow Oil | London | 58% of revenues from Africa | 58% | O | 9,104 | 29.7 | 6.7 |
| UUU.TO | *Uranium One Inc | Canada | Uranium in South Africa | 20% | NR | 2,425 | 13.5 | 20.2 |
| VED.L | Vedanta Resources | London | Cu in Zambia | 6% | N | 12,279 | 13.8 | 1.6 |
| VIV.PA | Vivendi | Paris | 20% of 2007 EBITA comes from Maroc Telecom (which operates in Morocco, Gabon and Burkina Faso) | 20% | O | 47,164 | 10.0 | 1.3 |
| VOD.L | Vodafone | London | Owns 50% of Vodacom, the mobile operator co-owned by Telkom SA which has operations in South Africa, DRC, Lesotho, Mozambique and Tanzania | <10% | O | 166,731 | 13.6 | 2.4 |
| WFT | Weatherford | NY | Probably near 5% of revenue, growing 30% | 5% | O | 25,432 | 17.6 | 2.7 |
| WEIR.L | Weir | London | The company recently acquired the CH Warman Pump Group, which is a specialist pump business focussed on serving the mining and minerals processing industry throughout Africa. | 10% | N | 3,135 | 15.3 | 1.3 |
| XTA.L | Xstrata | London | Chrome and coal in South Africa | 9% | O | 69,616 | 10.2 | 2.2 |
| YAR.OL | *Yara International | Oslo | Global fertiliser producer: Africa accounted for 8.5% of revenues in 2006 | 9% | NR | 17,213 | 14.6 | 1.1 |
| ZAIN.KW | Zain Group | Kuwait | Zain operates in 14 sub-Saharan African countries. African revenues account for 47% of the group total. | 47% | N | 29,652 | 19.2 | 4.0 |
| 0763.HK | ZTE | China | Chinese telco equipment supplier, aggressively expanding into Africa. c.11% of revenues from Africa in 2006 | 13% | O | 806 | 20.2 | 0.1 |

*Source: *IBES estimates, Company data, Credit Suisse estimates*

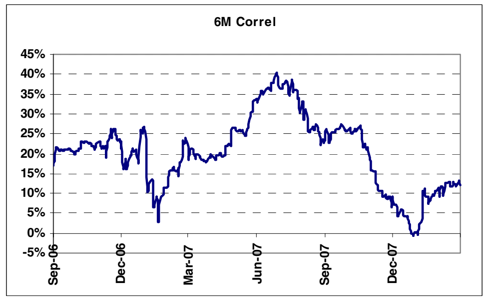
# Appendix 6: Market correlations

Figure 106: **Egypt**



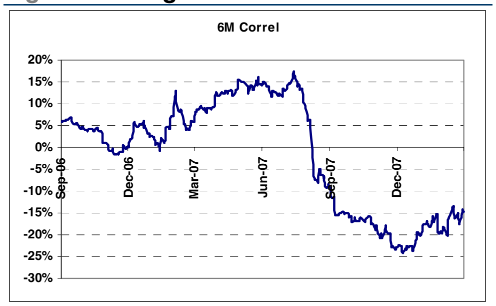

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 107: **Morocco**



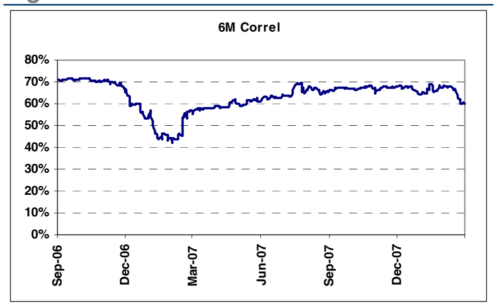

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 108: **Nigeria**



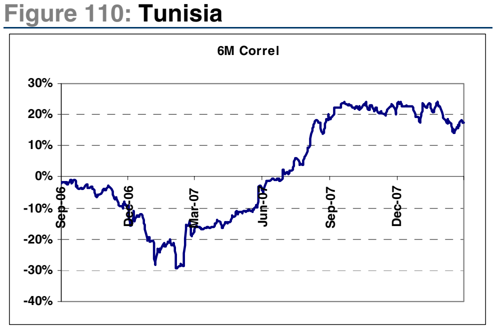

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 109: **South Africa**



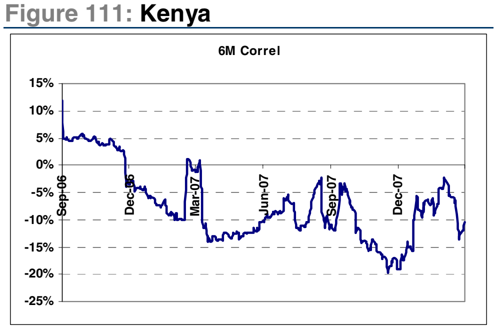

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 110: **Tunisia**



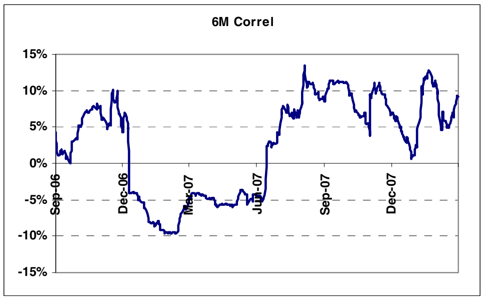

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 111: **Kenya**



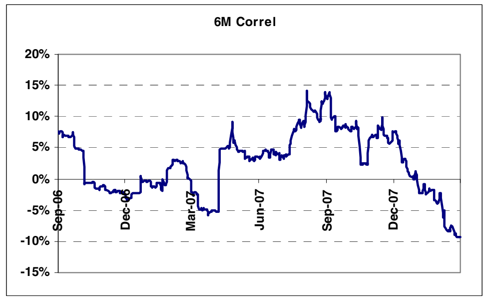

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 112: **Mauritius**



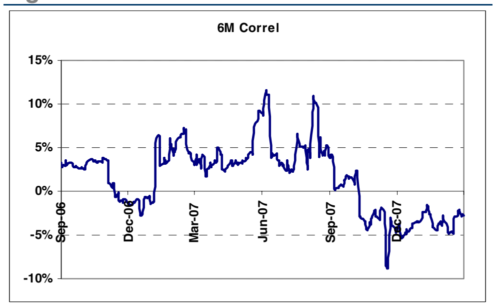

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 113: **Botswana**



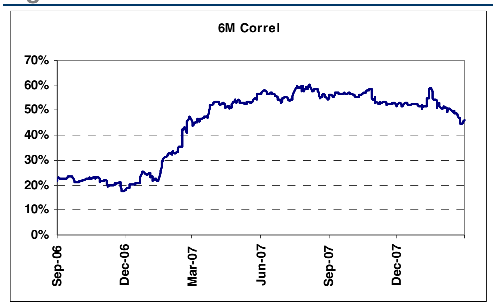

*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 114: **Ghana**




*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

Figure 115: **Namibia**




*Source: the BLOOMBERG PROFESSIONAL™ service, Credit Suisse research*

**Companies Mentioned** *(Price as of 02 Apr 08)*
ABB (ABBN.VX, SFr 27.46, OUTPERFORM, TP SFr 36.00, UNDERWEIGHT)
*ABSA Group Limited (ASAJ.J, R 105.30, NEUTRAL, TP R 114.00)
Acerinox (ACX.MC, Eu 17.71, UNDERPERFORM, TP Eu 16.00, OVERWEIGHT)
Alcatel-Lucent (ALUA.PA, Eu 3.92, OUTPERFORM, TP Eu 9.00, MARKET WEIGHT)
Alstom (ALSO.PA, Eu 136.55, OUTPERFORM, TP Eu 155.00, UNDERWEIGHT)
Anglo American plc (AAL.L, 3018.00 p , OUTPERFORM, TP 3300.00 p , OVERWEIGHT)
*Anglo Platinum (AMSJ.J, R 1200.00, NEUTRAL, TP R 1220.00)
*AngloGold Ashanti Ltd (ANGJ.J, R 264.01, NEUTRAL, TP R 384.00)
ArcelorMittal (MT.N, $81.49, OUTPERFORM, TP $110.00, OVERWEIGHT)
Aurobindo Pharma Limited (ARBN.BO, Rs 291.80, OUTPERFORM, TP Rs 850.00)
Baker Hughes Inc. (BHI, $72.05, NEUTRAL, TP $82.00)
Banco Santander Central Hispano SA (SAN) (SAN.MC, Eu 13.44, OUTPERFORM, TP Eu 17.00, OVERWEIGHT)
Barclays (BARC.L, 504.00 p , NEUTRAL, TP 570.00 p , OVERWEIGHT)
BG Group plc (BG.L, 1125.00 p , OUTPERFORM, TP 1425.00 p , MARKET WEIGHT)
BHP Billiton (BLT.L, 1528.00 p , RESTRICTED)
BJ Services Co. (BJS, $29.36, NEUTRAL, TP $28.00)
BP (BP.L, 520.50 p , NEUTRAL, TP 697.70 p , MARKET WEIGHT)
Bristow Group Inc. (BRS, $55.21, NEUTRAL, TP $58.00)
British American Tobacco (BATS.L, 1891.00 p , OUTPERFORM, TP 2100.00 p , MARKET WEIGHT)
Cameron International Corp. (CAM, $43.59, NEUTRAL, TP $50.00)
Central African Mining (CFM.L, 55.50 p , OUTPERFORM [V], TP 120.00 p , OVERWEIGHT)
Chevron Corp. (CVX, $87.51, NEUTRAL, TP $98.00)
Cipla Limited (CIPL.BO, Rs 219.25, NEUTRAL, TP Rs 220.00)
CNOOC Ltd (0883.HK, HK$11.90, NEUTRAL [V], TP HK$13.30)
Coca-Cola Company (KO, $60.46, OUTPERFORM, TP $68.00)
Coca-Cola Hellenic (HLB.AT, Eu 31.00, NEUTRAL, TP Eu 28.00, OVERWEIGHT)
ConocoPhillips (COP, $78.77, NEUTRAL, TP $92.00)
CVRD (VALE5, $29.79, OUTPERFORM [V], TP $58.00)
Daewoo E&C (047040.KS, W 21,750, OUTPERFORM, TP W 24,000)
Diageo (DGE.L, 1058.00 p , OUTPERFORM, TP 1260.00 p , OVERWEIGHT)
Eni (ENI.MI, Eu 22.14, NEUTRAL, TP Eu 29.10, MARKET WEIGHT)
Equinox Minerals (EQN.AX, A$5.04, OUTPERFORM [V], TP A$8.75, OVERWEIGHT)
Eramet (ERA.PA, Eu 499.75, NEUTRAL [V], TP Eu 390.00, OVERWEIGHT)
Ericsson (ERIC, $20.54, NEUTRAL, TP $28.75, MARKET WEIGHT)
ExxonMobil Corporation (XOM, $88.52, OUTPERFORM, TP $102.00)
*FirstRand Limited (FSRJ.J, R 17.08, OUTPERFORM, TP R 19.00)
FMC Technologies, Inc. (FTI, $59.55, NEUTRAL, TP $60.00)
France Telecom (FTE.PA, Eu 22.12, NEUTRAL, TP Eu 28.00, MARKET WEIGHT)
General Electric (GE, $38.02, OUTPERFORM, TP $41.00)
*Gold Fields Limited (GFIJ.J, R 107.63, OUTPERFORM, TP R 137.00)
GS E&C (006360.KS, W 142,000, NEUTRAL [V], TP W 150,000)
Halliburton (HAL, $40.18, OUTPERFORM, TP $50.00)
*Harmony Gold (HARJ.J, R 93.20, OUTPERFORM, TP R 107.00)
Heineken (HEIN.AS, Eu 37.66, RESTRICTED)
Hess Corporation (HES, $93.36, OUTPERFORM, TP $112.00)
Hikma (HIK.L, 460.25 p , NEUTRAL, TP 500.00 p , OVERWEIGHT)
Holcim (HOLN.VX, SFr 108.50, UNDERPERFORM, TP SFr 90.00, UNDERWEIGHT)
Hyflux Ltd (HYFL.SI, S$3.06, NEUTRAL, TP S$3.14)
*Illovo Sugar Limited (ILVJ.J, R 29.10, NEUTRAL, TP R 28.00)
*Impala Platinum Holdings (IMPJ.J, R 322.65, NEUTRAL, TP R 330.00)
Imperial Tobacco (IMT.L, 2334.00 p , NEUTRAL, TP 2550.00 p , MARKET WEIGHT)
International Power (IPR.L, 415.00 p , OUTPERFORM, TP 537.00 p , UNDERWEIGHT)
Isuzu Motors Ltd (7202, ¥518, OUTPERFORM, TP ¥700, MARKET WEIGHT)
Italcementi (ITAI.MI, Eu 13.57, NEUTRAL, TP Eu 15.00, UNDERWEIGHT)
Itochu (8001, ¥980, OUTPERFORM, TP ¥1,450, OVERWEIGHT)
JGC (1963, ¥1,594, OUTPERFORM, TP ¥2,650, MARKET WEIGHT)
Lafarge (LAFP.PA, Eu 112.75, UNDERPERFORM, TP Eu 95.00, UNDERWEIGHT)
LG Electronics Inc (066570.KS, W 130,500, OUTPERFORM, TP W 120,000)
Lundin Petroleum (LUPE.ST, SKr 86.25, OUTPERFORM, TP SKr 92.51, MARKET WEIGHT)
Marathon Oil Corp (MRO, $47.47, OUTPERFORM, TP $64.00)
Marubeni (8002, ¥702, OUTPERFORM, TP ¥1,020, OVERWEIGHT)
*Medi-Clinic (MDCJ.J, R 19.52, UNDERPERFORM, TP R 19.70)
Mitsubishi Corp (8058, ¥3,020, OUTPERFORM, TP ¥3,925, OVERWEIGHT)
Mitsui & Co (8031, ¥2,050, OUTPERFORM, TP ¥3,015, OVERWEIGHT)

Mondi (MNDI.L, 430.50 p, OUTPERFORM [V], TP 590.00 p, MARKET WEIGHT)
*MTN Group (MTNJ.J, R 133.10, OUTPERFORM, TP R 150.00)
*Naspers Limited (NPNJn.J, R 147.44, OUTPERFORM, TP R 246.00)
*Nedbank Group Limited (NEDJ.J, R 121.56, OUTPERFORM, TP R 136.30)
*Network Healthcare (NTCJ.J, R 8.25, NEUTRAL, TP R 9.10)
Oil & Natural Gas Corporation Limited (ONGC.BO, Rs 1011.10, NEUTRAL, TP Rs 1250.00)
Oil States International (OIS, $45.98, NEUTRAL [V], TP $49.00)
*Old Mutual (OMLJ.J, R 19.10, OUTPERFORM, TP R 28.50)
OMV (OMVV.VI, Eu 42.56, UNDERPERFORM, TP Eu 52.00, MARKET WEIGHT)
Orascom Telecom (ORTEq.L, $71.10, OUTPERFORM, TP $91.00)
PetroChina - H (0857.HK, HK$10.20, NEUTRAL, TP HK$10.00)
Portugal Telecom (PTC.LS, Eu 7.85, UNDERPERFORM, TP Eu 7.40, MARKET WEIGHT)
Ranbaxy Laboratories Limited (RANB.BO, Rs 445.35, NEUTRAL, TP Rs 380.00)
Reliance Communication Ltd (RLCM.BO, Rs 519.05, UNDERPERFORM, TP Rs 490.00, MARKET WEIGHT)
Reliance Industries (RELI.BO, Rs 2343.60, NEUTRAL, TP Rs 2424.00)
Repsol YPF SA (REP.MC, Eu 23.49, RESTRICTED)
Rio Tinto Limited/PLC (RIO.L, 5360.00 p , RESTRICTED [V])
Royal Dutch Shell plc (RDSa.L, 1757.00 p , NEUTRAL, TP 2266.00 p , MARKET WEIGHT)
SAB Miller Plc (SAB.L, 1111.00 p , OUTPERFORM, TP 1580.00 p , OVERWEIGHT)
Sappi Limited (SAPJ.J, US$12.4, OUTPERFORM, TP US$17)
Sasol Limited (SOLJ.J, R 381.00, NEUTRAL, TP R 415.00, MARKET WEIGHT)
Schlumberger (SLB, $90.80, OUTPERFORM, TP $102.00)
Smith International, Inc. (SII, $69.91, NEUTRAL [V], TP $73.00)
Societe Generale (SOGN.PA, Eu 69.38, NEUTRAL, TP Eu 91.00, OVERWEIGHT)
SPX Corporation (SPW, $107.84, NEUTRAL, TP $104.00)
*Standard Bank Group Limited (SBKJ.J, R 94.50, NEUTRAL, TP R 98.50)
Standard Chartered (STAN.L, 1837.00 p , OUTPERFORM, TP 2000.00 p , OVERWEIGHT)
StatoilHydro ASA (STL.OL, NKr 157.00, OUTPERFORM, TP NKr 197.10, MARKET WEIGHT)
Suez (LYOE.PA, Eu 42.6, OUTPERFORM, TP Eu 52.20)
Tata Communications Ltd (TATA.BO, Rs 532.30, NEUTRAL [V], TP Rs 455.00, MARKET WEIGHT)
Tata Motors Ltd. (TAMO.BO, Rs 637.80, OUTPERFORM, TP Rs 746.00)
TAV Havalimanlari Holding (TAVHL.IS, 7.80, OUTPERFORM, TP 11.50)
*Telkom SA Ltd (TKGJ.J, R 131.50, OUTPERFORM, TP R 178.00)
*Tongaat-Hulett Group Ltd (TONJ.J, R 97.30, UNDERPERFORM, TP R 78.00)
Total (TOTF.PA, Eu 48.50, NEUTRAL, TP Eu 64.10, MARKET WEIGHT)
Toyota Motor Corp. (7203, ¥5,240, OUTPERFORM, TP ¥7,000, MARKET WEIGHT)
Tullow Oil (TLW.L, 638.50 p , OUTPERFORM, TP 707.00 p , MARKET WEIGHT)
Vale (VALE5, $29.79, OUTPERFORM [V], TP $58.00)
Vedanta Resources PLC (VED.L, 2151.00 p , NEUTRAL [V], TP 2300.00 p , OVERWEIGHT)
Vivendi (VIV.PA, Eu 25.94, OUTPERFORM, TP Eu 32.00, UNDERWEIGHT)
Vodafone Group (VOD.L, 158.40 p , OUTPERFORM, TP 200.00 p , MARKET WEIGHT)
Weatherford International, Inc. (WFT, $74.97, OUTPERFORM, TP $82.00)
Weir Group (WEIR.L, 754.50 p , NEUTRAL, TP 705.00 p , UNDERWEIGHT)
Xstrata Plc (XTA.L, 3594.00 p , OUTPERFORM, TP 4000.00 p , OVERWEIGHT)
ZAIN (ZAIN.KW, 1.92, NEUTRAL, TP 2.11)
ZTE (0763.HK, HK$39.20, OUTPERFORM [V], TP HK$44.70)
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Companies not rated mentioned in the report

Afrn Rainbow Minls, Aspen Pharmacare Aveng,Banco Bpi Sa, Barloworld Ltd, Bco Com Portug., Cimpor Cimentos De, First Quantum Minerals Ltd, Group Five, Guangzhou Shipyard, Kumba Iron Ore Ltd, Merafe Resources, Metorex, Motorola, Murray & Roberts, Palabora Mining Co, Pretoria Port Cmnt, S/Zhenhua Port Mac, Powerwave Technologies, Sinopec S/Petroche, Yara International, PZ Cussons, Anvil Mining, Katanga-Nikanor, African Copper plc, Teal Exploration & Mining, Platmin Ltd, First Uranium Co, Paladin, African Eagle Resources, Assore Ltd, Afren, Omnia Holdings.

# Disclosure Appendix

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|---|---|---|
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**Neutral (N):** The stock's total return is expected to be in line with the JSE All-Share (range of ±7.5%) over the next 12 months.

**Underperform (U):** The stock's total return is expected to underperform the JSE All-Share by 7.5% or more over the next 12 months.

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