2010 Market Study on the South and Southern African Zinc Market

International Zinc Association Southern Africa

(Rob White June 2011)

Zinc market in South and Southern Africa, 2010.

EXECUTIVE SUMMARY.

The (apparent) local zinc demand for 2010 is estimated as 101 000 tonnes, as zinc tonnes. Local supply of zinc and zinc containing products is now of the order of 134 500 tonnes. With primary sales estimated at around 87 000 tonnes, there is clearly room for manoeuvre in terms of local sourcing.

2010 showed a continued decline in Gross Fixed Capital Formation and Industrial Production in South Africa, both impacting heavily upon the zinc market. Respite was provided through the FIFA Soccer World Cup but once this work had been completed, the construction industry found itself in a precarious position. Combined with an overall poor year in building and a poor auto market, a rapid decline in market conditions was experienced in the last quarter of 2010. The relationship between Industrial Production and market demand for zinc is well researched and, in addition, Fixed Investment (Gross Fixed Capital Formation – previously known as Gross Domestic Fixed Investment) plays an important role for the general galvanizers in particular.

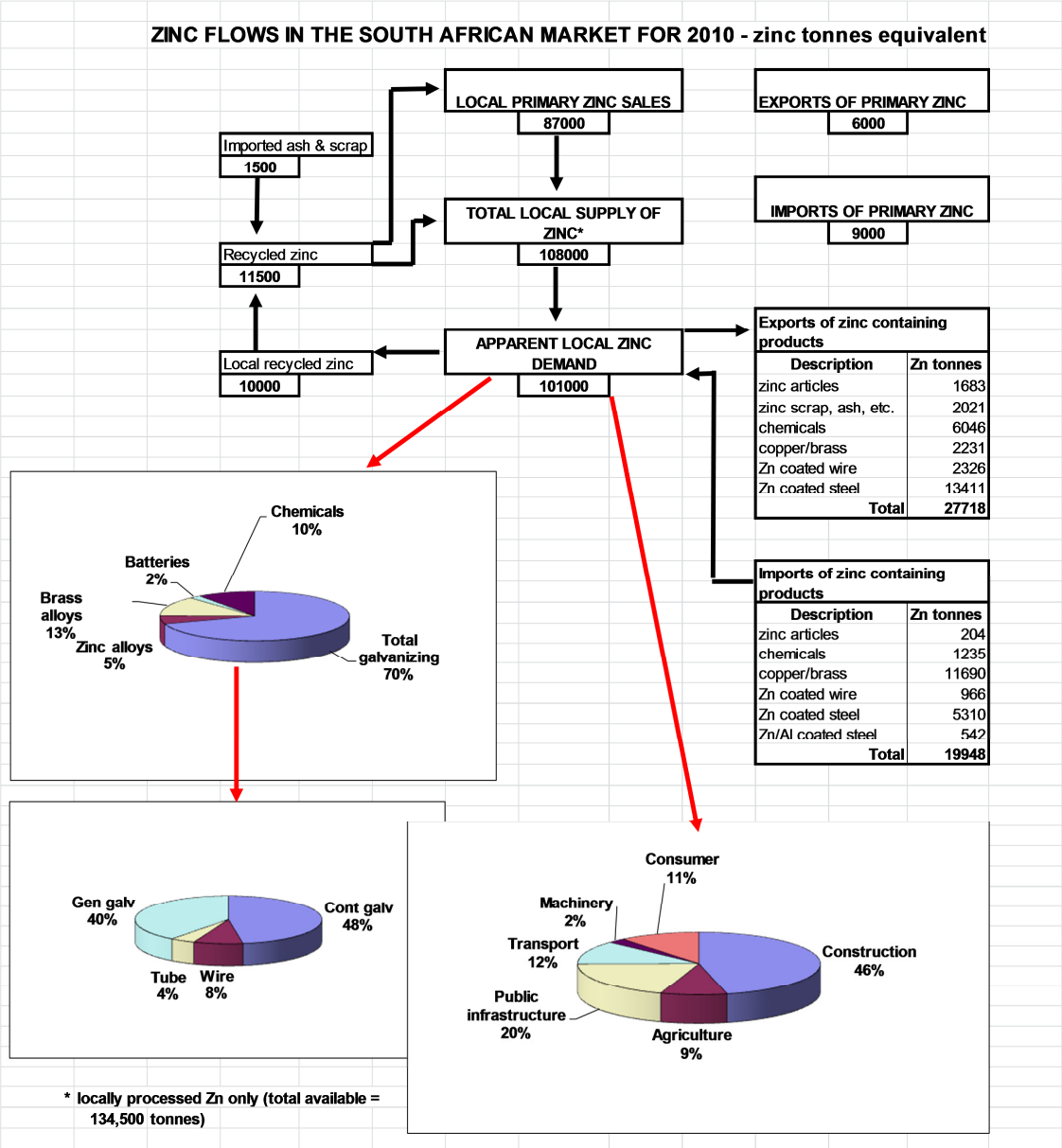
The galvanizing sector continues to be the dominant market for zinc in South and Southern Africa. This is set to grow as Safal Steel ramps up production. 2010 was a good year for the general galvanizing industry with many projects being completed surrounding the Soccer World Cup, various infrastructure projects and the Eskom power station developments. However, the industry is already showing some strain as these projects come to an end and the power station projects focus on the galvanizers located on the reef. Coastal plants are suffering poor market conditions at the time of writing. The commodities boom has largely passed South Africa by but, fortunately, the region as a whole is experiencing good times with high levels of investment into the primary sector specifically from the BRIC countries. This rapid rate of investment will be reflected in higher sales from General Galvanizing industry.

Wire and tube had a mixed 2010 with good prospects often met through overseas supply. Specific developed products did well. Locally, flat steel prices only rose marginally during 2010 with long products rising by 6% in Rand terms. South African steel prices remain on par with those in high cost input regions such as the USA and the EU. This places steel prices higher than many competitive developing countries and does impact upon the South African wire and tube industries.

The brass industry continues to show good progress although the importation of finished goods remains a concern and directly impacts upon local zinc use. The National Foundry Technology Network continues to look at technology assistance to the foundry industry. However, the government's reluctance to raise a un-beneficiated scrap export tax continues to constrain the foundry industry.

The zinc chemicals industry experienced a buoyant 2010. The promotion of addition of zinc to fertilizers, foliar sprays, etc. continues to show promise. 2010 fertilizer figures were down on 2009 but not by the extent of other zinc market sectors.

FIGURES AT A GLANCE.



Exports of zinc containing products

Description	Zn tonnes
zinc articles	1683
zinc scrap, ash, etc.	2021
chemicals	6046
copper/brass	2231
Zn coated wire	2326
Zn coated steel	13411
Total	27718

Imports of zinc containing products

Description	Zn tonnes
zinc articles	204
chemicals	1235
copper/brass	11690
Zn coated wire	966
Zn coated steel	5310
Zn/Al coated steel	542
Total	19948

South Africa's Apparent Demand for 2010 was 101 000 tonnes. Total local supply for zinc and zinc containing products was of the order of 134 500 tonnes (this includes all value added products). Demand for primary zinc fell considerably during the last quarter of 2010 as major projects wrapped up and new projects were often delayed due to capacity constraints within the allocation frameworks.

The percentages allocated to First User markets were similar to previous years with a small increase in galvanizing and a small decrease in allocation to chemicals.

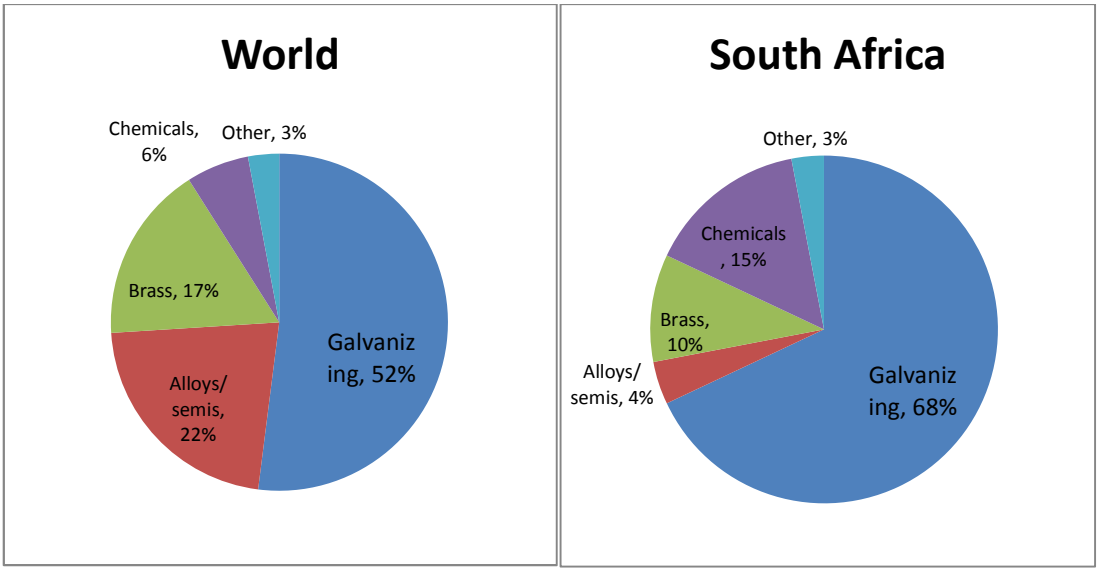


Figure1. First User market demand for zinc (2007 (ILZSG), South Africa 2010)

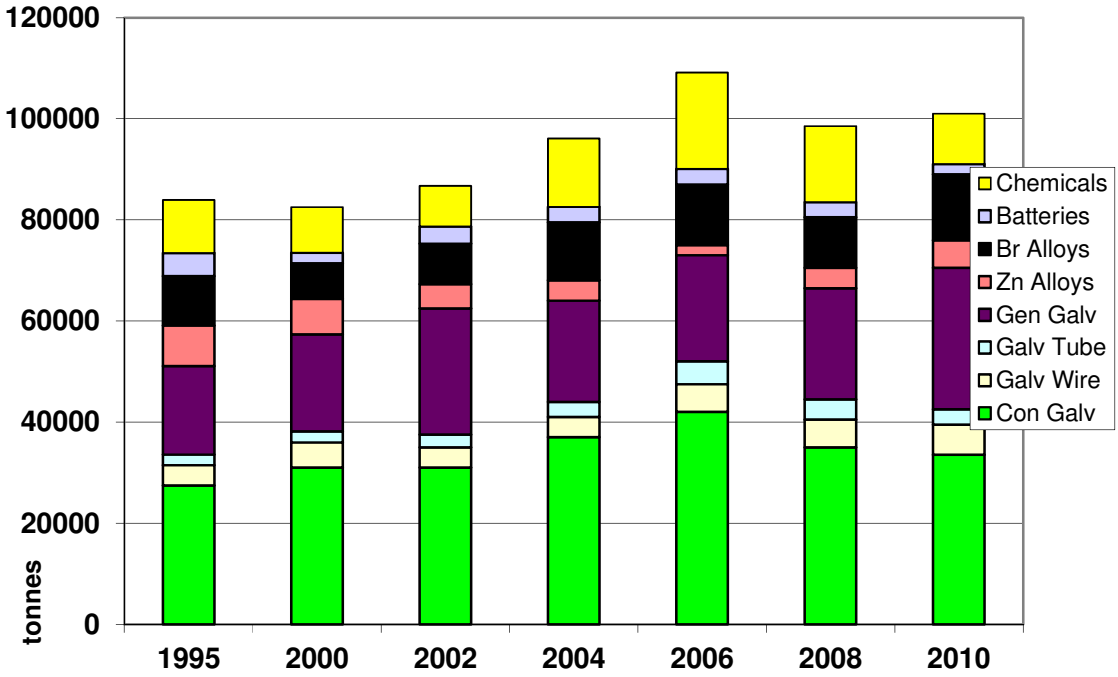


Figure 2. Estimated final market demand percentages since 1995

The financial crisis in 2008/9 resulted in significant reduction in demand for zinc and zinc containing products. 2010 was a little better than 2009, largely due to construction projects surrounding the Soccer World Cup where galvanizing was used extensively (reference *Zinc Protects – Hot Dip Galvanizing for the 2010 FIFA Soccer World Cup*). In all countries, zinc demand follows Industrial Production (IP) and GDFI now called Gross Fixed Capital Formation

(GFCF). For a few years, South Africa looked as if it was to break out of the cycle of constraint and raise the percentage of GFCF of GDP to above 25% (as with the star growing economies). This target was set by government as a goal to be reached by 2014. In 2007, the figure was 20.6% rising to 23.2% in 2008. By quarter one 2009 the figure dropped considerably as GFCF decreased by some 10.5% quarter-on-quarter. During 2010 an overall decline of 3.7% occurred. GFCF has now fallen below the 20% of GDP mark. Without increases in IP and GFCF South African zinc demand will remain depressed.

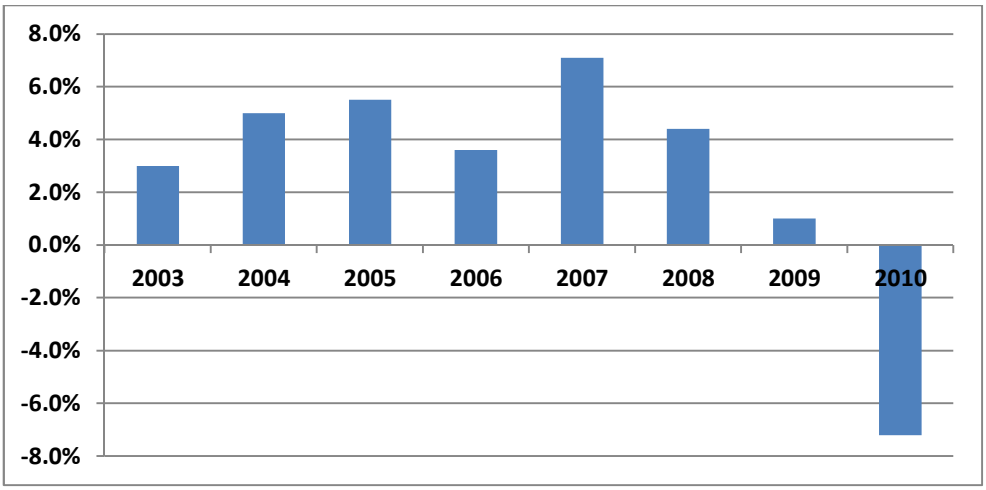


Figure 4. Changes in Industrial Production for South Africa (includes mining, manufacturing and construction) (ref. CIA Worldfact Book Dec 2010)

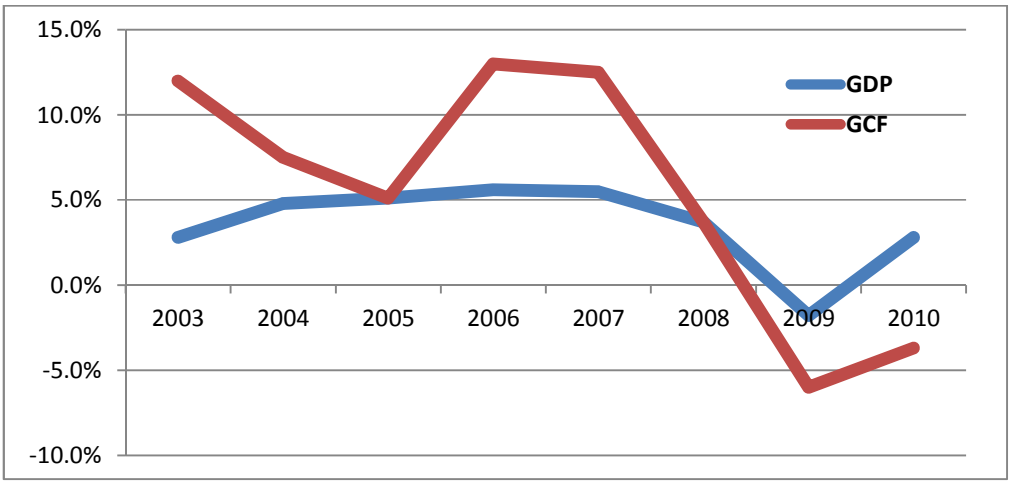


Figure 5. Growth for GDP and GFCF (ref World Bank/Standard Bank)

SUPPLY, DEMAND AND PRICING

During 2010 Anglo American managed the divestment of its zinc business (Skorpion and Black Mountain regionally) to Vedanta, the London listed Indian mining group. It is hoped that the development of the Gamsberg project (300kt per year zinc metal) will now go ahead.

Refined primary metal output in the SADC region came in at around 230 000 tonnes with total South African primary zinc production being of the order of 81 500 tonnes.

Two exploration projects are under consideration regionally. These are the production of zinc from the Mount Burgess mine in Botswana and delineation of resources by Aviva in Kenya.

As with other commodities, the zinc price showed some volatility in 2010 opening at around $2 600/tonne in January and exhibiting a low of $1 700/tonne mid-year. **Figure 6** shows the Rand Dollar exchange rate and the local (base) zinc price from January 2003 until March 2011.

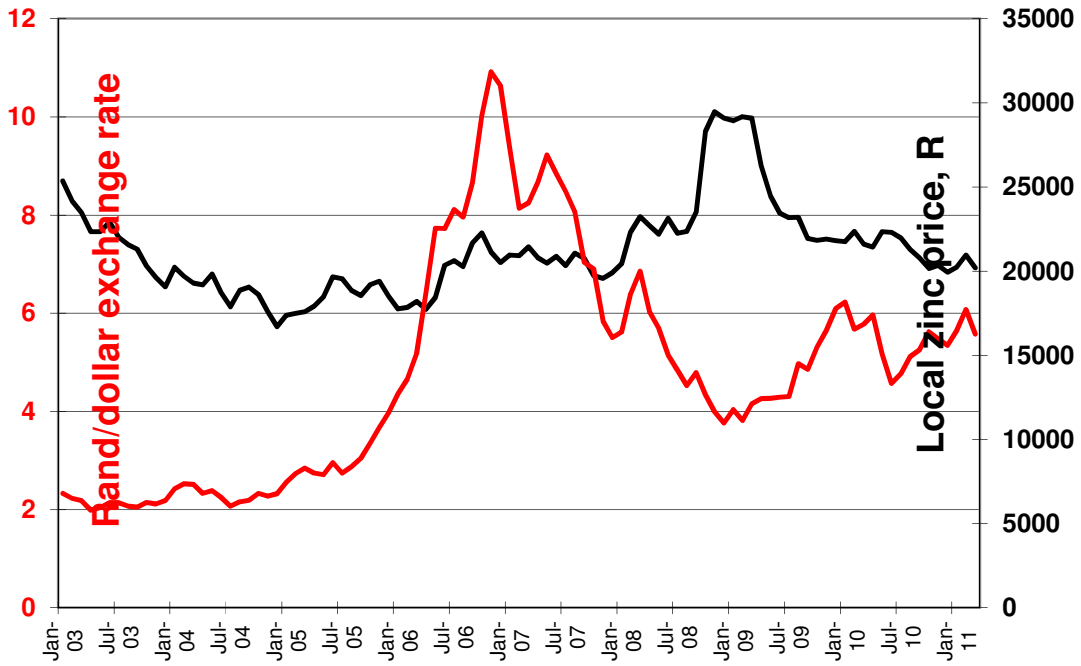


Figure 6. Rand exchange rate and local zinc price since 2003.

In 2010, global zinc mine production was 14% up on 2009 with metal supply estimated to be 13.3m tonnes. Global demand for zinc rose significantly during the closing months of 2010, estimated at 12.2m tonnes. Demand from around the world, with the year-on-year increases for 2010 are shown in **Figure 7**. Major mines are due to close in the coming years but, although the finds are smaller, significant resources are coming on-stream to compensate.

In 2010 Chinese (apparent) zinc demand was only up 8-11% on 2009. However, destocking and probable release of "strategic reserves" are likely reasons for the low registered figure. **Figures 8 and 9** illustrate a significant reason for sustained increases in demand from countries such as China. In addition to the need for roads, rail and other infrastructure developments, urbanisation can also be considered to be a driver for zinc demand. As urbanisation continues in sub-Saharan Africa, a similar if not as extreme effect will encourage local zinc demand.

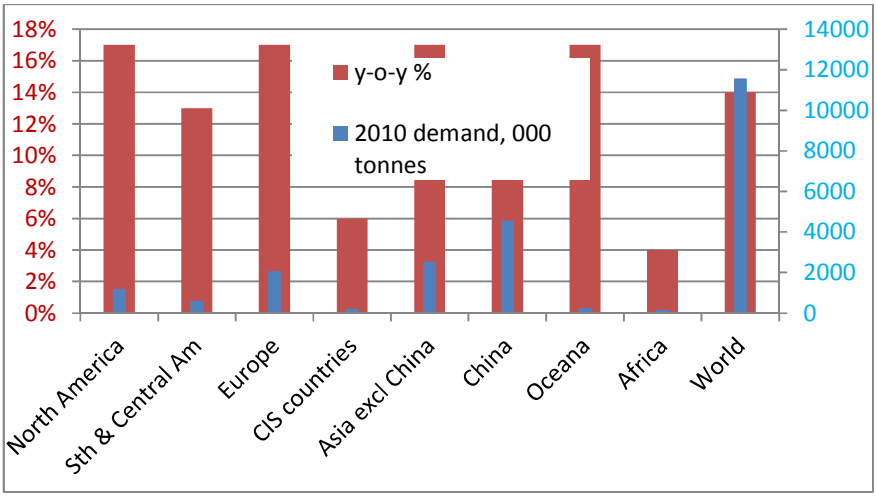


Figure 7. Year-on-year growth in zinc demand by region (2009/2010) and absolute regional demand for 2010 (ref Brook Hunt)

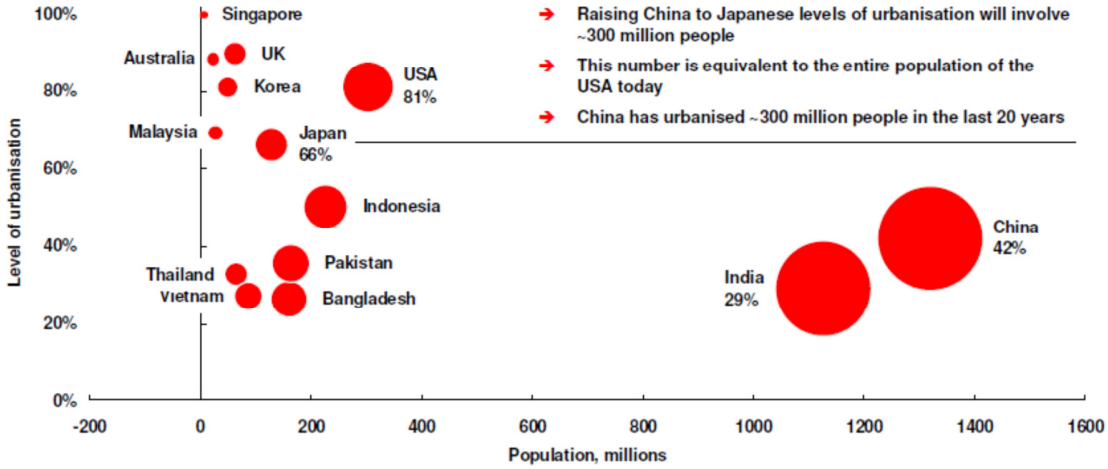


Figure 8. Population and urbanisation levels showing demand potential for China (ref World Bank, UN, Macquarie Research)

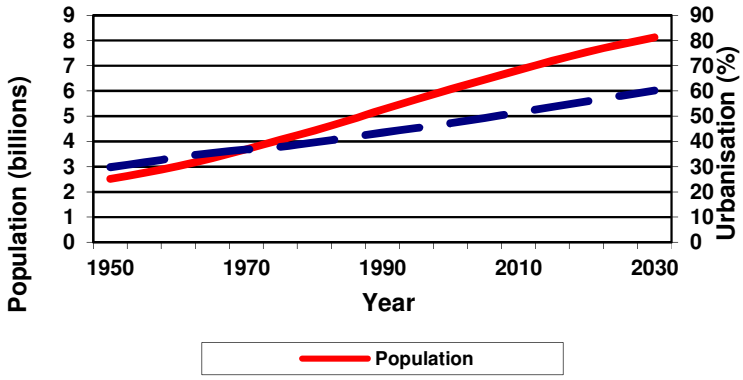


Figure 9. Global projected urbanisation progress (ref UN)

MARKET OBSERVATIONS AND PROSPECTS – SOUTH AFRICA

It is probable that South Africa's GDP growth for 2011 will not exceed 3.5%. Indeed, it is likely, that as the current recovery is led by consumer spending (retail, transport, communications and limited manufacturing) any disturbance (such as higher inflation, raised interest rates, continual excessive rises in administered prices and labour unrest – 2010 experienced some 20.4m workdays lost due to strike action, double the 2007 figure) will limit the growth prospects. The fragility of the recovery is highlighted by the fact that currently, South African personal consumer debt exceeds 70% leaving little leeway for high growth prospects. Poor Fixed Investment (Fixed Gross Capital Formation) growth will also limit economic growth upside. If capacity constraints are removed things could improve. However, zinc market growth is unlikely to exceed 3% for the foreseeable future. Only through market interventions can the market grow. It is for this reason that IZASA is targeting support for potential growth markets such as chemicals (primarily fertilizers) and import substitution (such as construction materials).

Continuous Galvanizing.

Exports of zinc coated steel were 268 224 tonnes during 2010 with imports being 106 201 tonnes. Whilst the exports were considerably down on the 2008 figures, imports were up by nearly 50%. The importation of cheap and sometimes non-compliant zinc coated steel (mainly from the Far East) has been raised as a matter of concern by the steel and construction industry in South Africa. The matter is currently being managed through the National Regulator for Compulsory Specifications (NRCS). A sub-committee has been formed to address specifics and it is hoped that there will be some resolution soon. The imports are impacting upon the development of the steel building industry and their detrimental impact upon it cannot be over-stressed. Total zinc sales into this market sector were over 41 000 tonnes for 2010. This is lower than the 2008 figures.

Safal Steel only started operation in 2010, producing some 21 00 tonnes of Al55%/Zn with an eventual capacity estimated at 160 000 tpy. 11 000 tonnes of Al55%/Zn coated steel exports were recorded with imports of 21 674 tonnes. This is half the 2008 figure and, with local supply now on stream, the import figure will fall considerably. Safal Steel is the only licensed producer for Al55%/Zn coated steel in Africa.

The Duferco Steel Processing operation in Saldhana produced some 242 000 tonnes of galvanized coil in 2010. Some 80% is normally exported. Whilst peak tonnes were higher in the past, the changes are structural as a result of competition from the Far East, in particular China, in traditional export markets. Effort is being carried out to develop markets in Africa.

Arcelor Mittal South Africa (AMSA) has an installed capacity of 500 000 tonnes per year of continuously galvanized coil comprising three continuous galvanizing lines and one electro-galvanizing line with a capacity of over 100 000 tonnes per year. Line 3 produces full hard material and thicker gauges to 3 mm, line 4 roofing material and line 4 pre-painted material. During 2010 some 100 m^2 of galvanized steel and almost 10 m^2 of electro-galvanized steel was dispatched as prime material into the local market. This includes colour coated material. Production of galvanized coil was cut considerably in the last quarter of 2010. Overall sales were some 22% down compared to quarter 3. Fortunately the market has shown a revival from the start of 2011. The annual sub-Saharan African steel growth rate was 4.7% in 2010 and it is expected to rise to 5.3% in 2011.

The importance of infrastructure spend (and thus GFCF) is clearly shown at the presentation of the AMSA results for 2010. Domestic steel sales have been largely constant for over 30 years with all peaks coinciding with major government infrastructure spending programs. The impact of the 2010 FIFA Soccer World Cup is clear and it will be interesting to see the impact of the new Eskom investment programs.

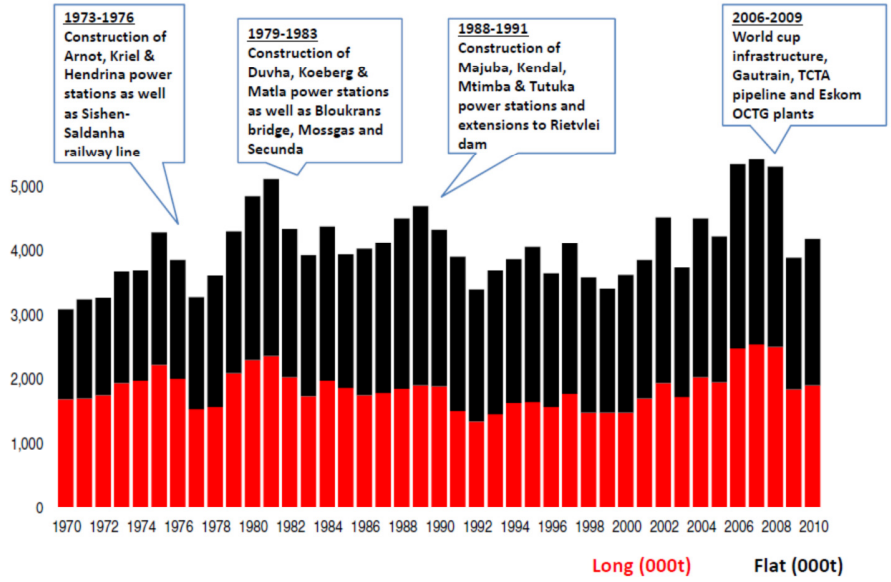


Figure 10. Total South Africa domestic steel sales since 1970 (ref. SAISI and AMSA)

The breakdown of the steel market in South Africa is also relevant, as a large proportion of steel sales into the auto industry are galvanized or zinc coated sheet.

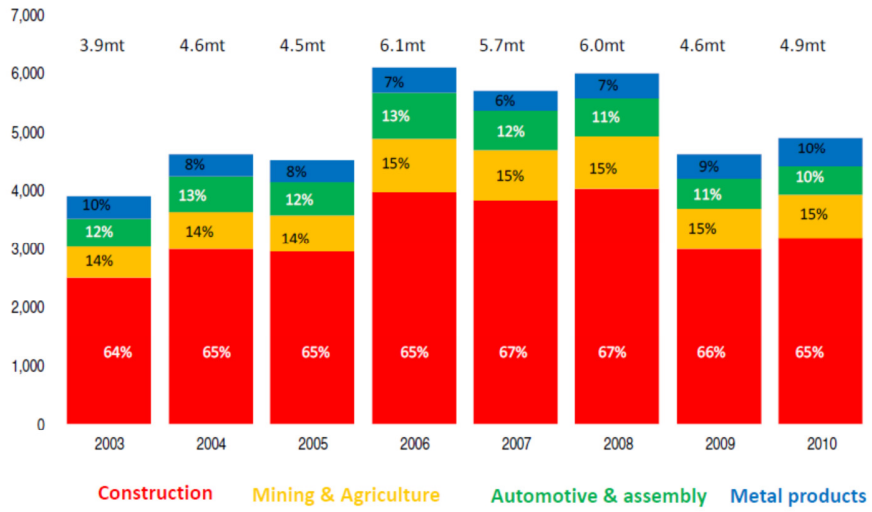


Figure 11. Domestic steel sales into market sectors since 2003 (ref. SAISI, AMSA)

General Galvanizing

The theoretical capacity of the general galvanizing industry is estimated at 525 000 tonnes with 2010 production being around 422 000 tonnes. South Africa enjoys one of the highest

consumption rates per capita of any country. Unfortunately, 2011 has not started well with those galvanizing for the power stations having a good workload but those out of this market experiencing strain especially the plants in coastal areas.

Although regional differences exist, the sector demand is shown in **Figure 12**. As previously reported, construction and general infrastructure are the largest market sectors. However, the transport sector was active during the construction of services and facilities around the Soccer World Cup. This includes new transport hubs, airports development and the Gautrain project. Of particular interest is the rise in heat exchanger applications. This is indicative of the active building and construction sector during the current phase of infrastructure spending.

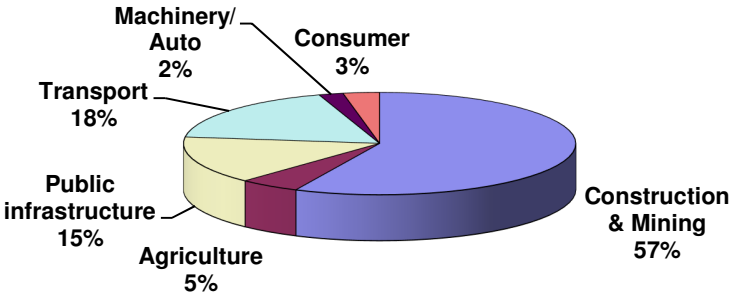


Figure 12. Market sector demand for the General Hot Dip Galvanizing industry (excl wire)

Wire Galvanizing

The galvanized wire industry continues to be dominated by three major players: Consolidated Wire Industries (CWI), Cape Gate (Sharon Wire works) and the Allensmescho Group. There are 24 wire plants in total in South Africa with 29 production lines and an estimated capacity in excess of 900 000 tonnes per year. In 2010, some 46 500 tonnes of zinc coated wire was exported and some 19 500 tonnes imported. Local production is estimated to have been around 165 000 tonnes. The apparent consumption figure is of the order of 185 000. This figure is considerably higher than the 2008 figure and represents significant tonnes into the World Cup Stadiums with Galfan taking a significant share of this market. Galfan is gaining market share in South Africa although exact figures are still difficult to assess at this stage.

Galvanized Tube

From the zinc demand figures, local production of galvanized tube from the three welded tube and pipe producers was of the order of 60 000 tonnes. This is considerably below the 2008 figure despite being corrected for irrigation and galvanized mining/industrial pipe. Thin wall pipe and tube continues to take market share with a current take-off of around 250 tpm. Much of this pipe goes into the mining industry (chiefly platinum and coal) but a policy of re-use was used extensively in 2010 limiting the new galvanized pipe market – a consequence of its own success! 2011 has started well and growth of 30% is expected. Foreign market interest in thin wall quick fit is growing, positioning galvanized piping directly against alternative materials.

Zinc Alloys

The alloy business is continuing to decline and still no decision has been made on the issue of a tax on un-beneficiated scrap exports. This export activity continues to plague the industry. The National Foundry Technology Network (NFTN) continues to play a role in developing the foundry industry and zinc die-casting is still represented. However, until key market decline is arrested (importation of white goods, etc.) or further access to the automotive industry can be found, market expectations are poor.

Brass Alloys

The importation of primary brass products continues to be at a high level. The local market demand is high but the percentage met by local production continues to fall.

Battery Industry

Ever Ready, based in Port Elizabeth, remains the single supplier zinc chloride batteries in South Africa. It has diversified over the past few years and is producing, in addition to zinc coil and zinc callots for export, zinc air-cell anodes and potentially building products. Notwithstanding this the local zinc take-off remains at around 1100 tonnes per year.

Chemicals Industry

The chemicals industry provides great opportunities for the zinc industry although many markets are limited in size (such as nutrition and pharmaceutical applications). Industrial applications offer the largest markets.

Notable trade in 2010 included zinc pigments and octate stabilizers.

The fertilizer and animal feed industry continue to dominate the chemicals sector for zinc demand in South Africa. In 2010, fertilizer sales were some 7% down on 2009 to 1.728m tonnes. Almost all the fertilizer sold contained 0.5% Zn (= 8 640 tonnes). The fertilizer and fertigation markets are key focus areas for the value adding sector of the industry.

Other

The electroplating industry provides for a small market estimated at around 500 tonnes per year.

The use of rolled zinc products in South Africa continues to climb. Product is all imported and used for the building industry. Demand is still estimated at less than 1000 tonnes per year.

MARKET PROSPECTS

Several factors impact on forecasts of future use. Limits to GDP growth have been discussed previously such that growth rates may be capped at 3% in 2011 with Industrial Production slowly recovering from negative growth. However, other areas require discussion.

Foreign Direct Investment was rather stagnant globally in 2010. Investment into Africa declined sharply with South Africa's decline a staggering 77.9% over 2009. This compares with a rise of 43.4% in Chile (to bring it to ⅔ that of Brazil in real terms). Cross Border Merger and Acquisition activity (generally used to show real FDI) only registered the Dimension Data Acquisition as the $3bn+ deal in 2010. Of specific interest is the future investment potential. The UNCTAD survey has shown that for the first time the BRIC countries are in the top 5 destinations (with the USA) for future Foreign Direct Investment. South Africa has entered the top 20 for the first time but sub-Saharan Africa is still viewed with scepticism by investors. The main form of investment remains in the Primary Sector.

In contrast the sale of South African bonds has been startling. Some R65bn of bonds were bought in the first 10 months of 2010 over double that of equities.

More positively, with continued economic growth and urbanisation in developing countries (as shown in **Figure 8**) demand for South Africa's minerals will continue apace. Local urbanisation will have a similar impact locally and, importantly, regionally. If Industrial Production can turn the corner quickly, GDP predictions may be too pessimistic and ditto zinc market demand growth.

The South African building and construction industry whilst spared the global 2009 experience felt the pinch as 2010 progressed. Negative growth was already evident in 2009 but masked. Eskom and Transnet deferred projects partly due to difficult capital access as a result of the financial crisis. The scale of the problem is shown in **Figure 13**. At the end of quarter one, 2011, business confidence and activity was at its lowest level for 11 years. The general construction industry reported a 45% decline in revenues (2010) with the laying off of a third of the labour pool. General consensus is that improvements are only expected in 2012. In addition, the industry has repeatedly commented that bunching of infrastructure projects (which is a long standing issue – see **Figure 10**) will continue the boom bust boom cycles in the industry.

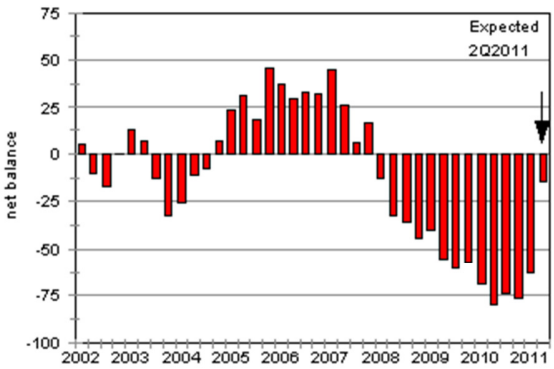


Figure 13. Growth in civil construction activity (ref FNB)

As the second largest contributor to the South African economy, manufacturing battled through 2010. The rapid decline in the third quarter of 2010 resulted in the GDP turning too (**Figure 14**). The 3 main contributors to the decline are attributed as appreciation of the Rand (impacting upon competitiveness), credit availability and labour unrest. Employing more than 14% of the total non-agricultural industries, costs have been rising rapidly with 2010 costs rising more than 10%. The ability to pass on these costs is also squeezing industry.

The auto industry is considered a leading indicator and sales volumes started to pick up before 2010 was out. By December 2010 new car sales were up by 25% y-o-y and expectations are for another 15% gain in 2011. With local estimates being that over 15% of total zinc sales are for auto production, the importance of this market to the local zinc industry is clear. NAAMSA expect the auto industry to get back to the 2007 peak levels only in 2013. In perspective, global auto sales are expected to be a record in 2011 with the number of units sold in China to surpass that of Europe making it the largest auto market globally.

The Mining Industry continues to be a driver for galvanized steel demand. However, in spite of having the world's largest in situ mineral resources by value, South Africa's mining sector has underperformed. During the recent 7 year commodity boom the world's top 20 mining countries achieved an average mining GDP growth of 5% a year compared to South Africa's -1% per year. It is generally accepted that the cause is the development of an unfavourable environment which is borne out by many studies. Notwithstanding this, the need for future local resources such as coal is providing growing optimism in the industry. This is reflected in the rise in mining production of 8.1% for the 3 months ending January 2011 versus the same period for 2010. This is clearly shown in Figure 14. Mining has traditionally been a large market for galvanized steel and a real revival in mining investment will have a rapid and meaningful impact upon the galvanizing industry. In 2010 Latin America accounted for 32% of all global mining investment. Rumours of recent foreign interest (such as the proposed Brazilian Vale bid for Metorex at $1.1bn) indicate that investment appetite may have returned to South Africa. This is in addition to the government's recent announcement of a $2.5bn rare metals processing complex. Russian and Chinese investment has been offered with Exxaro offering to provide feedstock. However, long term, South Africa needs to change its frameworks to take real advantage of its natural resources.

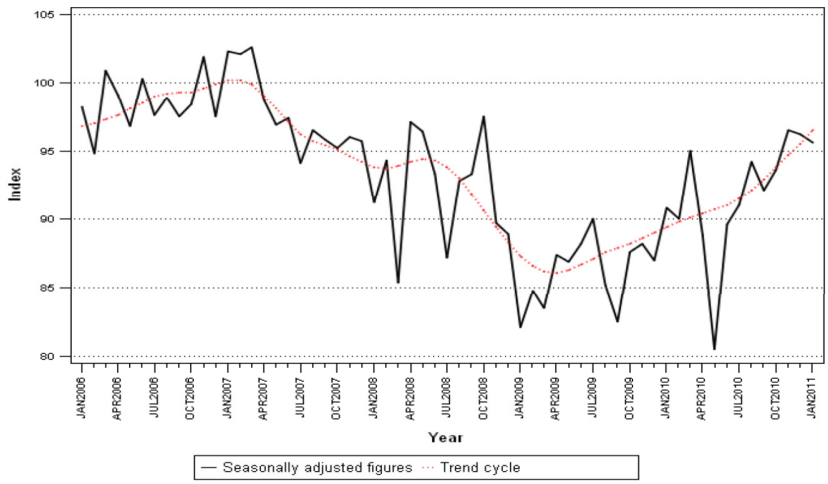


Figure 14. Monthly indices of physical volume of total mining production (Base: 2005=100)
(ref StatsSA)

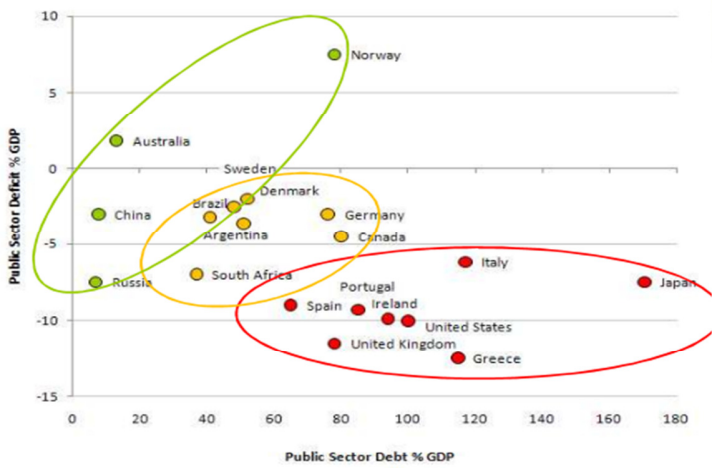


Figure 15. Countries with sound versus unsound public debt (ref Reuters)

Notwithstanding all the factors above, the relative buoyancy of the country's debt is often overlooked. Compared with many countries, South Africa, whilst not wishing to be profligate, is able to increase expenditure (and so GFCF) unlike many countries. This could well raise growth rates beyond the current expectations and so the demand for zinc coated steels.

The limits on growth resulting from power capacity constraints are slowly being addressed. With over a third of public infrastructure spending allocated to energy, it is hoped that within the next few years reserves will be such as to not act as a constraint to economic development. Camden power station was taken out of mothballs in October 2010. The first of six units of South Africa's 4,788 MW Medupi power plant (Eskom's first new power plant in over two decades) should come on stream in late 2012, and the first unit of the 4,800 MW Kusile plant should be operational in late 2014. Power will remain tight until after 2012. Public-private partnerships (co-generation) are likely to enable South Africa to emerge from its energy crisis. It should be noted that with over 35 000 tonnes of galvanized steel in Medupi alone, the energy program offers good opportunities for the zinc market. System supply and demand probabilities are shown in **Figure 16**.

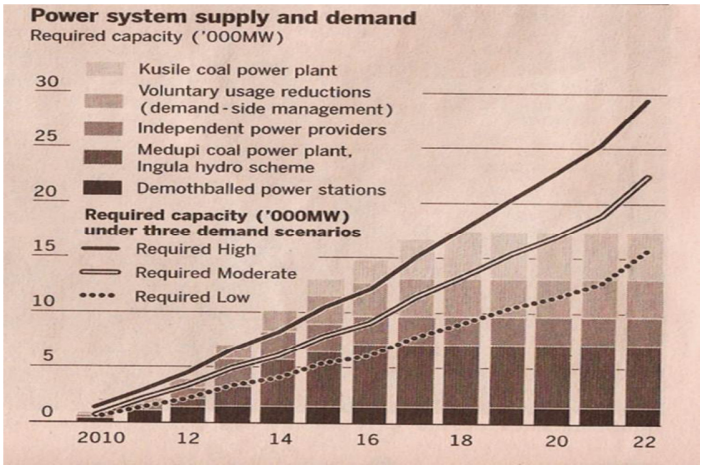


Figure 16. Predicted power system supply and demand (000MW) (ref Financial Times/Eskom)

REGIONAL OPPORTUNITIES

There are four countries globally often not mentioned that are exercising good growth. They all have large populations, growth in excess of 7% and GDPs of around $1trillion each. These are Mexico, Korea, Turkey and Indonesia. Whilst not in the same league the Southern African Development Community (SADC) is currently one of the strongest Regional Economic Communities in terms of economic strength by country GDP. SADC member countries include Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar (suspended), Malawi, Mozambique, Mauritius, Namibia, Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe. SADC represents a population of over 230 million people. The economies of the member states are diverse from oil-rich Angola, natural resource diverse Democratic Republic of Congo, and sector diverse South Africa.

Table 1. Some selected forecast 2011 economic data on the SADC countries

Country	**Pop. m (2010)[2]**	**Size, square km**	**GDP current prices, $**	**Real Forecast 2011 GDP growth, %[2]**	**Per capita GDP, $**
Angola[1]	19	1,246,700	*85.47bn*	*7.6*	4800
Botswana[1]	2.0	582,000	*12.94bn*	*6.33*	7000
D R Congo	58	2,345,095	*12.65bn*	*5.44*	190
Kenya	41	580,367	*34.00bn*	*4.11*	937
Lesotho	1.8	30,355	*1.74bn*	*2.98*	686
Malawi	12	118,484	*4.78bn*	*5.96*	336
Mozambique[1]	23.4	799,380	*10.21bn*	*6.45*	473
Namibia[1]	2.0	823,114	*10.48bn*	*1.7*	5000
South Africa[1]	50	1,123,26	*287.00bn*	*3.0*	10 700
Zambia[1]	13.3	752,614	*16.07bn*	*5.84*	1317
Zimbabwe	12.6	390,759	*5.14bn*	*2.24*	438

1. Countries with some industrial base
2. World Bank estimates

Significant development is occurring in the countries with some industrial base. As discussed earlier, most investment is in primary industries. Whilst it is true that political uncertainty impacts upon mining investment, in general, logistical bottlenecks do not. This does mean that the SADC region is well placed to secure further investment.

Significant investment is occurring in the region from the BRIC countries. Much of this relates to infrastructure, notably transport. Road freight costs are 4 to 5 times that in the USA and freight times up to 5 times longer per kilometre travelled. As a whole, it is estimated that the additional costs of deficient infrastructure (transport, power, telephony, etc.) cost 1% of GDP growth per year. SADC investment by the BRICs is such that it follows what is termed the "Angola model", i.e. government extended non-concessional loans. It is estimated that this works out as a 36% grant and China for example uses the scheme to take advantage of its globally competitive construction industry. In 2006, 44% of all new overseas contracts (in value) secured by Chinese construction firms and contractors were in Africa.

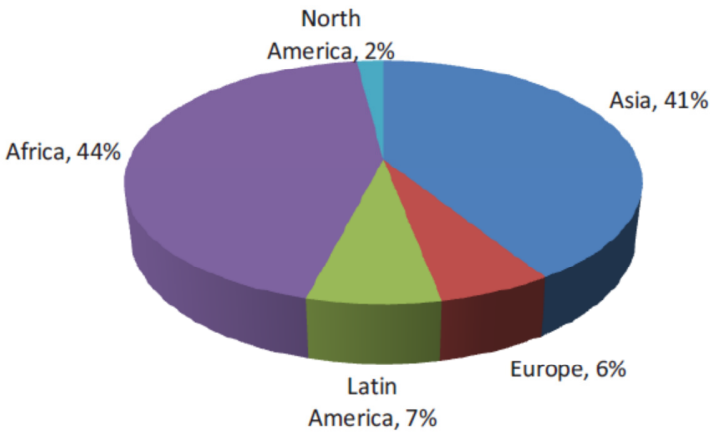


Figure 17. Percentage of overseas construction projects funded from China (2006) (ref MOFCOM)

India, in contrast invests via the provision of lines of credit (via India's Exim bank) for direct projects, such as the $40m rehabilitation of railways project in Angola and the $25m electrification projects in the provinces of Cabo Delgado, Manica and Niassa provinces of Mozambique.

Brazil has been very active in Mozambique with various projects such as the $300m investment to develop coal and biofuel projects, $50m upgrade to Nacala airport and various electrification projects linking the hydro-power services of the north to the high demand areas in the south of the country. Mozambique is undergoing massive regeneration with the Moatize Basin being billed as the largest undeveloped coal deposit in the world. Vale's investment in the coal development already exceeds $1.5bn. Mozambique's infrastructure is developing at a rapid pace from electricity transmission to port development to railway development. Similar developments are occurring in Angola. It is likely, that further investment into the infrastructure development market offered by Africa will take place from Brazil with companies such as Coteminas, Embraer, Marcopolo, Natura, Petrobras, Sadia, Vale and the Votorantim Group leading the charge.

Russia, as the holder of the world's 3rd largest foreign reserves (around $500bn) has been late to move into Africa from an investment perspective. However, with significant investment such as Alrosa's (one of the world's largest mineral companies) investing $500m to build homes, schools and dams throughout Angola, already operating two mines and exploring for oil and gas with Angola's state owned Sonangol, significant investments are likely to continue. Angola's growing importance as an oil and gas producer in the wake of political unrest in North Africa, West Africa and the Middle East is ensuring a construction boom that is still underestimated. Angola is the second largest economy in SADC and South Africa is well positioned to take advantage of its growth.

Whilst West Africa bemoans the state of its rail and road infrastructure, plans to upgrade the SADC regions communications are well developed. Political obstacles do exist but should the North-South corridor, being mooted, occur then the links from the copperbelt to Dar es Salem in Tanzania and Durban in South Africa will revitalise the region completely. Corridors are also planned to link with Angola, Mozambique and Namibia. Whether this integrated system will occur soon remains to be seen.

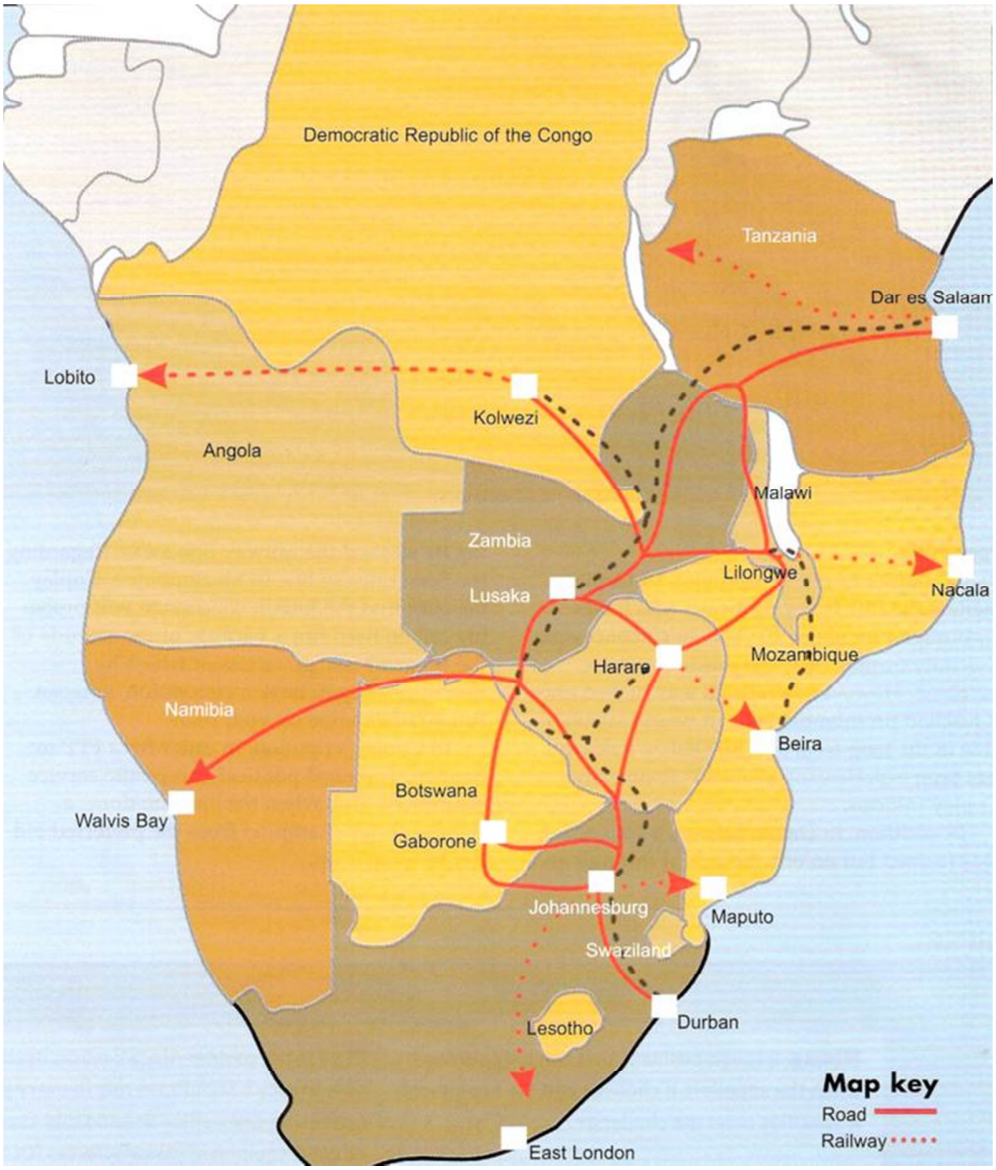


Figure 18. Proposed North South Corridor linking the Copperbelt, Dar es Salem and Durban (ref African Mining, Sept/Oct 2010)

POTENTIAL ZINC DEMAND

The development of the zinc market in the region has been slow in recent years despite raising infrastructure spend. However, there is little doubt that a tipping point is nearing when opportunities may exist to enable regional investment in value adding opportunities such as galvanizing. In South Africa, electricity constraints will restrict mining expansion over the short term. However, after 2012 the electricity supply situation will ease.

Table 2. Apparent demand forecast to 2012 (zinc tonnes).

		Forecasts (low)				Forecasts (high)			
		Apparent Local Demand							
	2010	**2011**	**2012**	**2013**	**2014**	**2011**	**2012**	**2013**	**2014**
GDP growth yoy[1]	2.80%	3.00%	3.00%	3.50%	4.50%	3.40%	3.70%	4.00%	4.50%
GFCF growth yoy[1]	-3.70%	3.00%	3.00%	4.00%	5.00%	3.20%	3.90%	5.10%	5.10%
Industrial Prodn, yoy	-7.20%	2.00%	2.00%	5.00%	6.00%	2.00%	2.00%	8.00%	8.00%
Wire[2]	6000	5778	5951	6130	6375	5778	5963	6195	6511
Tube & Pipe[3]	3000	2837	2907	2980	3114	2990	3068	3158	3365
HDG[3]	28000	26474	27136	27814	29066	26474	27162	27964	29795
Congalv[4]	33500	36505	37600	39010	40863	36606	37997	39725	41632
Alloys[5]	18500	18993	19500	20312	21362	19030	19639	20759	21977
Battery[6]	2000	2060	2122	2196	2295	2068	2145	2230	2331
Chemicals[7]	10000	10300	10609	10980	11474	10243	10578	10984	11596
TOTAL	**101000**	**102947**	**105825**	**109423**	**114549**	**103189**	**106551**	**111015**	**117207**
growth yoy		**2%**	**3%**	**3%**	**5%**	**2%**	**3%**	**4%**	**6%**
SADCC GFCF growth yoy	**6**	**6%**	**20%**	**20%**	**20%**	**8%**	**50%**	**50%**	**50%**
Zinc Use[8]	11000	11660	13992	16790	20148	11880	17490	20988	25186
Africa GFCF growth yoy	**5**	**6%**	**15%**	**20%**	**20%**	**5%**	**10%**	**25%**	**25%**
Zinc Use[8]	145000	153700	176755	212106	254527	152250	169070	220944	265133
TOTALS AFRICA ZINC	**257000**	**268307**	**296572**	**338319**	**389225**	**267319**	**293111**	**352947**	**407525**

Assumptions

1	Estimates by Standard Bank
2	T&P exports exchange rate & steel price dep.
3	Expect growth to track at previous GFCF & IP growth
4	Growth linked with current GDP, GFCF, IP
5	Zn alloys stagnant, brass grows at GDP
6	Battery growth depends upon GDP
7	Chemicals continues to grow at GDP+
8	Assumes 90% to galvanizing