FUND FOR RESEARCH INTO INDUSTRIAL DEVELOPMENT, GROWTH AND EQUITY (FRIDGE)

NEDLAC

STUDY TO PREPARE VARIOUS SOUTH AFRICAN MANUFACTURING SECTORS FOR EFFECTIVE NEGOTIATIONS FOR THE PROPOSED SACU/CHINA AND SACU/INDIA TRADE NEGOTIATIONS.

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METALS

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LIST OF ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AD	Anti-dumping
AIL	Automatic import license
Al	Aluminium (atomic symbol); also aluminium (American term)
AQSIQ	Administration of Quality Supervision, Inspection and Quarantine
ASEAN	Association of South East Asia Nations
Asgi-SA	Accelerated and shared growth initiative for South Africa
BBBEE	Broad-based black economic empowerment
BEE	Black economic empowerment
BIS	Bureau of Indian Standards
BTP	Bio-technology Park
CCP	Chinese Communist Party
CEPA	State Environmental Protection Agency
CKD/SKD	Completely-knocked down/semi-knocked down
CST	Customs sales tax
CVD	Countervailing duty
Cu	Copper (atomic symbol)
DEPB	Duty entitlement pass book
DFRC	Duty free replenishment certificate
DGFT	Director General: Foreign Trade
DME	Department of Minerals and Energy
EBITDA	Earnings before interest, tax, depreciation and amortisation
EHTP	Electronic hardware technology park
EOU	Export-oriented unit
EPCG	Export promotion capital goods

ABBREVIATION	DESCRIPTION
EU	European Union
EXIM	Export-import
FDI	Foreign-direct investment
Fe	Iron (atomic symbol)
FICE	Foreign invested commercial enterprise
Fob	Free on board
FTA	Free trade agreement
FTWZ	Free Trade and Warehousing Zone
Ha	Hectare (10 000 m^2)
HACCP	Hazard analysis and critical control points
ISO	International Standards Organization
JV	Joint venture
LNSS	Low-nickel stainless steel
MFN	Most favoured nation
MOFCOM	Minister of Commerce (China)
MOU	Memorandum of understanding
MRP	Maximum retail price
Mtpa	Million tonne per annum
NAMA	Non-agricultural market access
Nes	Not elsewhere specified
Ni	Nickel (atomic symbol)
NTB	Non-trarif barrier
Pa	Per annum; per year
PGM	Platinum-group metals
PTA	Preferential trade agreement
QR	Quantitative restrictions
SACU	Southern African Customs Union

ABBREVIATION	DESCRIPTION
SECCP	Sustainable energy & climate change project
SEZ	Special Economic Zone
SME	Small and medium-sized enterprise
SOE	State-owned enterprise
STP	Software technology park
TBT	Technical Barriers to Trade
TNT	Technical barriers for trade.
The dti	The Department of Trade and Industry
Tpa	Tonne per annum
TPR	Trade policy review
UNCTAD	United Nations Conference on Trade and Development
USD, US$	US dollar
USTR	United States Trade Report Representative
WTO	World Trade Organisation

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EXECUTIVE SUMMARY

1.1. Rationale

1. This report is in preparation of bi-lateral trade negotiations with China. It provides an introduction to the improving business and trading environment in China, as well as an overview of the key attributes and growth prospects of the metals sectors. It also provides the background to China's approach to trade relations, as well as macro-economic, growth, development and competitive conditions relevant to the metals sectors.

1.2. Policy

1. China has a well functioning policy formulation and implementation mechanism in its successive five year plans that among others ensures continuity and policy stability and transparency. South African economic development policy making process appears to be trapped in the problem statement stage. South Africa is required to move forward to policy functionality encompassing strategy, its resourcing and implementation.

2. The Chinese metal industries are in a robust growth phase as the outcome of a previously devised, well articulated and resourced sector strategy. South Africa's metal sector policy, in contrast, is still under wraps.

3. As South Africa is playing catch up in the policy, strategy and implementation stakes; and as industrial policies and strategies have a decisive impact on competitiveness when engaging the likes of China, South Africa is at a disadvantage in entering into trade agreements in this context.

4. China needs to adapt to WTO requirements that will water down its existing battery of subsidies, incentives and other means of industrial development support. With South Africa embarking on the upgrading of its incentives, some convergence of the impact of the respective sets of support may happen somewhere in future.

1.3. Interventions

1. The trading environment of the metal sector needs to be evaluated against the backdrop of certain aspects that cut across sectors. In many respects they pose serious threats in respect of China as an exporter or for exporting to China. These aspects can be summarised as follows:

    - The Chinese economic system in transition from a communist to a social market economy. Pockets of the economy are “marketised” (open to market forces and private sector participation), but a mixture of market conditions and state intervention apply in many others. The metal sector cannot be considered as marketised. WTO membership imposes requirements for China to become fully market orientated.

    - There is intensive involvement by the state (central, provincial and local) in capital formation. Industries are empowered with direct financing, preferential interest and tax rates, subsidies contingent on exports and favourable financing of target industries.

    - Banks are state controlled with state directives in their lending .They are bailed out when bad debts become a burden. With very high levels of savings and gross domestic investment, financial system risk of exposure to external debt finance is reduced to some extent.

    - Chinese government officials intervene in the economy in a way inconsistent with market principles, essentially pursuing internal development targets set by different tiers of government. Subsidies are non-transparent. Irrational investment lead to the creation of unsustainable and excess (global) capacity while pricing becomes non-transparent and divorced from market discipline due to of interventions and support. Development initiatives are often pursued by officials from regional or local authorities in competition with their inter-regional counterparts. WTO membership imposes requirements for China to become fully market orientated and do away with interventions. However, progress seems to be slow.

    - The undervalued Chinese currency contributes considerably to competitiveness in international markets.

1.4. Metals

1. The metals sectors of China and South Africa in a global context comprise the following relative production volumes and market shares: -

Table 1.4-1: Key Figures for Metals Sectors in China and South Africa (2004/2005)

METAL SECTOR	WORLD	CHINA		SOUTH AFRICA	
	VOLUME [Mtpa]	VOLUME [Mtpa]	SHARE OF WORLD [%]	VOLUME [Mtpa]	SHARE OF WORLD [%]
Steel	1 129	349,4	30,9%	9,5	0,8%
Aluminium	31,2	7,2	23,1%	0,830	2,7%
Copper	15,8	2,04	12,7%%	0,087	0,6%
Nickel	1,500	0,071	4,7%	0,042	2,8%

2. China has embarked on an unprecedented growth and development path, supported by a mix of market–oriented policies, very high levels of investment in industrial, developmental and infrastructure projects, targeted initiatives and sectors using state-owned enterprises with ready access to capital, combined with the privatisation of ineffective enterprises to management entrepreneurs, as well as rapid large-scale urbanisation, increasing per capita wealth levels and a growing middle-class of consumers, resulting in demand for products from construction and consumer products industries with a virtuous circle of ever-increasing supply from globally-competitive industries.

3. China's steel industry is very important for the Chinese economy and its development over the last decade reflects recent trends across China's heavy industries. State funds were used to upgrade and expand SOE melt shop and mill facilities, while foreign steel firms were attracted by favourable investment policies to establish operations and transfer technologies to China

4. The steel industry in China has more than tripled its outputs in the past 14-years, from 90 Mtpa in 1993 to the present level of 349 Mtpa. China is the dominant steel producer, more than twice the size of 2nd ranked Japan, and it is responsible for the bulk of the volume growth globally in the steel industry. China recently became a net exporter of steel in volume terms, although its exports are mainly in lower-end long

products, while it still imports higher value flat products and steel sheet. China is a large importer of iron ore for 36% of its steelmaking raw materials requirements.

5. China is the top- ranked or highly ranked producer in a number of metals and commodity industry sectors. In the manufacturing industry, it has become the workshop and the factory of the world. China is also moving higher up the value-chain of production and its ambition is to market more high-tech products to the world. China's exports of high-tech products into the USA already exceed that of Japan. It is a priority for China to ensure that its high-tech exports should not be jeopardised.

6. The aluminium industry in China has more than tripled its production in the past nine years, from 2 Mtpa in 1997, to more than 7 Mtpa presently. China has become a net exporter of aluminium, but it is dependent upon some 50% of its raw materials in the form of alumina. In reaction to relatively high price levels of alumina, numerous new projects and expansions were announced that may lead to short-term over-supply and long-term depletion of reserves, prompting the government to introduce stricter policy and control measures to rationalise future capacity roll-out.

7. China has become the largest copper consuming country in the world and it is the 2nd ranked copper producer, but can only meet 25% of the demand for metal for its downstream manufacturing sectors, supplying the construction, electrical, industrial and transport applications. It is, however, an exporter of copper products.

8. China supplies some 50% of the nickel volumes for captive applications in its own stainless steel manufacturing sector. In an attempt to avoid the high cost of imported nickel, it opted for substitution by low-nickel stainless steel grades, but these grades are limited to non-industrial applications only and the strong demand for nickel is expected to be sustained.

9. The strong growth in demand for consumer products, as well as the high levels of investment in industrial and infrastructure projects, from China and neighbouring India, all contributed to a high level of demand for metal and energy input commodities, resulting in an upward shift in commodity price trends, which may become a long-term structural adjustment if the demand levels are sustained.

10. China's industrial policies are aimed at rationalising and consolidating production capacities into large-scale, more efficient and competitive operations, as well as increased control over the exploitation of reserves and promotion of materials recycling – by means of the "circular economy" – and a "scientific" approach to development,

which strives for the optimal positioning of new projects relative to available raw materials and energy resources, as well as least environmental impact.

11. It is difficult to predict the upside limit or the sustainability of China's development path in future, as it continues with its programme of urbanisation of a further 300 million of its people over the next 15 years, at a rate of constructing the equivalent of a major new city for 20 million people per year.

1.5. Cost Competitiveness

1. On the macro-level China has a competitive advantage on South Africa in respect of labour costs while its companies benefit from lower capital costs. In terms of energy cost, South Africa attains the top ranking in the world but the economy is also highly energy intensive and is faced with future real increases in energy prices.

2. Benchmarking the global cost structures of steel production, with reference to published statistical data, reveals that:

    - South Africa has a 20% higher average selling price than China, with 10% lower operating costs, although general overheads (including labour costs) are similar. Profitability of the South African steel industry is substantially higher, at an EBITDA of US$395/t compared to US$241/t in China.

    - Per US$1,00 of turnover revenue, South African steel manufacturers require: US$1,73 of new steel plant as opposed to US$1,18 in China. The capital cost per plant (as fixed assets per tonne of steel produced, in US$/t) is 40% lower for China, depreciation charges are 30% less and interest payments only ½ of that paid locally. Asset productivity (revenue turnover earned relative to fixed capital cost) is accordingly 30% higher in China. South Africa is thus at a severe disadvantage regarding capital related costs.

    - South Africa's total operating costs, on the other hand, are 45¢ per US$1,00 in turnover compared with China's 60¢. This cost advantage is on account of South African raw materials and energy being low at 36¢ (compared to China at 49¢) and ; plus 9¢ of overheads of which 5¢ is labour costs and 4¢ general & other costs (compared to China with 11¢ of overheads, of which 5¢ labour and 6¢ general & other costs).

- Chinese headline earnings profitability (as EBITDA) is lower at only 61%, due to 17% lower selling prices, 24% higher raw materials costs and 10% higher operating cost.

- Downstream iron and steel industries in South Africa are at a 20% cost disadvantage in respect of material inputs compared to their Chinese counterparts. The Chinese government generally supports the production of products that are important inputs for the downstream manufacturing industry. Policy-makers have used SOEs in the heavy industry sector to reduce key costs of production for the export-orientated manufacturing sector. Although this point cannot be categorically substantiated in the case of steel manufacturing, it should be noted that such opportunities are present in terms of SOE's active in steel production and electricity supply. At the other end of the scale, South African downstream industries are faced with import parity pricing practices starting with a cost disadvantage for export marketing of manufactured products**.**

1.6. Trade

1. Imports from China were almost five times higher in 2005 than 2000, but this growth was from a low base. Imports from China nevertheless amounted to 6,3% of all imports from the world of upstream iron and steel products in 2005. China supplied 19,4% of South African imports of downstream iron and steel products in 2005, compared to 8,2% in 2000. Import penetration by China is prominent in a number of 4-digit codes, namely HS 7303 (97% of all imports); 7322 (56%); 7325 (41%); 7317 (38%); 7314 (34%); and 7324 (31%).

2. Imports of copper and products almost trebled from 2000 to R947 million in 2005. China supplied 10% of imports in 2005 as opposed to 3,6% in 2000. Imports are mainly in the 4-digit codes of HS 7412 (66% from China) and 7411 (44%), with occasional imports in HS 7418.

3. China is a consistent importer of nickel plates, sheet, strip and foil from South Africa, taking in almost 50% of South Africa's exports thereof in 2005. Exports of aluminium plates, sheets and strip to China increased significantly in 2003 and 2004 and remained at the higher level in 2005.

4. Imports of downstream manufactured metal products of chapters 82 and 83 and computing and office equipment of chapter 84 show significant import penetration by Chinese products.

5. The trade values in metals products, as well as the trade mix for South Africa, can be summarised as in the following tables:

Table 1.6-1: Value of Exports and Imports of Metal Products for South Africa (2005)

AMOUNTS [R million]	WORLD		CHINA	
HS CODE	EXPORTS TO	IMPORTS FROM	EXPORTS TO	IMPORTS FROM
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	33 114	3 182	795	200
H73: ARTICLES OF IRON AND STEEL	4 527	4 394	27	853
H74: COPPER AND ARTICLES THEREOF	1 866	947	215	97
H75: NICKEL AND ARTICLES THEREOF	1 600	801	425	2
H76: ALUMINIUM AND ARTICLES THEREOF	10 819	1 040	553	88
TOTAL: METALS INDUSTRIES	51 927	10 364	2 015	1 240

Table 1.6-2: Trade Mix for Metals Products per HS Chapters for South Africa

COMPARISON TO COLUMN TOTAL [%]	WORLD		CHINA	
HS CODE	EXPORTS TO	IMPORTS FROM	EXPORTS TO	IMPORTS FROM
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	64%	31%	39%	16%
H73: ARTICLES OF IRON AND STEEL	9%	42%	1%	69%
H74: COPPER AND ARTICLES THEREOF	4%	9%	11%	8%
H75: NICKEL AND ARTICLES THEREOF	3%	8%	21%	0%
H76: ALUMINIUM AND ARTICLES THEREOF	21%	10%	27%	7%
TOTAL: METALS INDUSTRIES	100%	100%	100%	100%

6. China is committed to substantial annual reductions in its tariff rates and immediately after its WTO accession in 2002, reduced its overall average tariff rate from over 15% down to 12%.

7. China's applied tariffs are 15%, but based on CIF values, resulting in an average basic tariff of 18%. This is compared to South Africa's applied tariff based on FOB values, with an average applied rate for industrial products of 11,4%.

8. China does not pose problems directly regarding non-tariff barriers. Licensing requirements are typically aligned with industry sector policies and control measures in

general. In practice, however, efforts to access Chinese markets are often frustrated in different ways, rendering JV partnerships the most efficient way to gain entry.

1.7. Recommendations from a defensive position

1.7.1. From a cross cutting perspective

By considering that:

- The Chinese economic system is in transition from a communist to a social market economy.
- Pockets of the economy are “marketised” but a mixture of market conditions and state intervention apply in many others including the metal sector.
- The state (central, provincial and local) participates in capital formation and directs bank financing.
- Preferential interest and tax rates, subsidies contingent on exports and favourable financing of target industries apply.
- The Chinese government officials intervene in the economy in a way inconsistent with market principles.
- Subsidies are non-transparent.
- Irrational investment practices lead to the creation of unsustainable and surplus capacity.
- Pricing is non-transparent and divorced from market discipline due to interventions and support.
- China is obliged to do away with trade related investment measures but that progress seems to be slow.
- The undervalued Chinese currency contributes considerably to competitiveness in international markets.
- China tend to marginalize the manufacturing sectors of developing countries especially those of Africa.

- The Chinese economy is 9 times South Africa's and its population 28 times that entails a huge difference in capacity to trade in China's favour

- NAMA introduces a degree of uncertainty with respect to future MNF tariff levels that may render bi-lateral concessions pre-mature

the cross cutting threats that it poses with regard to trade is reason to resist the granting of preferential access to Chinese products in the SACU market at least until such time as its economy becomes fully marketised, it fully complies with WTO obligations and a market determined exchange rate has replaced the undervaluation of its currency.

These threats also manifest themselves in a sector specific manner.

Sector specific aspects

1 .Because:

- China has a clearly articulated development strategy for its metal sector that proves itself in the growth performance of the sector while South Africa is still struggling to put a strategy together.

- China embarked on an aggressive capacity building and expansion programmes in the metals industries, such as steelmaking and aluminium, recording growth rates of exceeding 200% over the past seven to ten years. In the steel industry specifically, China most recently recorded an annual expansion in production of 28%, resulting in production levels exceeding Japan, the 2nd ranked country, by a factor of 2 ½-times;

- China has become a net exporter in steel and aluminium products. Given that these trade flows are from a very high baseline, any marginal increase in production can be expected to translate into substantial increases in exports relative to previous volumes;

- There is an apparent inability (alternatively, a reluctance) of the Chinese officials across the government tiers to calm down run-away capacity expansion;

- China is making inroads in the South African market for intermediary and downstream metals industry products, rendering some tariff protection by South Africa necessary for local producers. Trade between China and South Africa is progressing from a low base but China is posing a serious threat to down stream production of metal products with a 20% cost advantage over South Africa in the supply of iron and steel inputs.

- Penetration of down stream metal products exports by China in South Africa's imports are rapid without the benefit trade preferences

- South Africa present positive trade position in the Chinese market with certain metals products may suffer some deterioration;

- There is a threat of marginalisation of domestic incumbents in the markets of third countries, due to aggressive increases in competition from Chinese exports;
- The South African metal sector is a large employer and changes in its fortunes would have important socio-economic implications.
- China's overwhelming size and inherent competitiveness enable it to marginalise the manufacturing industry of smaller economies.

the question can be raised why China would need trade concessions in the light of the access it is achieving in the South African metal market. South African metal products are increasingly threatened by imports from China. Trade negotiators should thus resist the granting of concessions to China in metal products. **No bi-lateral concessions on metals products should be contemplated in favour of China.**

In view of the removal of duties on iron and steel of Chapter 72, South Africa does not have a defensive position in respect of these products.

Should any offers be contemplated they need to be worked out in conjunction with the constituents of the metal sector. Especially treatment of the downstream segment of the metal industry may require more investigation than the Terms of Reference of the present study provided for.

Ancillary aspects

The South African metals industry's pricing issues require resolution on an industry-wide scale, based to some extent on the following considerations:

- The primary defensive strategy for any business is about the threshold marketing factors of price, quality and service (which mirror the fundamentals of project management, being "QTC" – quality, time and cost). Of these factors, pricing became a prominent issue in the local steel market in the recent past. Import parity pricing ("IPP") – or as described by the steel industry as international pricing policy – resulted in higher prices for the local market than for export customers. This seems to be the situation in most steel producing countries

- Pricing should be a strategic issue for the whole industry value chain. It is an acknowledged business principle that excessive profits – starting with price levels being too high – tend to attract competitors. Given this, pricing can therefore become part of a defensive strategy.

- For a better defensive strategy, a number of issues have to be refined. The investment philosophy and propensity should be improved, with upward adjustments, for capacity creation at international standards. Investment support and incentives, as well as financing solutions, are inadequate to stimulate higher levels of investment in productive capacity.

1.8. Recommendations from an offensive position

1.8.1. From a cross cutting perspective

Opportunities of a cross cutting nature lie in the sustained high growth in its economy that makes China a prominent modern day wealth creator. South Africa shares in the prosperity that is generated by the Chinese economy and should endeavour to continue to do so.

Competition and cooperation:

- It is a contention of this report that the South African metals sectors are faced by strong competition from the dominant Chinese sectors, in the international and in the local market. This situation requires a twofold approach. First and foremost, South African companies should be prepared to compete directly with their Chinese counterparts in any marketplace; however, they should also recognise the Chinese situation as an opportunity to cooperate and be willing to engage in business and trade – as is the case already – as well as possibly in joint-projects and shared investment in a cooperative manner.

- To compete *and* cooperate is not a new concept, and is not a unique challenge for the metals industry. It is a trade-off that has become the modern-day reality, even for many large countries and companies. Smaller countries or companies cannot escape this challenge and should develop ways cope with it. While facing each other in the marketplace, competing directly with products, brand names, quality, service levels, value-for-money and customer loyalty, many of these competitors also cooperate closely to mitigate high risk levels, in research and

development, technology platforms, capital intensive production capacities and generic input costs.

- The consideration is that the notion of compete *and* cooperate creates a new mindset, moving away from an over-reliance on defensive strategies, into a mode of focusing on offensive strategies as well.

1.8.2. From a sector specific perspective

Considering that:

- China's metals market is on a strong growth path
- its growing metals market has offered an increasing number of export opportunities to South African business.
- China is increasingly becoming a net exporter of steel and aluminium
- Trade in metals between South Africa and China is still in favour of South Africa.

It therefore follows that trade concessions should be requested from China. Although the Chinese duties on metals are relatively low at mostly 4% to 8%, duty-free access to the Chinese market would assist South African producers to improve their competitive position relative to competitors in other countries. In the case of iron and steel of Chapter 72, where South Africa now has zero duties, it is essential that China also offer duty-free access for our products to their market.

However, opportunities for South African metal exporters outside primary and intermediate products are limited and any request for concessions should be drafted in conjunction with the industry and mindful of the risks inherent in counter requests by China that trade preferences be granted to its exports of downstream products..

Companies that contemplate entry of the Chinese market should preferably conclude a partnership with a Chinese counterpart.

The following issues may complicate negotiations:

- The difference in competitiveness arising from interventions by the Chinese government.

- The undervalued Chinese currency.
- Apparent limited new opportunities for South African exporters in the more labour intensive downstream products.
- The barriers posed by non-tariff measures and protective practices.
- The inherent asymmetry to benefit from trade due to the (economic) size difference in favour of China.
- China's massive increase in production capacity in various metals and it, in fact, becoming a net exporter.

2. BACKGROUND

2.1. OBJECTIVES OF THE STUDY

The Southern African Customs Union ("SACU") and China expressed the desire to enter into a trade agreement. NEDLAC launched a study into the implications of the envisaged agreement for a number of South African manufacturing sectors in preparation of stakeholders for the coming negotiations. It is accepted that the trade agreement with China could be selective in the format of a Preferential Trade Agreement (PTA) or it could be a Free Trade Agreement (FTA).

The primary objectives of the study are to obtain an insight into the business environment of doing business in China, and the attributes of its textile, clothing, leather and footwear sector as well as the stainless steel, metals, automotive and chemical industries. Threats and opportunities are to be identified and defensive and offensive strategies developed with regard to the envisaged trade deal.

2.2. TRADE AGREEMENTS

In June 2004 South Africa granted China market economy status. China and SACU agreed to encourage and support mutual trade and investment, to expand cooperation in areas of mutual economic interest and to launch FTA/PTA negotiations. No time frame was set out for the negotiations.

China has followed a similar path to that of the large powers such as the EU and US in the trading system that have looked beyond the multilateral trading system to conclude bilateral deals furthering their national commercial interests. China is pursuing an extensive number of FTA's and brought a number of impressive ones to conclusion since its accession to the WTO in 2001. The Chinese are pragmatic in their approach to bilateral economic agreements, recognising differences across economic partners and allowing for linkages along conventional trade interests. The CEPA with Hong Kong focuses on trade in goods, cross border investment and financial activities, while the agreements with Australia and New Zealand will cover a number of wider areas.

Currently China's FTA target partners are selected on a regional basis. From a long-term point of view, China must secure a place in the rising trading block within Asia. This has been achieved in the Asia Pacific-and the ASEAN agreement. China's next move will be to begin official negotiations with Japan and Korea with the aim of creating an East Asian FTA bringing together China, Japan, South Korea and the ASEAN member states (ASEAN + 3). In this regard, China will be aiming to become the focal point of an East Asian free trade zone that will effectively rival others blocs such the EU and NAFTA (North American Free Trade Area).

China is seeking to penetrate other regions by signing FTAs with strategic countries in each region. For example China's FTA with Chile is seen by many as a gateway to other Latin American countries and indeed the region. As such China's impending FTA/PTA / with SACU can be seen in the same light. Although China has economic and trade relationships with many Africa countries, FTA/PTA negotiations with SACU are the first for China on the African continent.

China's strong bilateral focus in its trade agenda has also been strategically oriented in order to secure commodity supplies. The rate of growth of the Chinese economy requires a constant supply of raw materials (SACU, Australia, and GCC).

By becoming a member of the WTO China agreed to the core principles governing the body. Undertakings by China require adherence to key agreements of the WTO transparency and independent reviews of administrative decisions, technical barriers to trade; sanitary and phyto-sanitary measures; trade-related investment measures (TRIMS) Intellectual Property Rights (TRIPS); subsidies; import licensing; rules of origin; customs valuation; distribution services; non-tariff measures; state-trading enterprises; price controls; and safeguard measures. Compliance to these commitments requires substantial reforms.

Market access to China was greatly improved when China agreed to reduce tariff rates. The tariff rates were reduced and are set out in China's Goods Schedule. Down phasing of tariffs should be substantially completed by December 2007. China has selected to position itself with other developing countries and more specifically with the G-20, in the Doha negotiations.

2.3. MACRO MATTERS

China started with market orientated reforms in the 1980's to reduce the constraints on growth of its rigid communist economy. The ruling Chinese Communist Party (CCP) remains in firm control of reforms and its vision is for China to become a "socialist market economy". A FTA/PTA between SACU and China will thus be a trade deal between two different economic systems. Implications arise for cost competitiveness as determined under market conditions in South Africa and non-market conditions in China

The reforms that drive economic growth and transformation in China are the (1) rationalisation of the State Owned Enterprises (SOEs); (2) the regulatory framework of markets; and (3) the internationalisation of the economy.

The norm for growth in GDP in recent years came to more than 8% for China and 4% for South Africa. China is expected to grow at between 7 and 8% in future. South Africa has a vision of 6% growth. The population of China is about 23 times and its GDP 9 times that of South Africa. However it's GDP per capita is more than 3 times less than South Africa's. China is catching up as one of the largest economies of the world. In 2004 it was the 7th largest economy and five years time it can be 4th.

China is able to sustain a high growth rate with the help of an extraordinary high investment ratio equal to 40.2% of GDP. Foreign direct investment is at the core of the internalisation of the Chinese economy. Incentives and subsidies that China offers to foreign investors are important promoters of foreign investment. The expansion in its foreign trade opened the Chinese economy at an unprecedented rate. Whereas the sum of exports and imports of goods and services amounted to 38.1% of GDP in 1998 it rocketed to 70.8% in 2004.

The growth in merchandise trade and foreign direct investment are directly related. Foreign investors target China's comparative advantage in low cost labour to supply world markets. Foreign invested companies ("FIEs") increased their share of Chinese exports from 20% in 1992 to 54.8% in 2003. The share of SOEs in exports fell from 46.7% in 2000 to 31.5% in 2003. The FIEs is also responsible for the change in the export structure from primary to

manufactured goods. In 1985 primary exports was 50% of merchandise exports while in 2003 manufactured goods accounted for 92% thereof.

Total employment in the Chinese economy increased from 740 million in 2000 to 760.million in 2003 as the result of employment by private enterprise.

Accession to the WTO is set to change the present dispensation with regard to incentives. China is now committed to implement a comprehensive programme according to a set time table to prevent appeals to the WTO by trade partners. However, tax reforms to eliminate incentives as the result of accession to the WTO are expected not to come into force before 2007. Membership of the WTO is to benefit China because its exports will now have easier and more secure entry into foreign markets with the clothing industry to benefit immediately with the termination of the Multi-fibre Agreement.

In the mean time it is suspected that the investment that is taking place may remain less disciplined than would be the case in an environment of free capital markets. The inefficient SOE-sector poses a threat to the banking sector. Banking is still overwhelmingly state owned and the overwhelming majority of bank funds are being lent to state linked firms. Rationalisation of the banking sector included steps to allow banks to operate on a more commercially oriented basis. Solvency ratios were improved by state capital injections and by shoving bad loans into government established asset management companies. These actions in effect constitute a subsidy on the cost of capital. Short term interest rates in China is about half of that in South Africa. The real interest rate is very low and possibly a contributing factor to the high investment ratio.

Chinese companies thus benefit from an uneven playing field. In the mean time rapid expansion of capacity may lead to excesses that may upset the markets of trading partners in the absence of market dictated investment discipline in China. However, a strong plus point of the Chinese economy is its investment in human resources as a long term platform for sustained growth. A high proportion of students is enrolled in engineering and management sciences.

Reforms that introduced private enterprise into manufacturing reduced the importance of SOEs in production from more than 80% of the output before 1980 to 37% in 2003... They are mainly found in heavy industry. The government follows aggressive strategies to improve the efficiency of SOEs through closures, mergers, sale of ownership and by allowing SOEs to shed redundant labour. The drive towards efficiency among SOEs, by necessity, has a serious socio-economic fall out. It is said that about 30 million work places became redundant between 1998 and end 2004. These workers and their families lost extensive

social security benefits. As a consequence the government is trying to introduce a new social security system to complement SOE reforms.

The South African production structure conforms to that of a developed country. The Chinese economy apparently has a production structure of its own with inordinately high dependence on manufacturing and a low contribution by the services sector. The latter would be indicative of underdeveloped financial, business and commercial (retail) services and is commensurate with a society with a low per capita income.

2.4. BUSINESS ENVIRONMENT

Over a sustained period of two decades, China maintained the stability of its economy and industries, and recorded unprecedented growth rates and a scale of development, despite transforming from a central planning system to a market economy. This can be attributed to the government's ability to set and guide the planning process of economic reform. Investment is the main driver for growth.

China is the world's third largest country, with a geographical area of 9.6 million kilometres square and a population of approx. 1.3 billion people. The country consists of 23 provinces, 5 autonomous regions, 4 municipalities, and 2 special administration regions directly under the Central Government. The State Council is responsible for exercising unified leadership over the local state administrative bodies and regulates the division of power and the functions of the state administrative organs at the central level and the provincial, regional and municipal levels. The bureaucratic hurdle is acute when it comes to starting a business, licensing applications and applying for credit. Foreign investors are also wary of a lack of transparency and high levels of corruption.

Uniform personal income taxes on locals and foreigners apply ranging from zero to 30% differentiated over nine levels. Concessions serve to reduce the flat tax rate on profits.

For profits in SEZs, ETDZs, EPZs and the western region the income tax rate is reduced to 15%. The 15% tax rate may also apply to investment in transport-infrastructure and some other activities while refunds, tax holidays and allowances apply to targeted activities. A capital gains tax is in force. South Africa and China have signed an agreement for the avoidance of double taxation.

Financial sector reform is ongoing, having being identified as a key area for promoting economic growth and attracting FDI. The banking sector suffers from non-performing loans and government strives to improve the situation in order to avoid a banking crisis.

The Chinese financial system is highly regulated and relatively underdeveloped. A number of international banks have been permitted to open branches in China with only a few being permitted to carry out branch functions in Shanghai and Shenzhen. Participation in the financial sector has been minimal. As part of China's WTO commitments all remaining restrictions on local currency transactions will have to be removed and foreign banks will be able to conduct transactions in yuan renminbi with both Chinese companies and individuals. The rate of reform is slow.

The Chinese stock markets have been described as relatively underdeveloped and in need of internal reform.

The transport infrastructure in China is undergoing improvement, particularly with regards to port development and capacity and the improvement of road and rail networks. China has embarked on several power generation and hydro electric projects and has also urged foreign companies to become involved in the infrastructure development process in the country.

There are many cases where foreign products and brand names have been copied by unscrupulous Chinese operators. Registering a brand name, logo, patent, trademark, and copyright is a priority. Since joining the World Trade Organization, China has strengthened its legal framework and amended its IPR laws and regulations to comply with the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Despite stronger statutory protection and committed officials measures taken have not been sufficient to deter massive IPR infringements effectively

2.5. TRADE AND INDUSTRIAL POLICIES

In its latest five year plan the Chinese government has undertaken to increase investment in rural construction; development of the middle and western areas of the country; social causes; science and technology; environmental protection; and infrastructure construction. The Chinese leadership is aware of the growing disparities between the wealth of the urban and rural areas, and endeavours to address these concerns.

A primary objective of its trade policy is to strengthen China’s position vis-à-vis trade with the developing world. Presently China is challenged to develop high-technology products locally and is heavily reliant on imported technologies. In order to address this perceived shortfall, it is promoting the development of its high-technology sectors. China is moving to a position where it will potentially be able not only to compete with the developed world in terms of

high-technology goods and services, but also simultaneously supply them with all the low-technology goods it currently provides.

Resources companies have strategically positioned themselves vis-à-vis China's booming commodity demand. However, it appears that the Chinese leadership is wary of over reliance on foreign companies and governments for its supplies of raw materials. The past two years have seen an incredible growth in China's direct interaction with natural resource rich regions and countries. Prominent among these are South America and most recently, Africa.

China is extracting significant amounts of raw materials from Africa and has also increasingly been promoting Africa as an investment destination for Chinese multinational corporations. There has been substantial investment in for example oil, construction, telecommunications, and transport and energy assets. A side effect of China's industrial or trade policy has been the further competitive marginalisation of Africa's manufacturing sector. Unable to compete against lesser priced Chinese imports, African economies continue to move further down the manufacturing value-chain. This further entrenches the lack of industrialisation amongst the continent's economies.

China is pursuing its various trade and industrial objectives through a number of means, incentives and initiatives. China relies heavily on foreign investment to build up its industrial sector, especially export manufacturing, high technology enterprises and investment in the central and western regions.

China is attempting to achieve its economic objectives by providing direct support for number of specific industries. Prominent among these are the automotive, agriculture, energy and transport industries. Many of these often appear in reference to certain "pillar industries" which receive direct support from the state. These industries are offered a large degree of protection by the PRC government and some concerns have been raised about the lack of transparency and access in these industries.

Membership of The World Trade Organization (WTO) has been a significant target of its strategy. Within the WTO, and through various bilateral agreements pursued since 2001, China has been trying to acquire Market Economy Status (MES) from as many countries as possible. China is not recognised as a market economy by the US, a status that makes it easier for trade actions to be brought against Chinese firms. Dissatisfied by what it sees as discriminatory treatment and fearful that this status could make it vulnerable to Western protectionism, the Peoples Republic has embarked on a comprehensive campaign in the international community to gain MES

China is supporting its manufacturers and industries through the retaliatory mechanisms of the WTO. An example is extensive use of the anti-dumping mechanism to protect its chemicals industry against imports from South Korea, Japan, the United States, and even South Africa.

China is inclined to utilising political influence to support its trade and industrial policies. The most prominent has been the recent close political interaction with Africa and the release of its “Africa Policy” in January 2006. China has also used this appeal in South America, where Venezuela has stated openly a preference for a relationship with China over the US. These overtures are sometimes shored up by providing access to loans, technical assistance, expertise, and physical infrastructure development to countries that are dissatisfied with the assistance received from Western institutions.

China has relied on six types of industrial policy tools and incentives: central government financing and planning; empowering key industries with direct financing; preferential interest and tax rates and favourable financing for target industries; infant industry (trade) protection; pricing policies; and administrative means. In addition to these six tools, there are at least two additional important measures. One is the systematic guideline to channel FDI into desired industries. Based on these guidelines the government grants licenses and approval of investment projects. The other is the various restrictions imposed on foreign ownership, business ranges, and geographic scope of foreign-funded enterprises.

2.6. CONCLUSIONS ON CROSS CUTTING ISSUES

Although the rapid growth and size of the Chinese economy offer opportunities, a number of threats of a cross cutting nature stand in the way of opening the SACU market to China on a preferential basis.

These threats are:

1. The Chinese economic system in transition from a communist to a social market economy. Pockets of the economy are “marketised” but a mixture of market conditions and state intervention apply in many others. The metal sector cannot be considered as marketised. WTO membership imposes requirements for China to become fully market orientated.

2. There is intensive involvement by the state (central, provincial and local) in capital formation. Industries are empowered with direct financing, preferential interest and tax rates, subsidies contingent on exports and favourable financing of target industries.

3. Banks are state controlled with state directives in their lending. They are bailed out when bad debts become a burden.

4. Chinese government officials intervene in the economy in a way inconsistent with market principles. Subsidies are non-transparent. Irrational investment lead to the creation of unsustainable and excess (global) capacity while pricing becomes non-transparent and divorced from market discipline due to interventions and support. WTO membership imposes requirements for China to become fully market orientated and do away with interventions. Progress seems to be slow.

5. The undervalued Chinese currency contributes considerably to competitiveness in international markets.

6. Non tariff barriers and bureaucracy prevail that discourages trade.

7. The Chinese authorities are inclined towards the application of WTO trade remedies

8. Despite a willingness to comply with WTO requirements contravention of intellectual property rights remains a huge problem.

9. Penetration of Chinese exports into the South African market is rapid. This questions the need for preferences as implied by a bi-lateral trade agreement.

10. The Chinese economy is 9 times South Africa's and its population 28 times. The difference in capacity to trade is to China's advantage.

11. The Chinese export thrust has the side effect of marginalising manufacturing activity in other and especially African countries.

12. The applied tariff rates of some product groups will be subject to reduction over a period of time in terms of NAMA (non-agricultural market access) if the Doha Round is successfully concluded. NAMA introduces a degree of uncertainty with respect to future MNF tariff levels that may render bi-lateral concessions pre-mature.

The cross cutting threats are sufficient grounds to resist preferential trade concessions to China at least until such time as it fully complies with WTO obligations and a market determined exchange rate has eradicated undervaluation of its currency.

The opportunities from a cross cutting perspective can be articulated as follows:

1. Sustained high growth in economy makes China a prominent modern day wealth creator. It will soon advance from the 7th to the fourth 4th largest market in the world.

2. South Africa is to share in the prosperity that is generated by the Chinese economy.

3. Rapid growth gives rise to supply shortages that can be taken advantage of by South African exporters.

2.7. POLICY FRAMEWORK – CHINA

2.7.1. The Shift in Government Development Strategies and Policies

The profound changes in China's government policies and reforms that allowed market prices and investors to play a significant role in production and trade, largely contributed to an average economic growth of 9½% over the past two decades. In this time, China experienced higher personal incomes and a significant reduction in poverty, as well as becoming substantially integrated with the world economy. This rapid pace of economic transformation and development is expected to be sustained for some time in the foreseeable future.

There are, however, still notable challenges faced by China: -

- A better framework for private sector activity, which is driving growth
- A more flexible exchange rate to support a stable macro-economic environment
- Reforms needed in the financial sector
- A reduction in regional inequalities through fiscal transfers

Factors contribution to growth

China's extraordinary and sustained economic performance is as a result of changes in government economic policy that progressively acknowledged and emphasised market forces. The principal aspects of these policies over the past two decades were: -

- The abolishment of price controls
- Allowing ownership of limited liability companies for private individuals
- A number of competition laws that were rigorously enforced
- Allowing foreign direct investment in the country

- Reducing tariffs
- Abolishing the state export trading monopoly
- Ending multiple exchange rates
- Wide-ranging reforms to the state-owned enterprises ("SOEs") that dominated the economy of China until the early 1990's, by means of: -
  - Corporatising them with formal legal structures
  - Listing many SOEs on stock exchanges created in the early 1990's
  - Reducing the number of industrial SOEs by half over a five-year period to 2003, though restructuring of large enterprises and exiting from small enterprises
  - More flexible employment contracts, which led to job reductions of 14 million in the industrial sector, but was alleviated by unemployment and welfare programmes that transferred the burden of redundant workers from SOEs to the state
  - Creating and agency to exercise the government ownership of SOEs and to boost their performance

These changes created a momentum towards a freer economic system that is further supported by more recent policy changes, namely: -

- Membership of the World Trade Organization ("WTO"), resulting in the standardisation of a large number of laws and regulations, as well as the prospect of further tariff reductions
- Fundamental changes to the constitution in order to emphasise the role of the non-state sector and to protect private property
- Abolishing regulations that prevented privately-owned companies to enter certain sectors of the economy, such as infrastructure, public utilities and financial services

These reforms resulted in a framework for mobilising the resources generated by a very high savings rate of almost one-half of GDP and to generate a particularly rapid increase in capital stock. The increased asset base has also boosted labour productivity. Furthermore, the urbanisation of the workforce also results in higher productivity as people migrate from the

low productivity agricultural sector into the high productivity manufacturing and services sectors.

The government is also supporting economic capacity through raising education qualifications at all levels. Nine years basic education is being expanded to all rural areas. Higher education has expanded by a multiple of 3½ times over the five years to 2003 and there is a strong emphasis on technical training. New entrants to industries are substantially better educated than the retirees. As the urban labour market is freer, wages are determined by market forces and are improving for educated workers.

The radical transformation in government policies has created a largely market-oriented economy in China in which the private sector plays a key role.

Further support for growth prospects

The importance of the private sectors highlights the need to modernise the legal framework for business even further, essentially in three areas: -

- Bankruptcy law
- Company law
- Property rights

Importance of a stable macro-economic environment

The growing private sector role in the economy also emphasises the importance of price stability and the need for a low and stable rate of inflation. The inflexibility of the exchange rate, however, resulted in relatively high fluctuations of inflationary and deflationary phases recently, exposing the Chinese economy to the risks of price volatility. Although the Chinese authorities were able to compensate for these problems in the short-term, a policy of greater exchange rate flexibility would be required in the long-term.

Financial systems reforms

The banking system historically allocated credit on strategic considerations, in support of national development policies, rather than based on investment returns and risk mitigation considerations. As a result, banks have accumulated high levels of bad debt, substantially weakening the banking system. A restructuring programme is now being implemented, comprising better classification and accounting for non-performing loans, recovering of a

portion of the debts, better governance and risk management, improved management skills, and recapitalisation.

2.7.2. Foreign Companies

China opened its industries for investment by the outside world in the early 1980's by encouraging foreign companies to invest in its natural resources industries mainly through the introduction of capital and technology. In 1999, 2000 and 2002, China issued three major policies in order to encourage foreign companies to invest in further development of mineral industries, but also to promote the exchange of domestic and foreign resources, capital, information, technologies and markets, on the basis of mutual benefit. The main features of the development policies are: -

- Greater financial support from the Chinese government to foreign investors
- Technical innovation from foreign companies, as well as
- Increased domestic purchases, and
- Increased investment in the central and western regions
- An option to set up wholly-owned subsidiaries (in addition to partnering with Chinese companies)
- More emphasis on the introduction of technology, management skills and talents
- Conformance to World Trade Organisation ("WTO") trade protocols and other commitments, with the abolishment of administrative regulations that are incompatible

2.7.3. Sustainable Development

China's rapid industrialisation over the past decades has created problems in the depletion of natural resources, degradation of eco-systems, and pollution extending far beyond its own borders. There is a realisation that an American-style of consumerism and level of consumption would not be possible, as productivity gains will be eroded by the "rebound effect". The rebound effect occurs when the overall increases in industrial output are larger than the levels of efficiency improvements and reduction in pollution. An alternative model for economic development has to be identified and applied, in order to meet growing expectations, thereby ensuring social and political stability.

For the Chinese economy to attain its objective of an "all-round well-being society" with an average per capita income of US$4 000 per year (five times higher than the present) for its projected population of 1,8 billion people over the next 30 years, then it has to achieve a seven to ten-fold improvement in its resource use efficiency in order to avoid increase pressures on natural resources and the environment.

China's leadership has launched the Circular Economy ("CE") initiative, which has major strategic importance, not just for China, but for the whole world. Success in the CE's closed-loop concept would set new levels of competitiveness in the world economy and affect regional trade alliances.

The basic levels of action in achieving CE are:

- At company level, higher efficiency through pursuing the three "R"-s of clean production ("CP"), namely: reduction in consumption of resources and emission of pollutants and waste; re-use of resources; and recycling of by-products;

- Within industrial parks and industry clusters or chains, the re-use and recycling of resources so that they circulate fully in the localised system, such as the "eco-chains" for by-product exchanges

Regional integration of production and consumption systems to circulate resources among industries and urban systems, requiring the municipal or regional systems for the collection, storage, processing, and distribution of by-products

2.7.4. Urbanisation

Historically, urbanisation was at the rate of about 10 million people a month.

China announced its "People First" programme that includes a better life for its 800 million rural citizens. It includes the urbanisation of an additional 300 to 500 million people between 2003 and 2020.

The implication is …

the establishment of a major new city of 20 million people per year.

The Source of the increasing domestic demand is therefore the construction industry and its materials-intensive sectors comprising various building products.

2.8. POLICY ENVIRONMENT – SOUTH AFRICA

2.8.1.Developmental Challenges

South Africa's policy environment can best be understood in the context of the following statement, quoted from a research report by **the dti**, entitled " South African Labour Market: Benchmarking against Selected Economies," stating that:

> "In summary, it is strange that South Africa has a very firm and stable economic footing, has made advancements in education, has a relatively good diffusion of technology and in many ways appears to be emerging as a first world nation but also has severe poverty and human development problems."

South Africa's macro-economic policies are essentially about how to address this somewhat unique ("strange") situation, with a more inward-looking approach. The following summaries of the most current policy statements will serve to highlight these policy challenges.

2.8.2. Macro-Economic Environment – The Asgi-SA Initiative

The Development Challenge

In 2004, the South African government stated its objective to reduce poverty and unemployment by one-half by 2014. These objectives are attainable, based on a steady improvement in economic performance, supported by good economic policies, positive domestic sentiment, and a favourable international environment.

The Accelerated and Shared Growth Initiative for South Africa ("Asgi-SA") is rather positioned as a **national shared growth initiative**, instead of a "government programme". The GDP growth targets are for two phases, namely 4,5% per year for the first phase, between 2005 and 2009, and at least 6% per year for the second phase, between 2010 and 2014. Furthermore, the conditions for more labour-absorbing economic activities have to be considerably improved, in order to move towards the complete elimination of poverty and reduction of inequalities. This section is an overview extracted from the complete review of thw Asgi-SA policy framework in Annexure A. A summary of the existing industrial incentives is included in Annexure B.

The target of a sustainable growth rate of 6% would require that two imbalances – the strength of the currency and its effects on competitiveness, as well as poverty and people excluded from formal economic activity – be addressed.

This would be through a strategy for accelerated and shared growth.

It is based on a growth diagnostic method of analysis – the identification of the "binding constraints" impeding achievement of developmental objectives. Whereas all successful economies have certain threshold characteristics in common, namely a well managed fiscal and monetary policy, and competent government administration, there are other, different, country-specific challenges impeding attempts to move from mediocre to successful.

Binding Constraints

A succinct and focused set of binding constraints allows for a coherent and consistent set of responses. The key issues for South Africa presently are: -

- **The volatility and level of the currency**

  Despite major improvements in the administration of fiscal and monetary policy, currency volatility is a deterrent for investment in tradable goods and services outside of the commodity sector. The rand remains somewhat volatile, although it is assumed that the degree of volatility may be reducing. When the relative volatility is accompanied by an overvalued currency – resulting in economic resources being diverted into narrow areas of investment – such as presently, uncertainty is created and the effects of volatility are compounded. Macro-economic policies and implementation can be further improved by means of better expenditure management, notably in government capital investment.

- **The cost, efficiency and capacity of the national logistics system.**

  The cost of transporting goods and conveying services to other destinations is relatively high. It is due to backlogs in infrastructure, investment, inadequate planning, anti-competitive market structures The effects are exaggerated by South Africa being a fairly large country, with considerable concentration of production inland, some distance away from major industrial markets destinations.

- **Shortage of suitably skilled labour amplified by the cost effects on labour of apartheid spatial patterns.**

  Those parts of the legacy of apartheid most difficult to unwind are the deliberately inferior system of education and the irrational patterns of population settlement. The lack of skilled professionals, managers and artisans is a constraint for growth. The uneven quality of education remains problematic. Furthermore, the price of labour of the poor is pushed up by transport costs of the large number of people living great distances from their places of work.

- **Barriers to entry, limits to competition and limited new investment opportunities.**

  The South African economy remains relatively concentrated, especially in upstream production sectors such as iron and steel, paper and chemicals and inputs such as telecommunications and energy. This market structure has a negative effect on the potential to develop downstream production or service industries. This problem has to be addressed by competition law and industrial policies.

- **Regulatory environment and the burden on small and medium businesses.**

  The small, medium and micro enterprise ("SMME") sector struggles to perform in terms of contribution to GDP and employment creation. This problem partly arises from the sub-optimal regulatory environment, including the overhead burdens of the administration of taxation, the planning system requirements, municipal regulations, the administration of labour law, and in specific sectors, unnecessarily constraining regulatory environments.

- **Deficiencies in state organisation, capacity and leadership.**

  There are weaknesses in the way government is organised and in the capacity of key institutions that have to provide economic services. Furthermore, South Africa's growth potential is negatively affected by indecisive leadership in policy development and implementation.

Interventions: Decisive interventions are required to counter these "binding" constraints. A shift in economic policy is not required. Instead, a set of responses to these constraints and initiatives designed to achieve South Africa's development objectives more effectively should be designed, essentially in the following six categories:

- Infrastructure programmes;
- Sector investment strategies or industrial development strategies;
- Skills and education initiatives,
- Second economy interventions;
- Macroeconomic issues; and
- Public institutions effectiveness.

Towards Implementation

The Asgi-SA implementation plan still has to be refined. Progress will be reviewed and evaluated regularly, involving government and its social partners.

The ultimate objective of Asgi-SA is shared economic growth. It will contribute to the attainment of South Africa's social objectives, and meeting the Millennium Development Goals.

2.8.3. A Status Report from The Ministry of Trade and Industry

The Minister of Trade and Industry, Mr M Mpahlwa, presented his budget speech to the South African Parlaiment on 29 March 2006, and provided an overview of economic, trade and industry conditions, as well as an assessment of **the dti**'s role in driving forward economic growth. The main considerations as summarised below highlight the latest industry policy issues.

The near-term focus will be to address some of the main constraints to growth and thereby to unlock the full potential of the South African economy. In this regard **the dti** has been central in the Accelerated and Shared Growth Initiative for South Africa ("Asgi-SA). **The dti** specifically will focus on those dimensions of Asgi-SA addressing industrial development, sector strategies, enterprise development as well as second economy initiatives.t. The mandate of **the dti** is very broad, with the following strategic objectives, key projects and initiatives: -

- First, implementation of commitments to Asgi-SA;
- Second, promoting direct investment and growth in the industrial and services economy;
- Third, promoting broader participation, equity and redress in the economy;
- Fourth, raising the level of exports and promoting equitable global trade;
- Fifth, contributing towards the development and regional integration of Africa within the New Partnership for Africa's Development ("NEPAD") framework.

The dti is busy with the compilation of an overarching Industrial Policy Framework, aimed at harnessing the capacity of industries, in the manufacturing, selected primary and services sectors. Such an industrial policy is necessary to accelerate industrial development, and to focus human and financial resources on a narrower range of high impact sectors. Increased financing and improved incentives for industrial development will form part of such a focus. Furthermore, the compilation of Customised Sector Programmes (CSPs) will be completed. An effective industrial development strategy also requires adequate and appropriate financial resourcing. **The dti** package of incentives is also being refined for this purpose.

The downstream value-addition or beneficiation of raw materials may possibly be constrained by high input costs, typically arising from the anti-competitive pricing practices of

monopolistic enterprises. These situations have prompted a review of competition policy, measures to address import parity pricing ("IPP") and investigations into beneficiation incentives. The South African government will pursue a phasing out of price discrimination between domestic and export customers in key intermediate input sectors in the economy.

Further measures comprise: -

- The strengthening of the Competition Act to deal with the high levels of concentration in certain sectors of the economy and the resulting uncompetitive outcomes;
- Fiscal support by government or public enterprises will be subject to a policy of non-discriminatory pricing between the domestic and export markets;
- Import tariff protection on product lines subject to IPP will be removed and any protection will be amended to ensure that anti-dumping and countervailing duties do not serve as a form of protectionism to inhibit imports of such products;
- The development by government of a state-owned enterprises (SOEs) pricing and procurement framework, rendering SOE pricing and procurement practices subject to the market behaviour of their supply chain industries;
- The development of a new set of downstream beneficiation incentives, in order to address the lack of development in key downstream beneficiation sectors, namely the metal fabrication, machinery & equipment, and plastics sectors;

The measures to deal with IPP form part of a broader strategy of promoting downstream beneficiation. The steel industry is subject to specific attention and engagement with Mittal Steel, as the dominant supplier, would essentially be to reduce the cost of key manufacturing inputs. It has accordingly been established that a five percent import tariff on certain primary carbon and stainless steel products would not be required any more and that this duty should be removed with immediate effect.

Priority sectors for **the dti** are those that are labour absorbing and in which South Africa has a comparative advantage, such as business process outsourcing ("BPO") and tourism. Other focus areas include chemicals, creative and cultural industries, metals processing and beneficiation, agro-processing, and textiles and clothing.

The Motor Industry Development Programme ("MIDP") is being reviewed, with an objective to seek sustainable ways of maintaining and improving its performance to date, and ensuring that it receives support on par with international norms and standards.

The Clothing and Textile sector and its challenges have to be addressed in a comprehensive manner, focusing on both immediate issues such as very high levels of imports and its competitiveness in the long-term.

The Duty Credit Certificate Scheme will continue until March 2007, but will now only be restricted to manufacturers.

New plans for the support of manufacturing exports and investments will be announced during the year.

Industrial Policy

The Deputy Minister of Trade and Industry, Dr Rob Davies, provided a status report on industrial policy and international trade negotiations in his budget speech to the South African Parliament on 29 March 2006.

The point of departure is an acknowledgement that South Africa does not have a strong and robust industrial policy. Furthermore, for developing countries to break out of the constraints of mere producers of raw materials, active industrial policies would be required.

Industrial policy is defined as …

- A series of state interventions
- … in which the focus is redirected from the accumulation process
- … towards acceleration of the pace of accumulation.

The successes of the development of East Asian countries can be ascribed to very active industrial policies, redirecting investments into the development of lines of industrial activity and subsequently the establishment of a major competitive advantage.

The Accelerated and Shared Growth Initiative for South Africa ("Asgi-SA"), the latest macro-economic policy framework, expresses the need for a more robust and active industrial policy. Such a broad strategic framework document is presently being promoted through the government processes. Once available, this framework should, however, be followed by strategies on key areas of industrial policy and development, namely: -

- Industrial finance (funding)
- Capacity building
- Sectoral strategies

Since democratisation in 1994, South Africa has produced a number of policy documents and sectoral strategies. This most successful industry sector benefiting from such a focussed strategy is the automotive industry, through the Motor Industry Development Programme ("MIDP"). It has to be acknowledged that, in the past, that initiatives were too dispersed, too unfocussed, and with inadequate resources deployed to have a meaningful impact on the activities and performance of industry sectors.

South Africa has a fairly diversified industrial sector with competitive strengths in different areas. A first step would be to identify sectors that should be targeted with development strategies. Furthermore, certain areas should receive more focussed attention, namely: -

- Sectors identified by Asgi-SA for growth and job creation in the short-term, with the potential for early-stage successes, namely business process outsourcing (call centres) and tourism;
- Sectors with medium-term potential, but would need restructuring and reorganisation to unlock growth potential, such as the sectors identified by the 2003 Growth and Development Summit and subject to Customised Sector Programmes ("CSPs"), namely clothing and textiles, the motor industry, the chemicals industry, and agro-industries;
- Sectors excluded from industrial policy initiatives to date, but which could provide significant growth potential, as well as linkages into the so-called "second economy" (informal sector), for example ranging from bio-fuels to non-tradable services – repair shops, personal care and social services;
- Sectors where South Africa can develop cutting edge technologies and strong global competitive positions, such as aerospace, hydrogen energy, medical technology and biotechnology.

These development initiatives should be seen in the context of the cross cutting interventions identified in the Micro Economic Reform Strategy programme, as refined in Asgi-SA. The relevant areas are the infrastructure development programme and regulatory reviews, as well as the skills development and training programmes of the Joint Initiative on Priority Skills Acquisition ("JIPSA").

Any effective and robust industrial policy initiative would require that the challenge of capacity building be addressed. The first step is to enhance capacity within **the dti** and to optimise it within the respective divisions. Furthermore, mechanisms are required to utilise existing capacity, skills and expertise elsewhere, such as the Industrial Development Corporation ("IDC"), other government departments, universities, research institutions and industry sectors.

South African Perspective of Global Trade Negotiations

The World Trade Organisation ("WTO") Doha negotiations are presently at a critical stage. The Ministerial Conference in Hong Kong, China, at the end of 2005, were intended to give effect to the principles agreed at Doha in 2001, with regard to agricultural, non-agricultural and service negotiations. Despite intensive activities to promote it, the possibility of a developmental outcome still appears to be elusive.

2.8.4. Black Economic Empowerment

Black economic empowerment ("BEE") is the fundamental platform for economic policy in South Africa. It is a systematic policy to allow previously disadvantaged people to gain access to the benefits of and to play a meaningful role in the economy.

The BEE policy framework comprises: -

- The Broad-Based Black Economic Empowerment Act no. 53 of 2003
- Government's Black Economic Empowerment Strategy
- Industry Charters, such as the Mining Charter, the Financial Services Charter and various sector specific charters
- The Codes of Good Practice compiled by **the dti**, aimed at providing principles and guidelines for the implementation of broad-based BEE in a meaningful and sustainable way.

2.8.5. Customised Sector Policies

Sector-specific policies are also being compiled by **the dti**, but the process is still in a confidential stage and inputs are not yet available for the benefit of this report

2.8.6. Considerations

1. South African economic development policies appear to be trapped in the problem statement stage. China has a well functioning policy formulation and implementation mechanism in its successive five year plans that among others ensures continuity and policy stability and transparency. South Africa is required to move forward to policy functionality encompassing strategy, its resourcing and implementation.
2. The Chinese metal industries are in a robust growth phase as the outcome of a previously devised, well articulated and resourced sector strategy. South Africa's metal sector policy, in contrast, is still under wraps.
3. As South Africa is playing catch up in the policy/strategy/implementation stakes; and as industrial policies and strategies have a decisive impact on competitiveness when engaging the like of China, South Africa is at a disadvantage in entering into trade agreements in this context.

4. China needs to adapt to WTO requirements that will water down its existing battery of subsidies, incentives and other means of industrial development support. With South Africa embarking on the upgrading of its incentives, some convergence of the impact of the respective sets of support may happen somewhere in future.

3. SECTOR DEVELOPMENT POLICIES

3.1. CHINA –STEEL INDUSTRY POLICY

3.1.1. Towards Consolidation And Market Orientation

In line with its economic performance in general, China attracted the attention of the rest of the steel producing world in September 2004 when it became a net steel exporter for the first time in a decade. It was the culmination of a lifetime of development since the era of backyard furnaces in the 1950's, when Mao Zedong introduced his Great Leap Forward policy, resulting in everything from cutlery to iron ore to be used as feedstock for crudely constructed ovens. Although steel production then increased to as much as 70 times that of a decade before, the policy was not sustainable and failed, as did the backyard furnaces.

Now, four decades later, China has become the world largest producer of steel and its output is growing at rate of multiples compared to the rest of the world. This rate of production growth was previously regarded as unsustainable. The scenario of China becoming a net exporter of steel was not envisaged at the turn of the century a few tears ago. However, by 2003 China's production was double that of Japan, the second ranked country. China was also then moving into an oversupply situation. The earlier scepticism about China's capabilities was replaced by concern over the impact of a dominant China in the world steel industry.

The most significant impact on Chinese steel production may be internal efforts to slow down the domestic economy and to reduce its elevated growth levels. In early 2004, the Chinese government announced its intention to slow down the growth in early 2004 that it plans to slow down Chinese economy and the steel industry became one of the targets of China's powerful regulators. The problem is mainly related to a rampant growth in fixed asset investment, mainly in property development. However, the increased steel prices did not have any impact, resulting in the authorities adopting regulatory measures for steel industry. In the regulations that followed, export rebates were cancelled or reduced.

The Chinese government's role in the steel industry has a long history which can best be understood considering the structure of its production capacity. The steel industry in China is highly fragmented, with the largest 18 mills producing approximately 50% of national output, with the remainder produced by more than 800 smaller mills. As a result of this fragmentation, Chinese negotiating power is disproportionately little. Product focus is too much low end billets, instead of higher-end finished products. Despite being the dominant

steel producer in the world, China still had to import 5% of its finished steel requirements in 2004.

The Chinese government's intention for change was expressed in a number of regulatory measures, such as the reduction of iron ore importing licenses from approximately 500 to only 118. This was aimed at reducing spot trading of iron ore that was a result of supply shortfalls in China.

The most important event was the announcement of the long-awaited policy for China's steel industry, which provided clear statements of Government's expectations of the steel industry. The guideline was for the industry to reform itself in line with government wishes, or otherwise, by implication, face government intervention. The key consideration for the policy direction was that despite China's dominance of world steel production volumes, only one Chinese company, Baosteel, features in the top ten ranked global steel companies, and only six Chinese steelmakers are among the world's 20 largest producers. This under-representation in top echelons will have to be corrected with major mergers and acquisitions, ideally along geographical, provincial and regional lines.

The desired outcome would be more negotiating power for Chinese steelmakers, and a more market-related orientation. Historically, Chinese steelmakers simply expanded for the sake of regional competition and not in response to a market situation. In future, the Chinese government's intention is for steelmakers to be globally competitive producers and not only to compete in a local context.

Most importantly, the Chinese government is sensitive to the trade relations with the rest of the world and the potential for resistance to large volumes of exports of cheap steel. Steel exports are regarded as low yield gain compared to the high tech products that China is striving for. China would therefore prefer to avoid a protectionist reaction to steel exports in order not to jeopardize exports in high value products.

3.1.2. The Revitalisation Of The "Rustbelt" – A Case Study on Policy In Action

Liaoning Province is a traditional industrial base in the north east of China. Its capital city Shenyang and its port city is Dalian. Liaoning's population of 42 million is comparable to that of South Africa and its GDP of USD74 billion is 45% of that of South Africa. The province is of the industrialized region of China referred to the "rustbelt" that previously faced stagnation. It has 10% of China's large and medium sized enterprises, mainly in heavy industry sectors such as oil, iron and steel, automotive manufacturing and shipping.

Shenyang and Dalian are prime examples of how China's economy is developing. Dalian is taking advantage of foreign investment typically targeted at cities in the coastal regions of

China, with more than 10 000 companies funded from abroad, including participation by more than 70 global Fortune 500 companies. In contrast, the in-land Shenyang remains highly dependent on heavy industry. As a result, a range of subsidies between US$12 000 and US$125 000 were introduced to incentivise foreign multinational companies to establish operation in Shenyang.

The rustbelt in north east China has become the Government's target for large scale economic development. Although the previous Government promoted a so called "Go West" economic development policy, the incumbents are redirecting efforts to the north east regions. Under the auspices of the State Council, the Northeast Revitalization Office was established to encourage foreign and other investment into the region in order to stimulate development.

The local government of Shenyang invited investors to participate in 24 major SOEs with total assets of more than US$9 billion. These enterprises are in need of capital and technology in order to face the challenges of increasing domestic and foreign competition. This offer is regarded as a first for the Liaoning Province and even for China.

Facts & Figures about Liaoning

Population:	**42 million**
Capital:	**Shenyang**
Area:	**145,900 km²**
GDP (USD bn) :	**72.58**

Industry:
Auto, chemical, electronics, machinery, steel

Materials:
Boron, diamonds, iron ore, magnesite, natural gas

Agriculture:
Apples, cotton, maize, peaches, sorghum, soyabeans

Source: China Handbook 2005, Websites

Liaoning has vast coal and iron ore deposits and is China's second largest producer of steel, third largest producer of pig iron and fourth greatest oil contributor. Its steel production for the first half of 2005 increased by 17% to an annualized total of 30 Mtpa.

The most important event, however, was the merger of Anshan Iron & Steel Group ("Ansteel") and Benxi Steel ("Bensteel") in August 2005, to form Anben Steel Group Company, which will have a capacity 20 Mtpa, as well as 25% of China's iron ore reserves. This scale of operation is comparable with Baosteel, the leading Chinese steelmaker and 6th largest in the world, with a 2% share of world production.

The Anben merger is in line with the Chinese steel industry policy issued by the National Development and Reform Commission ("NDRC"), under the auspices of the State Council, which encourages domestic steelmakers to consolidate operations and create larger entities of the order of 30 Mtpa nameplate capacity. There is even a possible scenario in future of a complete consolidation of the steelmaking operations in north eastern China to form a single, large steel group of companies.

The revival of Liaoning Province is best illustrated by the automotive sector, which was given a major boost in 2003 with a strategic investment and joint venture of more than US$500 million between Brilliance China Automotive Holding and BMW of Germany. Liaoning Province is also successful in attracting high-tech investments from the fast-growing electronics industry, with from leading brands such as Toshiba, Sanyo, Siemens and Matsushita.

The north east region also has suffered the most from the restructuring of state-owned enterprises – and in fact the closing-down of industries. Although China prides itself on social stability, these restructuring lead to some labour unrest. In recent times it became clear that the "legal" way of protest – petitioning—was increasingly becoming a phenomenon of the north eastern region.

3.2. CHINA – ALUMINIUM INDUSTRY POLICY

The Chinese central government attempts to control and restrict the expansion of the aluminium industry, but provincial and local governments are instead striving to expand the industry for purposes of job creation and a reduction in social payments. Only redundant technology operations were allowed to be replaced and all other projects ahad to be approved by the central government.

In September 2005, China announced its "Special Development Plan on [the] Aluminium Industry" and the "Development Policy on [the] Aluminium Industry." The Chinese government envisages a "scientific" [rational] development approach, the control of the industry at a macro level, improvement of the structure and geographical distribution of the industry, reductions in consumption of energy and raw materials, and a bigger and stronger industry "on the new-type industrial development track." The key measures are: -

- Rationalisation of the scale of development and levels of investment, in line with raw materials and energy resources, as well as market demand;
- Thorough assessment for the approval of new alumina and aluminium projects;

- Mergers and consolidation of aluminium smelters and downstream and upstream integration for more efficient operations and energy consumption;
- Promotion of technology (with phasing-out of outdated technology) and value-added processing operations;
- Developing the circular economy and recycling of metals;
- Optimal use of local and imported raw materials and the establishment of a stable supply chain.

The Development Strategy:

The National Development and Reform Commission ("NDRC"), the Chinese aluminium industry policy-maker and watchdog, was responsible for the development strategy. In more detail: -

1. Industry structure as targeted for government support: Alumina: Eight alumina refineries are regarded as the base of the industry, namely the aluminium plants of Shandong (Shandong Province); Zhengzhou (Henan Province), Guizhou (Guizhou Province), Shanxi (Shanxi Province), Zhongzhou (Hunan Province) and Pingguo (Guangxi Province), all of these now part of the Chinese Aluminium Corporation ("Chalco", a state-owned enterprise), as well as the new refineries of Guangxi Huayin and Shanxi Jinbei. They are located in provinces with adequate bauxite, coal, electric power and water resources.

   Primary aluminium: In the 1980's, China constructed a number of aluminium smelters for the Yellow River hydro-electricity project, namely: Qinghai, Gansu Baiyin and the expanded Ningxia Qingtongxia, which, together with the existing Gansu Lanzhou and the Lanzhou Liangcheng smelters form the base of primary aluminium production in north west China. Furthermore, the Pinggou aluminium plant and the expanded Guizhou, Yunan and Baotou aluminium smelters were positioned to take advantage of hydro-electricity resources. In order to enhance competitiveness of the aluminium industry, the government granted support for the Shanxi Huaze integrated aluminium and power project, as well as the captive power station for the Lanzhou plant. Modernisation and production improvements are supported by means of preferential loans from government for a number of aluminium smelters, namely: Lanzhou, Yunnan, Shanxi Guanly, Qingtongxia, Shaanxi Tonghuan, Baotou and a number of others.

   Aluminium semi-manufactures: Although there are more than 1 000 semis plants in China, typically close to consumers markets, the government recognises a number of companies as the key producers of the aluminium fabrication industry, namely:

Southwest Aluminium (Chongqing-based), Northeast Light Alloys (Harbin city, Heilongjiang province), Northwest Aluminium Fabrication Plant (Lanzhou, Gansu), Bohai Aluminium (Qinhuangdao, Hebei), and North China Aluminium (Zhuozhou, Hebei). Privately-owned aluminium profile producers that are very competitive are also acknowledged.

2. Scale of Expansion: Problems identified: There is a possibility of over-expansion of alumina capacity in China due to hastily launched projects following the persistent high levels in global alumina prices. However, the capacity projects for the prime alumina and aluminium producing area, the Henan Province, in addition to existing operations, would result in consumption of some 29 Mtpa of bauxite, with local reserves adequate for only 10 to 15 years of production at that rate. This potential shortage of raw materials, the long project lead-times, the fluctuations in commodity prices and strong competition from incumbent global suppliers are all considered to be high risk factors for large investments such as alumina projects.

   These risks can be mitigated by new projects aligned with the availability of local raw materials – bauxite and energy; consolidating bauxite resources for key industries (government supported operations); new and more efficient technologies; more exploration for raw materials; and redirecting investment to projects abroad aligned with bauxite reserves.

3. Value Added: The Chinese government intends to restrict the export of primary aluminium products, in order to encourage the trade in aluminium semis with a higher value.

4. Electrical power costs: Although the aluminium smelters were not profitable in the environment of relatively high alumina and power station coal input costs, the Chinese government removed the “preferential power rate” previously enjoyed by smelters. Even those operations with captive power stations will be required to pay additional transmission fees.

5. Rationalisation policy: The government approved development strategy on the aluminium industry includes the rationalisation of capacity through mergers and consolidations, as well as the closure of small smelters or operations based on outdated technology.

3.3. INCENTIVES AND SCHEMES – CHINA

Refer Annexure A for an overview.

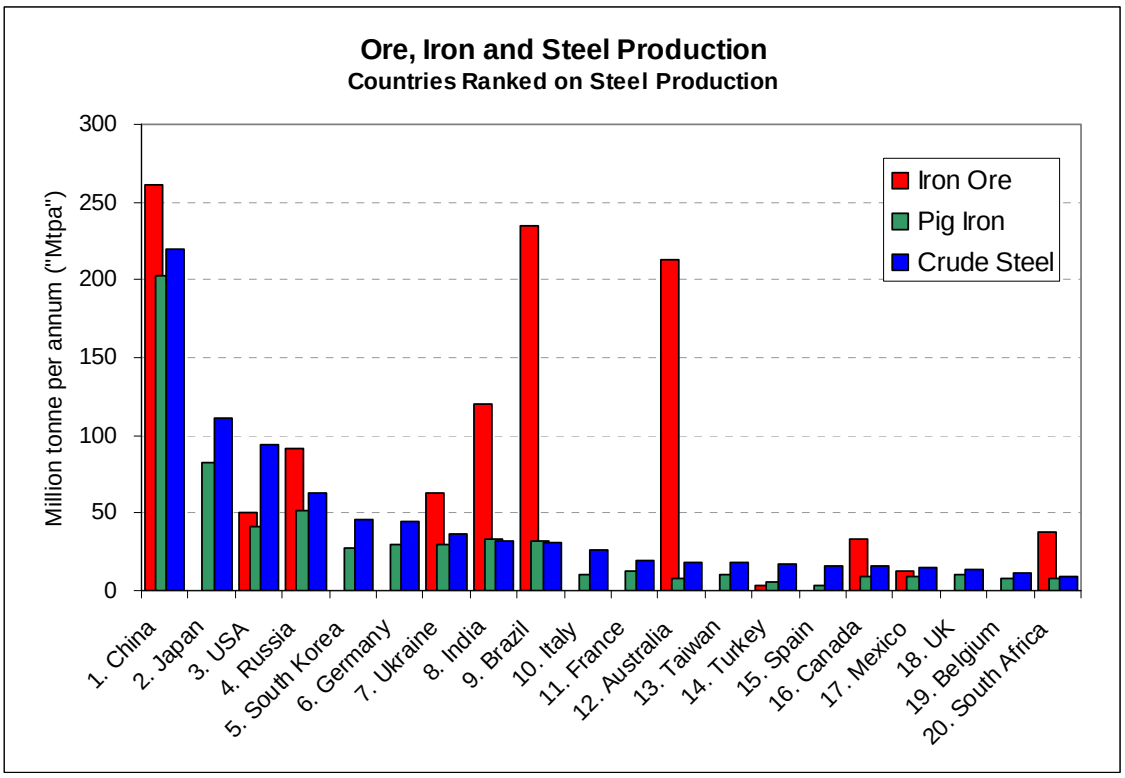
4. OVERVIEW OF MARKETS

4.1. IRON AND STEEL

4.1.1. World Iron and Steel

Iron ore is a very common element in the crust of the earth. It is mainly produced from two ore minerals, namely hematite (Fe_2O_3) and magnetite (Fe_3O_4). Iron is exploited commercially in greater quantities than any other metal. Iron ore is the primary feedstock for the manufacture of iron, steel and steel-based alloys. Iron ore is smelted in a blast furnace to produce molten "pig iron" at about 4% carbon. This iron is then converted to steel in another furnace by means of treatment with oxygen, which reduces carbon and removes impurities such as phosphorus and sulphur. The product is molten steel with a carbon content of less than 1%. The main steel producing countries are as illustrated in the graph below, also indicating iron ore raw materials and pig iron production.

Figure 4.1-1: Ranking and Comparative Size of Steel Producing Countries (2003)

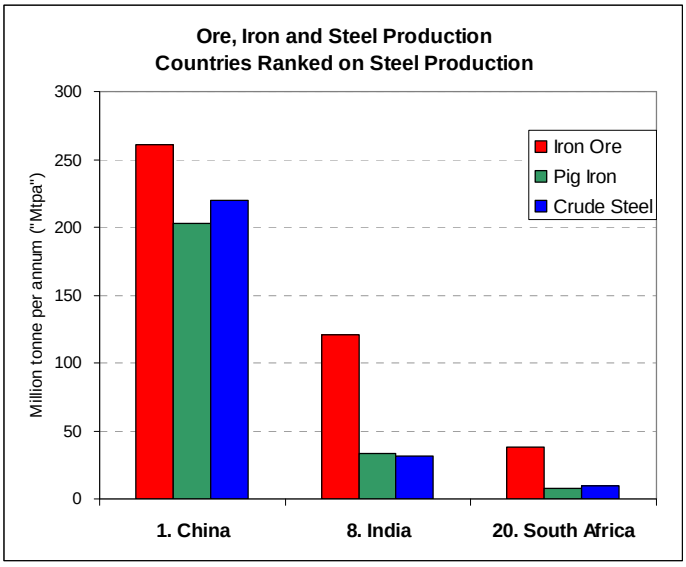


Source: World Metals & Minerals Review 2005 (Note: This source provides a set of comparable data for the primary processing stages of the metals industries. Although more recent data may be

available for some of the points, the analysis of this data set is essentially to illustrate the relative sizes of the different processing stages and to compare country rankings).

India is rated as the 8th largest steel producing country and South Africa is in the 20th position, as shown in the comparison below: -

Figure 4.1-2: Comparative Ore, Iron and Steel Production (2003)



Source: World Metals & Minerals Review 2005

The table below lists the world crude steel production per country, showing the doubling of output volumes from China over the period 2000 to 2004. India is the 8th largest steel producer in the world accounting for 3% of world production. Whereas world steel output increased by 23.5.% between 2000 and 2004 that of India expanded by 18% only. However, this was better than the increase at 12% in South Africa's output of crude steel.

Table 4.1-1: World Crude Steel Production [Mtpa]

COUNTRY	2000	2001	2002	2003	2004	SHARE
China	128,500	151,630	182,370	222,340	272,450	25,9%
Japan	106,444	102,866	107,745	110,511	112,718	10,7%
United States	102,000	90,100	91,600	93,700	99,700	9,5%
Russia	59,098	59,030	59,777	62,710	64,300	6,1%
Korea, Republic of	43,107	43,852	45,390	46,310	47,500	4,5%
Germany	46,376	44,775	44,999	44,809	46,374	4,4%
Ukraine	31,780	33,110	34,538	36,900	38,740	3,7%
India	26,924	27,291	28,814	31,779	32,000	3,0%

COUNTRY	2000	2001	2002	2003	2004	SHARE
Brazil	27,865	26,718	29,605	31,200	31,200	3,0%
Italy	26,544	26,483	25,930	26,832	28,317	2,7%
France	21,002	19,431	20,524	19,578	20,770	2,0%
Turkey	14,325	14,382	16,046	18,298	20,478	2,0%
Taiwan	17,302	17,336	18,255	18,832	19,604	1,9%
Spain	15,920	16,500	16,358	16,287	17,684	1,7%
Canada	15,900	16,300	16,300	17,000	17,000	1,6%
Mexico	15,631	13,300	14,010	15,159	16,730	1,6%
United Kingdom	15,022	13,610	11,718	13,128	13,766	1,3%
Belgium	11,637	10,783	11,495	11,114	11,698	1,1%
Poland	10,498	8,809	8,369	9,100	10,600	1,0%
South Africa	8,481	8,821	9,095	9,481	9,504	0,9%
Iran	6,600	6,890	7,293	7,869	9,382	0,9%
Netherlands	5,667	6,037	6,144	6,571	6,848	0,7%
Czech Republic	6,216	6,316	6,512	6,500	6,800	0,6%
Austria	5,725	5,887	6,208	6,261	6,530	0,6%
Romania	4,770	4,930	5,491	6,000	6,000	0,6%
Sweden	5,227	5,518	5,754	5,707	5,949	0,6%
Kazakhstan	4,770	4,691	4,868	5,067	5,400	0,5%
Argentina	4,472	4,107	4,363	5,033	5,125	0,5%
Finland	4,096	3,938	4,004	4,766	4,833	0,5%
Australia	7,812	7,600	8,242	8,300	4,811	0,5%
Egypt	2,820	3,800	4,358	4,398	4,757	0,5%
Others (60 countries)	47,468	48,159	49,826	50,461	52,433	5,0%
Total	850,000	853,000	906,000	972,000	1 050,000	100,0%

Source: USGS; for South Africa: SAISI

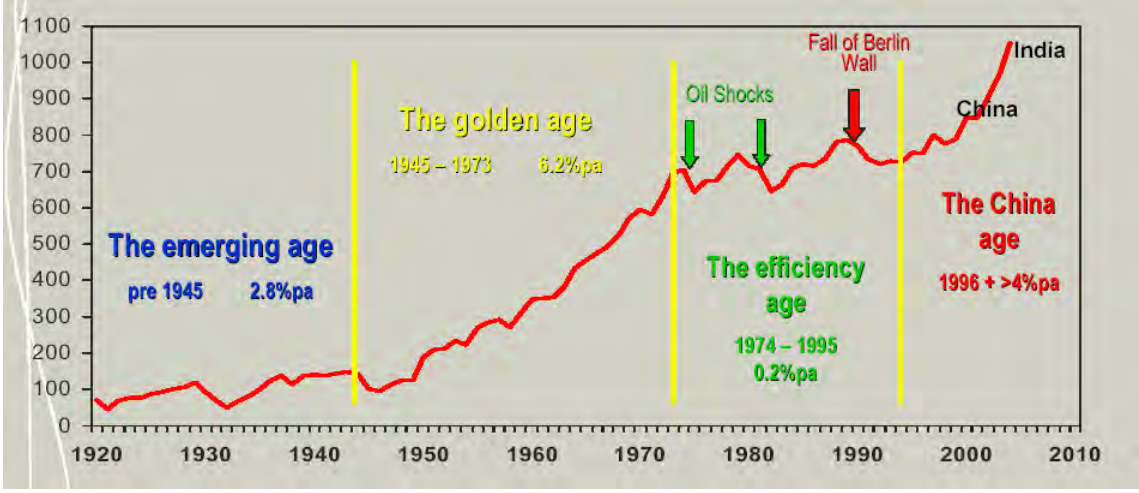
The revised world total for 2004 is 1 113,0 Mtpa (source: SAISI)

More recent data indicates crude steel production volumes for 2005 as: -

- China 349,4 Mtpa 30,9% market share
- India 38,1 Mtpa 3,4%
- South Africa 9,5 Mtpa 0,8%
- World production 1 129,0 Mtpa 100%

The long-term growth trend for the steel industry appears to have entered a phase of high growth rates exceeding 4% pa as shown in the graph below: -

Figure 4.1-3: Phases of Growth and Stagnation in the Global Steel Industry



Source: BHP-Billiton

4.1.2. Chinese Iron and Steel

The key figures for the Chinese iron and steel industry are: -

Table 4.1-2: Iron and Steel Production – China

IRON AND STEEL [Mtpa]	1999	2000	2001	2002	2003
Iron ore, gross weight	237	223	220	231	261
Steel metal					
Pig iron	125	131	156	171	214
Steel, crude	124	129	152	182	222
Steel, rolled	121	131	161	193	241

Source: USGS

The market balances for the Chinese steel industry is depicted in the table below, whereby: -

Apparent demand = Production + Imports - Exports

Table 4.1-3: Demand and Supply of Iron & Steel Materials and Products – China (2003)

IRON & STEEL [Mtpa]	PRODUC-TION	IMPORTS	EXPORTS	APPARENT DEMAND	LOCAL SUPPLY
Iron ore, gross weight	261,0	148,1	0,0	409,1	64%
Pig iron	213,7	0,0	0,7	213,0	100%
Steel products	241,1	45,8	5,0	281,8	86%

Source: USGS

China is dependent on imports for 36% of its iron ore requirements, and 14% of its steel products. It imports high value flat products and exports long products.

4.1.3. South African Iron and Steel

Table 4.1-4: Iron and Steel Production -- South Africa

Iron and steel [1 000 t]	1999	2000	2001	2002	2003
Ore and concentrate:					
Gross weight	29 512	33 707	34 757	36 484	38 086
Fe content (62%-65%)	18 442	21 570	22 240	23 200	24 200
Metal:					
Pig iron	4 587	5 410	5 824	5 823	6 234
Direct-reduced iron	1 260	1 562	1 560	1 700	1 542
Crude steel	6 830	8 399	8 724	9 008	9 384

Source: USGS; SAISI

4.2. ALUMINIUM

4.2.1. World Aluminium

Aluminium is the third most abundant element in the Earth's crust, comprising 7,3% by mass. In its natural form, it exists in very stable combinations with other materials, namely silicates and oxides. Aluminium is a widely-used metallic element with excellent commercial value

derived from its characteristics of: strength, lightness, malleability, corrosion resistance, high thermal and electrical conductivity, and non-sparking properties. It can be produced into a very thin foil, but has to be alloyed to increase strength for structural applications.

It was only in 1808 that the existence of aluminium was first established. Thereafter, it took many years of painstaking research to "unlock" the metal from its ore and many more to produce a viable, commercial production process.

Aluminium is a very young metal. It has only been produced commercially for 146 years. Humankind has been using copper, lead and tin for thousands of years and yet today more aluminium is produced than all other non-ferrous metals combined. Annual production of some 30 million tonnes compares with 14 million tonnes of copper, 6 million tonnes of lead and 0,2 million tonnes of tin.

In 1900, annual output was 8 000 tpa; the subsequent growth of the aluminium industry is illustrated in the table below: -

Table 4.2-1:: Historical Development of the Aluminium Industry

YEAR	OUTPUT [tpa]	GROWTH RATE [% pa]	OVER TIME PERIOD [YEARS]
1913	65 000	17,5%	13
1920	128 000	10,2%	7
1938	537 000	8,3%	18
1946	681 000	3,0%	8
1999	24 000 000	7,0%	53
2005	30 000 000	3,8%	6

Source: www.World-Aluminium.org

Aluminium value chain:

The various aluminium production processing steps for aluminium are as follows: -

Main steps in primary aluminium production:

1. Bauxite mining: the mining of bauxite is the first step in aluminium production.

2. Production of alumina: aluminium oxide, the raw material for primary aluminium production, is refined from bauxite.

3. Production of primary aluminium: primary aluminium is produced by electrolysis.

The subsequent steps in the aluminium production cycle include: -

- Semi-fabrication: encompassing several industrial processes for the production of rolled products, extrusions, wire, tubes, forgings and castings.

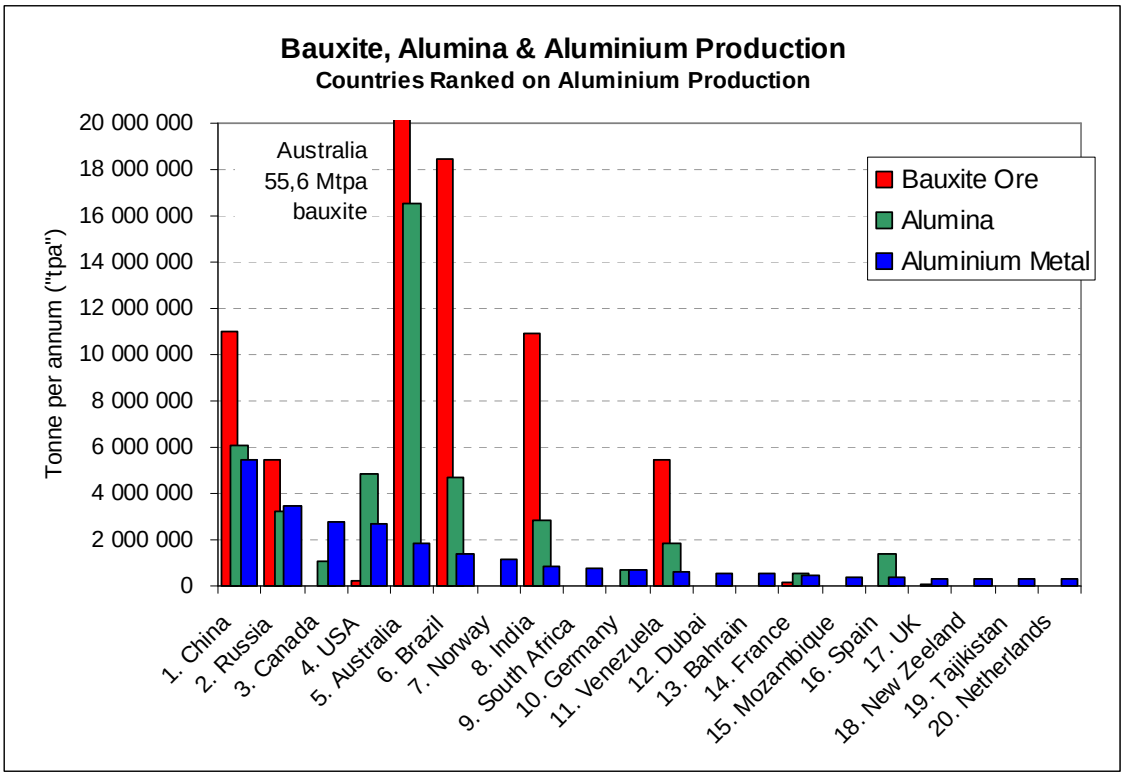
- Product manufacture: aluminium is then processed into finished products.

- End use phase: the major applications of aluminium products are in transport, building and construction, packaging and engineering.

- Recycling: all collected aluminium products are recycled and used again in new products. Waste aluminium and residual volumes from the production processes are also recycled.

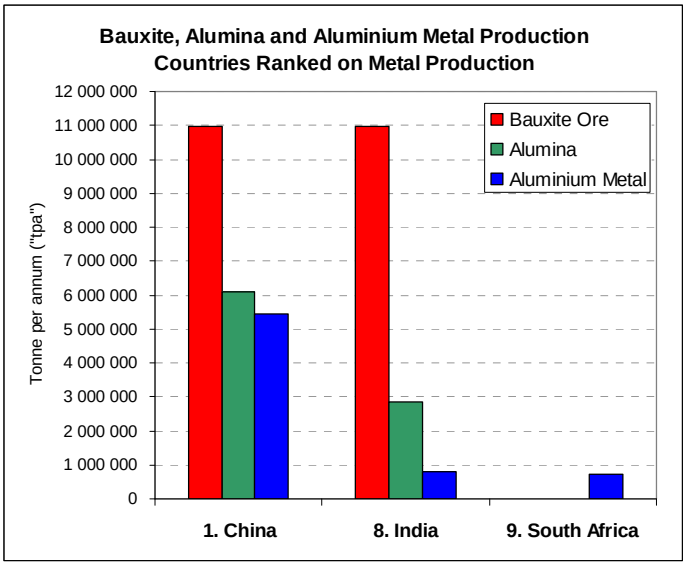
The main aluminium producing countries are shown in the graph below, followed by a comparison of the production values for India compared to South Africa: -

Figure 4.2-1: Ranking and Comparative Size of Aluminium Producing Counties (2003)



Source: World Metals & Minerals Review 2005

Figure 4.2-2: Comparison of Aluminium Production in China and South Africa



Source: World Metals & Minerals Review 2005

China dominates the world market for aluminium, supplying in the demand for construction materials and other industrial requirements.

Although South Africa does not have its own reserves of bauxite, it is still a significant participant in the global aluminium market. The other "raw material" for the production of aluminium is electricity. South Africa exploited its position as low cost electricity supplier (also refer section on competitiveness), combined with innovative gain-sharing pricing mechanisms, to entrench the production of primary aluminium. South Africa and Mozambique have a combined share of 3,7% of the global market for primary aluminium, as listed in the table below: -

Table 4.2-2: World-Wide Production of Primary Aluminium [1 000 t per annum]

COUNTRY	2000	2001	2002	2003	2004	SHARE
China	2 800	3 250	4 300	5 450	6 670	22,4%
Russia	3 245	3 300	3 347	3 478	3 593	12,1%
Canada	2 373	2 583	2 709	2 792	2 592	8,7%
United States	3 668	2 637	2 707	2 703	2 516	8,4%
Australia	1 769	1 797	1 836	1 857	1 900	6,4%
Brazil	1 277	1 140	1 318	1 381	1 457	4,9%
Norway	1 026	1 068	1 096	1 192	1 322	4,4%
South Africa	673	662	707	738	863	2,9%
India	644	624	671	799	862	2,9%
United Arab Emirates	470	500	536	560	683	2,3%

COUNTRY	2000	2001	2002	2003	2004	SHARE
Germany	644	652	653	661	675	2,3%
Venezuela	571	571	605	601	624	2,1%
Mozambique	54	266	273	408	547	1,8%
Bahrain	509	523	519	532	530	1,8%
France	441	462	463	443	450	1,5%
Spain	366	376	380	389	398	1,3%
United Kingdom	305	341	344	343	360	1,2%
Tajikistan	269	289	308	319	358	1,2%
New Zealand	328	322	335	340	350	1,2%
Netherlands	302	294	284	278	326	1,1%
Others (24 countries)	2 566	2 644	2 709	2 635	2 725	9,1%
Total	24 300	24 300	26 100	27 900	29 800	100,0%

Source: USGS

4.2.2. Chinese Aluminium

China's requirements of bauxite and alumina for metal production exceed locally available raw materials, as shown in the table below: -

Table 4.2-3: Aluminium Raw Materials and Production – China

ALUMINIUM: [TPA]	1999	2000	2001	2002	2003
Bauxite, gross weight	8 500 000	9 000 000	9 800 000	11 000 000	13 000 000
Alumina	3 840 000	4 330 000	4 650 000	5 450 000	6 110 000
Aluminium metal, refined, primary and secondary	2 810 000	2 990 000	3 570 000	4 510 000	5 970 000

China's aluminium raw materials supplies have experienced growth of 12% pa over the past five years, but the value-added metals production has grown by more than 20% pa.

The market balance for aluminium products in China shows an import requirement for one-half of its raw materials in the form of alumina and for less than 10% of aluminium metal.

Table 4.2-4: Demand and Supply of Aluminium Raw Materials and Products – China

ALUMINIUM [Mtpa]	PRODUC-TION	IMPORTS	EXPORTS	APPARENT DEMAND	LOCAL SUPPLY
Bauxite, gross weight	13,0	0,0	0,0	13,0	100%
Alumina	6,1	5,6	0,1	11,7	52%
Metal, refined, primary and secondary	6,0	2,1	1,5	6,5	92%

Source: USGS

4.2.3. South African Aluminium

South Africa imports its raw materials for the production of primary aluminium.

Table 4.2-5: Aluminium and Raw Materials Production -- South Africa

Aluminium [1 000 t]	1999	2000	2001	2002	2003[p]
Bauxite, Alumina	0	0	0	0	0
Aluminium metal, primary	689	673	662	707	739

Source: USGS

4.3. COPPER

4.3.1. World Copper

According to archaeological evidence, humankind has been exploiting copper for more than ten thousand years. Copper is relatively easy to mine and refine; methods to extract copper from its ores have been already discovered some seven thousand years ago. The Roman Empire obtained most of its copper from the island of Cyprus, which is also the origin of the name of copper. Presently, copper is mainly obtained from ores such as cuprite (CuO_2), tenorite (CuO), malachite (CuO_3-$Cu(OH)_2$), chalcocite (Cu_2S), covellite (CuS) and bornite (Cu_6FeS_4). The largest deposits of copper ore are found in the USA, Chile, Zambia, Zaire, Peru and Canada.

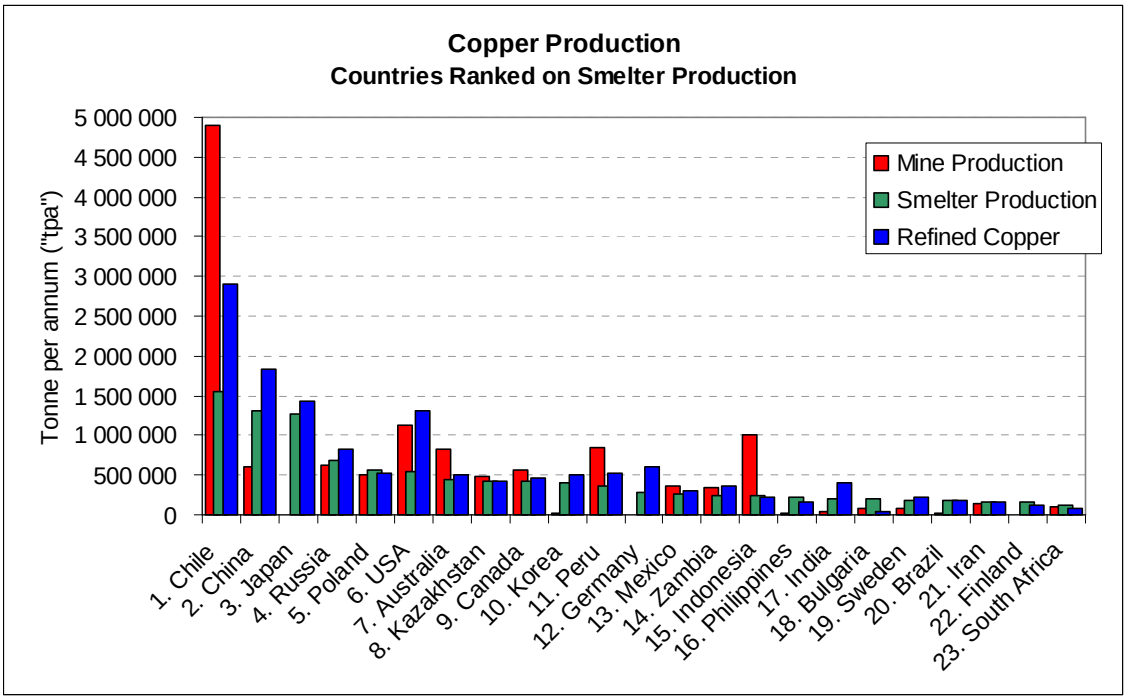
Used in large amounts by the electrical industry in the form of wire, copper is second only to silver in electrical conductance. Since it resists corrosion from the air, moisture and

seawater, copper has been widely used in coins. Although once made nearly entirely from copper, American pennies are now made from zinc that has been coated with copper. Copper is also used to make water pipes and jewellery, as well as and other items.

Pure copper is usually too soft for most practical uses. Five thousand years ago humankind first realised that copper can be strengthened by mixing it with other. The most common alloys of copper are bronze and brass. Bronze, the first alloy created, is a mix of copper with as much as 25% tin. It was used since historical times for tools, weaponry, containers and ornamental items. Brass, which was created 2 500 years ago, is a mix of copper with between 5% and 45% zinc. It was first extensively used to make such things as coins, kettles and ornamental objects, and today, for musical instruments, screws and corrosion resistant hardware. Copper is also present in a number of chemical compounds, such as agricultural poison, algaecides for water purification, blue pigment for inks, fabric dyes, chemicals for carbon dioxide absorption and for electroplating.

Modern day applications of copper are in the construction industry (air conditioning units, cabling and wiring); electrical products (telecommunications, power and electronic products) industrial machinery and equipment (generators and transformers); and transport (vehicles and radiators). The world's copper producing countries are: -

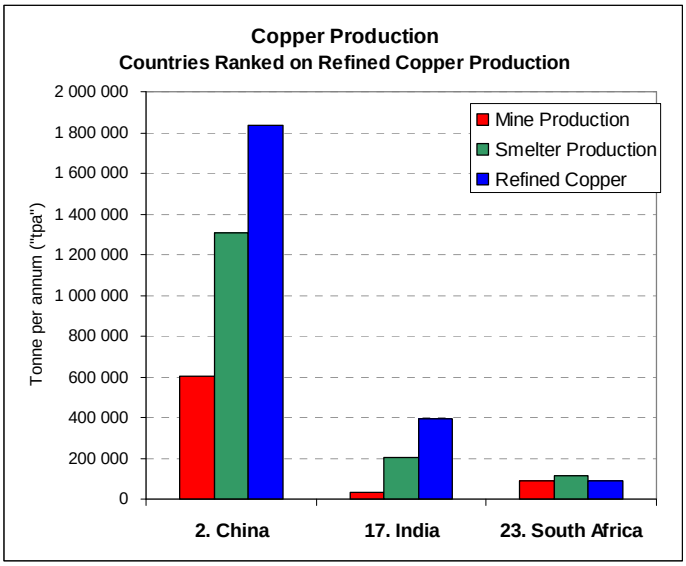
Figure 4.3-1: Ranking and Comparative Size of Copper Producing Countries (2003)



Source: World Metals & Minerals Review 2005

China is the 2nd ranked copper production country in the world, despite not having substantial reserves to the same scale as the other copper producers.

Figure 4.3-2: Comparison of Copper Production in China and South Africa (2003)



Source: World Metals & Minerals Review 2005

South Africa's copper industry, ranked 23rd in the world, is somewhat constrained to a balance between resources and mine production to meet the basic domestic demand.

4.3.2. Chinese Copper

China is a major copper market with a growing supply capacity. The key figures for the industry are: -

Table 4.3-1: Copper Industry Production – China

COPPER [tpa]	1999	2000	2001	2002	2003
Mine output, Cu content	520 000	593 000	587 000	568 000	610 000
Metal: Smelter, primary	837 000	1 020 000	1 150 000	1 180 000	1 380 000
Metal: Total Refinery	1 180 000	1 370 000	1 520 000	1 650 000	1 850 000
Primary	836 000	1 020 000	1 220 000	1 300 000	1 420 000
Secondary	344 000	350 000	300 000	350 000	430 000

Source: USGS

The Chinese copper industry has experienced growth of more than 12% per year over the past five years.

The Chinese copper industry is dependent upon imports for between 65% and 75% for its raw materials in metal form, as shown in the table below.

Table 4.3-2: Demand and Supply of Copper Raw Materials and Products – China (2003)

COPPER [tpa]	PRODUC-TION	IMPORTS	EXPORTS	APPARENT DEMAND	LOCAL SUPPLY
Mine output, Cu content	610 000	0	0	610 000	100%
Metal Smelter, primary	1 380 000	2 670 000	67 083	3 982 917	35%
Refined metal & semis	1 850 000	5 779 701	232 880	7 396 821	25%

Source: USGS

4.3.3. South African Copper

South Africa's copper industry is somewhat stagnant and declining, as shown in the key figures below: -

Table 4.3-3: Copper Production -- South Africa

Copper [1 000 t]	1999	2000	2001	2002	2003
Mine (company output), Cu content	144	137	142	130	90
Metal:					
Smelter	149	173	143	120	112
Refined, primary	135	126	132	101	93

Source: USGS

A number of mining and production operations were scaled down during this period.

4.4. NICKEL

4.4.1. World Nickel

Nickel (atomic symbol Ni) is a hard, ductile malleable metal with a silvery tinge that can take on a high polish. It has a high melting temperature (1 453ºC) and exhibits ferromagnetism, but conducts heat and electricity somewhat poorly. Nickel is an important industrial material as a result of its high resistance to corrosion and oxidation, as well as its retention of strength at elevated temperatures. The main application of nickel is therefore in the production of high quality stainless steel and other corrosion-resistant alloys.

The main applications of nickel in alloying comprises more than 60% of total use, especially in stainless steel, where it typically comprises 8% to 12% of the steel, and in super-alloys, nickel plating (for turbine blades, helicopter rotors, and extrusion dies) and cupronickel alloys. Nickel is also used as a substitute for silver in coins, for rechargeable “ni-cad” (NiCd) batteries, electronic circuitry, catalysts, paints and welding electrodes. Hybrid electrical vehicles may become a long-term demand factor in future.

Nickel ore deposits are of two types: -

- Sulphide deposits – for example from Sudbury, Canada, and Noril’sk, Russia, where copper, cobalt and platinum-group metals are co-products; mined by underground methods, the main production source, processed by electrolysis to different purities.

- Lateritic (oxide) deposits – for example from Cuba, New Caledonia and Indonesia, where cobalt may be a by-product; of geologically recent age; normally mined by open pit methods; processed by smelting to ferro-nickel (30% to 40% Ni, the remainder iron), for direct use by the stainless steel industry.

The regional mix of demand and supply is presented in the table below: -

Table 4.4-1: World Market Size for Nickel [tpa]

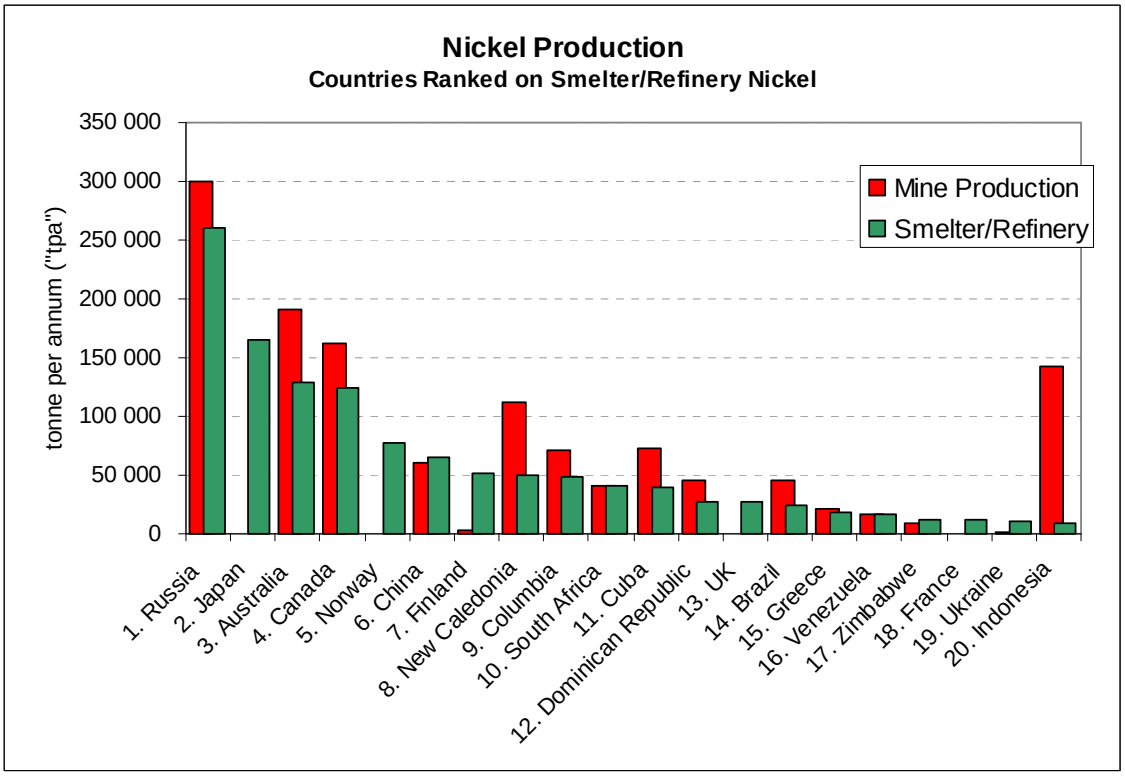
REGION	DEMAND	SHARE [%]	PRODUCTION	SHARE [%]
Europe	430 000	35%	185 000	15%
Asia	425 000	34%	180 000	15%
Former East Bloc	175 000	14%	385 000	31%
Americas	160 000	13%	250 000	20%

REGION	DEMAND	SHARE [%]	PRODUCTION	SHARE [%]
Oceania, Africa & Other	50 000	4%	240 000	19%
TOTAL	1 240 000	100%	1 240 000	100%

Source: World Metals & Minerals Review 2005

The leading nickel producing countries are Russia, Japan, Australia and Canada, as illustrated in the graph below: -

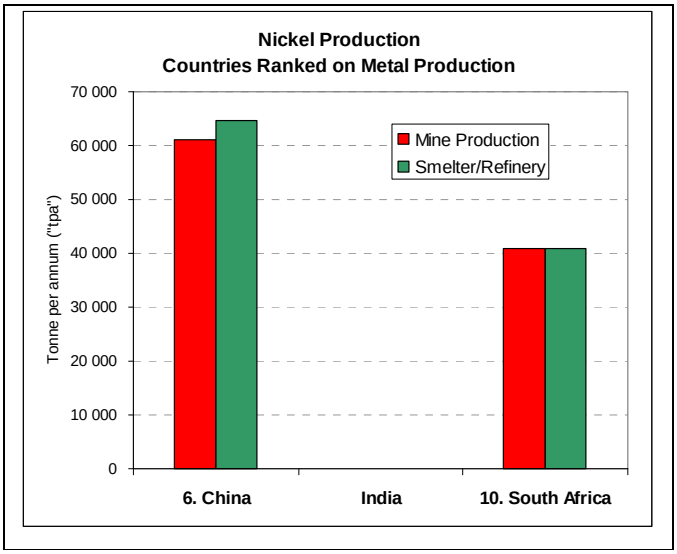
Figure 4.4-1: Ranking and Comparative Size of Nickel Production Countries (2003)



Source: World Metals & Minerals Review 2005

China and South Africa both have nickel industries essentially to support the local stainless steel production volumes, as shown in the graph below: -

Figure 4.4-2: Nickel Production in Study Countries (2003)



Source: World Metals & Minerals Review 2005

4.4.2. Chinese Nickel

China has nickel reserves and production is adequate to meet most of the needs of the growing local stainless steel industry, as follows: -

Table 4.4-2: Nickel Production – China

NICKEL:	1999	2000	2001	2002	2003
Mine output, Ni content	49 500	50 300	51 500	53 700	61 000
Matte	50 100	57 000	59 000	59 200	63 000
Smelter	44 400	50 900	49 500	52 400	64 700

Source: USGS

The Chinese nickel industry is dependent on imports for 47% of its metal requirements, as listed in the table below: -

Table 4.4-3: Demand and Supply of Nickel Raw Materials and Products – China (2003)

NICKEL [tpa]	PRODUC-TION	IMPORTS	EXPORTS	APPARENT DEMAND	LOCAL SUPPLY
Mine output, Ni content	61 000	8 405	0	69 405	88%

NICKEL [tpa]	PRODUC-TION	IMPORTS	EXPORTS	APPARENT DEMAND	LOCAL SUPPLY
Matte	63 000	9 185	0	72 185	87%
Smelter, metal	64 700	58 074	0	122 774	53%

Source: USGS

4.4.3. South African Nickel

The supply side of the South African nickel industry is essentially determined by the mining of platinum-group metals, of which nickel in a by-product. The demand side is stimulated by the thriving local stainless steel industry. The size of the industry is: -

Table 4.4-4: Nickel Production -- South Africa

NICKEL [t]	1999	2000	2001	2002	2003
Mine output, concentrate, nickel content	36 200	36 600	36 400	38 500	40 800
Metal, electrolytic	28 300	30 900	30 500	31 600	25 500

Source: USGS

4.5. SUMMARY TOTALS

The relative sizes of the metals industries and market shares of the study countries are summarised in the tables below: -

The relative sizes of the metals industries and market shares of the study countries are summarised in the tables below: -

Table 4.5-1: Comparative Output of Primary Metals for Study Countries (2004/2005) [tpa]

PRODUCTION	STEEL	ALUMINIUM	COPPER	NICKEL
World	1 129 000 000	31 200 000	15 770 000	1 500 000
China	349 400 000	7 200 000	2 035 000	71 000
India	38 100 000	860 000	400 000	0
South Africa	9 500 000	830 000	87 000	41 700

Table 4.5-2: Comparative of Counties on Share of World Market

MARKET SHARE	STEEL	ALUMINIUM	COPPER	NICKEL
China	30,9%	23,1%	12,9%	4,7%
India	3,4%	2,8%	2,5%	0,0%
South Africa	0,8%	2,7%	0,6%	2,8%

Based on an average reference price, the market values are estimated as in the following table.

Table 4.5-3: Market value of primary Products [US$ billion per year]

VALUE	STEEL	ALUMINIUM	COPPER	NICKEL
World	340	60	43	22
China	105	14	5,5	1,0
India	11	1,7	1,1	--
South Africa	2,9	1,6	0,2	0,6

5. FEATURES OF INDUSTRIES

5.1. CHINESE MINERAL RESOURCES FOR METAL SECTOR

China's rapid growth trends over the past two decades were stimulated by large scale infrastructure development, demand for capital goods and increasing demand for consumer goods. Consumption rates of mineral and metal products increase exponentially during such growth phases, as a result of increasing per capital consumption as a function of increasing wealth, expressed as per capital GDP.

Different development stages impact more on different products. The infrastructure phase stimulates demand for cement, construction materials and steel profile products. The light manufacturing phase stimulates copper consumption first, followed by aluminium and steel in the heavy manufacturing phase. For the manufacturing of high-technology consumer goods, industrial minerals are more in demand. In a maturing economy with higher per capital GDP levels and a growth phase in the services industries, materials consumption tends to stabilise.

In 2004, exploration licences issued by China increased by more than 60%, to a total of more than 12 700, leading to a discovery of more than 200 medium-to-large mineral deposits. More than 42 500 mining licences were issued.

The booming economy: trade US$1 155 (exports: US$593 billion, imports US$561, trade surplus US$32 billion). More than 43 600 FDI entities established, with signed FDI contracts worth US$150 billion, US$60 billion committed.

Mining output of top 10 non ferrous metals increased by 16% to 14,3 Mtpa. Imports of minerals and metals, and value added products, amounted to US$151 billion (a 49% increase over the previous year) and exports amounted to US$89 billion (50% increase). Trade in minerals and metals products represents 21% of total trade by China. In January 2005, China abolished an export tax refund for various mineral products, including electrolytic aluminium and nickel products.

Strong demand from China for raw materials is one of the main driving forces for the upward shift in global metals and other commodity prices in the recent past.

5.2. SOUTH AFRICAN MINERAL RESOURCES FOR METAL SECTOR

South Africa has a well established, resourceful and entrepreneurial, century-old mineral mining industry, which makes a substantial contribution to the national economy. It has a high degree of technical expertise and entrepreneurial drive, with the ability to mobilise capital for new projects. South Africa is globally recognised as a leading supplier of high quality minerals and metal products. Approximately 60 commodities are being produced by 920 mines and quarries.

In addition to the unique and extensive Witwatersrand basin, which yields a considerable portion of the world's gold reserves and production, a number of other geological formations are relevant to the metals sectors: -

- The Transvaal Supergroup contains iron ore and manganese;
- The Bushveld Complex contains more than a half of the world's reserves of platinum group metals and chromium, as well as iron, copper, nickel, vanadium, titanium, and fluorspar;
- The Phalaborwa Complex contains extensive deposits of copper, iron ore, phosphate, titanium, and vermiculite;
- Large deposits of lead and zinc, associated with copper and silver in the Northern Cape.

5.3. WORLD STEEL INDUSTRY

5.3.1. Size of the Industry

The world steel production exceeds 1 000 Mtpa. Its raw materials are mainly scrap steel (for the 45% of production based on electric arc furnaces operations) and iron ore, ideally with a 65% iron content (for integrated steel mills with blast furnace operations). These mills are supplied mainly by the world production of iron ore exceeding 1 200 Mtpa, as listed in the table below, and a seaborne trade in iron ore of 600 Mtpa.

Table 5.3-1: World Iron Ore Production (2003)

RANK	COUNTRY	PRODUCTION [Mtpa]	SHARE [%]
1	China	261	21%
2	Brazil	235	19%
3	Australia	213	17%
4	India	121	10%
5	Russia	92	7%
6	Ukraine	63	5%
7	USA	50	4%
8	South Africa	38	3%
9	Canada	33	3%
10	Iran	22	2%
11	Sweden	22	2%
12	Kazakhstan	19	2%
13	Venezuela	18	1%
14	Mexico	12	1%
15	Mauritania	10	1%
16 - 47	Rest of World (32 countries)	30	2%
47	World Total	1 238	100%

Source: US Geological Survey Minerals Yearbook, 2004

These production outputs are supported by the proven reserves for the respective countries as follows:

Table 5.3-2: World Iron Ore Reserves (Proven Resources)

RANK	COUNTRY	RESERVES - IRON CONTENT [Mt]	SHARE [%]
1	China	21 000	30,0%
2	Russia	14 000	20,0%
3	Australia	11 000	15,7%
4	Ukraine	9 000	12,9%
5	Brazil	4 800	6,9%
6	India	4 200	6,0%
7	Kazakhstan	3 300	4,7%
8	Venezuela	2 400	3,4%
9	Sweden	2 200	3,1%
10	USA	2 100	3,0%
11	Canada	1 100	1,6%

RANK	COUNTRY	RESERVES - IRON CONTENT [Mt]	SHARE [%]
12	Iran	1 000	1,4%
13	South Africa	650	0,9%
14	Mauritania	400	0,6%
R	Rest of the World	13 850	19,8%
T	World Total	70 000	100,0%

Source: Source: US Geological Survey Minerals Yearbook, 2004

Total resources of iron ore (unproven reserves) are estimated at more than 200 000 Mt.

Japan, Germany and Korea do not have local iron ore resources, but are significant producers of pig iron and crude steel, as listed in the tables below: -

Table 5.3-3: World Pig Iron Production (2003)

RANK	COUNTRY	PRODUCTION [Mtpa]	SHARE [%]
1	China	202,7	28,7%
2	Japan	82,1	11,6%
3	Russia	51,2	7,3%
4	USA	40,9	5,8%
5	India	33,6	4,8%
6	Brazil	32,5	4,6%
7	Germany	30,1	4,3%
8	Ukraine	29,6	4,2%
9	South Korea	27,3	3,9%
10	France	12,6	1,8%
11	UK	10,3	1,5%
12	Taiwan	10,3	1,5%
13	Italy	10,1	1,4%
14	Mexico	9,7	1,4%
15	Canada	8,6	1,2%
16	Australia	8,0	1,1%
17	Belgium	7,8	1,1%
18	South Africa	7,7	1,1%
19	Iran	7,2	1,0%
20	Venezuela	6,7	0,9%
20 - 59	Rest of World (39 countries)	76,4	7,7%
59	World Total	705,4	100,0%

Source: US Geological Survey Minerals Yearbook, 2004

China is the top steel producer in the world with a market share approaching 25%. It has a 21% share in iron ore production, 29% in pig iron and 23% in crude steel production, compared to South Africa with a 3% share in iron ore production, 1,1% in pig iron and 1,0% in crude steel production

Table 5.3-4: World Crude Steel Production (2003)

RANK	COUNTRY	PRODUCTION [Mtpa]	SHARE [%]
1	China	220,1	22,8%
2	Japan	110,5	11,4%
3	USA	93,7	9,7%
4	Russia	62,7	6,5%
5	South Korea	46,3	4,8%
6	Germany	44,8	4,6%
7	Ukraine	36,9	3,8%
8	India	31,8	3,3%
9	Brazil	31,2	3,2%
10	Italy	26,8	2,8%
11	France	19,8	2,0%
12	Taiwan	18,8	1,9%
13	Australia	18,8	1,9%
14	Turkey	17,6	1,8%
15	Spain	16,4	1,7%
16	Canada	15,8	1,6%
17	Mexico	15,2	1,6%
18	UK	13,3	1,4%
19	Belgium	11,1	1,1%
20	South Africa	9,5	1,0%
21	Poland	9,1	0,9%
22	Iran	7,9	0,8%
23	Czech Republic	6,8	0,7%
24	Netherlands	6,6	0,7%
25	Austria	6,2	0,6%
26	Romania	5,7	0,6%
27	Sweden	5,7	0,6%
28	Kazakhstan	5,1	0,5%
29	Argentina	5,0	0,5%
30 - 84	Rest of World (54 countries)	47,8	4,9%
84	World Total	967,0	100,0%

Source: US Geological Survey Minerals Yearbook, 2004

In 2004, world steel production exceeded the 1 billion tonne threshold for the first time ever, with total crude steel production of 1 050 Mtpa. China achieved an output of 260 Mtpa crude steel. China has one steel company in the top-ten largest steel groups in the world, and in the top-30, it six companies ranked in this top group.

Table 5.3-5: Largest Steel Groups of Companies in the World

WORLD RANKING	GROUP OF COMPANIES	PRODUCTION CAPACITY [Mtpa]		ANALYSIS [%]	
		2003	2004	Share	Change Year-on-Year
1	Arcelor	42,8	46,9	4,5%	10%
2	Mittal Steel	35,3	42,8	4,1%	21%
3	Nippon Steel	31,3	32,4	3,1%	4%
4	JFE	30,2	31,6	3,0%	5%
5	POSCO	28,9	30,2	2,9%	4%
6	**Shanghai Baosteel**	**19,9**	**21,4**	**2,0%**	**8%**
7	US Steel	17,9	20,8	2,0%	16%
8	Corus Group	19,1	19,0	1,8%	-1%
9	Nucor	15,8	17,9	1,7%	13%
10	ThyssenKrupp	16,1	17,6	1,7%	9%
11	Riva Acciao	15,7	16,7	1,6%	6%
12	ISG	10,6	16,1	1,5%	52%
13	Gerdau	12,3	14,6	1,4%	19%
14	Sumitomo	12,8	13,0	1,2%	2%
15	EvrazHolding	12,1	12,2	1,2%	1%
16	SAIL	12,4	12,1	1,2%	-2%
17	**Anshan**	**10,2**	**11,3**	**1,1%**	**11%**
18	Magnitogorsk	11,5	11,3	1,1%	-2%
19	China Steel	10,8	10,9	1,0%	1%
20	Severstal	9,9	10,4	1,0%	5%
21	**Wuhan**	**8,4**	**9,3**	**0,9%**	**11%**
22	Novolipetsk	8,9	9,1	0,9%	2%
23	Imidro	7,8	8,7	0,8%	12%
24	**Shougang**	**8,2**	**8,5**	**0,8%**	**4%**
25	Salzgitter1	8,0	8,1	0,8%	1%
26	**Maanshan**	**6,1**	**8,0**	**0,8%**	**31%**
27	Kobe Steel	7,3	7,7	0,7%	5%
28	INI Steel	7,2	7,6	0,7%	6%
29	**Jiangsu Shagang Group**	**5,0**	**7,6**	**0,7%**	**52%**
30	Krivorozstal	7,1	7,1	0,7%	0%

Source: IISI World Steel In Figures 2005, The China Analyst for Africa, October 2005

5.3.2. Focus of the Industry and Types of Products

The steelmaking processes and the relevant product categories for the study countries are listed in the table below: -

Table 5.3-6: Products and Processes of the World Steel Industry

PRODUCT OR PROCESS	World	China	India	South Africa
Iron ore	1 230 308	261 185	105 500	38 086
Pig Iron	658 678	202 312	26 550	6 234
Direct-Reduced Iron	45 858	310	7 051	1 542
Crude Steel	968 256	220 115	31 779	9 481
Processes: -				
BOF/OBC	615 831	187 200	17 910	5 083
EF/EAF	315 253	31 370	12 070	4 398
OHF & Others	34 433	50	1 800	
Total	965 517	218 620	31 780	9 481
Products: -				
Hot rolled products	851 128	235 816		6 796
Hot rolled long products	350 231	134 529	15 299	2 658
Hot rolled flat products	421 449	90 871	20 005	4 138
Railway track material	5 791	1 839	940	30
Heavy sections	34 007	9 992		425
Light sections	74 510	68 196		193
Concrete reinforcing bars	41 388	16 600		463
Other hot rolled bars	60 220	5 000		539
Wire rod	97 674	40 324	11 270	1 008
Electrical sheet and strip	7 285	1 932	163	0
Tin mill products	12 658	1 000	153	318
Metallic coated sheet	77 423	2 587		671
Non-metallic coating	5 883			
Tubes and tube fittings	57 987	17 699	525	500
Seamless tube	17 034	6 999		60
Welded tube	36 453	10 700		500

Source: IISI

5.3.3. Trade Structure – Imports and Exports

The trade patterns in major categories of steel products and raw materials are as follows: -

Table 5.3-7: Trade in Steel Products and Raw Materials [Mtpa]

ITEM	World	China	India	South Africa
Exports of finished and semi-finished products	337 931	8 481	5 548	5 098
Imports of finished and semi-finished products	322 939	43 197	1 454	311
Exports of iron ore	585 964	1	55 000	24 076
Imports of iron ore	582 541	148 128	457	0
Exports of steel scrap	77 670	4	31	385
Imports of steel scrap	80 385	10 520	2 272	131

Source: IISI

These trade patterns can be compared to the world total as follows:

Table 5.3-8: Market Share of Study Countries in Trade Patterns [% of World Total]

ITEM	China	India	South Africa
Exports of finished and semi-finished	2,5%	1,6%	1,5%
Imports of finished and semi-finished	13,4%	0,5%	0,1%
Exports of iron ore	--	9,4%	4,1%
Imports of iron ore	25,4%	0,1%	--
Exports of steel scrap	--	--	0,5%
Imports of steel scrap	13,1%	2,8%	0,2%

4.3.4 Competitive Analysis

A comprehensive analysis of benchmarking statistics is presented in Addendum C.

An assessment of the cost factors is also included in the analysis.

Industry Competitiveness Factors.

About Benchmarking

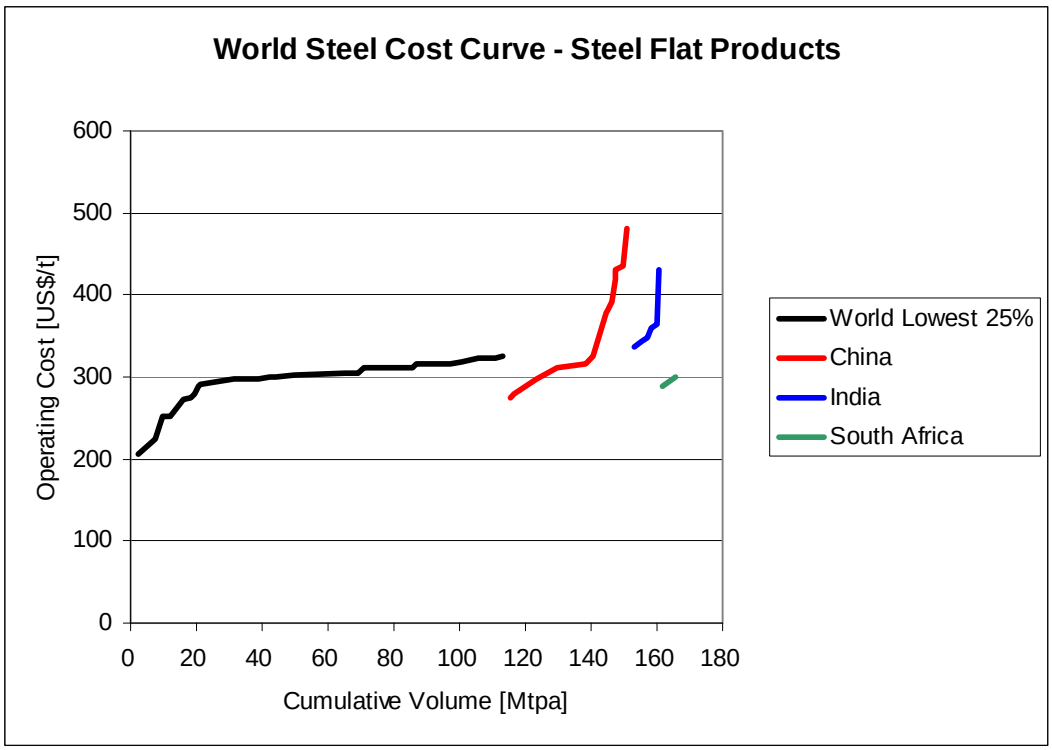
The most informative approach for understanding comparative competitiveness is through benchmarking. The typical application of benchmarking is a comparison of a company against the best-in-class rival(-s) globally. For example, since its inception, China Steel (Taiwan) used Iscor (South Africa, now Mittal Steel) as its benchmark, identifying areas for improvement and striving for specific operating parameters.

Company-to-company benchmarking offers valuable insights. As a note of caution, however, it has to be recognised that the analysis at company level provides a limited perspective. The importance of a wider, industry value chain approach to competitiveness, especially with respect to operating efficiency, is explained in the next section.

World Cost Curve

Competitiveness as company level is still the fundamental building block of competitiveness of industries and countries. The Global Steel Cost Service, jointly published by Metal Bulletin Research and American Metal Market Research, is an example of a global, industry-wide, generic benchmarking study with a world cost curve as an output. Although it involves a number of approximations, such as generic input cost parameters, plant specific operating configurations are taken into account for individual plants.

Figure 5.3-1: Comparison of Operating Costs for Cumulative Capacity Per Study Country



Especially raw materials costs (net of revenues from sale of intermediate products), energy costs, labour complements, fixed assets, operating overheads are modelled with plant-specific parameters. The cost curve for steel indicates the relative competitive position for a specific steel plant, by means of a ranking of operating costs relative to other plants, in terms of cumulative capacity.

Summary Company Assessments for RSA and China

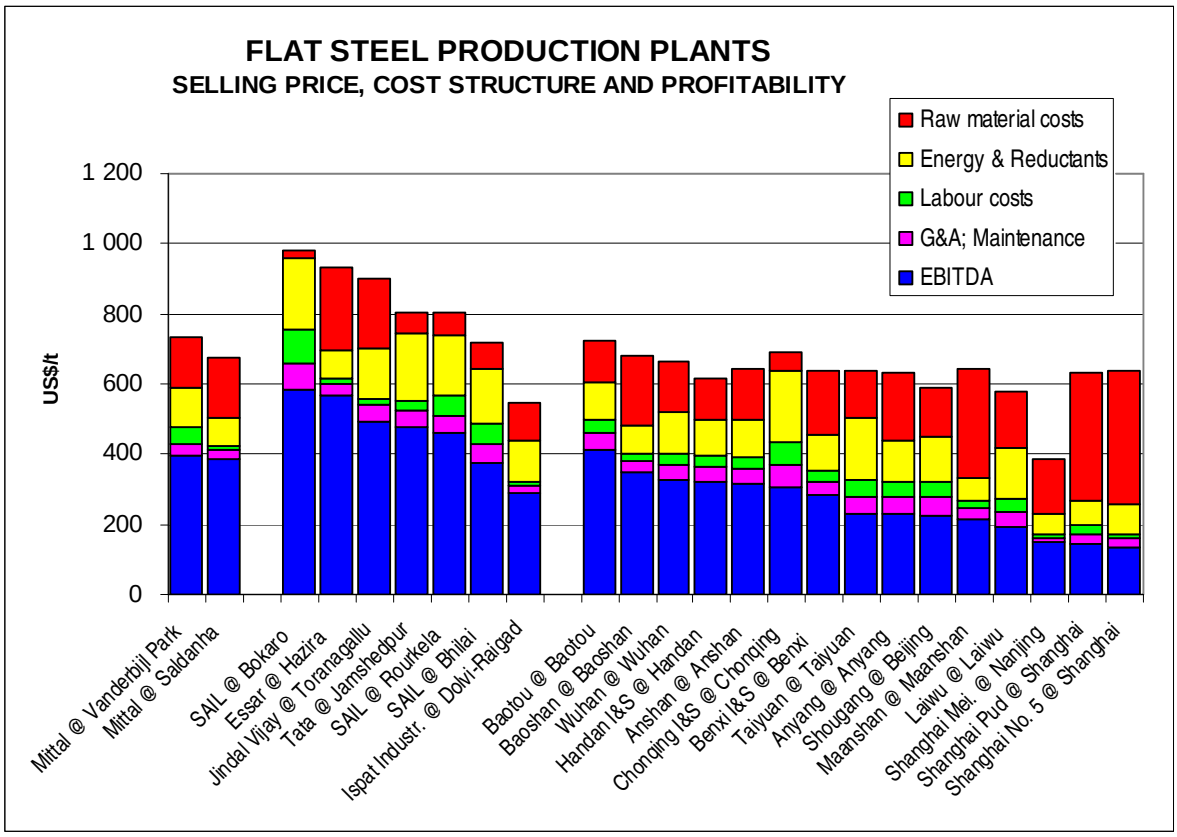
The contents of Table 4.3-9 is a representation of data extracted from the company tables per country that were summarised to country averages flat rolled steel. The comparisons of summary totals and averages of the study countries provide significant insights into their steel industries.

Table 4.3-9: Comparison of Country Averages of Financial Key Figures of Steel Plants (2005)

COUNTRY	South Africa	China
Number of steel plants in study group	2	15
Total production volume of study group [Mtpa]	4,45	31,80
Total employment in study group [people]	11 785	264 398
AVERAGES		
Sales price of goods shipped [US$/t]	720,97	600,46
Raw material costs [US$/t]	152,16	188,29
Energy & Reductants [US$/t]	106,83	103,58
Overheads [US$/t]	67,04	67,19
Labour costs [US$/t]	36,06	29,53
G&A; Maintenance [US$/t]	30,98	37,66
Total operating costs [US$/t]	326,03	359,06
EBITDA [US$/t]	394,94	241,40
Interest [US$/t]	52,76	23,98
Depreciation [US$/t]	26,94	19,17
Total costs [US$/t]	405,73	402,21
Earnings before tax [US$/t]	315,24	197,90
KEY FIGURES		
Finished product volumes [Mtpa]	2,8	4,1
Worker-hours per tonne shipped [hours/tonne]	5,5	13,9
Total employment [people]	8 497	22 392
Total fixed capital cost - historic [US$ billion]	2,60	2,43
Total fixed capital cost - replacement [US$ billion]	3,54	2,92
Total fixed capital cost - historic [US$/t]	918,82	588,89
Total fixed capital cost - replacement [US$/t]	1 247,98	707,07
Employment cost [US$/h]	6,64	2,13
Electricity cost [US$/kWh]	0,04	0,05
Other energy cost [US$/GJ]	3,25	4,52
Asset productivity (Revenue/asset value) [%]	78%	102%

The graph below illustrates the cost structure and profitability for the steel plants in the study countries, in line with the previous summary table. Plants are ranked in order of increasing headline earnings.

Figure 5.3-2: Comparison of Steel Plants Ranked in Terms of Headline Profitability (First Quarter 2005)



Note: Plants grouped for South Africa, India (for information) and China, respectively

According to the contents of Table 4.3-9, South Africa has a 20% higher average selling price than China, with 10% lower operating costs, although general overheads (including labour costs) are similar. Profitability of the South African steel industry is substantially higher, at an EBITDA of US$395/t compared to US$241/t in China.

China has relatively larger steel plants (at an average of 4,1 Mtpa, 50% larger than the South African average of 2,8 Mtpa), with more substantial employment levels of 22 400 workers per plant (2 1/2 –times that of South Africa). The cost of a new steel plant in China, at US$707/t, is more than 40% lower than in South Africa, at US$1 247/t.

The individual cost items should not be reviewed in isolation. The steel plants may involve different technologies, ranging from integrated steel plants (a low raw material input cost, with higher levels of processing cost, essentially energy and labour costs) to mini-mills (a higher raw material input cost linked with a lower processing cost).

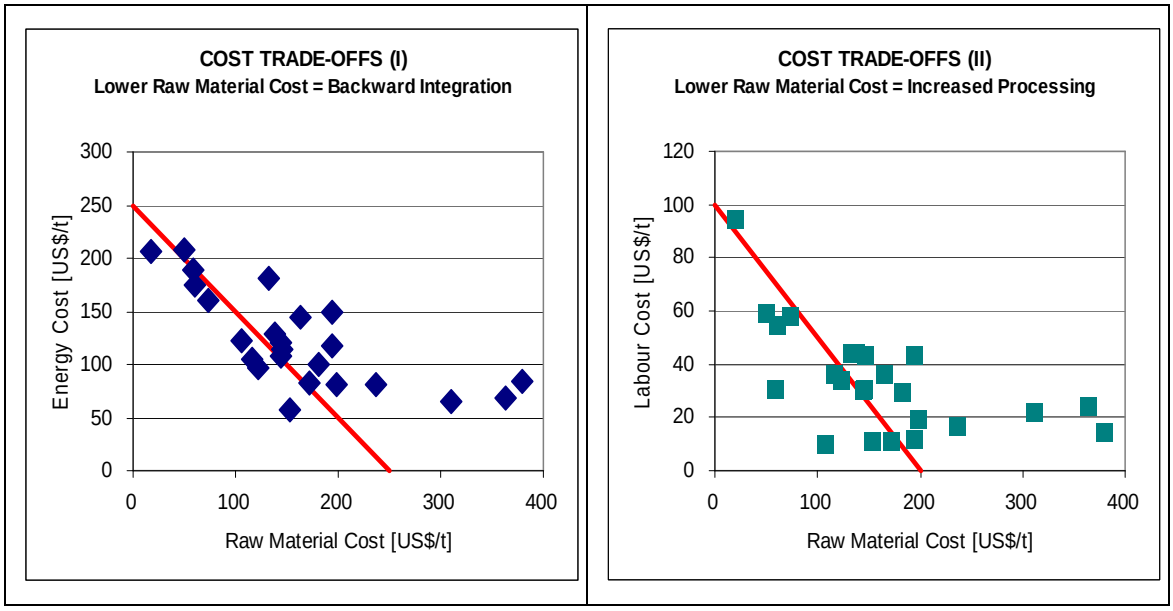
A trade-off can therefore be expected between certain cost factors, depending on the degree of backward integration, for example:

i. Between raw materials and energy costs

ii. Between raw materials and labour costs

These cost factors are plotted for all the steel plants listed in this analysis above. The trade-off relationships are clearly illustrated for the majority of data points, as presented in the graphs below, although there are a few exceptions for very high raw material costs. Other factors may also be applicable in these cases.

Figure 5.3-3: Examples of Cost Trade-offs



Comparison of cost items.

By means of a summary of summaries, the average cost structure and profitability of steel plants per country can be expressed in the unitised unity, relative to each US$1 of revenue turnover. It allows for certain per country conclusions to be drawn, as follows: -

Table 4.3-10: Financial Key Figures in Unity Format per Country (per US$1,00 Sales Price)

COUNTRY	South Africa	China
Sales price of goods shipped [US$/t]	1,00	1,00
Raw material costs [US$/t]	0,21	0,31
Energy & Reductants [US$/t]	0,15	0,17
Overheads [US$/t]	0,09	0,11
Labour costs [US$/t]	0,05	0,05
G&A; Maintenance [US$/t]	0,04	0,06
Total operating costs [US$/t]	0,45	0,60
EBITDA [US$/t]	0,55	0,40
Interest [US$/t]	0,07	0,04
Depreciation [US$/t]	0,04	0,03
Total costs [US$/t]	0,56	0,67
Earnings before tax [US$/t]	0,44	0,33
Total fixed capital cost - historic [US$/t]	1,27	0,98
Total fixed capital cost - replacement [US$/t]	1,73	1,18

Per US$1,00 of turnover revenue, South African steel manufacturers require: US$1,73 of new steel plant, with 36¢ of raw materials and energy; plus 9¢ of overheads (5¢ labour costs and 4¢ general & other), for a total operating cost of 45¢

Per US$1,00 of turnover revenue, Chinese steel manufacturers require: US$1,18 of new steel plant, with 45¢ of raw materials and energy; plus 11¢ of overheads (5¢ labour costs and 6¢ general & other), for a total operating cost of 60¢

On average steel plants in China, compared to South Africa, have: -

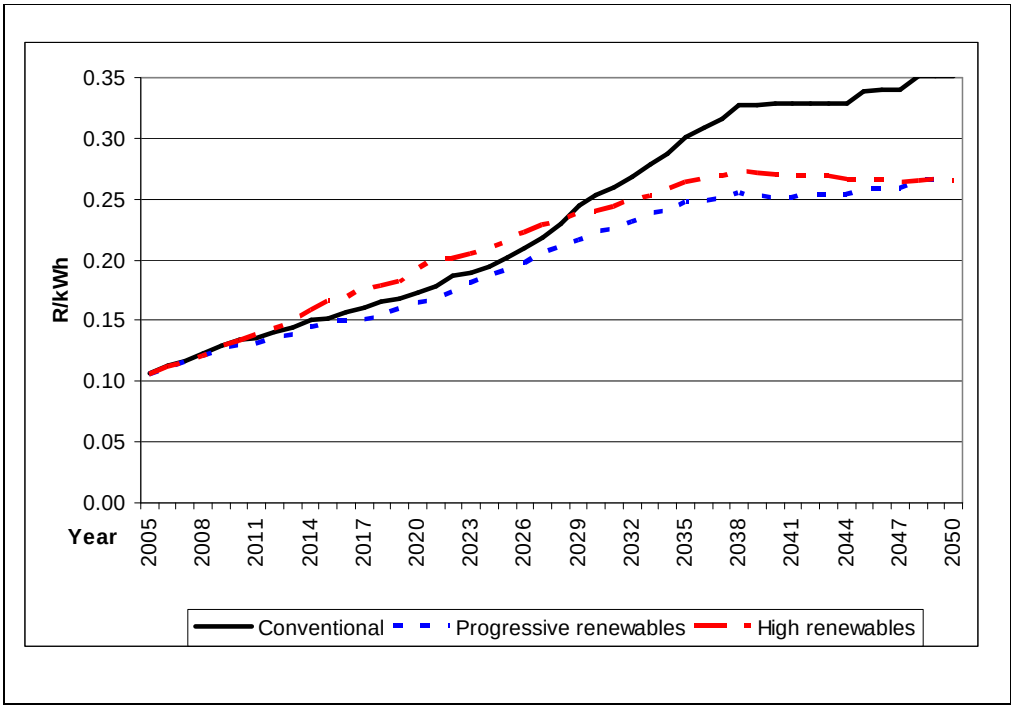
- A production capacity of 1 ½-times higher and an employment absorption of three-times more;
- An employment cost per worker of only ⅓, but worker-hours per tonne of steel produced of 2 ½-times;
- Lower headline earnings profitability (as EBITDA) of only 61%, due to 17% lower selling prices and 24% higher raw materials costs and 10% higher operating costs;
- Energy and reductants are 30% more expensive in terms of unit costs but total average cost is comparable – which can be ascribed to the process-related trade-offs as discussed above;
- The capital cost per plant (as fixed assets per tonne of steel produced, in US$/t) is 40% lower, resulting in 30% lower depreciation charges and only ½ of the interest

payments; asset productivity (revenue turnover earned relative to fixed capital cost) is accordingly 30% higher.

It is known that the Chinese government(s) intervene in the cost of companies. This is so where SOE's and banks are involved. In respect of the above cost structure the low Chinese energy cost, interest charges and cost of plant are suspicious. SOE's abound in heavy industries.

4.3.4.2 Energy South Africa

Figure 5.3-4 Long-term Cost Curve for Energy Cost in South Africa



Source: SECCP

In terms of energy cost, South Africa attains the top ranking in the world.. This raises the issue of vulnerability to energy costs, however, which is indicated by South Africa's very high consumption of energy relative to commercial output. Any increase in energy cost would therefore have a higher than average impact on commercial activities. The long-term projection for energy cost in South Africa, based on a scenario study conducted by SECCP on the deployment of conventional and renewable energy sources, indicates a possible doubling of unit costs in real terms over the next 20 years (Figure 4.4).

This assessment is based on the assumption that the energy portfolio would be built up over time by the implementation – in phases – of the most economic alternative available at that time that would provide the required additional capacity.

4.3.5 Performance Outlook – Expansion/Decline

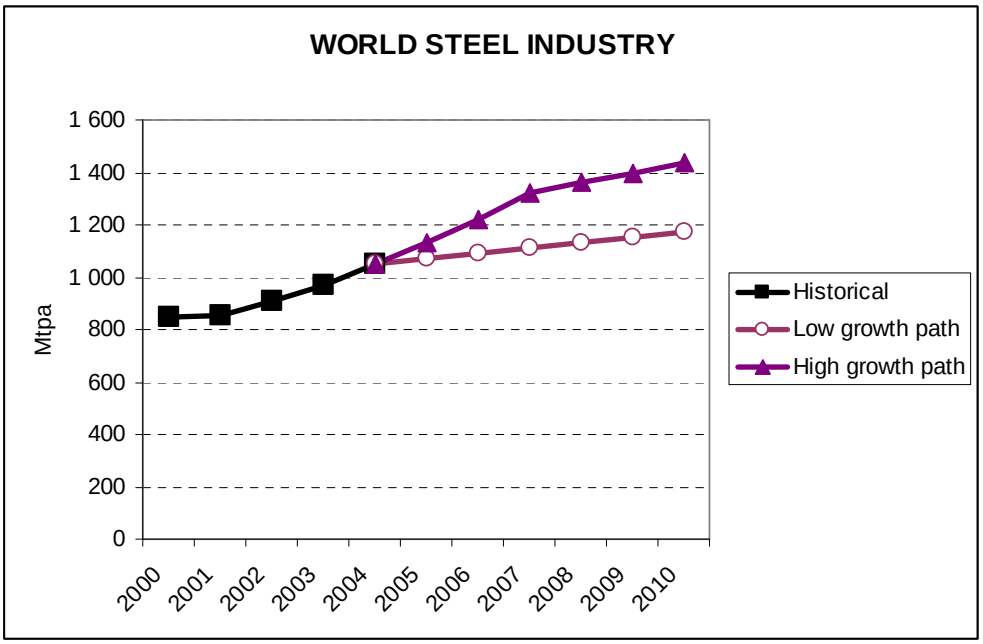
The growth trend for the global steel industry increased to 5,9% per year for the five years from 1999 to 2004, compared to the 1,7% for the previous five years before 1999. This was essentially as result of the growth in steel production in China by more than 16% pa. In the ten years since 1994, China's steel production increased by more than 200%, as shown in the table below: -

Table 4.3-11: Steel Industry Growth Trends

STEEL	1994	1999	2004
China	81	124	269
Rest of World	644	665	781
World	725	789	1 050
China Share [%]	11%	16%	26%
GROWTH TRENDS		1994 – 1999	1999 – 2004
Growth – China		8,9%	16,8%
Growth - Rest of World		0,6%	3,3%
Growth – World		1,7%	5,9%

If the current growth trends continue, a total steel production of more than 1 400 Mtpa can be expected by 2010, but the alternative, low growth scenario indicates steel production of 1 180 Mtpa by then.

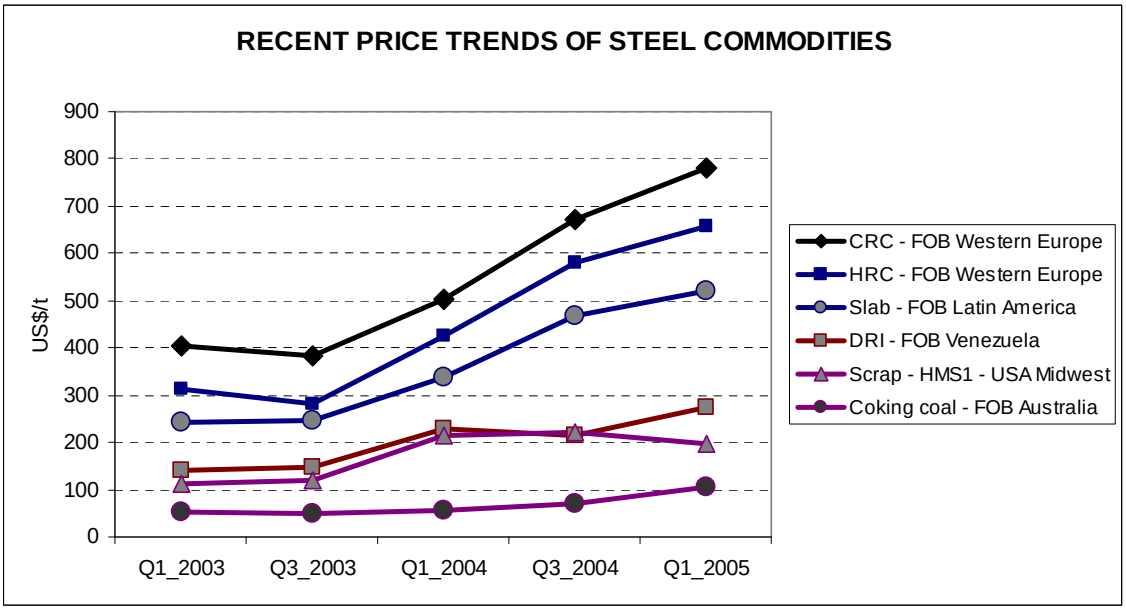
Figure 5.3-5 Growth Scenarios for World Steel



4.3.6 Cost Structure, Pricing and Logistics

Steel prices have experienced a persistent upward pressure in recent years, as depicted in the graph below:

Figure 5.3-6 Increasing Price Trends for Steel Products and Materials



5.4. CHINESE STEEL INDUSTRY

5.4.1. Production, Number of Producers, Capacity

China's strongly increasing demand for steel is seen as a possible long term solution for the global steel industry, particularly to exploit existing over capacity and improve profitability of steelmakers. In reality, however, China may not offer such a solution. China may gradually be in a better position to satisfy its total domestic market for flat steel. If there is eventually only a slight slow down in demand from China, then it may become a net exporter of flat steel products, to the detriment of existing high cost producers.

Since 2000, the demand for steel in China has grown by 17% pa, compared to 2% pa for the rest of the world. China is presently the only driver for growth in the global steel industry. If it continues to growth at one-half of the current growth rate, then the Chinese market for flat-steel products is expected to be reach a level of 170 Mtpa by 2010, compared to the current base of 100 Mtpa, and to 60 Mtpa in 2000.

New production capacity in China is approximately 60 to 80 Mtpa, doubling capacity available in 2000, with another 20 Mtpa from brownfields expansions and efficiency improvements.

Only the Former Soviet Union republics and South America – Brazil – can compete with new Chinese plants on full cost, including cost of capital, fixed and variable cost, and logistics. At current (higher) price levels, a number of steelmakers from high cost regions can also compete on a variable cost basis.

China is the world's largest steel consumer, at some 30% of global demand, driven by the construction and automotive markets. China's imports of iron ore were relatively constant at 50 Mtpa for the period between 1995 and 1999, but since then the levels of imports increased in a straight line to 160 Mtpa by 2004. Growth is expected to continue for the foreseeable future.

Since 2002, the price of steel scrap more than doubled from typical levels of US$100 to US$150/t, to levels of US$350/t at time, due to strong demand and aggressive procurement by Chinese buyers.

The iron ore producers in China are: -

Table 5.4-1 : Iron Ore Producers – Major Companies in China

Operating companies	Location of main facilities	Capacity [Mtpa]
Anshan Mining Co.	Liaoning, Anshan	30,0
Shoudu (Capital) Mining Co.	Beijing	20,0
Benxi Iron and Steel Co.	Liaoning, Benxi	13,7
Panzhihua Mining Co.	Sichuan, Panzhihua	13,0
Maanshan Iron and Steel Co.	Anhui, Maanshan	10,0
Baotou Iron and Steel and Rare Earth Co.	Nei Mongol, Baotou	10,0
Wuhan Iron and Steel (Group) Co. (Wugang)	Hubei, Wuhan	5,1
Hainan Iron Mine	Hainan, Changjiang	4,6
Jiuquan Iron and Steel Co.	Gansu, Jiayuguan	4,0
Taiyuan Iron and Steel Co.	Shanxi, Taiyuan	4,0
Handan Xingtai Metallurgical Bureau	Hebei, Handan	3,8
Tangshan Iron and Steel Co.	Hebei, Tangshan	3,0
Meishan Metallurgical Co.	Shanghai	2,0
Dabaoshan Mining Co.	Guangdong, Qujiang	1,7
Banshigou Iron Mine Mining Co.	Jilin, Hunjiang	1,4
Kunming Iron and Steel Co.	Yunnan, Kunming	1,4
TOTAL - MAJOR COMPANIES		127,7

Source: US Geological Survey Minerals Yearbook, 2004

The steel industry in China is highly fragmented, with the largest 18 mills producing approximately 50% of national output, with the remainder produced by more than 800 smaller mills.

The major steel producers in China are: -

Table 5.4-2: Crude Steel Producers – Major Operations in China

Major operating companies	Location of main facilities	Capacity [Mtpa]
Baoshan Iron and Steel (Group) Corp. (Baosteel)	Shanghai	13,0
Wuhan Iron and Steel (Group) Co. (Wugang)	Hubei, Wuhan	10,0
ShouduIron and Steel (Group) Co. (Shougang)	Beijing	8,5
Anshan Iron and Steel (Group) Co. (Angang)	Liaoning, Anshan	8,5
Shanghai Iron and Steel Co. Ltd.	Shanghai	6,0
Baotou Iron and Steel and Rare Earth Co.	Nei Mongol, Baotou	3,5
Maanshan Iron and Steel Co.	Anhui, Maanshan	3,0
Panzhihua Iron and Steel (Group) Co. (Pangang)	Sichuan, Panzhihua	3,0
Benxi Iron and Steel Co. (Bengang)	Liaoning, Benxi	2,7
Taiyuan Iron and Steel Co. (Taigang)	Shanxi, Taiyuan	2,5
Handan Iron and Steel General Work (Handan)	Hebei, Handan	2,4

Major operating companies	Location of main facilities	Capacity [Mtpa]
Tangshan Iron and Steel Co. (Taigang)	Hebei, Tangshan	2,3
TOTAL - MAJOR COMPANIES		65,4

Source: US Geological Survey Minerals Yearbook, 2004

5.4.2. Performance Outlook – Expansion/Decline

In the past decade, China was the source of most of the growth of the steel industry, as shown in the graph below, and summarised in the nearby table: -

Figure 5.4-1: China and World Steel Production [Mtpa]

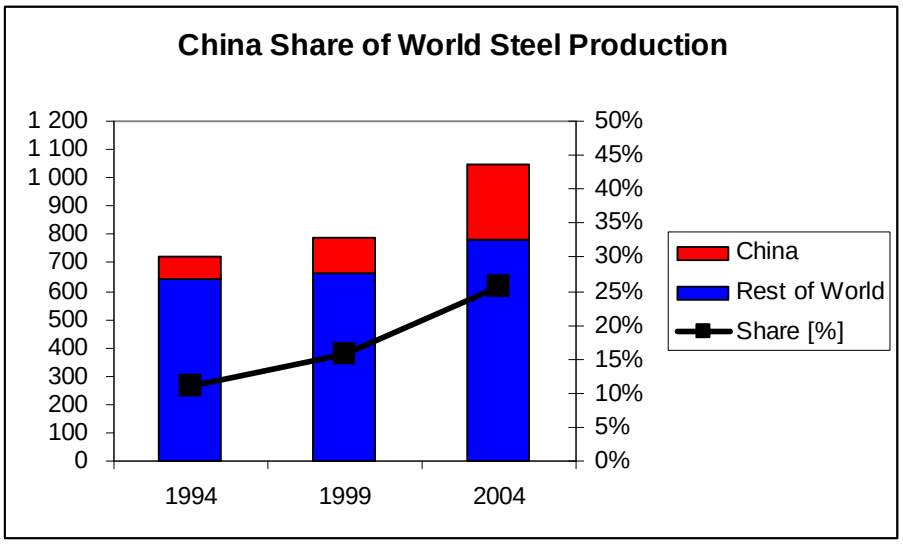


Table 5.4-3: Relative Growth Rates for China and the Rest of the World

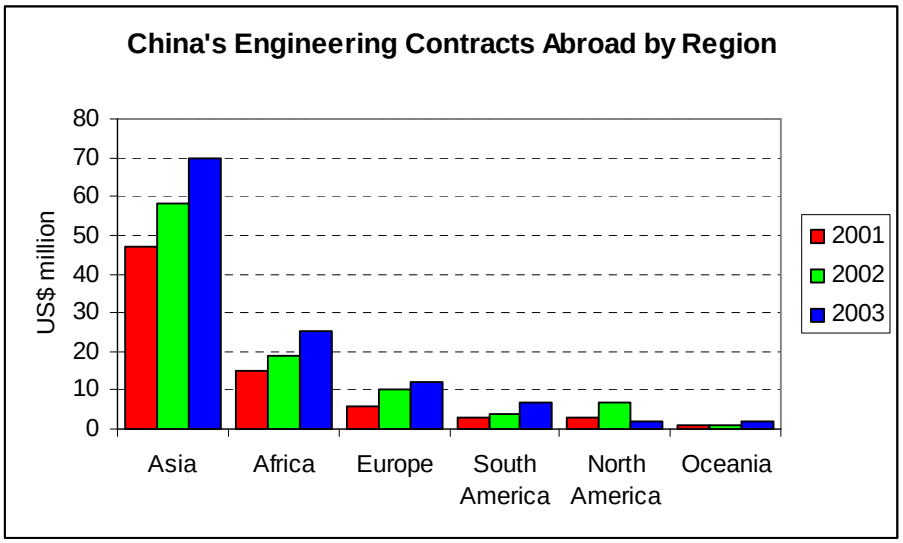
REGION	1994 - 1999	1999 – 2004
China	8,9%	16,8%
Rest of World	0,6%	3,3%
World	1,7%	5,9%

China's iron ore imports, based on an annualized estimate, could potentially increase to between 260 and 290 Mtpa. Steel production estimates range between 310 and 335 Mtpa. Apparent steel consumption in China is also on the increase, as exports are declining, while imports are increasing, without any changes in higher inventory levels.

5.4.3. Linkages

China is intent on developing downstream value-added products. Its success in building a global construction industry can be illustrated (refer graph below) by the repetitive nature of its performance in the global markets.

Figure 5.4-2: China's Revenues in the Global Construction Industry



5.5. SOUTH AFRICAN STEEL INDUSTRY

5.5.1. Production, Number of Producers, Capacity

Kumba exports more than 21 million tonne per annum ("Mtpa") iron ore from Sishen, Northern Cape Province, which is the second largest single open-pit mine in the world. The 860 km rail system that links Sishen to the dedicated deepwater port and bulk-loading facility at Saldanha is one of the most efficient in the world and has advanced logistical systems for handling and loading iron ore. Kumba has a total production of 33 Mtpa iron ore, with a 3,5% world market share, making it the 5th largest supplier globally.

Sishen ore is known for its high grade and consistent lumpy ore quality. Due to its relative "hardness" it can be used for only 10% to 15% of a blended ore charge for a blast furnace, but it is a sought-after material for its quality and smelting characteristics. Kumba has established a diverse and loyal customer base of 34 companies in 12 countries.

The Sishen Expansion Program ("SEP") was recently announced. It comprises a production increase to 39 Mtpa, supported by an upgrade of the Sishen-Saldanha railway line by Transnet to handle the projected increase in exports.

The local steelmaking companies are: -

Table 5.5-1: South African Steel Companies

COMPANY	CAPACITY [Mtpa]
Mittal	7,3
Highveld	1,0
Scaw Metals	0,5
Cape Gate	0,5
Cisco	0,3

The local steel industry key figures for local and trade sales are:

Table 5.5-1: South African Steel Industry Key Figures [tpa]

CONSIDERATION	2004	2005
LOCAL SALES	4 505 400	4 230 800
Flat	2 482 800	2 272 400
Profile	2 022 600	1 958 400
EXPORTS	3 220 000	3 397 900
Flat	2 124 200	2 314 500
Profile	1 095 800	1 083 400
IMPORTS	308 300	335 800
Flat	242 400	253 400
Profile	65 900	82 400

Source: SAISI

5.5.2. Focus of the Industry and Types of Products

South African steel products are mainly used in building and construction, the structural metal industries (tube and pipe, and plate and sheet metal works), for cable and wire products, and for the automotive industries, as follows: -

Table 5.5-2: Applications of South African Steel Products [1000 tpa]

SECTOR	2002	2003	2004	2005 [1]
Mining	124	110	146	164
Manufacturing	2 695	2 216	2 534	2 328
Packaging	313	282	261	256
Structural metal	1 072	782	982	858
Tube & pipe	523	397	529	439
Plate & sheet metal works	477	356	435	420
Roofing & cold forming	72	30	23	37
Agricultural	29	41	39	33
Automotive	310	237	314	290
Electrical apparatus/white goods	57	55	50	47
Cables, wire products & gates	672	617	647	589
Fasteners	52	49	57	50
Other	190	152	181	166
Building & construction	1 034	864	968	955
Unallocated	678	566	866	792
TOTAL	4 531	3 756	4 515	4 239

Source: SAISI

Local steel consumption has remained somewhat stagnant over the past four years.

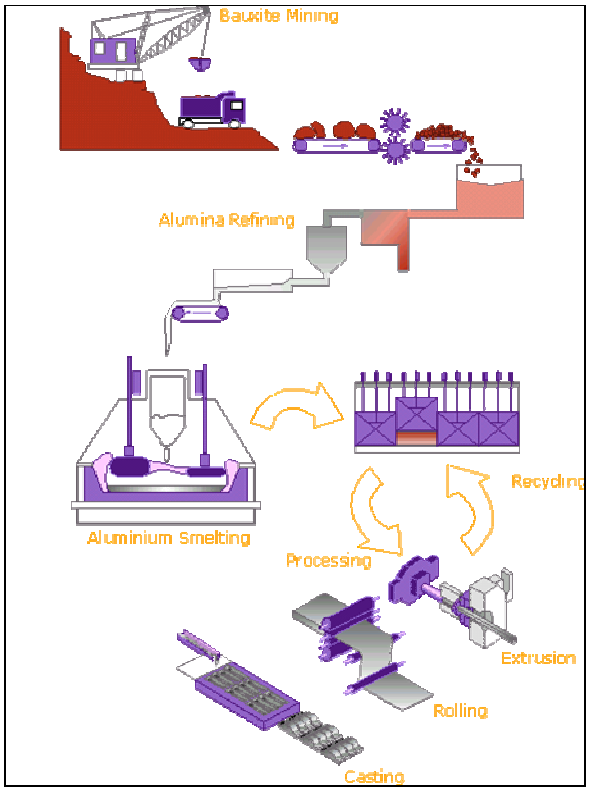
5.5.3. Presence of Multinationals

Mittal Steel is part of a major global group of companies.

5.6. WORLD ALUMINIUM INDUSTRY

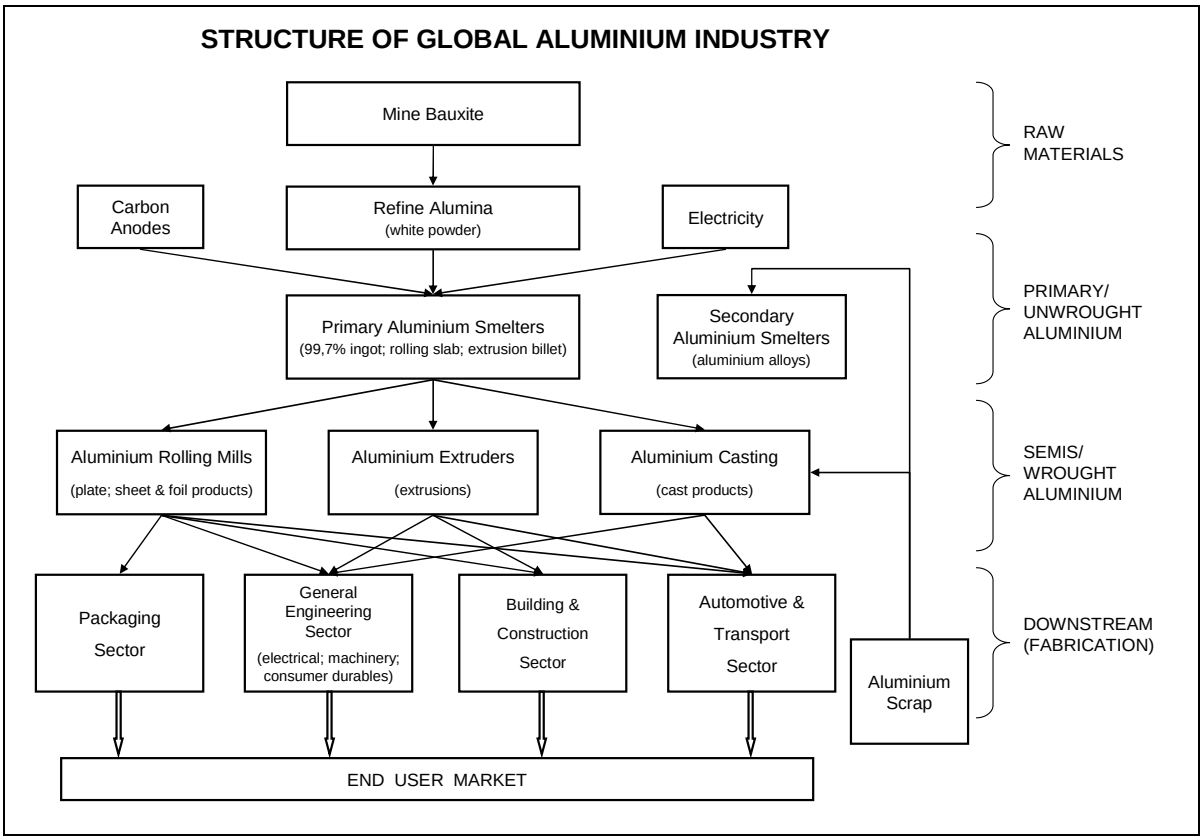
Presently, the only ore exploited for aluminium production is bauxite, a mixture of aluminium and iron oxides. Bauxite is processed to alumina, a pure aluminium oxide. Alumina is treated by electrolysis to produce primary aluminium metal. Approximately four tonnes of bauxite yields two tonnes of alumina, which yields one tonne of aluminium metal.

Figure 5.6-1: : Aluminium Production



The structure of the industry is illustrated as follows: -

Figure 5.6-2: : The Structure and Linkages of the Aluminium Industry



Source: Hulett Alluminium

The world reserves of bauxite comprise: -

Table 5.6-1: World Reserves of Bauxite

COUNTRY	RESERVES [Mt]	SHARE [%]
Guinea	7 400	32,2%
Australia	4 400	19,1%
Jamaica	2 000	8,7%
Brazil	1 900	8,3%
India	770	3,3%
China	700	3,0%
Guyana	700	3,0%
Greece	600	2,6%
Suriname	580	2,5%

COUNTRY	RESERVES [Mt]	SHARE [%]
Venezuela	320	1,4%
Russia	200	0,9%
Rest of the World	3 430	14,9%
TOTAL	23 000	100,0%

Source: World Metals & Minerals Review, 2005

Aluminium raw materials and primary aluminium production is dominated by the "Big-5" companies, comprising: -

1. Alcoa (12%)
2. Russky Alyminy (9%)
3. Alcan (7%)
4. Hydro (6%)
5. BHP-Billiton (4%)

The production capacities for individual plants are as listed below: -

Table 5.6-2: Primary Aluminium Smelter Plants for the World

NR	REGION	COUNTRY	LOCALITY	CAPACITY [tpa]	SHARE [%]
1	Europe	Russia	Bratsk	950 000	2,8%
2	Europe	Russia	Krasnoyarsk	903 000	2,6%
3	Africa	South Africa	Richards Bay, Hillside	670 000	2,0%
4	Asia	UAE	Jebel Ali/Dubai	668 000	2,0%
5	Oceania	Australia	Tomango	540 000	1,6%
6	Africa	Mozambique	Maputo	530 000	1,5%
7	Europe	Tajikistan	Regar	530 000	1,5%
8	Asia	Bahrain	Askar	527 000	1,5%
9	Oceania	Australia	Boyne Island	521 000	1,5%
10	Europe	Russia	Sayanogorsk	500 000	1,5%
11	Americas	Venezuela	Mantanzas	448 000	1,3%
12	Americas	Canada	Baie Comeau	437 000	1,3%
13	Americas	Brazil	Belem	430 000	1,3%

NR	REGION	COUNTRY	LOCALITY	CAPACITY [tpa]	SHARE [%]
14	Americas	Canada	Becancour	410 000	1,2%
15	Americas	Canada	Alma	404 000	1,2%
16	Oceania	Australia	Portland	388 000	1,1%
17	Americas	Brazil	Sao Louis	380 000	1,1%
18	**Asia**	**China**	**Yichuan Aluminium**	**370 000**	**1,1%**
19	**Asia**	**China**	**Qingtongxia Shi**	**360 000**	**1,1%**
20	Europe	Norway	Sunndalsora	360 000	1,1%
21	Americas	Brazil	Sorocaba	350 000	1,0%
22	Oceania	New Zealand	Tiwai Point	349 000	1,0%
23	Asia	India	Renukoot	345 000	1,0%
24	Asia	India	Angul	345 000	1,0%
25	**Asia**	**China**	**Qinghai**	**340 000**	**1,0%**
26	**Asia**	**China**	**Xiexhou**	**330 000**	**1,0%**
27	Americas	USA	Ecansville	310 000	0,9%
28	Europe	Russia	Novokuznetsk	296 000	0,9%
29	**Asia**	**China**	**Nanshan**	**295 000**	**0,9%**
30	Americas	USA	Ferndale	285 000	0,8%
31	Europe	Russia	Shelekhovo	282 000	0,8%
32	Americas	Argentina	Puerto Martyn	280 000	0,8%
33	Americas	Canada	Kitimat	280 000	0,8%
34	Americas	USA	Hannibal	269 000	0,8%
35	Europe	Norway	Karmoy	267 000	0,8%
36	Americas	USA	Rockdale	264 000	0,8%
37	**Asia**	**China**	**Datong Xian**	**260 000**	**0,8%**
38	Americas	Canada	Deschamboult	253 000	0,7%
39	Americas	USA	New Madrid	253 000	0,7%
40	Africa	Egypt	Nag Hammadi	250 000	0,7%
41	Europe	France	Dunkirk	250 000	0,7%
42	**Asia**	**China**	**Jiauzuo Shi**	**247 000**	**0,7%**
43	Americas	Canada	Sept-lies	245 000	0,7%
44	Americas	USA	Hawesville	244 000	0,7%
45	**Asia**	**China**	**Guizhou**	**240 000**	**0,7%**
46	**Asia**	**China**	**Guiyang Shi**	**240 000**	**0,7%**
47	**Asia**	**China**	**Baotou Shi**	**240 000**	**0,7%**
48	Oceania	Australia	Point Henry	225 000	0,7%
49	Asia	Indonesia	Kuala Tanjung	225 000	0,7%
50	Americas	USA	Mt Holly	222 000	0,6%
51	Americas	Canada	Lateriere	220 000	0,6%
52	Europe	Germany	Norf	220 000	0,6%
53	Americas	Venezuela	Puerto Ordaz	215 000	0,6%
54	Asia	China	Fushun Shi	210 000	0,6%

NR	REGION	COUNTRY	LOCALITY	CAPACITY [tpa]	SHARE [%]
55	Americas	USA	Alcoa	210 000	0,6%
56	Europe	Norway	Aardal	208 000	0,6%
57	Europe	Spain	San Ciprian	208 000	0,6%
58	Americas	Canada	Grande Baie	200 000	0,6%
59	**Asia**	**China**	**Yugang Longquan**	**200 000**	**0,6%**
60	**Asia**	**China**	**Longquan Al**	**200 000**	**0,6%**
61	Africa	Ghana	Tema	200 000	0,6%
62	Europe	Netherlands	Vlissingen	200 000	0,6%
63	Americas	USA	Sebree	200 000	0,6%
64	Africa	Nigeria	Ikof Abasi	193 000	0,6%
65	Europe	Norway	Mosjoen	188 000	0,5%
66	Americas	USA	Columbia Fals	185 000	0,5%
67	Europe	Russia	Krasnoturinsk	182 000	0,5%
68	Americas	USA	Wenatchee	182 000	0,5%
69	**Asia**	**China**	**Wanji Aluminium**	**180 000**	**0,5%**
70	**Asia**	**China**	**Lanzhou Shi**	**180 000**	**0,5%**
71	Africa	South Africa	Richards Bay, Bayside	180 000	0,5%
72	Americas	USA	Ravenswood	180 000	0,5%
73	Europe	Iceland	Straumsvik	176 000	0,5%
74	**Asia**	**China**	**Kunming Shi**	**175 000**	**0,5%**
75	Europe	UK	Lynemouth	175 000	0,5%
76	Americas	USA	Frederick	174 000	0,5%
77	Americas	USA	Goldendale	172 000	0,5%
78	Europe	Norway	Husnes	168 000	0,5%
79	Europe	Russia	Volvograd	168 000	0,5%
80	Oceania	Australia	Kurri Kurri	165 000	0,5%
81	Americas	Canada	Jonquiere	163 000	0,5%
82	Europe	Greece	St Nicholas	163 000	0,5%
83	Oceania	Australia	Bell Bay	162 000	0,5%
84	Europe	Slovakia	Ziar nad Hronom	160 000	0,5%
85	Europe	Germany	Essen	155 000	0,5%
86	Europe	Slovenia	Kidricevo	155 000	0,5%
87	**Asia**	**China**	**Zouping**	**150 000**	**0,4%**
88	**Asia**	**China**	**Honglu Aluminium**	**150 000**	**0,4%**
89	**Asia**	**China**	**Eimeshan**	**150 000**	**0,4%**
90	Europe	Italy	Portoscuso	144 000	0,4%
91	**Asia**	**China**	**Yongcheng City**	**140 000**	**0,4%**
92	**Asia**	**China**	**Yangquan Aluminium**	**140 000**	**0,4%**
93	**Asia**	**China**	**Pingguo Xian**	**140 000**	**0,4%**
94	**Asia**	**China**	**Chiping Xinfa**	**138 000**	**0,4%**
95	Europe	France	St Jean de Maurienne	135 000	0,4%

NR	REGION	COUNTRY	LOCALITY	CAPACITY [tpa]	SHARE [%]
96	Europe	Russia	Kamensk	135 000	0,4%
97	Europe	UK	Anglesey	135 000	0,4%
98	**Asia**	**China**	**Liancheng**	**133 000**	**0,4%**
99	**Asia**	**China**	**Tianyuan**	**130 000**	**0,4%**
100	Europe	Germany	Hamburg	130 000	0,4%
101	Americas	USA	St Lawrence	130 000	0,4%
102	Americas	USA	Massena	125 000	0,4%
103	**Asia**	**China**	**Guanlu**	**123 000**	**0,4%**
104	**Asia**	**China**	**Zhenxing Aluminium**	**120 000**	**0,4%**
105	**Asia**	**China**	**Sanmenxia Shi**	**120 000**	**0,4%**
106	**Asia**	**China**	**Qinyang**	**120 000**	**0,4%**
107	**Asia**	**China**	**Hejin Xian**	**120 000**	**0,4%**
108	Asia	Iran	Arak	120 000	0,4%
109	Europe	Montenegro	Podgorica	120 000	0,4%
110	Americas	USA	Vancouver	116 000	0,3%
111	**Asia**	**China**	**Shangdian**	**115 000**	**0,3%**
112	Americas	USA	Badin	115 000	0,3%
113	**Asia**	**China**	**Guanyuan Qimingxing**	**114 000**	**0,3%**
114	Europe	Ukraine	Zaporozhye	112 000	0,3%
115	Asia	India	Korba	110 000	0,3%
116	Asia	Iran	Bandar Abbas	110 000	0,3%
117	Europe	Netherlands	Delfzijl	110 000	0,3%
118	Europe	Bosnia	Mostar	107 000	0,3%
119	**Asia**	**China**	**Danjiankou Shi**	**103 000**	**0,3%**
120	**Asia**	**China**	**Qiatou**	**102 000**	**0,3%**
121	**Asia**	**China**	**Yinhai Aluminium**	**100 000**	**0,3%**
122	**Asia**	**China**	**Taiyuan Shi**	**100 000**	**0,3%**
123	**Asia**	**China**	**Meishan Qimingxing**	**100 000**	**0,3%**
124	**Asia**	**China**	**Baise Yinhai**	**100 000**	**0,3%**
125	Europe	Sweden	Sundsvall	100 000	0,3%
126	Africa	Cameroon	Edea (1 plant only)	96 000	0,3%
127	Europe	Iceland	Others - 1 plant	90 000	0,3%
128-129	Europe	Norway	Others - 2 plants (avg 86 000t)	172 000	0,5%
130-131	Europe	Spain	Others - 2 plants (avg 85 000t)	170 000	0,5%
132	Americas	USA	Others - 1 plant	82 000	0,2%
133 - 134	Europe	Germany	Others - 2 plants (avg 80 000t)	159 000	0,5%
135	Americas	Mexico	Vera Cruz (1 plant only)	75 000	0,2%
136 - 139	Americas	Brazil	Others - 4 plants (avg 74 000t)	296 000	0,9%
140 - 141	Americas	Canada	Others - 2 plants (avg 70 000t)	141 000	0,4%
142	Europe	Azerbaijan	Sumgait (only plant)	60 000	0,2%
143	Asia	Turkey	Seydisehir (only plant)	60 000	0,2%

NR	REGION	COUNTRY	LOCALITY	CAPACITY [tpa]	SHARE [%]
144	Europe	Poland	Konin (1 plant only)	53 000	0,2%
145	Europe	France	Others - 1 plant	50 000	0,1%
146 - 149	Europe	Russia	Others - 4 plants (avg 47 000t)	188 000	0,5%
150	Europe	Switzerland	Steg (1 plant only)	44 000	0,1%
151	Europe	Italy	Others - 1 plant	43 000	0,1%
152	Europe	UK	Others - 1 plant	42 000	0,1%
153 - 205	**Asia**	**China**	**Others - 53 plants (avg 42 000t)**	**2 220 000**	**6,5%**
206 - 208	Asia	India	Others - 3 plants (avg 40 000t)	119 000	0,3%
209	Europe	Hungary	Inota (1 plant only)	35 000	0,1%
210	Asia	Japan	Kambara (only plant)	20 000	0,1%
T	TOTAL			34 256 000	100,0%

Source: Light Metal Age, February 2005

Production of wrought aluminium (for downstream fabrication) is dominated by the “Big-3” – in this case, comprising:-

1. Alcoa
2. Hydro
3. Novelis (a spin-out downstream operation from Alcan)

The global market for aluminium semi-fabrication sales comprises the following segments:-

Table 5.6-3: Aluminium Semi-Manufactures

Segment	Volume [Mtpa]	Share [%]
Rolled	13	42%
Extruded	9	29%
Cast	8	26%
Forged	1	3%
Total	31	100%

End-use applications

The specific mass of aluminium is one-third as much as that of steel, giving it an excellent strength-to-weight ratio. It is therefore a good material for aircraft, railroad cars and automobiles. Its corrosion resistance is also useful for boat hulls and marine applications. As a result of high heat conductivity, it is used for cooking utensils and internal combustion

engines. Aluminium is used in the packaging industry, for beverage cans, and its foil provides a good insulating solution in an air structure. Aluminium can be used in low temperature nuclear reactors, due to its low absorption of neutrons. The end-users segments are typically:

- Transportation (30%)
- Packaging (20%)
- Building (20%)
- General engineering (fast growing) (30%)

5.7. CHINESE ALUMINIUM INDUSTRY

5.7.1. Production, Number of Producers, Capacity

China is an important producer and consumer of aluminium. Alumina production is 7,0 Mtpa, plus imports of 5,8 Mtpa, with consumption of 13,7 Mtpa – the remaining 0,9 Mtpa being from de stocking. Production of primary aluminium was 6,8 Mtpa, plus imports of 7,0 Mtpa, against local consumption of aluminium of 6,0 Mtpa and exports of 1,4 Mtpa, with more than 5 Mtpa in stockbuilding. Aluminium demand is derived from the construction and the automotive industries.

Chinese imports increased from around 600 000 tpa levels in 1999 to about 1 600 000 tpa in 2004. The price of aluminium increased by 20% from 2003 to 2004, to a peak level of US$1 700

China regards aluminium smelters as an over invested sector and introduced control measures, including halting construction of a 1,4 Mtpa capacity and further delays in plans for a further 0,9 Mtpa capacity. Total aluminium smelter capacity is 9,7 Mtpa. The Chinese aluminium industry suffered financial losses due to the high costs of alumina and power shortages.

The leading Chinese aluminium company, Aluminium Corp of China Limited (“Chalco”) has a joint venture agreement with CVRD for the establishment of alumina production in Brazil. Its commissioning is planned for 2006, with the first production capacity of 1,8 Mtpa to come online first. Thereafter capacity would increase in phases to reach US$7,2 Mtpa

China has an installed production capacity for 50% of its alumina requirements, as follows: -

Table 5.7-1: Alumina Producers - China

Major operating companies	Location of main facilities	Capacity [tpa]
Shanxi Aluminium Plant (Aluminium Corporation of China)	Shanxi, Hejin	1 400 000
Zhengzhou Aluminum Plant (Aluminum Corporation of China)	Henan, Zhengzhou	1 300 000
Zhongzhou Aluminum Plant (Aluminum Corporation of China)	Hunan, Zhongzhou	1 100 000
Shandong Aluminum Plant (Aluminum Corporation of China)	Shandong, Zibo	950 000
Pingguo Aluminum Co. (Aluminum Corporation of China)	Guangxi, Pingguo	850 000
Guizhou Aluminum Plant (Aluminum Corporation of China)	Guizhou, Guiyang	650 000
TOTAL - MAJOR COMPANIES		6 250 000

Source: USGS

China has capacity for more than 90% if its aluminium metal requirements, as listed in the table below: -

Table 5.7-2 Aluminium Producers - China

Major operating companies	Location of main facilities	Capacity [tpa]
Guizhou Aluminum Plant (Aluminum Corporation of China)	Guizhou, Guiyang	400 000
Pingguo Aluminum Co. (Aluminum Corporation of China)	Guangxi, Pingguo	380 000
Qinghai Aluminum Smelter (Aluminum Corporation of China)	Qinghai, Xining	255 000
Qingtongxia Aluminum Plant	Ningxia, Qingtongxia	240 000
Liancheng Aluminum Plant	Gansu, Lanzhou	235 000
Baotou Aluminum Plant	Nei Mongol, Baotou	216 000
Lanzhou Aluminum Plant	Gansu, Lanzhou	210 000
Shanxi Guanlu Aluminum Co. Ltd.	Shanxi, Yuncheng	210 000
Yichuan Yugang Longquan Aluminum Co.	Henan, Yichuan	200 000
Henan Shenhuo Aluminum-Electricity Co. Ltd.	Henan, Yongcheng	200 000
Henan Wanji Aluminum Co. Ltd.	Henan, Luoyang	180 000
Jiaozuo Wanfang Aluminum Co. Ltd.	Henan, Jiaozuo	176 000

Major operating companies	Location of main facilities	Capacity [tpa]
Fushun Aluminum Plant	Liaoning, Fushun	175 000
Huaxin Aluminum Industry Co.	Shandong, Chiping	160 000
Baiyin Aluminum Plant	Gansu, Baiyin	150 000
Yunnan Aluminum Plant	Yunnan, Kunming	130 000
Taishan Aluminum-Power Co. Ltd.	Shandong, Fecheng	125 000
Henan Huanghe Mianchi Aluminum Plant	Henan, Mianchi	115 000
Shangqiu Aluminum Smelter	Henan, Shangqiu	115 000
Sanmenxia Tianyuan Aluminum Co. Ltd.	Henan, Sanmenxia	110 000
Tongchuan Xingguang Aluminum Co. Ltd.	Shaanxi, Tongchuan	80 000
Taiyuan Oriental Aluminum Co.	Shanxi, Taiyuan	75 000
Hanjiang Danjiangkou Aluminum Co. Ltd.	Hubei, Danjiangkou	73 000
Jilin Aluminum Co.	Jilin, Panzhi	70 000
Zhengzhou Aluminum Plant (Aluminum Corporation of China)	Hunan, Zhengzhou	60 000
Shandong Aluminum Plant (Aluminum Corporation of China)	Shandong, Zibo	55 000
TOTAL - MAJOR COMPANIES		4 395 000

Alcan Inc. (Canada) has acquired a 50% shareholding in the Qingtongxia aluminium smelter.

5.7.2. Performance Outlook – Expansion/Decline

China has announced 26 alumina production projects with a combined capacity of more than 28 Mtpa. Not all of these initiatives are, however, supported by government policy (refer Chapter 2 for a review of targeted expansion projects). The main concern of the Chinese policy makers is that the 12 of the 26 projects are in the Henan Province, the main bauxite reserve base in China, but the estimated raw material consumption would decrease the remaining lifespan of the ore reserves to between 10 and 15 years only. The Chinese government policy is presently to discourage such expansions and so-called “blind” investments (not taking all the risk factors into consideration).

Whereas China’s previous alumina capacity could supply in 50% of its consumption of 12 Mtpa alumina, such an expansion of 28 Mtpa – or even a fraction thereof – would result in a severe over-supply situation in the domestic market. Given that demand from China was to date the main source of growth and the cause of supply shortages, then China as a potential exporter of alumina would result in unforeseen changes in the world market.

After the commissioning of new primary aluminium production capacity, China will have a combined capacity of 10 Mtpa, more than double the output of two years ago. These smelter projects are relatively large, such as Shandong Xinfa and Ningxia Qingtongxia, that will reach

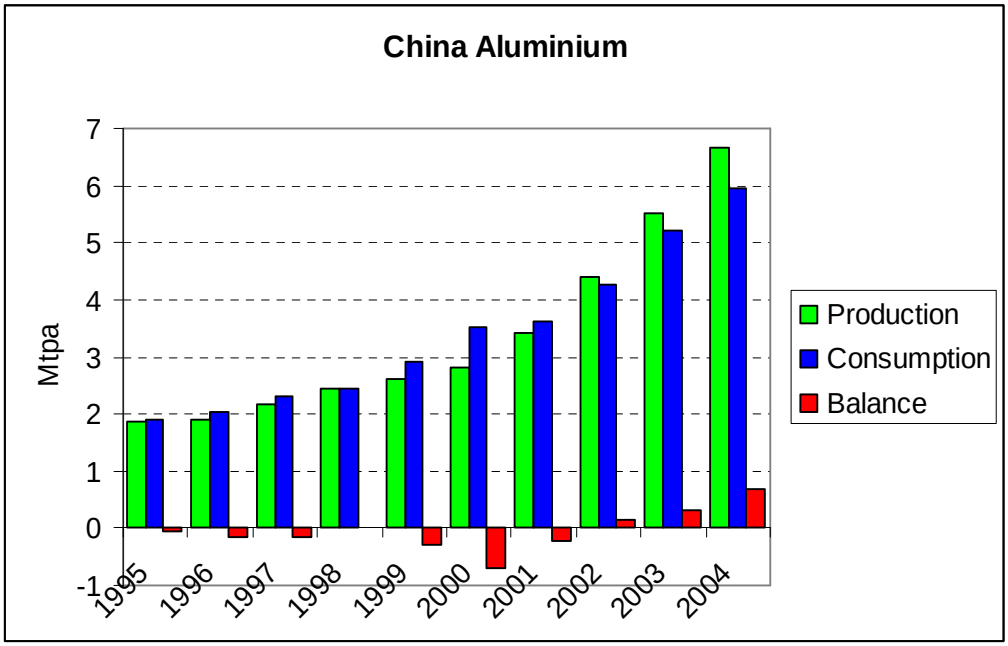
capacities of 550 000 tpa. Expansions to other smelters will also contribute to a change in the industry structure and larger plant sizes on average, as another five smelters will exceed 300 000 tpa and nine more will exceed 200 000 tpa. As a result: -

- 42 smelters greater than 100 000 tpa will account for 82% of aluminium production;
- 32 smelter between 50 000 and 100 000 tpa will account for 13% of production; and
- 35 small smelters less than 50 000 tpa will only be 5% of production.

5.7.3. Production and consumption

The global aluminium industry experienced a major structural change in 2002 when China became a net exporter of primary aluminium, as illustrated in the graph below: -

Figure 5.7-1: : Production and Consumption of Aluminium -- China



Source: The Beijing Axis, Hulett Aluminium

5.8. SOUTH AFRICAN ALUMINIUM INDUSTRY

5.8.1. Production, Number of Producers, Capacity

South Africa does not have bauxite reserves and imports its alumina requirements of 1,5 Mtpa. The producers of primary aluminium are: -

Table 5.8-1: Primary Aluminium Production in the Southern African Region

NAME OF PLANT	LOCALITY	FIRST YEAR OF OPERATION	PRODUCTION CAPACITY [tpa]
Bayside	Richards Bay, Kwa-Zulu Natal Province	1970	170 000
Hillside		1995	680 000
Total	South Africa		850 000
Mozal	Maputo, Mozambique	1998	570 000
Total	Southern Africa Region		1 420 000

Sources: USGS, Hulett Aluminium

The Hillside and Bayside smelters are 100% owned by BHP-Billiton. Mozal is owned by BHP-Billiton (49%), Industrial Development Corporation of South Africa (26%), Mitsubishi of Japan (24%) and the Mozambique Government.

5.8.2. Focus of the Industry and Types of Products

The local production of 850 000 tpa is mainly allocated to exports, which comprises 580 000 tpa (68% of primary volumes). The balance of 270 000 tpa is beneficiated by the local manufacturing industry, as follows: -

Table 5.8-2: Aluminium Manufacturing Sector in South Africa [tonne per annum]

TYPE OF OPERATION	COMPANY	LOCALITY	TOTAL RAW MATERIALS	DIRECT EXPORTS	VALUE-ADDED EXPORTS (DOWN-STREAM)	LOCAL MARKET
Rolling mill	Hulett Aluminium	Pietermaritzburg	175 000	123 000	18 000	34 000
Extrusion	Hulett-Hydro Extrusions	Midrand, Pietermaritzburg, Cape Town	17 000	1 000	4 000	12 000
Alloy wheel	TWS	Hammanskraal	16 000	14 000	0	2 000
Alloy wheel	Hayes Lemmerz	Johannesburg	12 000	10 000	0	2 000
Extrusion	Wispeco	Johannesburg	11 000	100	400	10 500
Cable and wire	M-Tec	Johannesburg	7 000	2 100	400	4 500
Cable and wire	Aberdare	Johannesburg	7 000	2 000	1 000	4 000
Extrusion	AGI-Profal	Johannesburg	6 000	100	300	5 600
Cable and wire	African Cables	Johannesburg	6 000	2 000	1 000	3 000

TYPE OF OPERATION	COMPANY	LOCALITY	TOTAL RAW MATERIALS	DIRECT EXPORTS	VALUE-ADDED EXPORTS (DOWN-STREAM)	LOCAL MARKET
Alloy wheel	Borbet	Port Elizabeth	5 000	4 000	0	1 000
Others, castings, master alloys, deoxidants, powders	Various	Various	8 000	4 000	0	4 000
TOTAL			270 000	162 300	25 100	82 600

Source: Hulett Aluminium

Some 60% of primary aluminium procured by the local aluminium manufacturing is again exported directly. A further 10% is exported by downstream value-added companies. The remaining 82 000 tpa is consumed by the end-user market in South Africa.

There is a trend towards increasing value-added exports, by means of establishment and entrenchment of export positioning, as well as ongoing initiatives to develop products for niche markets. The environment in export markets is, however, very competitive and it is aggravated by the weakness of the US-dollar/strength of the Rand. One victim of such tough trading conditions is the Consani Engineering tank container operation in Cape Town, which consumed 1 000 tpa of aluminium, but had to close down in 2005.

5.8.3. Linkages

A case study in downstream industry development: Hulett Aluminium initiated a project to establish South Africa as a new global hub for automotive heat exchanger manufacture. This project is expected to emulate the successful aluminium alloy wheels export drive, based on world-class business ventures and products. A number of automotive components such as car radiators, the condensers and evaporators of the air-conditioning unit, heater cores, charge air coolers, car oil coolers and fuel coolers are all based on the heat exchanger ("HE") concept. The modern trend is to use increasingly more HEs per vehicle, with modern sport utility vehicles having as many as eleven HEs.

Why HEs? HEs could include a high percentage components of local content. They are relatively high value components, between R200 to R 800 per unit. The value-added is also relatively high, involving both labour and expertise. The incumbent competitors are presently

located in high cost manufacturing regions in developed countries. It is also a type of product that can be transported cost-effectively to international destinations.

The product design involves a specialised coated aluminium strip for flat tube manufacture, manufactured by Hulett Aluminium using a unique sheet rolling technique. Other HE components comprise clad aluminium sheet for header plates and side supports, as well as finstock. The complete product also includes plastic tanks, rubber hoses, aluminium pipes and various ancillary components.

The driving forces for locating the HE project in South Africa are locally available aluminium sheet and foil, delivered at a very competitive price, with good Government incentives (the MIDP), efficient infrastructure, low establishment costs and good support industries (including multinationals), as well as considerations such as a track record in HE manufacturing and convenient overlapping of time zones with the primary market destinations.

Global automotive suppliers (first and second tiers) are being involved in the new concept and it is believed that their support will make the project a reality. The HE project is expected to advance South Africa as an automotive component supplier. It also entrenches the approach to exploit local comparative advantages in formulating a project for the international marketplace.

The way forward for South African metals industry companies would be: -

…. Through medium-sized industry development initiatives,
…. Focusing on high value-added, innovative products
…. For global niche market applications
…. With a scale of operations flexible and adaptive to customer needs,
…. But also large enough to be reliable and sustainable,
…. Ideally under the leadership of a manager-entrepreneur.

5.8.4. Performance Outlook – Expansion/Decline

Alcan announced that it would conduct a new feasibility study for the construction of a 660 000 tpa aluminium smelter in Coega, Eastern Cape Province. The new study, scheduled to be completed in 2005, would evaluate the use of AP30 or AP35 smelting technologies (Alcan Inc., 2004).

5.8.5. Cost Structure, Pricing and Logistics

Pricing of Primary Aluminium from BHP-Billiton: The global price for aluminium supplied by BHP-Billiton is based on the London Metal Exchange ("LME") price of aluminium. This baseline price applies to both export and domestic sales. For domestic customers, the price is converted to a Rand-base at the prevailing Rand-USD exchange rate at the time. BHP-Billiton then also adds a "geographic" or "market" premium, as well as a delivery charge. For aluminium products that are subsequently exported by customers or after further beneficiation, BHP-Billiton pays its customer an export rebate. This rebate is typically between 3% and 5% of the Rand invoice price, taking into account: -

i. "Geographic" premiums in other BHP-Billiton export destinations

ii. Ocean freight costs

iii. Ex-factory to free-on-board costs for BHP-Billiton

Export Parity Pricing: The Hillside Smelter negotiated an export parity pricing ("EPP") agreement with the South African Government in 1995 in terms of the "37E" tax arrangements. In terms of EPP, aluminium supplied to the local market for products that are subsequently exported, should be priced so that BHP-Billiton earned the same as for aluminium exported directly by it. Although local customers receive such rebates, the question remains as to the extent that the EPP mechanism is being applied.

Import Parity Pricing: The price levels for aluminium for domestic consumption are set at import parity pricing ("IPP") levels. Local customers can therefore procure primary aluminium at the same price from global suppliers, as these inbound logistics and other costs are reflected in the BHP-Billiton prices already.

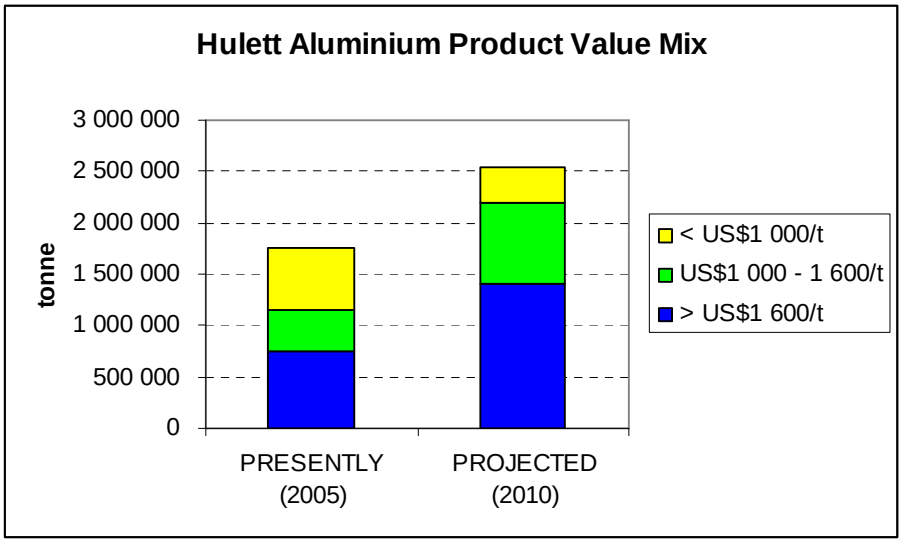
Shape and Alloy Premiums: A further price premium is added for value-added products supplied by BHP-Billiton, other than unalloyed metal in ingot form. Typical shapes include rolling slabs, extrusion billet, rim alloy blocks, and rod for cable and wire. These additional charges are determined by global price trends and BHP-Billiton production costs.

5.8.6. Presence of Multinationals

The Southern African primary aluminium projects started as local project initiatives of the Billiton resources company, but were subsequently acquired into the global BHP-Billiton group.

The future of Hulett Aluminium ("Hulamin") is an important consideration. Hulamin, is owned by Tongaat Hulett (50%), the Industrial Development Corporation (30%) and Anglo American (20%). It is positioned centrally in the South African aluminium industry, as a niche re-roller of aluminium products. Its value is in innovation and customer focus rather than ever increasing volumes and low cost inputs. Because it is independent as opposed to other similar operations that are backward-integrated with mining dominant parent companies. Hulamin has shifted its focus to high value products, with a projected change in value mix as follows: -

Figure 5.8-3: : Hulett Aluminium - Projected Increase in Value-Added Products



Source: Engineering News, March 3 – 9, 2006

Hulamin's position as an independent supplier may be affected by its planned unbundling from the Tongaat Hulett Group and possible divestment by the Anglo American Group. Hulamin is regarded as having reached a critical mass which would enable it to justify a JSE Securities Exchange listing on its own, with a possible capitalisation of between R4,5 and 6,2 billion.

The strategy of global aluminium companies regarding the very high levels of competition in the market, however, is to acquire independent producers and to "rationalise" supply, by reducing production at selected plants under control of the bigger company.

The key issue for the local aluminium value-added segment is therefore: -

Will Hulett Aluminium become a take-over target for a large multi-national company?

5.8.7. Competitive Analysis

South African aluminium companies – and possibly any other company for this consideration – would have to adopt a two-pronged strategy with regard to the China question: -

1. **First and foremost, regard China as a dominant new global competitor; … but**
2. **At times it would be impossible not to engage in business relations with Chinese companies, as customers, suppliers and potential investors.**

5.9. WORLD COPPER INDUSTRY

One-half of the world's reserves of copper can be found in Chile, the USA, Indonesia and Peru, as shown in the table below: -

Table 5.9-1: World Copper Reserves

COUNTRY	RESERVES [t]	SHARE [%]
Chile	150 000 000	32%
USA	35 000 000	7%
Indonesia	32 000 000	7%
Peru	32 000 000	7%
Poland	30 000 000	6%
Mexico	27 000 000	6%
China	26 000 000	6%
Australia	24 000 000	5%
Russia	20 000 000	4%
Zambia	17 000 000	4%
Rest of World	77 000 000	16%
World Total	470 000 000	100%

Source: USGS

Copper metal production follows a similar pattern, except for Japan and Germany that also form part of the downstream industry, as listed in the table below: -

Table 5.9-2: World Copper Production [1 000 t]

COUNTRY/ PROCESS STAGE	1999	2000	2001	2002	2003	SHARE
Chile:						
Electrowon	1 362	1 373	1 538	1 602	1 600	10,5%
Primary	1 304	1 296	1 344	1 248	1 300	8,6%
Total	2 666	2 668	2 882	2 850	2 900	19,1%
China:						
Electrowon	13	21	18	20	30	0,2%
Primary	823	1 003	1 200	1 280	1 370	9,0%
Secondary	338	347	300	350	400	2,6%
Total	1 174	1 371	1 518	1 650	1 800	11,8%
Japan:						
Primary	1 215	1 292	1 287	1 211	1 252	8,2%
Secondary	126	149	139	190	179	1,2%
Total	1 342	1 442	1 426	1 401	1 430	9,4%
United States:						
Primary:						
Electrowon	586	566	628	601	591	3,9%
Other	1 300	1 030	1 000	841	662	4,4%
Secondary	230	208	172	70	53	0,4%
Total	2 120	1 800	1 800	1 510	1 310	8,6%
Russia:						
Primary	600	620	650	670	670	4,4%
Secondary	160	220	245	200	170	1,1%
Total	760	840	895	870	840	5,5%
Germany:						
Primary	242	245	352	331	296	1,9%
Secondary	454	465	342	365	301	2,0%
Total	696	710	694	696	597	3,9%
Poland:						
Primary	448	498	498	509	510	3,4%
Secondary	22	20	30	19	20	0,1%
Total	471	518	529	528	530	3,5%
Peru:						
Primary:						
Electrowon	114	127	131	156	171	1,1%
Other	319	324	341	346	346	2,3%
Total	433	452	472	503	517	3,4%

COUNTRY/ PROCESS STAGE	1999	2000	2001	2002	2003	SHARE
Korea, Republic of						
Primary	450	468	474	500	510	3,4%
Australia:						
Electrowon	84	97	102	96	67	0,4%
Primary	335	390	456	449	417	2,7%
Total	419	487	558	545	484	3,2%
Canada:						
Primary	476	490	525	514	430	2,8%
Secondary	72	61	43	25	27	0,2%
Total	549	551	568	539	457	3,0%
Kazakhstan,						
Primary	362	395	426	453	433	2,8%
Belgium:						
Primary	201	236	236	207	208	1,4%
Secondary	187	187	187	216	215	1,4%
Total	388	423	423	423	423	2,8%
India:						
Primary, electrolytic	200	234	310	354	375	2,5%
Secondary	8	9	18	20	19	0,1%
Total	208	243	328	374	394	2,6%
Mexico:						
Primary:						
Electrowon	51	56	60	69	71	0,5%
Other	361	340	333	284	249	1,6%
Secondary	14	15	15	35	20	0,1%
Total	426	411	408	388	355	2,3%
Zambia, primary:						
Electrowon	60	50	79	84	100	0,7%
Other	259	227	218	253	250	1,6%
Total	319	277	297	337	350	2,3%
Spain:						
Primary	251	258	235	272	259	1,7%
Secondary	65	58	56	37	35	0,2%
Total	316	316	291	309	294	1,9%
Indonesia,						
Primary	91	158	213	192	223	1,5%

COUNTRY/ PROCESS STAGE	1999	2000	2001	2002	2003	SHARE
Sweden:						
Primary	95	105	179	199	189	1,2%
Secondary	20	25	25	25	25	0,2%
Total	115	130	204	224	214	1,4%
Brazil						
Primary	193	185	212	190	174	1,1%
Philippines						
Primary	148	159	165	144	171	1,1%
Iran:						
Electrowon	10	10	12	12	12	0,1%
Primary	132	132	132	143	135	0,9%
Total	142	142	144	155	147	1,0%
Finland:						
Primary	100	100	105	100	120	0,8%
Secondary	15	14	15	15	16	0,1%
Total	115	114	120	115	136	0,9%
South Africa						
Primary	116	106	105	99	93	0,6%
Uzbekistan:						
Primary	60	75	80	75	75	0,5%
Secondary	10	10	10	10	10	0,1%
Total	70	85	90	85	85	0,6%
Others	511	449	462	420	333	2,2%
Grand total:	14 600	14 900	15 700	15 500	15 200	100,0%

Source: USGS

China is the 2nd largest producer of copper with a market share of 11,8% and South Africa is the 24th largest with a share of 0,9%.

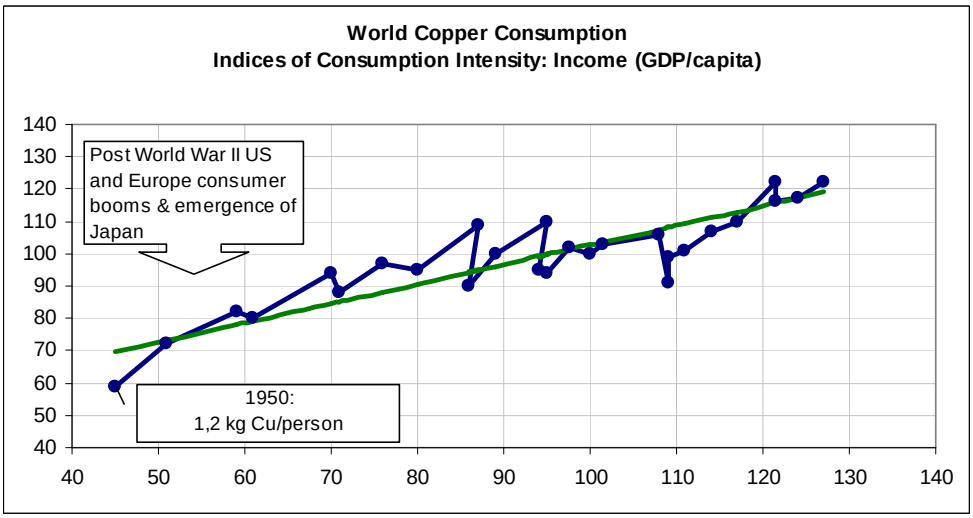
The commercial applications of copper are: -

- Construction industry – air conditioning units, cabling and wiring: 35% – 45% in mature economies, as high as 60% in developing economies;
- Electrical products – telecommunications, power and electronic products: 25% – 35%
- Industrial machinery and equipment (generators, transformers, electric motors: 10% – 15%

- Transport – wiring in vehicles and radiators;
- Chemical compounds.

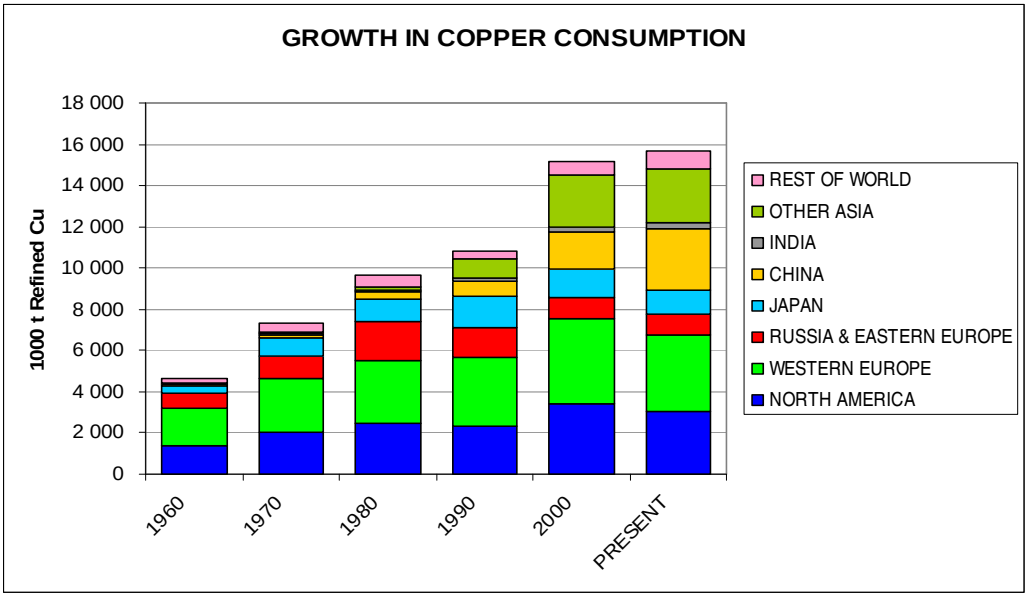
In the long-term, copper cabling and wiring used in the telecommunications industry may be under thread of substitution from fibre-optic cables, but that is not yet seen in the demand for copper. Consumption of copper is directly related with wealth creation, as illustrated in the graph below, which traces the long-term increase in consumption against increasing per capita GDP.

Figure 5.9-1: Index of Copper Consumption (measured in kg/capita) to Index of Wealth (GDP/capita)



Presently, the world market for copper in growing strongly as a result of ongoing strong demand from China. The country has a booming construction industry, for its growing residential market, preparation for the 2008 Olympic Games and 2010 World Expo, as well as massive infrastructure projects such as the Three Gorges Dam project. As indicated in the long-term trend graph below, regional stagnation or decline in consumption is fully compensated for by increasing consumption in China and other Asian countries: -

Figure 5.9-2: Long-term Growth Trends in Copper Consumption for Regions and Major Countries



Source: BHP-Billiton

It can be seen that China is responsible for a large portion of the growth of demand for copper products globally.

5.10. CHINESE COPPER INDUSTRY

5.10.1. Production, Number of Producers, Capacity

China's copper market experienced strong demand as a result of establishment of new power generation facilities, but production problems due to inadequate power supply at time, resulted in difficult market conditions. China is the world's 2nd largest copper producer, with a share of 14%. Despite the production problems, its 2004 production increased to 2,17 Mtpa (18% higher than in 2003). Imports of copper concentrates increased by 8% in volume to 2,88 Mtpa, with a value increase by 74%, due to higher prices. Consumption of refined copper is estimated at 3,47 Mtpa. Copper is a very accurate indicator of industrial commodity demand in developing countries, as it is widely used as a key metal in the construction, electrical, manufacturing and automotive industries.

The following plants in China produce copper: -

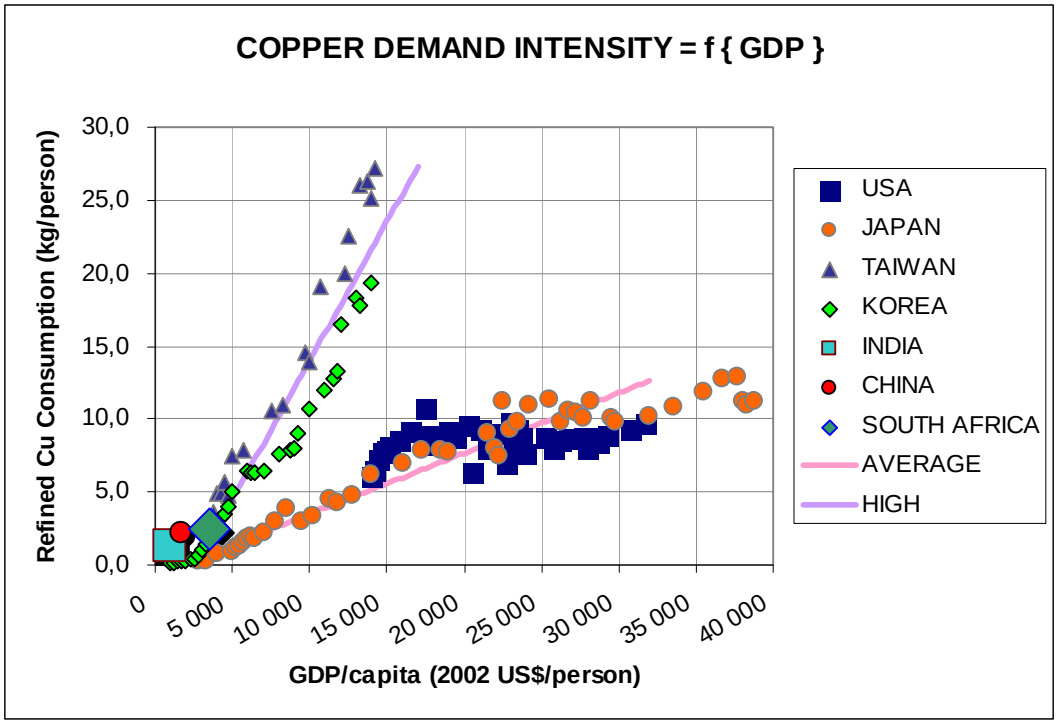
Figure 5.10-1: Copper Producers in China

MAJOR OPERATING COMPANIES	LOCATION OF MAIN FACILITIES	CAPACITY [TPA]
Guixi Smelter (Jiangxi Copper Company Limited)	Jiangxi, Guixi	400 000
Yunnan Smelter (Yunnan Copper Group Co. Ltd.)	Yunnan, Kunming	160 000
Daye Nonferrous Metals Co.	Hubei, Daye	150 000
Jinchang Smelter (Tongling Nonferrous Metals Co.)	Anhui, Tongling	130 000
Jinlong Smelter (Tongling Nonferrous Metals Co.)	Anhui, Tongling	120 000
Jinchuan Nonferrous Metals Corp.	Gansu, Jinchuan	120 000
Zhangjiagang United Copper Co. (Tongling Nonferrous Metals Co.)	Jiangsu, Zhangjiagang	100 000
Huludao Copper Smelter (Huludao Zinc Smelting Co.)	Liaoning, Huludao	100 000
Zhongtiaoshan Nonferrous Metals Co.	Shanxi, Yuangu	80 000
Wuhu Smelter (Hengxin Copper Industry Group Co.)	Anhui, Wuhu	60 000
Baiyin Nonferrous Metals Co.	Gansu, Baiyin	50 000
Luoyang Copper Processing Factory	Henan, Luoyang	50 000
Taiyuan Copper Industry Co.	Shanxi, Taiyuan	30 000
Tianjin Copper Electrolysis Factory	Tianjin	25 000
TOTAL - MAJOR COMPANIES		1 575 000

5.10.2. Performance Outlook – Expansion/Decline

The graphical plot below of the increasing consumption of copper mapped against a wealth indicator, such as GDP per capita, shows two distinct development paths. The average path includes established countries, the USA and Japan, stabilising at about 10kg/capita relative to a range of GDP values of between US$20 000 to 35 000/capita. Alternatively, the high growth path, including newly-industrialised countries such as Korea and Taiwan, comprises copper consumption of 15 to 25 kg/capita for a range of GDP values of between US$10 000 to 15 000/capita.

Figure 5.10-2: Consumption Patterns for Copper as a Factor of Wealth



Source: BHP-Billiton

China has a copper demand intensity that may potentially be higher that the high growth path of newly-industrialised countries such as Korea and Taiwan. In line with the consumption patterns as indicated, the general upward trend of per capita wealth in China would result in substantial increases in the world market for copper.

China intends to slow down the implementation of new copper smelters in an effort to restrain expansion and the possibility of over-supply. Presently, there are plans for an additional 18 smelters with a nameplate capacity of 2,5 Mtpa. This scale of expansion is equivalent to: -

- 135% of local production capacity of 1,85 Mtpa
- 43% of import volumes of 5,78 Mtpa
- 34% of total consumption of 7,40 Mtpa

Implementation will, however, be phased, with three smelters being constructed, seven were being studied and another eight are planned by local governments. Furthermore, brownfields expansions to existing smelters will be prioritised such as the large Jiangxi Copper production facility.

5.11. SOUTH AFRICAN COPPER INDUSTRY

5.11.1. Production, Number of Producers, Capacity

Copper is also produced in a number of other Southern African Countries, as listed below: -

Table 5.11-1: Copper Production in Southern African Countries

LOCALITY NAME	MAJORITY OWNERSHIP OR OPERATING COMPANY	PROCESS TYPE	CAPACITY [TPA]
Zambia			
Nkana-Kitwe (Nkana)	Zambia Consolidated Copper Mines Ltd.	Reverberatory/Teniente Conv.	200 000
Mufulira	Mopani Copper Mines Plc.	Electric	180 000
Nchanga	Zambia Copper Investments Ltd.	Electrowinning (Low Grade)	70 000
Chambishi	Avnim (SA)	Electrowinning (Roast Leach)	15 000
Nkana-Kitwe (Nkana)	Zambia Consolidated Copper Mines Ltd.	Electrowinning (Roast Leach)	14 000
Sub-total			479 000
South Africa			
Phalaborwa	Palabora Mining Co. Ltd.	Reverberatory	135 000
Nababeep (O'okiep)	Metorex	Reverberatory	50 000
Springs	Impala Platinum Ltd.	Electric	7 000
Rustenburg	Rustenburg Platinum Mines Ltd.	Electric	7 000
Western Platinum	Western Platinum Ltd.	Electric	2 000
Sub-total			201 000
Zimbabwe			
Alaska (Lomagundi)	Mhangura Copper Mines (ZMDC)	Reverberatory	25 000
Eiffel Flats	Rio Tinto Mining (Zimbabwe)	Blast Furnace	6 000
Inyati	Corsyn Consolidated Mines Ltd.	Blast Furnace	5 000
Sub-total			36 000
Namibia			
Tsumeb	Ongopolo Mining and Processing	Reverberatory	30 000
Botswana			
Selebi-Phikwe	Botswana Consolidated Ltd.	Outokumpu Flash	26 000

5.12. WORLD NICKEL INDUSTRY

5.12.1. Resources and Production

The estimates of nickel reserves are somewhat varied, as indicated in the table below: -

Table 5.12-1: World Reserves of Nickel Ore

COUNTRY	SULPHIDES	LATERITES	TOTAL RESERVES [Ni CONTENT]	RESERVES [Ni]	RESOUR-CES [Ni] [1]
Australia	4 000 000	9 600 000	13 600 000	22 000 000	27 000 000
Russia	14 500 000		14 500 000	6 600 000	9 900 000
Cuba		5 500 000	5 500 000	5 600 000	23 000 000
Canada	4 800 000		4 800 000	5 200 000	15 000 000
Brazil				4 500 000	8 300 000
New Caledonia		13 600 000	13 600 000	4 400 000	12 000 000
South Africa [2]				3 700 000	12 000 000
Indonesia		9 000 000	9 000 000	3 200 000	13 000 000
China	5 500 000		5 500 000	1 100 000	7 600 000
Philippines		3 500 000	3 500 000	940 000	5 500 000
Columbia		1 000 000	1 000 000	830 000	1 000 000
Dominican Republic		600 000	600 000	740 000	1 000 000
Venezuela		600 000	600 000	610 000	600 000
Botswana	400 000		400 000	490 000	900 000
Greece		400 000	400 000	490 000	900 000
Zimbabwe				15 000	300 000
All other countries			1 500 000	1 585 000	51 000 000
WORLD TOTAL	29 200 000	43 800 000	74 500 000	62 000 000	189 000 000

Sources: *Mining Journal, March 2004, for Total Reserves = Sulphides + Laterites;*
US Geological Survey for Reserves
DME, South Africa for Resources

Notes *[1] Refer comments below for "reserves" as opposed to "resources"*
[2] South Africa not listed by Mining Journal, but it is stated that nickel reserves as integral to platinum-group metals

The nickel reserves relate to proven reserves in land based deposits. Nickel resources (estimated at twice the amount of nickel reserves) which would encompass sub-economic reserves, i.e. not mineable at a profit, are not included in the table. The development of new process technologies will result in the conversion of some resources into the reserve base.

Ongoing exploration continues to add to both bases. According to some sources, nickel resources on the sea-bed are many times those located on land. The land resource base is thought to be in excess of 100 years exploitation at the present mining rate

5.12.2. Focus of the Industry and Types of Products & Linkages

Typical nickel first use patterns (outside China) is dominated by stainless steel (60%), with important volumes being used in nickel-based alloys (11%), plating (10%), alloy steels (8%), foundry (3%), copper alloys (2%) and a wide range of different first uses for the balance (6%). End use is very diverse. Nickel is used in hundreds of different applications in all sectors of economic activity - infrastructure, capital investment and consumer goods. For convenience, these uses can be grouped into major end use sectors - engineering, transport, electrical and electronic, building and construction, metal good, tubular products. No single sector dominates nickel use. And no single end use accounts for more than two or three percent of total nickel use.

This diversity of use reflects nickel's role as *the great enabler* – it confers substantial and valuable improvements of properties to alloys for characteristics as varied as corrosion resistance, toughness and strength at various operating temperatures. Nickel also enables the production of vital products with special properties, such as magnetic, electronic, controlled expansion, catalytic and battery-related.

Nickel use has been highly innovative, with added value more than compensating for the relatively high cost of nickel. Continuous innovation has underpinned the long term trend growth rate of global nickel use, which at 4% per annum exceeds the long-term average global GDP growth rate. Nickel products play key roles in all developed and developing economies. They enable efficient telecommunications, safe transportation, effective oil and gas production, clean and reliable energy generation, hygienic processing of foods and drinks, safe and reliable medical equipment, water treatment and delivery and various emissions-reducing equipment from gas scrubbers to hybrid vehicles. These nickel products are critical to modern society.

5.12.3. Cost Structure, Pricing and Logistics

Nickel prices were high and volatile during the past two years, averaging US$13 800/t in 2004, and moving in a range of US$14 500 to 16 900/t, with a peak of US$17 900/t in 2005. This is referred to as a “price boom” and is expected to continue for some time, mainly due to two factors: -

- Slow growth in supply of primary nickel; and

- A sharp increase in demand from China.

The origins of the present demand/supply situation can be traced back more than a decade to the 1990's. A number of projects were planned during that stage, but implementation did not meet original expectations, namely: -

- Inco acquired the Viosey's Bay deposit in Canada for a planned production of 120 000 tpa of nickel. The project was initially delayed due to political and economic reasons until 2005 and its capacity was scaled down to 60 000 tpa;

- The first generation of pressure acid leaching ("PAL") projects were planned for Cawse, Bulong and Anaconda (Murrin Murrin) in Australia, scheduled for production of 60 000 tpa of nickel. The new PAL technology was expected to reduce capital cost and to keep operating cost below US$1/lb (US$2 200/t), signalling a revolution in the competitive cost structures of the nickel industry. These expectations proved to be unrealistic. Capital and operating costs are much higher than the planning assumptions. Presently, only two of these operations are in production with a total capacity limited to 37 000 tpa of nickel.

The effect of these projects is not only in a shortfall in supply, but also that had a severe impact on investment in new capacity.

During the early 1990's the planning reference price for nickel was US$4/lb (US$8 800/t), however, market prices were actually in the US$6 500 to 7 200/t range. Existing producers had to implement cost cutting as a prime focus and new projects were not feasible in the planning stages. Investment was curtailed.

By 1999, China only consumed 48 000 tpa of nickel (5% of world demand). Since then Chinese demand for nickel has tripled and is predicted to continue on the growth path. It has to support that country's stainless steel industry, which is projected to grow to 6,6 Mtpa by 2009, thereby doubling the present demand for nickel. Primary nickel demand of 1,3 Mtpa is expected to increase by 0,55 Mtpa by 2010 and by 0,70 Mtpa in the decade 2010 to 2020.

The market response was substitution of nickel in stainless steel. There is a switch away from series-300 (austenitic) stainless steel to series-200 (low nickel stainless steel, "LNSS") and series-400 (non nickel containing) stainless steel, especially by Chinese and Indian manufactures. This is, however, a short-term, situation only, as series-300 is the mainstay for industrial applications as a result of its un-matched corrosion resistance properties in aquatic conditions.

The outlook for increased supply of nickel is also improving. A number of greenfields projects and expansions of existing operations are being commissioned: -

- BHP Billiton's Ravensthorpe mine for 50 000 tpa and expansion of the Yabulu refinery in Australia;
- Inco's Goro project for 60 000 tpa nickel in Goro, New Caledonia, Canada
- Large brownfields expansions, as well as significant additional capacity from small miners, which would increase supply significantly for the next two years.

The additional capacity is estimated to support a growth pattern of between 5% and 7% per year for the nickel industry over the next two years. Furthermore, it has become clear that volatility and high prices are not a unique characteristic of nickel prices but are becoming increasingly common in all industrial raw materials. In a recent editorial, the Metal Bulletin referred to the "virus of volatility that has infected global commodity markets". The editorial was stimulated by the very sharp price rises of iron scrap that have been seen in recent months, with prices for many grades reported as more than doubling over a nine-period and increasing of 25-60% over two months.

Volatility is mostly attributable to the far-reaching changes taking place in the structure of the global economy, especially in its manufacturing sector, and especially associated with the dramatic industrial developments in China and India. Although it is very exciting to see the economic success of these economies, and the resulting benefits for their large populations, the impact on the raw material supply industries worldwide and on other economies has to be assessed more accurately. Major new raw materials-using capacity is coming on stream, with plans for much more. New supply chains have to be established, with implications for distribution, shipping and warehousing systems. The filling of new supply chains always distorts and confuses otherwise transparent commodity market systems - just as the winding up of defunct supply chains can give rise to opposite distortions.

In summary, it can be assumed that nickel demand is sufficiently elastic to react to price increases, with supply ready to become available and avoid prolonged periods of high prices.

5.13. CHINESE NICKEL INDUSTRY

5.13.1. Production, Number of Producers, Capacity

Demand for nickel exceeds supply in China. China has abundant nickel resources of at least 2,5 Mt, but these are located in Gansu Province, suffering from poor infrastructure and high production costs. Nickel concentrate production of 63 200 tpa was augmented by imports of 65 400 tpa supply in the consumption demand of 148 000 tpa (the remainder from de stocking). Imports were mainly from Australia, Canada and Russia.

Table 5.13-1: NICKEL PRODUCERS -- CHINA

MAJOR OPERATING COMPANIES	LOCATION OF MAIN FACILITIES	CAPACITY [tpa]
Jinchuan Nonferrous Metals Corp.	Gansu, Jinchuan	60 000
Chengdu Electro-Metallurgy Factory	Sichuan, Chengdu	5 000
TOTAL - MAJOR COMPANIES		65 000

Jinchuan plans to increase its production capacity to 100 000 tpa nickel, with funding raised from an initial public offer of the stock market. China Metallurgical Construction Co is planning an investment in the development of the Ramu nickel mine in Papua New Guinea.

5.13.2. Linkages

The main source of demand for nickel is by the stainless steel industry, with the following downstream applications [BHP-Billiton]: -

- Industrial (35%): Chemicals, petro-chemicals, pharmaceuticals, food & beverage, pulp & paper, refineries, power;
- Consumer durables (34%): Flatware, hollowware, and white goods;
- Construction (24%): Kitchen & bathroom fitting, decorative parts, elevator and escalator components, city landscaping;
- Various others (7%).

China exports 30% of its stainless steel, mainly in the form of consumer durables.

The growth in nickel demand was well below the growth in stainless steel production in China, due to the substitution with 200-series, non-nickel, stainless steel, as well as an

increased use of external scrap. The use of 200-series stainless is expected to stabilise and nickel demand will recover in line with the upside potential of 300-series, high nickel-content, stainless steel.

5.13.3. Performance Outlook – Expansion/Decline

In 2005, 70% of the growth in melting capacity occurred in Asia, from China (26%), South Korea (23%), India (13%) [Source:BHP-Billiton]. China is expected to be the dominant growth factor in future, to satisfy its nickel demand for a fast-growing stainless steel industry.

5.14. SOUTH AFRICAN NICKEL INDUSTRY

5.14.1. Production, Number of Producers, Capacity

The production trends for the local nickel industry are as follows: -

Table 5.14-1: South African Nickel Industry

SALES	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
VOLUME [tonne]	28 600	30 200	31 700	33 600	37 400	35 400	36 100	36 500	38 500	40 100
Local	14 300	13 500	10 300	13 200	14 800	19 200	20 800	22 200	22 600	24 000
Export	14 300	16 700	21 400	20 400	22 600	16 200	15 300	14 300	15 900	16 100
PRICES (fob) [R/kg]	19,24	28,20	31,02	29,88	26,06	32,42	56,81	49,58	68,55	68,06
Local	19,29	28,28	32,29	29,89	25,43	34,01	57,14	49,66	69,87	68,66
Export	19,18	28,13	30,42	29,86	26,47	30,54	56,37	49,45	66,67	67,16
VALUE [R million]	550	852	983	1 004	975	1 148	2 051	1 810	2 639	2 729
Local	276	382	333	395	376	653	1 189	1 103	1 579	1 648
Export	274	470	651	609	598	495	862	707	1 060	1 081

Source: DME

Nickel production in South Africa is mainly as a by-product of PGM mining, with a small portion also from copper mining. One mining operation, namely Nkomati Nickel, is solely dedicated to nickel production, supplying 12,5% of total local output. It is planning to increase its production capacity by 300%, but the implementation schedule is uncertain.

The growth in supply was on average 3,4% pa for the past decade (as presented in the table above). Supply is more than adequate to support the growing local stainless steel industry, of which the share of nickel consumption increased from 50% to 60% over the past decade.

5.14.2. Linkages

In South Africa, the upstream linkage of nickel is with the mining operations, mainly with PGMs, but also with copper mining.

The down stream linkage is with the stainless steel industry, which can be referred to as a separate report published under this study.

In the long-term new developments such as electric vehicles may become relevant, as one of the core technologies is nickel-containing batteries to be used for energy storage systems. This application, however, would not become relevant on a large scale for another decade.

5.14.3. Performance Outlook – Expansion/Decline

The planned expansions in the PGM mining operations are mostly associated with the exploitation of ores with lower nickel content. The effect on future output capacity for the South African nickel industry will therefore be limited. The positive outlook for the local stainless steel industry would have a positive effect on the nickel industry.

A ferro-nickel smelter with a nameplate capacity of 200 000 tpa and a capital cost estimate of R3 billion is planned for the Coega industrial zone at the port of Ngqura, near Port Elizabeth in the Eastern Cape Province. These coastal projects have the benefit that they are not captive for local suppliers only, as they can benefit from the global sourcing of raw materials, if required.

5.14.4. Cost Structure, Pricing and Logistics

In recent years, the strength of the South African Rand has dampened the effects of the sharp rise in the US$-nominated global price trends. Commodity prices are still at relatively high levels and operations are profitable. The tracking of all movements of nickel is complex due to the nature of intermediary products.

5.15. IMPORTANCE OF THE METALS SECTOR TO THE SOUTH AFRICAN ECONOMY

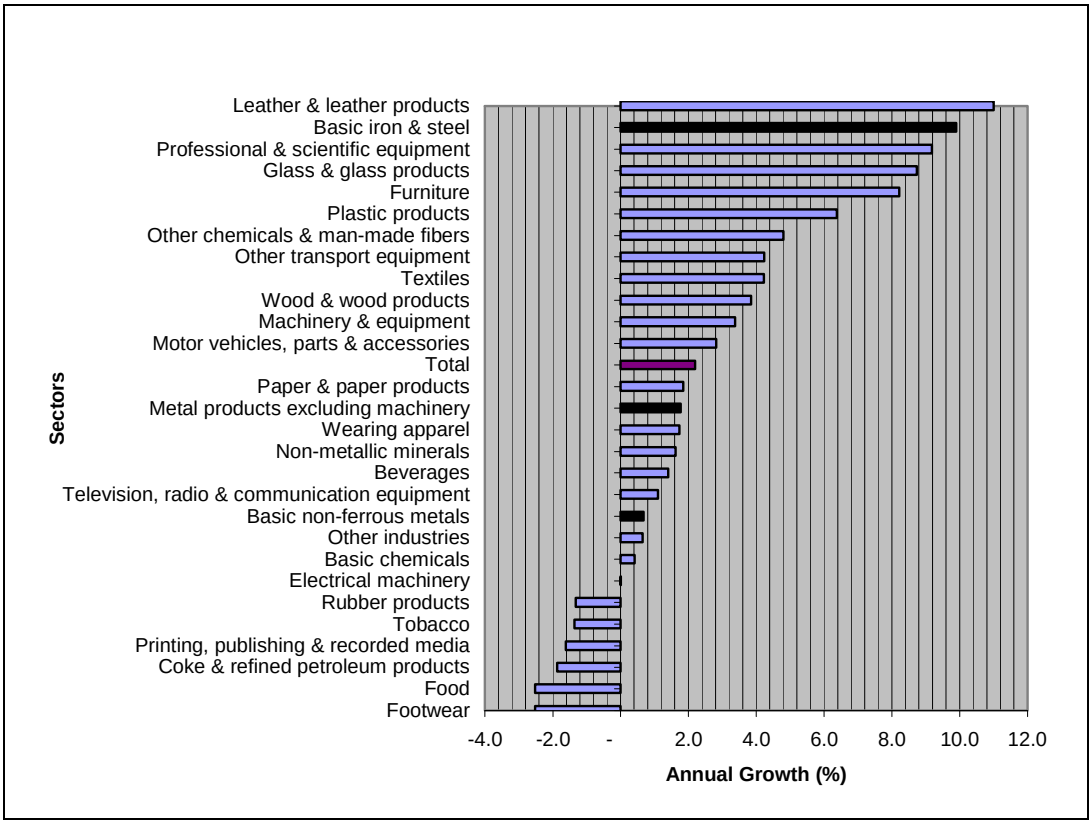
In this paragraph some indicators are reviewed to gain a sense of the socio-economic attributes and performance of the metal sectors. All monetary aggregates are in real terms at constant 2000-prices.

5.15.1. Value added

In 2005 the metal sector produced 16.1% of the value added by the manufacturing sector.[1] The basic iron and steel industry is the largest sub-group responsible for 43.4% of the value added by the sector. The manufacture of metal products is the second largest (34% of value added) and the manufacture of basic non-ferrous metals the third important with 22.6% of value added.

Growth in value added of basic iron and steel production was 9.9% p.a. between 2000 and 2005. This was the second highest growth rate of all manufacturing sectors over this period. Growth in the value added of manufacturing sector averaged 2.2% .The growth of value added by the non-ferrous basic industries was 0.7%. The value added of the more labour intensive metal products sector was 1.8% p.a.

Figure 5.15-1: Growth in the value added by manufacturing sectors 2000 to 2005 [percent p.a. constant 2000-prices]



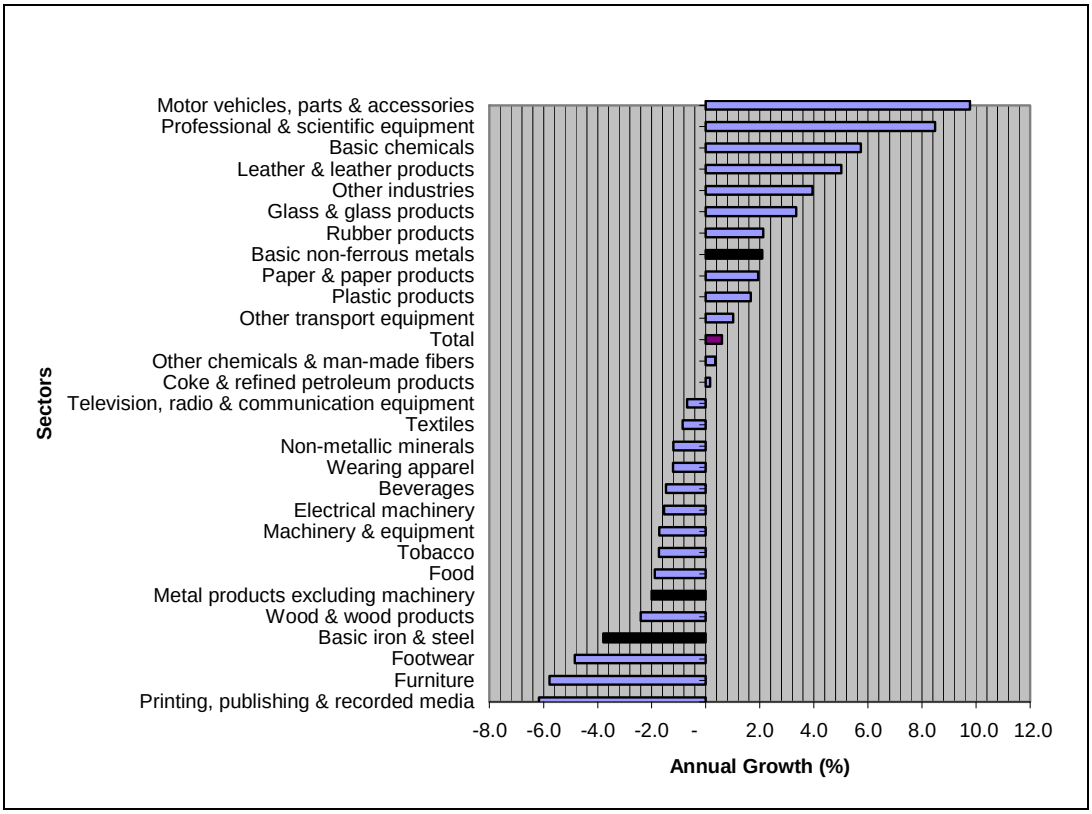
[1] Manufacturing added 18.2% of the value of GDP in 2004 and the metal sector thus 2.9%.

5.15.2. Capital Stock

About 18 % of the fixed capital stock of manufacturing is found in the metal sectors: basic iron and steel (9%); basic non-ferrous metals (7%) and metal products (2.2%).

While the fixed capital stock of the non-ferrous metal industries expanded by 2.5% p.a. between 2000 and 2005 compared with 0.6% for manufacturing that of the basic iron and steel industry declined by 3.8% p.a. and of metal products by 2.0% p.a. Although growth in value added by the latter two sectors were encouraging little happened to expand physical capacity.

Figure 5.15-2: Growth in the capital stock of manufacturing sectors 2000 to 2005 [percent pa. constant 2000 prices]

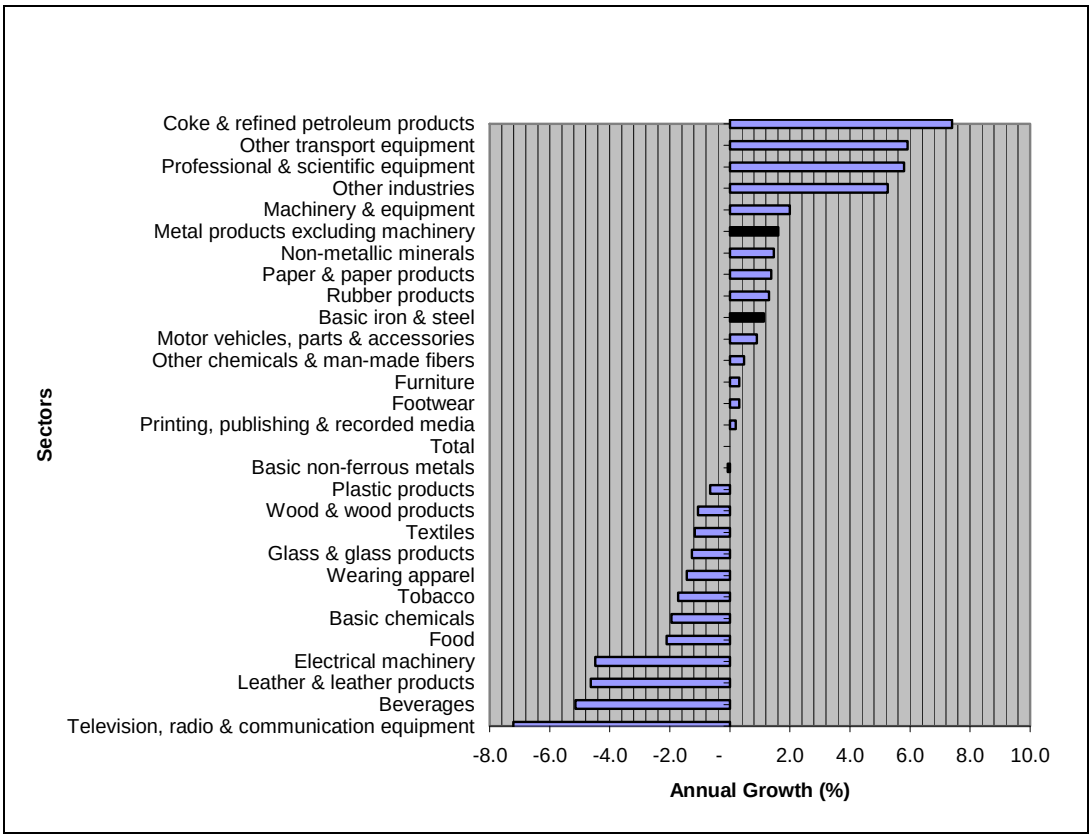


5.15.3. Employment

In 2005 the metal sectors employed 12.4% of manufacturing labour. The basic iron and steel industry employed (2.6%); the basic non-ferrous metal industry (1%) and the metal products industry (8.8%)

Employment in manufacturing changed little between 2000 and 2005. In contrast to this the metal sectors increased employment over this period. Employment by the basic iron and steel industry increased by 1.1% p.a. and that in the metal product sector by 1.7%. The labour force of the basic non-ferrous metal industry declined by 0.8% p.a.

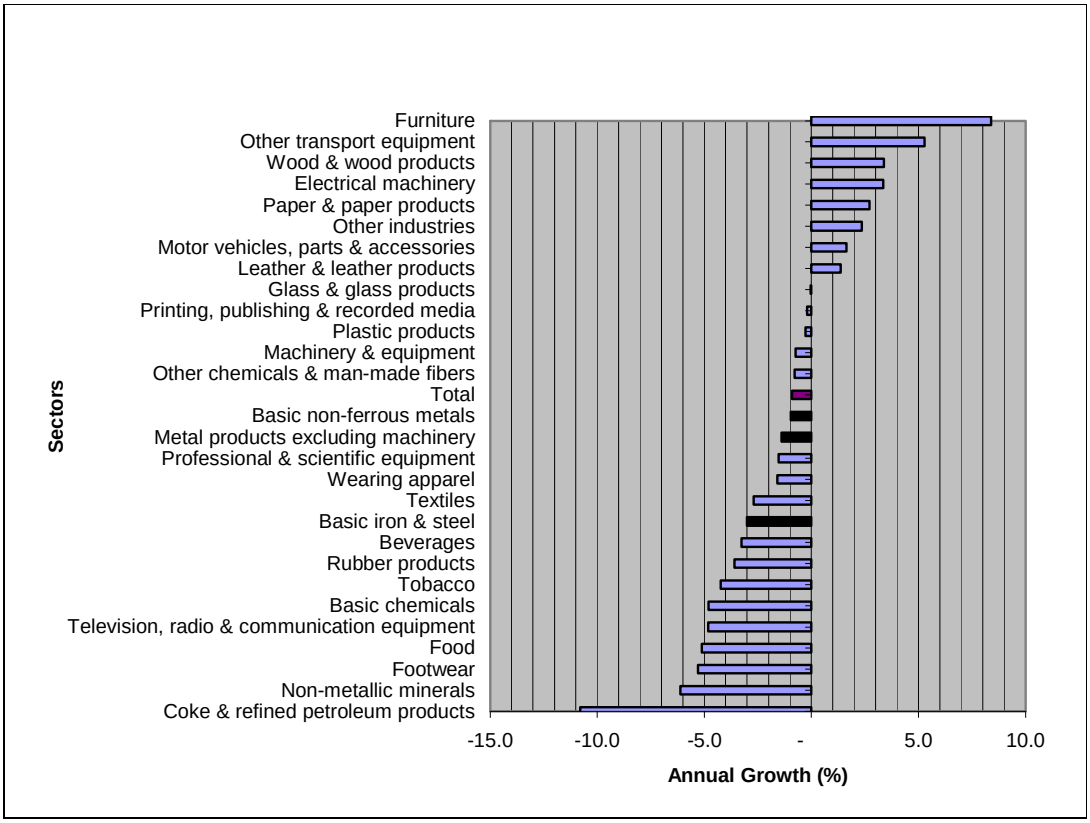
Figure 5.15-3: Growth in the employment of manufacturing sectors 2000 to 2005 [percent pa]



5.15.4. Labour remuneration

Although manufacturing employment remain unchanged between 2000 and 2005 labour remuneration declined 0.9% in real terms. The decline in real labour remuneration in the basic iron and steel industry came to 3% p.a. between 2000 and 2005. That of the non-ferrous basic metal sector was 1.0% and of metal products 1.4%.

Figure 5.15-4: Growth in the labour remuneration of manufacturing sectors 2000 to 2005 percent p.a. (Metal sectors highlighted)



5.15.5. Internationalisation

The basic iron and steel sector is highly export intensive with exports as a percentage of local production 50.3% in 2005. Imports remain below 10 % of local demand. The sector is open to foreign trade with imports plus exports 52.7% of total demand in 2005 compared with 37.3% for total manufacturing.

The non-ferrous basic metal sector is also open to international trade with imports plus export 39.7% of total demand. Although the export amount is higher than imports the latter may be gaining in the local market especially post 2002.

Table 4.15.2 Demand variables 1994 to 2005

Basic iron & steel	2000	2001	2002	2003	2004	2005
1. Sales R billion	42.0	42.3	56.9	61.9	67.8	70.2
2. Exports R billion	20.1	17.5	23.0	26.7	31.3	35.3
3. Imports R billion	2.4	2.6	2.7	3.3	3.6	3.7
4 Total demand R billion (1+3)	44.4	44.9	59.6	65.2	71.4	73.9

Basic iron & steel	2000	2001	2002	2003	2004	2005
5 Domestic demand (4 less 2)	24.3	27.3	36.7	38.4	40.2	38.6
6. Domestic sales (1 less 2)	21.9	24.8	33.9	35.2	36.6	34.9
7. Domestic as % of total sales	90.0	90.6	92.5	91.5	91.0	90.5
8. Imports/ domestic demand%	10.0	9.4	7.5	8.5	9.0	9.5
9. Exports/ Sales%	47.9	41.4	40.4	43.2	46.1	50.3
10. Ex+Im/ total demand %	50.7	44.8	43.1	46.1	48.8	52.7
11. Exports/total demand %	45.2	39.1	38.5	41.0	43.8	47.8
Total manufacturing						
Ex+Im/total demand %	37.9	36.6	35.4	35.5	36.6	37.3
Basic non-ferrous metals	2000	2001	2002	2003	2004	2005
1. Sales Rbill	20.7	19.0	22.3	23.6	22.3	23.0
2. Exports Rbill	6.7	5.4	6.2	6.1	5.9	6.2
3. Imports Rbill	5.3	2.4	2.8	3.6	4.7	4.8
4 Total demand Rbill (1+3)	26.1	21.4	25.1	27.2	27.0	27.7
5 Domestic demand (4 less 2)	19.4	16.0	18.8	21.1	21.1	21.5
6. Domestic sales (1 less 2)	14.1	13.6	16.1	17.5	16.4	16.7
7. Domestic as % of total sales	72.5	84.9	85.2	82.8	77.8	77.8
8. Imports/ domestic demand%	27.5	15.1	14.8	17.2	22.2	22.2
9. Exports/ Sales%	32.2	28.4	28.0	25.8	26.3	27.1
10. Ex+Im/ total demand %	46.1	36.5	36.0	35.7	39.1	39.7
11. Exports/total demand %	25.6	25.2	24.9	22.3	21.7	22.5
Metal products excluding machinery	2000	2001	2002	2003	2004	2005
1. Sales Rbill	31.3	34.2	35.8	37.3	38.2	39.8
2. Exports Rbill	5.2	4.8	4.6	4.1	4.4	4.7
3. Imports Rbill	4.0	4.0	4.1	4.4	5.1	5.5
4 Total demand Rbill (1+3)	35.2	38.2	40.0	41.7	43.4	45.2
5 Domestic demand (4 less 2)	30.1	33.4	35.4	37.6	39.0	40.5
6. Domestic sales (1 less 2)	26.1	29.4	31.2	33.2	33.8	35.1
7. Domestic as % of total sales	86.7	88.0	88.3	88.4	86.8	86.5
8. Imports/ domestic demand%	13.3	12.0	11.7	11.6	13.2	13.5
9. Exports/ Sales%	16.5	14.1	12.8	11.0	11.5	11.7
10. Ex+Im/ total demand %	26.0	23.0	21.9	20.3	22.0	22.4
11. Exports/total demand %	14.7	12.6	11.5	9.9	10.1	10.3

The ratio of exports plus imports for the metal products sector was 22.4% in 2005. Exports are about 10% of total demand. Imports became more important in 2004 and 2005 reaching more than 12% of total demand in 2005.

5.16. CONSIDERATIONS

1. China is the world's leading producer and consumer of a number of metal sector commodities and value-added industrial and consumer products.

2. Its market reforms and development initiatives, based on urbanisation and people development, as well as very high levels of investment in production operations and infrastructure projects, all contribute to a sustainable development path for China.

3. China is a vast country with vast human and natural resources. It enjoys competitive and cost advantages, such as labour costs, the cost of establishing new production capacity and capital equipment, as well as the cost of investment capital to finance new projects.

4. China's steel and aluminium sectors benefited from very steep development curves in terms of new production capacity, in both cases tripling capacity (a more than 200% increase) in less than the past decade.

5. The Chinese steel industry dominates the world production volumes with a share of 26%, more than twice that of Japan, its nearest rival. Whereas China historically mainly supplied its local market, it is becoming a significant exporter. However, its exports are essentially in long products for the lower end of the market, while it still imports high quality flat and sheet steel.

6. The steel policy strives for rationalisation of inefficient operations and promotes the concept of mergers and consolidations, ideally on a regional basis, in order to create globally competitive steel companies with a nameplate capacity of some 30 Mtpa. Fewer larger regional steelmakers would allow for a better regulatory and control environment for the government authorities.

7. The Chinese aluminium industry's expansion resulted in a major new dynamic in the global market, when China recently became a net exporter of aluminium in volume terms. It is still exposed to the high price levels of imported raw materials. It subsequently resulted in the announcement of substantial new capacity in alumina

production, which could change the 50% local shortfall into a severe over-supply situation and over-exploitation of reserves.

8. The aluminium policy strives for more control over new projects, with a more rational, "scientific" approach to ensure proper risk mitigation for expansion plans. The government authorities also intend to reduce the scale and implementation schedules of new capacity, but to target expansions that would increase the average size (capacity) of aluminium production operations.

9. The copper and nickel sectors benefit from the strong growth in captive demand for downstream products from infrastructure and industrial projects, as well as durable consumer goods for a fast growing middle-class and export programmes.

10. Higher value-added products are encouraged instead of merely a for-export processing step or trading activities.

11. On the one hand, this strong growth trend in Chinese metals sectors appears to be sustainable, given the urbanisation trend of 20 million people over the next 15 years. On the other hand, a slowdown in the steep growth trend (not even a recession) may result in an over-supply situation in China and potentially a disruptive effect on export markets.

12. The South African metals sectors are faced by strong competition from the dominant Chinese sectors, not only in third country export markets, but also through imports in the local markets. This situation requires a two-fold approach. First and foremost, South African companies should be prepared to compete head-on with their Chinese counterparts. However, they should also recognise the Chinese situation as an opportunity and be willing to do engage in business, joint-projects and investment in a co-operative manner with their counterparts.

13. 0n the macro-level China has a competitive advantage on South Africa in respect of labour costs while its companies benefit from lower capital costs.

14. In terms of energy cost, South Africa attains the top ranking in the world but the economy is also highly energy intensive. The long-term projection for energy cost in South Africa, indicates a possible doubling of unit costs in real terms over the next 20 years signalling erosion of its present competitive advantages in the long term.

15. Benchmarking the production of cost of the global steel industry based on published data reveals that:

- South Africa has a 20% higher average selling price than China, with 10% lower operating costs, although general overheads (including labour costs) are similar.
- Profitability of the South African steel industry is substantially higher, at an EBITDA of US$395/t compared to US$241/t in China.
- Per US$1,00 of turnover revenue, South African steel manufacturers require: US$1,73 of new steel plant, with 36¢ of raw materials and energy; plus 9¢ of overheads (5¢ labour costs and 4¢ general & other), for a total operating cost of 45¢
- Per US$1,00 of turnover revenue, Chinese steel manufacturers require: US$1,18 of new steel plant, with 45¢ of raw materials and energy; plus 11¢ of overheads (5¢ labour costs and 6¢ general & other), for a total operating cost of 60¢
- As the capital cost per plant (as fixed assets per tonne of steel produced, in US$/t) is 40% lower for China, depreciation charges are 30% less and interest payments only ½ of that paid locally, asset productivity (revenue turnover earned relative to fixed capital cost) is accordingly 30% higher.
- An employment cost per worker of only ⅓, but worker-hours per tonne of steel produced of 2 ½-times compared to South Africa;
- Energy and reductants are 30% more expensive than locally in terms of unit costs but total average cost is comparable – which can be ascribed to the process-related trade-offs.
- Lower Chinese headline earnings profitability (as EBITDA) of only 61%, due to 17% lower selling prices and 24% higher raw materials costs and 10% higher operating cost.

16. Down stream metal industries in South Africa are at a 20% cost disadvantage in respect of material inputs compared to their Chinese counterparts. The Chinese government generally supports the production of products which are important input products of the downstream manufacturing industry. Policy-makers have used SOEs in the heavy industry sector to reduce key costs of production for the export-orientated manufacturing sector. This cannot be categorically substantiated in the case of steel but opportunities are present in terms of SOE's in steel production and electricity supply. At the other end of the scale South African down stream industries are faced with import parity pricing practices.

17. Growth in South Africa's value added of basic iron and steel production was 9,9% p.a. between 2000 and 2005. This was the second highest growth rate of all manufacturing

sectors over this period and exemplary for a primary industry. The growth of value added by the non-ferrous basic industries was 0,7% and of the more labour intensive metal products sector 1,8% p.a. conformed to the average in manufacturing.

18. The fixed capital stock of the non-ferrous basic metals increased between 2000 and 2005 but declined with respect to the basic iron and steel and the metal product sectors. Conditions are thus not in support of an enlargement of capacity as yet.

19. In 2005 the metal sectors employed 12,4% of manufacturing labour. The metal products sector is the labour intensive one among these and employs 8,8% of the manufacturing labour force. Employment in total .manufacturing changed little between 2000 and 2005. However, employment in the basic iron and steel industry increased by 1,1% p.a. over this period and that in the metal product sector by 1,7% p.a.. The metal sector is thus starting to generate employment following restructuring in the industry. Trade negotiations should avoid negative impacts in this respect.

20. Although manufacturing employment remain unchanged between 2000 and 2005 labour remuneration declined by 0,9% in real terms. The decline in real labour remuneration in the basic iron and steel industry came to 3% p.a. between 2000 and 2005. That of the non-ferrous basic metal sector was 1,0% and of metal products 1,4%.

17. The basic iron and steel sector is highly export intensive while the non-ferrous basic metal sector is export orientated. The metal products sector is biased to the local market. South Africa benefits from its comparative strength in the export of primary products while India focus on downstream metal products.

18 Mild import penetration is sensed in the case of metal products and non-ferrous basic metals. Caution should thus apply in trade negotiations especially with regard to metal products. China is comparatively stronger in metal products manufacture and South Africa in primary products.

6. PROTECTION AND ASSOCIATED ASPECTS

6.1. TARIFFS

The extent of tariff bindings, bound rates and applied or actual rates are analysed.

6.1.1. Bindings and Bound Rates

Bound rates are the maximum rates a country is allowed to apply under its WTO commitments. Countries generally increased the coverage of their tariff bindings substantially during the Uruguay Round. In the case of most developing countries there are substantial differences between bound and applied rates. This has the implication that countries are allowed to increase current rates of duty up to the level of bound rates without transgressing their WTO commitments. In the words of the WTO (Trade Policy Review of Brazil, 2004): "--the average bound rate considerably exceeds the average applied rate, thus imparting a degree of uncertainty to the tariff and providing scope for the authorities to raise applied MFN rates".

South Africa

All South African tariff lines are bound with the exception of Chapters 3 (fish), 27 (mineral oil and fuels) and 93 (arms and ammunition) and a few lines in chemicals. The binding coverage is 96.4%.

The average bound rate for industrial products is 16.6%. The highest bound rate is 30% with the exception of two product groups, namely clothing (45%) and motor vehicles (50%).

The table below shows the ranges of South African bound rates in respect of metals of Chapters 72, 73, 74 and 75.

Table 6.1-1: SA Bound Tariff Rates per Chapter

Chapter	Description	South Africa Bound Rates: %
72	Iron and Steel	5/10
73	Articles of Iron and Steel	15/30
74	Copper and Articles thereof	5/15/20/30
76	Aluminium and articles thereof	5/15/30

Generally, South Africa's bound rates show a distinct structure with an escalation from primary products to final products in most chapters.

China

Under the terms of its WTO accession, China submitted a schedule of tariffs and tariff reductions, prepared in 2001, which is China's binding schedule. It covers all tariff lines (100% binding coverage). The schedule shows

- The HS code
- Description
- The bound rate at accession
- The final bound rate
- Implementation (meaning the year in which the final bound rate would be implemented)
- The rates for each year in columns from 2002 to 2010.

China committed to substantial annual reductions in its tariff rates, with most of them taking place within five years of China's WTO accession. The largest reductions took place in 2002, immediately after China acceded to the WTO, when the overall average tariff rate fell from over 15 percent to 12 percent.

In the case of metals, most of China's final bound rates came into effect immediately upon accession but in some cases the final bound rates were phased in. In those cases, the phasing took place over a short time, mostly by 2003 and in a few cases by 2004. All China's final bound rates on metals have been implemented.

6.1.2. Applied Tariffs

South Africa

South Africa's tariffs are applied on the FOB value of imports.

The simple average tariff rate for industrial products is 11.4% according to the recent exercise of compiling the bound rates of the tariff lines as at 1 January 2005, and the applied rates, for the purpose of the Doha Round NAMA analysis.

A comparison of the South African and China's applied rates in respect of the tariff lines under the chapters covered by this study follows in par 5.1.3.

China

China's customs duties are applied on a CIF basis. This means that the value for calculation of the basic duty is up to 20% higher than South Africa's FOB value basis. This has the following affect:

	Basic customs duty	Effective customs duty
South Africa	15%	15%
China	15%	18%

In addition to the basic duty, China applies import VAT of 17% compared to South Africa's 14%. 6.1.3. Comparison

The tables below include summary comparisons of the customs duties of China and South Africa, as in January 2006, per 4-digit tariff heading for metals per chapter and for the metal products covered under this study. It should be noted that with effect from 30 May 2006 the South Africa's customs duties on iron and steel of Chapter 72 shown in Table 5.1-2 were reduced to a rate of free. South African iron and steel therefore do not currently receive any tariff support.

Table 6.1-2: Comparison of China and South Africa Applied Tariffs on Iron and Steel (excluding stainless steel) of Chapter 72 as at January 2006

HS4	Description	China: % (Frequency)	SOUTH AFRICA: % (Frequency)
	Chapter 72: Iron and Steel		
7201	Pig iron and spiegeleisen in pigs, blocks or other primary forms	1 (4)	0 (3)
7202	Ferro-alloys	2 (15) 9 (2)	0 (15) 5 (1)
7203	Ferrous products obtained by direct reduction of iron ore and other spongy ferrous products, in lumps, pellets or similar forms; iron having a minimum purity by mass of 99.94 %, in lumps, pellets or similar forms	2 (3)	0 (2)
7204	Ferrous waste and scrap; remelting scrap ingots of iron or steel	0 (6) 2 (3)	0 (7)
7205	Granules and powders, of pig iron, spiegeleisen, iron or steel	2 (3)	0 (3)
7206	Iron and non-alloy steel in ingots or other primary forms (excluding iron of heading 72.03)	2 (2)	0 (2)
7207	Semi-finished products of iron or non-alloy steel	2 (4)	0 (4)
7208	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated	3 (2) 5 (9) 6 (11)	5 (14)
7209	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated	3 (2) 6 (11)	5 (9)
7210	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated	4 (3) 5 (1) 8 (6) 10 (1)	0 (4) 5 (7)
7211	Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated	6 (6)	5 (6)
7212	Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, clad, plated or coated	4 (1) 5 (1) 8 (4)	0 (3) 5 (4)
7213	Bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel	3 (2) 5 (2)	5 (4)
7214	Other bars and rods of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but including those twisted after rolling	3 (3) 7 (2)	5 (5)

HS4	Description	China: % (Frequency)	SOUTH AFRICA: % (Frequency)
7215	Other bars and rods of iron or non-alloy steel	3 (1) 7 (2)	5 (3)
7216	Angles, shapes and sections of iron or non-alloy steel	3 (10) 6 (9)	5 (12)
7217	Wire of iron or non-alloy steel	8 (4)	5 (4)
7224	Other alloy steel in ingots or other primary forms; semi-finished products of other alloy steel	2 (3)	0 (2)
7225	Flat-rolled products of other alloy steel of a width of 600 mm or more	3 (5) 6 (1) 7 (3)	0 (4) 5 (6)
7226	Flat-rolled products of other alloy steel, of a width of less than 600 mm	3 (5) 7 (4)	0 (4) 5 (5)
7227	Bars and rods, hot-rolled, in irregularly wound coils, of other alloy steel	3 (2) 6 (1)	5 (3)
7228	Other bars and rods of other alloy steel; angles, shapes and sections, of other alloy steel; hollow drill bars and rods, of alloy or non-alloy steel	3 (5) 6 (3) 7 (1)	0 (1) 5 (7)
7229	Wire of other alloy steel	3 (1) 7 (2)	5 (3)

China has low tariffs of 0 to 2% on primary products, ingots and semi-finished products while South Africa's rate is free. The exceptions are China's tariff of 9% on ferro-vanadium and South Africa's tariff of 5% on ferro-silico-magnesium. (reduced to free on 30/05/2006).

On flat-rolled products, bars/rods, angles/shapes/sections and wire, China's tariffs vary from mostly 3% to 8% while those of South Africa are either 5% or free. (all free from 30/05/2006).

Table 6.1-3: Comparison of China and South Africa Applied Tariffs on Articles of Iron and Steel of Chapter 73 as at January 2006

HS4	Description	China: % (Frequency)	SOUTH AFRICA: % (Frequency)
	Chapter 73: Articles of Iron and Steel		
7301	Sheet piling of iron or steel, whether or not drilled, punched or made from assembled elements; welded angles, shapes and sections, of iron or steel	7 (2)	5 (1) 10 (1)
7302	Railway or tramway track construction material of iron or steel, the following: rails, check-rails and rack rails, switch blades, crossing frogs, point rods and other crossing pieces, sleepers (cross-ties), fish-plates, chairs, chair wedges, sole plates (base plates), rail clips, bedplates, ties and other material specialized for jointing or fixing rails	6 (2) 7 (2) 8 (1)	5 (4)
7303	Tubes, pipes and hollow profiles, of cast iron	4 (2)	0 (1)
7304	Tubes, pipes and hollow profiles, seamless, of iron (excluding cast iron) or steel	4 (14) 5 (5) 8 (1) 10 (4)	0 (5) 10 (3) 15 (5)
7305	Other tubes and pipes (for example, welded, riveted or similarly closed), having circular cross-sections, the external diameter of which exceeds 406.4 mm, of iron or steel	3 (1) 6 (3) 7 (3)	0 (3) 10 (7)
7306	Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel	3 (4) 6 (2) 7 (1)	10 (7)
7307	Tube or pipe fittings (for example, couplings, elbows, sleeves), of iron or steel	4 (2) 5 (1) 7 (2) 8 (1) 8.4 (4)	0 (10) 10 (20)
7308	Structures (excluding prefabricated buildings of heading 94.06) and parts of structures (for example bridges and bridge-sections, lock-gates, towers, lattice masts, roofs, roofing frame-works, doors and windows and their frames and thresholds for doors, balustrades, pillars and columns), of iron or steel; plates, rods, angles, shapes, sections, tubes and the like, prepared for use in structures, of iron or steel	4 (1) 8 (1) 8.4 (2) 10 (1)	0 (4) 15 (5)
7309	Reservoirs, tanks, vats and similar containers for any material (excluding compressed or liquefied gas), of iron or steel, of a capacity exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment	10.5 (1)	0 (1)

HS4	Description	China: % (Frequency)	SOUTH AFRICA: % (Frequency)
7310	Tanks, casks, drums, cans, boxes and similar containers, for any material (excluding compressed or liquefied gas), of iron or steel, of a capacity not exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment	10.5 (1) 17.5 (2)	0 (3)
7311	Containers for compressed or liquefied gas, of iron or steel	8 (1) 17.5 (1)	0 (1) 15 (1)
7312	Stranded wire, ropes, cables, plaited bands, slings and the like, of iron or steel, not electrically insulated	4 (2)	0 (3) 5 (3)
7313	Barbed wire of iron or steel; twisted hoop or single flat wire, barbed or not, and loosely twisted double wire, of a kind used for fencing, of iron or steel	7 (1)	5 (1)
7314	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel	7 (4) 8 (5) 10 (3) 12 (6)	0 (4) 5 (16)
7315	Chain and parts thereof, of iron or steel	10 (1) 12 (9)	0 (8) 10 (5)
7316	Anchors, grapnels and parts thereof, of iron or steel	10 (1)	0 (1)
7317	Nails, tacks, drawing pins, corrugated nails, staples (excluding those of heading 83.05) and similar articles, of iron or steel, whether or not with heads of other material, (excluding such articles with heads of copper)	10 (1)	0 (1) 5 (1) 10 (2)
7318	Screws, bolts, nuts, coach screws, screw hooks, rivets, cotters, cotter-pins, washers (including spring washers) and similar articles, of iron or steel	5 (1) 8 (2) 10 (9)	0 (12) 10 (4)
7319	Sewing needles, knitting needles, bodkins, crochet hooks, embroidery stilettos and similar articles, for use in the hand, of iron or steel; safety pins and other pins of iron or steel, not elsewhere specified or included	10 (4)	0 (4)
7320	Springs and leaves for springs, of iron or steel	6 (3) 10 (3) 12 (1)	5 (3)
7321	Stoves, ranges, grates, cookers (including those with subsidiary boilers for central heating), barbecues, braziers, gas-rings, plate warmers and similar non-electric domestic appliances, and parts thereof, of iron or steel	12 (1) 15 (1) 21 (5) 23 (1)	15 (7)

HS4	Description	China: % (Frequency)	SOUTH AFRICA: % (Frequency)
7322	Radiators for central heating, not electrically heated, and parts thereof, of iron or steel; air heaters and hot air distributors (including distributors which can also distribute fresh or conditioned air), not electrically heated, incorporating a motor-driven fan or blower, and parts thereof, of iron or steel	20 (1) 21 (2)	15 (3)
7323	Table, kitchen or other household articles and parts thereof, of iron or steel; iron or steel wool; pot scourers and scouring or polishing pads, gloves and the like, of iron or steel	12 (1) 14 (1) 20 (7)	20 (6) 30 (1)
7324	Sanitary ware and parts thereof, of iron or steel	10 (1) 18 (1) 25 (1) 30 (1)	10 (1) 20 (4)
7325	Other cast articles of iron or steel	7 (1) 10.5 (2) 20 (2)	0 (3)
7326	Other articles of iron or steel	8 (1) 10 (1) 10.5 (3) 18 (1) 20 (1)	0 (6) 10 (1) 15 (2)

In both countries there are very substantial variations in the rates on products of iron and steel, ranging from generally 5% to 15% with the highest rate in both countries being 30%. South Africa has a rate of free on some lines. China's rates on finished products are generally higher than those of South Africa.

Table 6.1-4: Comparison of China and South Africa Applied Tariffs on Copper and Articles Thereof of Chapter 74 as at January 2006

HS4	Description	China: % (Frequency)	South Africa: % (Frequency)
	Chapter 74: Copper and Articles of Copper		
7401	Copper mattes; cement copper (precipitated copper)	2 (2)	0 (2)
7402	Unrefined copper; copper anodes for electrolytic refining	2 (1)	0 (1)

HS4	Description	China: % (Frequency)	South Africa: % (Frequency)
7403	Refined copper and copper alloys, unwrought	1 (4) 2 (4)	0 (8)
7404	Copper waste and scrap	1.5 (2)	0 (1)
7405	Master alloys of copper	4 (1)	0 (1)
7406	Copper powders and flakes	3 (1) 4 (1) 6 (6)	0 (2)
7407	Copper bars, rods and profiles	4 (1) 7 (3)	0 (1) 10 (4)
7408	Copper wire	4 (2) 7 (2) 8 (1)	0 (4) 3 (1)
7409	Copper plates, sheets and strip, of a thickness exceeding 0.15 mm	4 (2) 7 (6)	0 (2) 10 (10)
7410	Copper foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.15 mm	4 (3) 7 (4)	0 (2) 10 (2)
7411	Copper tubes and pipes	4 (1) 7 (3)	0 (4) 10 (4)
7412	Copper tube or pipe fittings (for example, couplings, elbows, sleeves)	4 (1) 7 (2)	0 (1) 10 (6)
7413	Stranded wire, cables, plaited bands and the like, of copper, not electrically insulated	5 (1)	0 (1) 5 (1)
7414	Cloth (including endless bands), grill and netting, of copper wire; expanded metal of copper	7 (1) 8 (1) 15 (2)	0 (2)
7415	Nails, tacks, drawing pins, staples (excluding those of heading 83.05) and similar articles of copper, iron or steel with heads of copper; screws, bolts, nuts, screw hooks, rivets, cotters, cotter-pins, washers (including spring washers) and similar articles, of copper	8 (3) 10 (3)	0 (5)
7416	Copper springs	10 (1)	0 (1)
7417	Cooking or heating apparatus of a kind used for domestic purposes, non-electric, and parts thereof, of copper	20 (1)	20 (1)
7418	Table, kitchen or other household articles and parts thereof, of copper; pot scourers and scouring or polishing pads, gloves and the like, of copper; sanitary ware and parts thereof, of copper	18 (3)	20 (3)

HS4	Description	China: % (Frequency)	South Africa: % (Frequency)
7419	Other articles of copper	10 (2) 14 (1) 20 (2)	0 (1) 10 (1) 15 (1)

China's tariffs on primary and intermediate products of copper range from 3% to 8% and on finished products generally from 10% to 20%.

Table 6.1-5: Comparison of China and South Africa Applied Tariffs on Aluminium and Articles Thereof of Chapter 76 as at January 2006

HS4	Description	China: % (Frequency)	South Africa: % (Frequency)
	Chapter 76: Aluminium and Articles Thereof		
7601	Unwrought aluminium	5 (1) 7 (1)	0 (2)
7602	Aluminium waste and scrap	1.5 (2)	0 (1)
7603	Aluminium powders and flakes	6 (2) 7 (1)	0 (2)
7604	Aluminium bars, rods and profiles	5 (3)	0 (3) 5 (5)
7605	Aluminium wire	8 (4)	0 (4) 5 (4)
7606	Aluminium plates, sheets and strip, of a thickness exceeding 0.2 mm	6 (6) 10 (1)	0 (4) 10 (8)
7607	Aluminium foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.2mm	6 (4)	0 (4) 10 (3)
7608	Aluminium tubes and pipes	8 (2)	0 (1) 5 (1)
7609	Aluminium tube or pipe fittings (for example, couplings, elbows, sleeves)	8 (1)	0 (1) 10 (1)

HS4	Description	China: % (Frequency)	South Africa: % (Frequency)
7610	Aluminium structures (excluding prefabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge-sections, towers, lattice masts, roofs roofing frameworks, doors and windows and their frames and thresholds for doors, balustrades, pillars and columns) aluminium plates, rods, profiles, tubes and the like, prepared for use in structures	6 (1) 25 (1)	10 (2)
7611	Aluminium reservoirs, tanks, vats and similar containers, for any material (excluding compressed or liquefied gas), of a capacity exceeding 300 li, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment	12 (1)	0 (1)
7612	Aluminium casks, drums, cans, boxes and similar containers (including rigid or collapsible tubular containers), for any material (excluding compressed or liquefied gas), of a capacity not exceeding 300 li, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment	12 (2) 30 (1)	0 (1) 10 (2)
7613	Aluminium containers for compressed or liquefied gas	6 (1) 12 (1)	0 (1)
7614	Stranded wire, cables, plaited bands and the like, of aluminium, not electrically insulated	6 (2)	10 (2)
7615	Table, kitchen or other household articles and parts thereof, of aluminium; pot scourers and scouring or polishing pads, gloves and the like, of aluminium; sanitary ware and parts thereof, of aluminium	15 (1) 18 (2)	20 (3) 30 (1)
7616	Other articles of aluminium	10 (3) 15 (1) 18 (1)	0 (3) 10 (2) 15 (1)

In respect of aluminium and products thereof, China has tariff rates of mostly 5% to 7% on primary products, 5% to 8% on intermediates and 10% to 30% on final products. China's highest rates are 25% and 30% on certain structures and containers, respectively, while various other products have rates of 12% to 18%.

In South Africa's case only household articles and steps & ladders have rates of more than 10%.

Generally, China's rates in this chapter are higher than those of South Africa.

Table 6.1-6: Comparison of China and South Africa Applied Tariffs on Certain Tools, Implements, Cutlery, Spoons, Forks and Parts Thereof, of Base Metals, of Chapter 82 as at January 2006

HS4	Description	China: % (Frequency)	South Africa: % (Frequency)
	Chapter 82: Tools, Implements, Cutlery, Spoons, Forks and Parts Thereof, of Base Metals		
8201	Hand tools, the following: Spades, shovels, mattocks, picks, hoes, forks and rakes; axes, bill hooks and similar hewing tools; secateurs and pruners of any kind; scythes, sickles, hay knives, hedge shears, timber wedges and other tools of a kind used in agriculture, horticulture or forestry	8 (14)	0 (7) 15 (1) 20 (6)
8202	Hand saws; blades for saws of all kinds (including slitting, slotting or toothless saw blades)	8 (6) 8.4 (2) 10.5 (1)	0 (6) 10 (1) 20 (2) 21 (1)
8203	Files, rasps, pliers (including cutting pliers), pincers, tweezers, metal cutting shears, pipe-cutters, bolt croppers, perforating punches and similar hand tools	10.5 (4)	0 (3) 15 (1) 20 (4)
8204	Hand-operated spanners and wrenches (including torque meter wrenches but excluding tap wrenches); interchangeable spanner sockets, with or without handles	10 (2) 10.5 (1)	0 (3) 20 (5)
8205	Hand tools (including glaziers' diamonds), not elsewhere specified or included; blow lamps; vices, clamps and the like (excluding accessories for and parts of, machine tools); anvils; portable forgers; hand or pedal-operated grinding wheels with frameworks	10 (4) 10.5 (6)	0 (10) 20 (8)
8206	Tools of two or more of the headings 82.02 to 82.05, put up in sets for retail sale	10.5 (1)	0 (1)
8207	Interchangeable tools for hand tools, whether or not power-operated, or for machine-tools (for example for pressing, stamping, punching, tapping, threading, drilling, boring, broaching, milling, turning or screwdriving) including dies for drawing or extruding metal, and rock drilling or earth boring tools	8 (15)	0 (9) 15 (2) 20 (5)
8208	Knives and cutting blades, for machines or for mechanical appliances	8 (5)	0 (5)
8209	Plates, sticks, tips and the like for tools, unmounted, of cermets	8 (1)	0 (1) 15 (1) 20 (1)
8210	Hand-operated mechanical appliances, of a mass of 10 kg or less, used in the preparation, conditioning or serving of food or drink	18 (1)	20 (1)

China's rates on tools, implements, cutlery, spoons, forks and parts thereof, of base metals, vary form 8% to 18% with 8% and 10.5% the most common rates. South Africa's rates are higher at mostly 15% and 20%.

Table 6.1-7: Comparison of China and South Africa Applied Tariffs on Certain Miscellaneous Articles of Base Metals of Chapter 83 as at January 2006

HS4	Description	China: % (Frequency)	South Africa: % (Frequency)
	Chapter 83: Miscellaneous Articles of Base Metals		
8303	Armoured or reinforced safes, strong-boxes and doors and safe deposit lockers for strong-rooms, cash or deed boxes and the like, of base metal	14 (1)	15 (1) 20 (1)
8304	Filing cabinets, card-index cabinets, paper trays, paper rests, pen trays, office-stamp stands and similar office or desk equipment, of base metal (excluding office furniture of heading 94.03)	10.5 (1)	20 (1)
8305	Fittings for loose-leaf binders or files, letter clips, letter corners, paper clips, indexing tags and similar office articles, of base metal; staples in strips (for example, for offices, upholstery, packaging), of base metal	10.5 (3)	20 (3)
8306	Bells, gongs and the like, non-electric, of base metal; statuettes and other ornaments, of base metal; photograph, picture or similar frames, of base metal; mirrors of base metal	8 (5)	0 (4)
8307	Flexible tubing of base metal, with or without their fittings	8.4 (2)	10 (2)
8308	Clasps, frames with clasps, buckles, buckle-clasps, hooks, eyes, eyelets and the like, of base metal, of a kind used for clothing, footwear, awnings, handbags, travel goods or other made up articles; tubular or bifurcated rivets, of base metal; beads and spangles, of base metal	10.5 (3)	0 (3) 15 (3)
8309	Stoppers, caps and lids (including crown corks, screw caps and pouring stoppers), capsules for bottles, threaded bungs, bung covers, seals and other packing accessories, of base metal	12 (1) 18 (1)	5 (2) 14 (1)
8310	Sign-plates, name-plates, address-plates and similar plates, numbers, letters and other symbols, of base metal, excluding those of heading 94.05	18 (1)	20 (1)
8311	Wire, rods, tubes, plates, electrodes and similar products, of base metal or of metal carbides, coated or cored with flux material, of a kind used for soldering, brazing, welding or deposition of metal or of metal carbides; wire and rods, of agglomerated base metal powder, used for metal spraying	8 (4)	0 (4) 10 (3)

In respect of miscellaneous articles of base metals of headings 83.03 to 83.11, China's rates vary from 8% to 18% and those of South Africa from 10% to 20%.

6.2. NON-TARIFF BARRIERS ("NTBs")

6.2.1. Introduction

Non-tariff barriers (NTBs) cover a wide range of barriers, measures or situations, other than ordinary customs tariffs, that have the effect of restricting or discouraging trade.

NTBs can be arbitrarily categorised in three groups, namely:

- Trade policy measures;
- Technical regulations; and
- Administrative procedures.

Situations and conditions other than specific measures can also act as NTBs that discourage imports into a country.

Trade policy measures

These include import licensing, import quotas, state trading enterprises, additional taxes, reference prices, export assistance, subsidies, anti-dumping and countervailing duties and safeguards. The extent of policy predictability, transparency and the regularity of changes in policy and policy measures is also an important factor.

Technical regulations

These include measures such as standards and technical specifications that are aimed at protecting health, safety, the environment and the interests of consumers.

Administrative procedures

These cover a wide range of regulations, procedures and other factors that operate in a manner that restrict or discourage imports. Examples are burdensome customs procedures; a lack of transparency or consistency in customs and other import procedures; slow customs clearing that causes delays; and services that are not user-friendly.

Other situations or conditions that discourage imports are mainly related to infrastructure such as inadequate port facilities causing congestion, problems with internal transport infrastructure and facilities etc.

6.2.2. Import Quotas

Currently, no import quotas exist for the applicable metal products.

(The Quota License Affairs Bureau of the Ministry of Commerce is responsible for the regulation of import quotas. MOFTEC implemented as safeguard measures (import quotas and above-quota raised tariff levels) in November 2002 (MOFTEC Notice No. 48/02). The measures quotas covered five categories of steel products, including: non-alloy hot rolled sheets and coils, non-alloy cold rolled sheets and coils, organic coated sheets, silicon-electrical steel, and stainless cold rolled sheets and coils. South Africa was part of a list of developing countries that was excluded from all quotas and safeguard measures. From 26 December 2003 (MOFCOM Notice No. 76/2003), these remaining quotas were terminated as higher global steel prices put pressure on domestic users of steel and steel products. An industry analyst commented that, due to both the growing production capacity and high demand by steel product end-users, there is unlikely to be a re-imposition of steel quotas.)

6.2.3. Export Quota

Alumina (bauxite) is subject to an export quota. Exporters require a specific export license called the *Certificate of Export Licenses for applying for Quota Tender – Commodities,* promulgated in the 'Catalogue of Commodities Subject to Export License in 2006' (Announcement No. 85 of MOFCOM and General Administration of Customs). The export quota amount for 2006 is 970,000 metric tonnes of alumina.

(Although this does not apply to any HS 76 Aluminium products, 'other adobe clay' under 'alumina' (2508400000) is subject to a special export quota as of 1 June 2005.)

6.2.4. Other Import/Export Restrictions

Export tax:

The export of Aluminium and Aluminium products (HS 76), Copper (HS 74), ferro-alloy (7202) and ferro-silicon (72022100) are subject to an export tax of 5%. (See below: 'Regulations to cool over-investment in the Metals processing sector').

Prohibited, Restricted goods: Processing Trade restrictions:

There are no outright, 'Prohibited goods' under the metal and metal products section.

Due to overinvestment in production capacity in certain metals processing sectors, MOFCOM has implemented import and export restrictions on a number of metals in the 'Processing Trade'. More specifically, they are trying to target overinvestment by restricting (controlling) the trade of the raw materials and 'for-export' processed products. This does not mean that trade in these products is always restricted. It only means that if you want to import a specific raw material solely for the purpose of exporting the processed metal, this is not allowed. The regulation includes both import restrictions on the raw material and export prohibition on the processed metal. As the 'export processing sector' contributes 55% of all China's exports, this is well established and regulated area and is controlled largely by the on-sight customs houses of the special development/trade zones. Hence, no foreign company representatives spoke of problem areas with regard to this regulation.

Nonetheless, the intention of MOFCOM is very clear on this issue: Due to the large number of applicable tariff lines, the general sections subject to this regulation and the applicable HS codes are listed below. MOFCOM, The General Administration of Customs and SEPA (State Environmental Protection Agency) jointly promulgated the notice concerning the 'Catalogue of Prohibited products for processing trade' on 11 December 2005. The notice 105/2005, took effect on 1 January 2006.

The 'Catalogue of Prohibited products for Processing Trade', includes:

a) various scrap and waste of metals.

i. Ferrous waste and scrap (7204490010,7204490020)

ii. Cement Copper (7401200000)

iii. Copper waste and scrap (7404000010, 7404000090)

iv. Aluminium Waste and scrap (7602000010)

b) various refined copper and copper alloys, unwrought and copper concentrate 7403110000,7403120000,7403130000,7403190000,7403210000,7403220000,7403230000, 7403290000, 26030000)

c) various products under HS code 72: Iron and Steel 7201100000,7201200000,7201500010,7201500090,7204100000,7204210000,7204290000, 7204300000,7204410000,7204490090,7204500000,7205100000,7205210000,7205290000,

7206100000,7206900000,7207110000,7207120000,7207190000,7207200000,7218100000,
7224909000)

d) various Ferro-alloys
7202110000,7202190000,7202210000,7202290000,7202300000,7202410000,7202490000,
7202500000,7202600000,7202700000,7202801000,7202802000,7202910000,7202921000)

Please note, there are many widely-used, heavily-traded raw materials and products under the above sections. The intention is not to impede the trade in these particular products. The intention of the 'Catalogue of Prohibited products for processing trade', is to control overinvestment and the resulting excess capacity in a number of key industries. Each section of the act lists the tariff lines within which sit the targeted products that are being controlled. Hence, you may have a particular tariff code, and even the same product listed under 2 or more sections.

Dual Purpose Use/ Double Functions restrictions:

Trade in various metals and articles of metal are restricted due to their potential use in non-civilian industries and well as civilian industries. 'Administrative Measures on Import and Export License of Substances and Technologies of Double Functions' took effect as from 1 January 1 2006, promulgated by Decree No.29/2005 of MOFCOM and The General Administration of Customs. Both importers and exporters should apply to MOFCOM for a special import/export permit relating to any products which fall under the following tariff codes. Imports and exports for non-civilian use are prohibited; hence the trade in these products, for civilian use, needs specific permission from MOFCOM. Products include;

a) various bars, rods & other profiles, of aluminium, alloys (7604290010)

b) various tubes and pipe of aluminium and alloys (7608200010)

c) various chemical production equipment of Iron and Steel

- Storage tanks (7310100010, 7310100010)

- Multi-wall pipeline (7306900010)

d) various missile and military-related

- Tiny sphere aluminite powder (7603100010)

6.2.5. Export Subsidies

(See below: Export tax rebates)

6.2.6. Scrap metal import regulations:

(See 9.10 Environmental issues)

6.3. ADDITIONAL TAXES DISCRIMINATORY TO IMPORTS

None applicable.

6.4. CUSTOMER PROCEDURES

6.4.1. Import License:

General Distribution and Trading:

It is necessary to have a specific trading and distribution license to trade in any products in China. (See FICE, Foreign Invested Commercial Enterprise, trading license issues under General Section).

Product-specific import license

Apart from the mandatory licenses issued as part of the above 'NTB' restrictions/regulations, product-specific licenses are necessary for each shipment of goods to pass through Customs. (This legal requirement is often waived and importers may be issued with 3-month or one-year import licences). The applicant must prove that the import is "necessary" and that there is sufficient foreign exchange available to pay for the transaction. In reality the application of import licenses for most metal products is straight forward and can be handled by an agent. (Without a FICE license, a foreign company would not be able to trade under its own name anyway.)

Automatic Import License (AIL):

The import of many metal and articles of metal products require a AIL. Applicable products are found in the Catalogue of Commodities under Administration of Automatic Import Permission of 2006, promulgated by Announcement No.101/2005 of MOFCOM and The

General Administration of Customs. This regulation covers a wide range of goods under most two-digit HS code sections and is therefore not only applicable to metal products.

Applications for AIL may be submitted online or in writing. Licenses should generally be issued within 10 days of the receipt of application and complete applications. An AIL is valid for 6 months within a calendar year. Although MOFCOM generally requires a single import license for each shipment, for certain products, MOFCOM will permit entry of up to 6 shipments based on a single AIL.

AILs are not required for products processed for export in the processing trade.

Products include:

a) Various Iron and Steel products:

(all products from 7207 to 7229)

b) Various articles of Iron and Steel:

(7301100000, 7301200000, 7302100000, 7302300000, 7302400000, 7302901000, 7302909000, 7303001000, 7303009000, 7304101000, 7304102000, 7304103000, 7304109000, 7304211000, 7304219000, 7304290000, 7304311000, 7304312000, 7304319000, 7304391000, 7304392000, 7304399000, 7304411000, 7304419000, 7304491000, 7304499000, 7304511000, 7304512000, 7304519000, 7304591000, 7304592000, 7304599000, 7304900000, 7305110000, 7305120000, 7305190000, 7305200000, 7305310000, 7305390000, 7305900000, 7306100000, 7306200000, 7306300000, 7306400000, 7306500000, 7306600000, 7306900010, 7306900090, 7312100000)

c) Various Copper products and articles thereof

(7402000000, 7403110000, 7403120000, 7403130000, 7403190000, 7403210000, 7403220000, 7403230000, 7403290000, 7404000010, 7404000090, 7406101000, 7406102000, 7406109000, 7406201000, 7406202000, 7406209000, 7407100000, 7407210000, 7407220000, 7407290000, 7408110000, 7408190000, 7408210000, 7408220000, 7408290000, 7409110000, 7409190000, 7409210000, 7409290000, 7409310000, 7409390000, 7409400000, 7409900000, 7410110010, 7410110090, 7410121000, 7410129000, 7410210000, 7410221000, 7410229000, 7411100000, 7411210000, 7411220000, 7411290000)

d) Various Aluminium products and articles thereof

(7601101000, 7601109000, 7601200000, 7602000010, 7602000090, 7603100010, 7603100090, 7603200000, 7604100000, 7604210000, 7604290010, 7604290090, 7605110000, 7605190000, 7605210000, 7605290000, 7606112000, 7606119000, 7606122000, 7606123000, 7606124000, 7606910000, 7606920000, 7607111000, 7607119000, 7607190000, 7607200000, 7608100000, 7608200010, 7608200090)

6.5. CERTIFICATES OF ORIGIN

Importers should show a certificate of origin to Customs at the port of entry. If the importers cannot present the certificates of origin, the Mainland Customs will inspect other supporting documents such as contract, invoice, bill of landing, etc. to substantiate the origin of the steel imports. If the Customs cannot verify the origin of the goods based on the above documents, they may refer the case to the tariff department for a professional assessment. Additional duty will be levied on imports where origin cannot be verified.

An industry source said there were no abnormal issues relating to certificates of origin in the metals and metal products sector which can be viewed as a barrier to trade.

6.6. STANDARDS

6.6.1. Mandatory cargo inspection by AQSIQ:

The import of some products into China requires mandatory cargo certification by officials from AQSIQ (Administration of Quality Supervision, Inspection and Quarantine). This is called a CCC Mark. No Metals products are by law required to have a CCC Mark, but it is widely used and regarded as business practise.

A metal industry analyst said these inspections are not common, as AQSIQ does not have the capacity to inspect all cargoes. But, they are occasionally used on a discretionary basis to cause deliberate delays at Chinese ports. These cases are often politically motivated actions against the imports of certain products from certain countries to gain negotiating leverage or are vendettas against a particular company. These occurrences are not common but do occur, and are occasionally mentioned in official submissions under the Feasibility Study for the Australian FTA with China.

An industry analyst commented that no customs related standards exist, though there are occasionally issues relating to which HS category a product fits into. He said however that this was not a significant issue and is not specific to importing into China.

The industry analyst also mentioned that International Technical Standards were widely used by importers and exporters of metal products in China. He mentioned product quality was an issue in selling the product in China, not in handling the customs procedures.

6.7. TRADE ACTION ISSUES

6.7.1. Trade Actions initiated by China:

The Bureau of Fair Trade for Imports and Exports and the Bureau of Industry Injury Investigation, both departments of MOFCOM, are responsible for instituting trade actions on behalf of China.

Safeguard measures:

China put safeguard measures on 5 categories of imported steel in 2002. These measures were terminated on 26 December 2003. (See above: 9.3.1: Import quota)

AD Actions:

In October 2000, China put anti-dumping duties on the imports of cold-rolled magnetic silicon steel from Russia. These measures were terminated by MOFCOM Notice No. 76/2004 with effect from 30 December 2004. (72251100, 72251900, 72261100, 72261900)

6.7.2. Significant Trade Actions against China:

In the USA, tube-makers have been on a 3-year campaign seeking safeguard measure protection in the form of quotas against imports of Chinese welded non-alloy steel pipe. In January 2006, the Bush Administration again turned down this action.

In December 2005, the Brazilian tube-makers association, ABITAM, threatened to apply AD action against the imports of Chinese steel tube and pipe. It claimed China was selling in Brazil at 30% below the domestic market price.

6.8. PRICE CONTROLS

There are no national, internal, direct price controls on the applicable metals and metals products. There is no state-trading system on any of the applicable metal products

In the past, there was strong control over issuing product-specific import licenses; most metal import licenses were issued only to large SOE trading companies. This trend appears to be returning again as government looks to use informal cartel-buying to control the long term price of imported raw materials. This is particularly evident in the copper and aluminium markets and there are signs its use is spreading to iron ore and other ferrous and non-ferrous raw material imports.

In a recent policy release, Government explained its registration scheme for importers of raw materials. Importers need to apply for a product-specific import license for all metal products. In restricting which companies are successfully issued these import licenses, Government holds potential control over China's buying power on international markets. It hopes to use this leverage to put downward on high and rising global metals and raw materials prices. Companies will be encouraged to form alliances to negotiate collectively with large global suppliers, like BHP Billiton, Anglo-American, CVRD and Rio Tinto.

China has already introduced this registration scheme for copper cathode, aluminium and iron ore importers. It plans to introduce this scheme for copper concentrate and alumina importers. It will also continue consolidating importers in 2006. I.e., it will reduce the number of companies granted import license and so exercise more effective control over contract prices of imports.

A representative from a major global resource firm explains his company's experience: Up until now, foreign companies were not allowed to import goods themselves (without a FICE license). They worked through large SOE trading companies (e.g. Minmetals Corp) or the large Chinese end-users themselves (e.g. Baosteel Corp). Each time a new supply/ sales contract is signed with the Chinese trader, this sales contract needs to be included in the application for a import license from MOFCOM. (The Chinese trading company would handle this itself.) Often, MOFCOM has refused to issue licenses if the contract price was too high or the contract term was too short.

Even under the new FICE regulations, his company would continue to use Chinese trading companies. His company held the view that even after the have a FICE license, MOFCOM may not grant them product-specific import licences under its new registration scheme. The representative noted that this worrying trend was especially evident in the granting of import

licenses for copper and aluminium. He said that, whereas MOFCOM previously issued copper import licenses to around 600 importers, only around 100 companies now had licenses to import copper.

China has recently been very vocal in its opinion that it should have a larger say in the determination of global iron ore prices. It was subject to humiliation by BHP Billiton, CVRD and Rio Tinto in 2004, and feels that the drop in finished steel prices last year should pass through to downward pressure on iron ore prices. It has publically expressed its intention to use the registration scheme to advance realize these intentions. (A further point of interest is that Baosteel Corp representatives play a large role in the Chinese Government negotiating and decision-making process on steel and iron ore issues.)

6.9. LABELS

Not applicable to metal or metal products

6.10. ENVIRONMENTAL ISSUES

6.10.1. Scrap metal import license and supplier registration:

Alongside the Automatic Import Licences (AIL) issued by MOFCOM, since 1 January 2004, the import of scrap metal requires an additional import license and supplier registration with AQSIQ. This measure applies to the import of Iron and Steel scrap, copper scrap and aluminium scrap. This is in line with China's policy to prevent it being used as a dumping ground for harmful waste products, as been the case previously. The 'Registration Scheme Concerning Overseas Suppliers of Waste Material Imports' covers a number of other non-metal products.

The AQSIQ regulations apply to the import of the following products:

- Ferrous scrap: (72041000.00, 72042100.00, 72042900.00, 72043000.00, 72044100.00, 72044900.10, 72044900.90, 72045000.00)
- Copper scrap (74012000.00, 74040000.90)
- Aluminium scrap (76020000.90)

AQSIQ's scrap metal regulation contains two problematic issues which have been viewed as barriers to trade.

Firstly, all importers (and exporters from foreign countries using Chinese agents to handle customs procedures) of metal scrap have to register with AQSIQ. (See: General Section: AQSIQ Registration Regulations, for more detail.) The implementation of the Registration scheme has been highly criticized by the global scrap industry. Initially, there were some problems around the short registration window and the lack of remedy for major scrap dealers who were not granted import licenses due to minor technical problems relating to their application. After much pressure, AQSIQ created further opportunities for registration but has still taken up to 6 months to issue licenses to successful applicants.

Also, all documents for this application have to be the originals and in Chinese. According to the Institute of Scrap Recycling Industries (ISRI) in the US, the short warning and registration periods, AQSIQ's poor communication and confusion over which foreign agents were legally authorised by AQSIQ to assist in the application process has lead to significant trade disturbances.

Secondly, as part of the application for an AQSIQ import license, AQSIQ now requires pre-shipment inspection of the metal scrap by an AQSIQ official or a authorised by AQSIQ. This new rule is believed to ensure that imported wastes will comply with the environmental protection standards as well as other mandatory requirements and technical regulations of China. Industry analysts say China has recently stepped up efforts to verify that the import license information actually matches the cargo shipped. Industry analysts have complained that these additional inspection measures, the lack of capacity to administer them efficiently, and the language difficulties, hinders the export of scrap to China.

AQSIQ has responded on its 'scrap metals' website. <http://scrap.eciq.cn> It "reminds all applicant enterprises that they can check their own application status on the website. In order to avoid the losses on the time and cost, the applicant enterprise should not go through the non-standard agents who can not or refute to provide online status tracking service, or promise to pass the registration evaluation in a very short time. The actions and promises from these agents can not be supported or guaranteed by AQSIQ."

Based on the 2005 scrap supplier registration application results, about 40% of applicants worked through unauthorised, private agents. AQSIQ claims that most enterprises going through agents had been rejected by AQSIQ. These rejected enterprises need to wait for 6 months to be qualified for re-application. AQSIQ has also warned that most of these 'AQSIQ

agents' do not have the experience or capability to assist the enterprise to pass the AQSIQ registration evaluation.

It appears most of the confusion around the initial registration has now been sorted out. Some scrap analysts have commended AQSIQ for extending the registration windows and authorising foreign Qualified Inspection Companies to carry out the inspection. However, scrap dealers will still need to apply annually to re-new their import licenses.

An industry analyst suspects that the above administrative difficulties have less to do with China deliberately using Technical Barriers to Trade (TAT), than with the AQSIQ's lack of international experience. He believes that, while AQSIQ has become more efficient over the last year, there are greater political issues around the future role of AQSIQ in China. There are rumours that the SEPA will assume all of AQSIQ's current functions in the not too distant future.

No other environmental issues relating to the import of metals and metals products. Hence, importers do not have to deal with the State Environmental Protection Agency (SEPA) regarding imports of metals and metals products.

6.11. LABOUR ASPECTS

All workers in China belong to a single trade union; "The All-China Federation of Trade Unions (ACFTU) is a mass organization of the working class formed voluntarily by the Chinese workers and staff members. Founded on May 1, 1925, it now has a membership of 134 million in more than 1.713 million primary trade union organizations." (www.acftu.org.cn). However, all respondents spoken to said that this trade union had no real power in wage negotiations within China's government structures. On a national level, it forms a useful part of the bureaucracy of the state through which the CCP rules. On a city-level, it organizes conferences and functions. And on a factory level, it is widely said to organise cakes on birthdays and take visiting dignitaries on factory tours.

There are no issues regarding wages and the labour market that relate specifically to this sector.

6.12. IMPORTANT GOVERNMENT DEPARTMENTS

DEPARTMENT	Ministry of Commerce ("MOFCOM")
ADDRESS	No.2 ong Hangman Avenue, Beijing, 100731
TELEPHONE	+86 10 67184455
FACSIMILE	+86 10 67081513
WEBSITE	www.mofcom.gov.cn
BUREAU: TRADE ACTIONS	Bureau of Fair Trade for Imports and Exports
TELEPHONE	+86 10 65198924
FACSIMILE	+86 10 65198915
BUREAU: TRADE ACTIONS	Bureau of Industry Injury Investigation
BUREAU: LICENSING	Quota License Affairs Bureau

DEPARTMENT	General Administration for Quality Supervision, Inspection and Quarantine ("AQSIQ")
RESPONSIBILITY	Port cargo inspection and special scrap metal import licenses
ADDRESS	No. 6 Madian Road, Haidian District, Beijing, 100088
E-MAIL	webmaster@aqsiq.gov.cn
WEBSITE	www.aqsiq.gov.cn (Chinese only)

DEPARTMENT	Environmental Protection Agency ("SEPA")
ADDRESS	No.115 Xizhimennei Nanxiaojie, Beijing (100035)
TELEPHONE	+86 10 66556006
FACSIMILE	+86 10 66556010
WEBSITE	http://www.zhb.gov.cn (English and Chinese)

DEPARTMENT	General Administration of Customs Foreign Affairs Division
ADDRESS	No. 6 Jianguomenwai DaJie, Beijing
TELEPHONE	+86-10-6519-5263 or 6519-5246
FACSIMILE	+86-10-6519-5394
WEBSITE	www.customs.gov.cn (currently under construction)

DEPARTMENT	China Non-Ferrous Metals Industry Association ("CNIA")
ROLE	Top industry lobby group for Copper and Aluminium industry
ADDRESS	Office 609, Non-Ferrous Affairs Main Building, Fuxing Second Road No. 12, Beijing
TELEPHONE	+86 10 63971479, +86 10 63941034
FACSIMILE	myp@cnmn.net.cn
WEBSITE	www.cnmn.com.cn (Chinese only)
SUB-BODY OF CNIA	China Non-Ferrous Metals Processing Association
SUB-BODY OF CNIA	The Non- Ferrous Metals Society of China

DEPARTMENT	The Chinese Society for Metals ("CSM")
TELEPHONE	+861065270210
FACSIMILE	+861065214122
E-MAIL	webmaster@csm.org.cn
WEBSITE	english.csm.org.cn/

DEPARTMENT	China Chamber of Commerce of Metals Minerals & Chemicals Importers & Exporters ("CCCMC")
ROLE	17th Floor, Prime Tower, No. 22 Chaowai Dajie, Chaoyang District, Beijing 100020,
ADDRESS	86-10-65882823
TELEPHONE	86-10-65882825
E-MAIL	webmaster@cccmc.org.cn
WEBSITE	www.cccmc.org.cn/EnglishWeb/Company/

DEPARTMENT	China Iron & Steel Association ("CISA")
ROLE	Most influential body relating to steel and stainless steel matters in China.
ADDRESS	No.46.Dong Si Xi Da Jie, Beijing, 100711
TELEPHONE	+86-(10)-65133322-1146
E-MAIL	info@chinaisa.org.cn
WEBSITE	www.chinaisa.org.cn/en/

DEPARTMENT	China Steel Pipe Association ("CSPA") Previously: Steel Tube Council of the China Steel Construction Society
TELEPHONE	+86-10-65133322
FACSIMILE	+86-10-65136301-512
E-MAIL	info-cpi@cpi.org.cn
WEBSITE	www.cpi.org.cn (only available in Chinese)

DEPARTMENT	China Cold Roll-Forming Steel Association
ADDRESS	4-26-301 Chunguangli Hongjiayuan, Shuangqiaomen, Nanjing 210012
TELEPHONE	+86 25 52616203
FACSIMILE	+86 25 52616802
E-MAIL	admin@chinalw.org; chinalw@e165.com
WEBSITE	www.chinalw.org/

DEPARTMENT	Stainless Steel Council of China Special Steel Enterprises Association
ADDRESS	No. 46, Dongsixidaije Beijing China 100711
TELEPHONE	+86 10 652 36395
FACSIMILE	+86 10 652 36395

DEPARTMENT	China Steel Construction Society (CSCS)
ADDRESS	33 Xitucheng Road. Beijing 100088
TELEPHONE	86 10 62275342
FACSIMILE	86 10 82227105
E-MAIL	csc@cncscs.com
WEBSITE	www.cncscs.com

DEPARTMENT	China Metallurgical Mining Association
WEBSITE	www.miningchina.org

DEPARTMENT	Metallurgical Council of China for the Promotion of International Trade ("MC-CCPIT")
ADDRESS	46 Dongsi Xidajie,Beijing,China 100711
TELEPHONE	86-10-65227956
FACSIMILE	86-10-65131921
E-MAIL	webmaster@mc-ccpit.com
WEBSITE	www.mc-ccpit.com/english/

6.13. PROVINCES AND TRADE DISCRIMINATION

No official regulations or barriers to trade exist, relating to the trade of metals and metal products between provinces. No industry players knew of any other issues with provincial trade discriminations in this sector.

(An industry analyst mentioned that there existed some provincial restrictions on the movement of coal and other strategic products. For example, a de facto 'export duty' is applied to the movement of coal materials out of Shanxi province. This was an incentive to encourage beneficiation of coal in Shanxi, a coal rich province.)

6.14. ANY OTHER TRADE DISCRIMINATION

6.14.1. Export Rebates:

Since 1985, China has had in place a tax rebate system designed to support the export trade in key industries.

After a product is exported, a producer may apply to the State Administration of Taxation for a rebate on taxes previously paid on the production of the exported product. Such taxehould be incurred during the processes of domestic production and circulation.

Generally speaking, the rebate is on VAT (on imported or domestically consumed goods and services), business tax and special consumption taxes. However, for foreign invested enterprises export tax, such rebate only refers to VAT rebates due to the Chinese government current stipulation of 0% rate of consumption tax for these enterprises.

The standard VAT in China is 17 %, though many special/staple products enjoy 13% VAT, policy set by The State Council.

For metals and metals products, many export rebates have been cancelled or reduced at the end of 2004 and again at the end of 2005. The general trend in the metals sector is the cancellation of export rebates to prevent the export of semi-processed metals made from imported raw materials and using China's subsidised energy.

Most rebates are 11% or 13% with a few tariff categories enjoying 5% rebates.

The primary forms of Ferro-alloy and Steel enjoy no export rebates (7201-7208). However, most other Iron and Steel products (7208- and HS 73) enjoy 13% rebates.

Primary forms of Copper and Aluminium do not enjoy export rebates. There were cancelled at the end of 2004. But again, most Copper and Aluminium products enjoy 11 or 13% export rebates.

6.14.2. Regulations to cool over-investment in the Metals Processing sector:

Since 2003 China has imposed measures to reduce capacity at existing aluminium smelters and cool investment in the metals processing sector. These include: credit curbs, higher power fees, reduction and cancellation of tax rebates, imposition and increases in export taxes, export quotas, prohibiting imports and exports of products in 'export processing' sector, and the reduction in waivering of VAT on certain imports.

There is a 5% tax on exports of most aluminium and aluminium products. Many analysts thought this would be raised to 10% in early 2006 as the aluminium production figures are not levelling off and exports of aluminium have continued. These rumours were recently denied by Government officials. However, Government did remove the 5% export tax on aluminium alloy products on 1 July 2005 as this sector was struggling badly.

The tax rebate on the export of primary forms of aluminium was cancelled in 2004. The tax rebate on the export of aluminium products remains at 13%.

In August 2005 the State Council ended a tax provision under which aluminium smelters imported the main alumina (raw material for aluminium production) free of import duty, as long as they exported their finished product. Aluminium smelters now pay an 8 percent import tariff and 17% VAT on alumina imports.

Similar provisions have been applied to the copper sector. The overcapacity side of the issue is not as pertinent as with aluminium. The smelting of alumina into aluminium consumes a

massive amount of electricity, even dwarfing the amount needed for copper smelting. The issue in the copper industry has been the massive rise in global copper prices in the past three years, on the back on increasing demand in China. China's copper stocks are reportedly low and shrinking.

Copper continues to enjoy 'for export processing' benefits. VAT on imported products, and export taxes are currently waived when traders import copper concentrate or scrap and export an equivalent amount of refined metal. VAT is 13 percent for imports of copper concentrate and 17 percent for imports of scrap. (Note, standard import tariffs are not waived under these benefits.

Export taxes on ferro-alloys (7202) and ferro-silicon (7202) will remain unchanged at 5% for 2006, even though market participants report rumours of an extra 8-15 percentage point increase in export tax. Again, Government had denied these rumours.

6.15. CONSIDERATIONS

1 All South Africa's metals tariff lines were bound in the Uruguay Round. China submitted a tariff binding schedule under its WTO accession agreement. Some lines were subject to a phase-in. All the final bound rates in respect of metals have been implemented.

2 South Africa's tariffs are applied on a FOB basis while that of China are on a CIF basis. This means that the same applied rate will in the case of China amount to an effective rate of up to 3 percentage points higher than South Africa's effective rate.

3 China has low tariffs of 0 to 2% on primary products, ingots and semi-finished products of iron and steel while South Africa's rate is free. The exceptions are China's tariff of 9% on ferro-vanadium. . On flat-rolled products, bars/rods, angles/shapes/sections and wire, China's tariffs vary from mostly 3% to 8% while South Africa's rate used to be 5% but was reduced to free on 30 May 2006.

4 In both countries there are very substantial variations in the rates of products of iron and steel, ranging from generally 5% to 15% with the highest rate in both countries being 30%. South Africa has a rate of free on some lines. China's rates on finished products are generally higher than those of South Africa.

5 China's tariffs on primary and intermediate products of copper range from 3% to 8% and on finished products generally from 10% to 20%.

6 In respect of aluminium and products thereof, China has tariff rates of mostly 5% to 7% on primary products, 5% to 8% on intermediates and 10% to 30% on final products. China's highest rates are 25% and 30% on certain structures and containers, respectively, while various other products have rates of 12% to 18%. In South Africa's case only household articles and steps & ladders have rates of more than 10%. Generally, China's rates in this chapter are higher than those of South Africa.

7 China's rates on tools, implements, cutlery, spoons, forks and parts thereof, of base metals, vary form 8% to 18% with 8% and 10.5% the most common rates. South Africa's rates are higher at mostly 15% and 20%.

8 In respect of miscellaneous articles of base metals of headings 83.03 to 83.11, China's rates vary from 8% to 18% and those of South Africa from 10% to 20%.

9 China does not have any import quotas on metals products, but these is an export quota on alumina, a raw material for the production of aluminium metal, for which China is presently dependent on imports for 50% of its requirements.

10 Strict control is applied on the import of raw materials for the sole reason of exporting a single stage processed product or material – the so-called "for-export" processing – in order to avoid over-investment (or "blind" investment) in resource-intensive, low value-added projects.

11 Trade and distribution licences, as well as product specific import licences are required for all products. Automatic import licences are required for metal products, but a range of exclusions apply for certain line items in Chapter 72 (iron and steel), Chapter 73 (products of iron and steel), Chapter 74 (copper products) and Chapter 76 (aluminium products).

12 Certificates of origin are required but the system is administered properly and can not be regarded as a trade barrier.

13 The mandatory AQSIQ certification system is required to check quality of imported products, but inspections can only be carried out on an ad hoc and limited basis. The system is, however, open for abuse in isolated cases to delay specific targeted cargoes. This practice is not widespread in China and may in fact occur in other countries as well.

14 Steel pipes and tubes were recently singled out for anti-dumping measures in Brazil.

7. SOUTH AFRICA – CHINA TRADE ANALYSIS

7.1. TRADE STRUCTURES

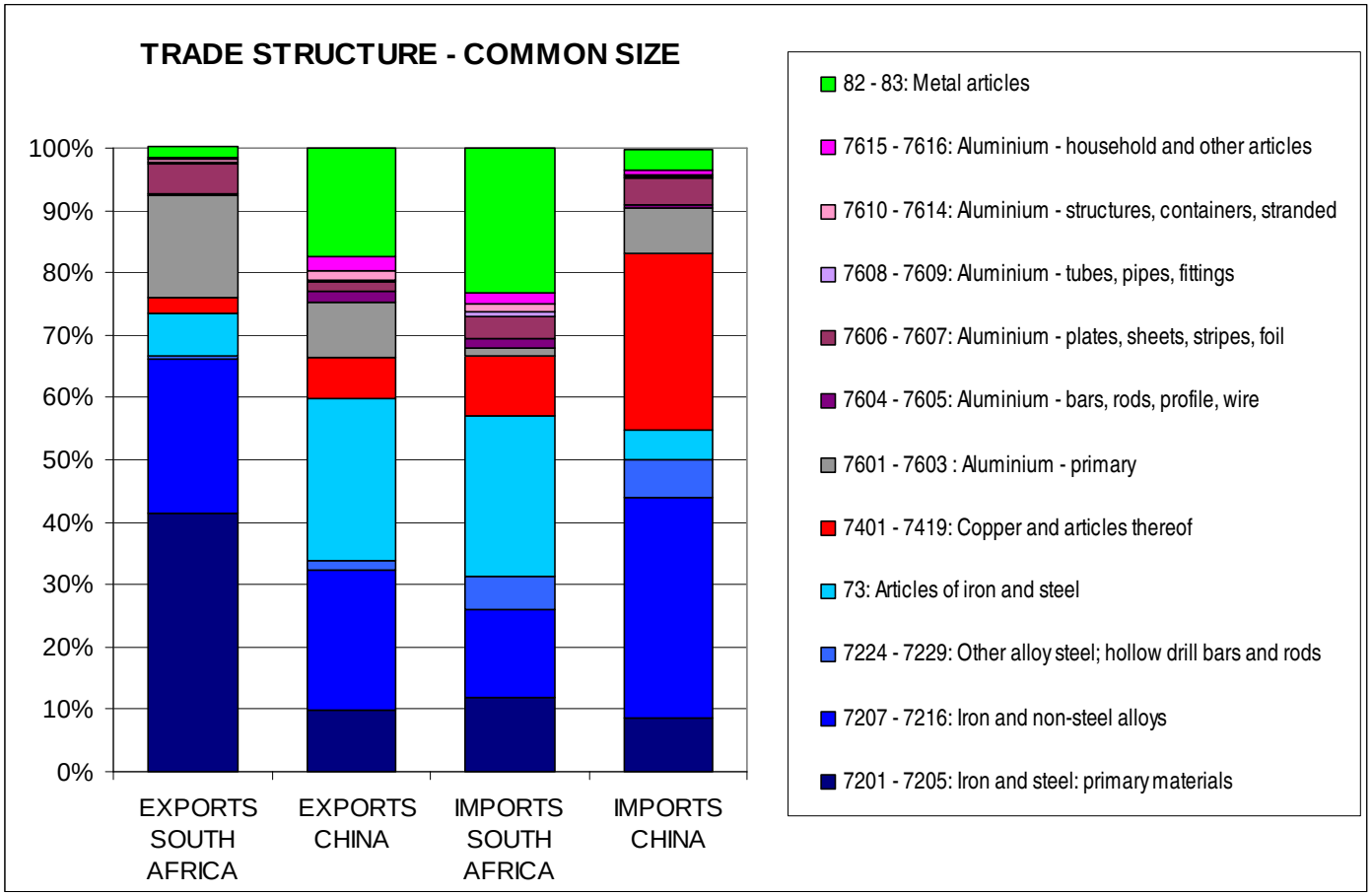
The table below presents a summary of general trade patterns for the study countries, with the date analysed in the subsequent graph.

Table 7.1-1: Structure of South African and Chinese Metal Exports and Imports (Common Size Format)

SUB-GROUP	HS CODE	EXPORTS		IMPORTS	
		SOUTH AFRICA	CHINA	SOUTH AFRICA	CHINA
Iron and steel: primary materials	7201 - 7205	41,30%	9,90%	11,90%	8,70%
Iron and non-alloy steel	7207 - 7216	24,90%	22,50%	14%	35,30%
Other alloy steel; hollow drill bars and rods	7224 - 7229	0,40%	1,40%	5,30%	6,10%
Articles of iron and steel	73	6,80%	26%	25,80%	4,70%
Copper and articles thereof	7401 - 7419	2,70%	6,70%	9,60%	28,30%
Aluminium – primary	7601 - 7603	16,20%	8,70%	1,30%	7,20%
Aluminium – bars, rods, profile, wire	7604 - 7605	0,50%	1,80%	1,60%	0,60%
Aluminium - plates, sheets, strips, foil	7606 - 7607	4,70%	1,50%	3,60%	4,40%
Aluminium - tubes, pipes, fittings	7608 - 7609	0,20%	0,20%	0,70%	0,20%
Aluminium - structures, containers, stranded	7610 - 7614	0,60%	1,50%	1,10%	0,30%
Aluminium – household and other articles	7615 - 7616	0,10%	2,40%	1,80%	0,60%
Metal articles	8201-8205 & 8310-8311	1,80%	17,40%	23,30%	3,40%
TOTAL		100%	100%	100%	100%
NOMINAL VALUE [US$ million]		6 815	32 209	1 260	37 018

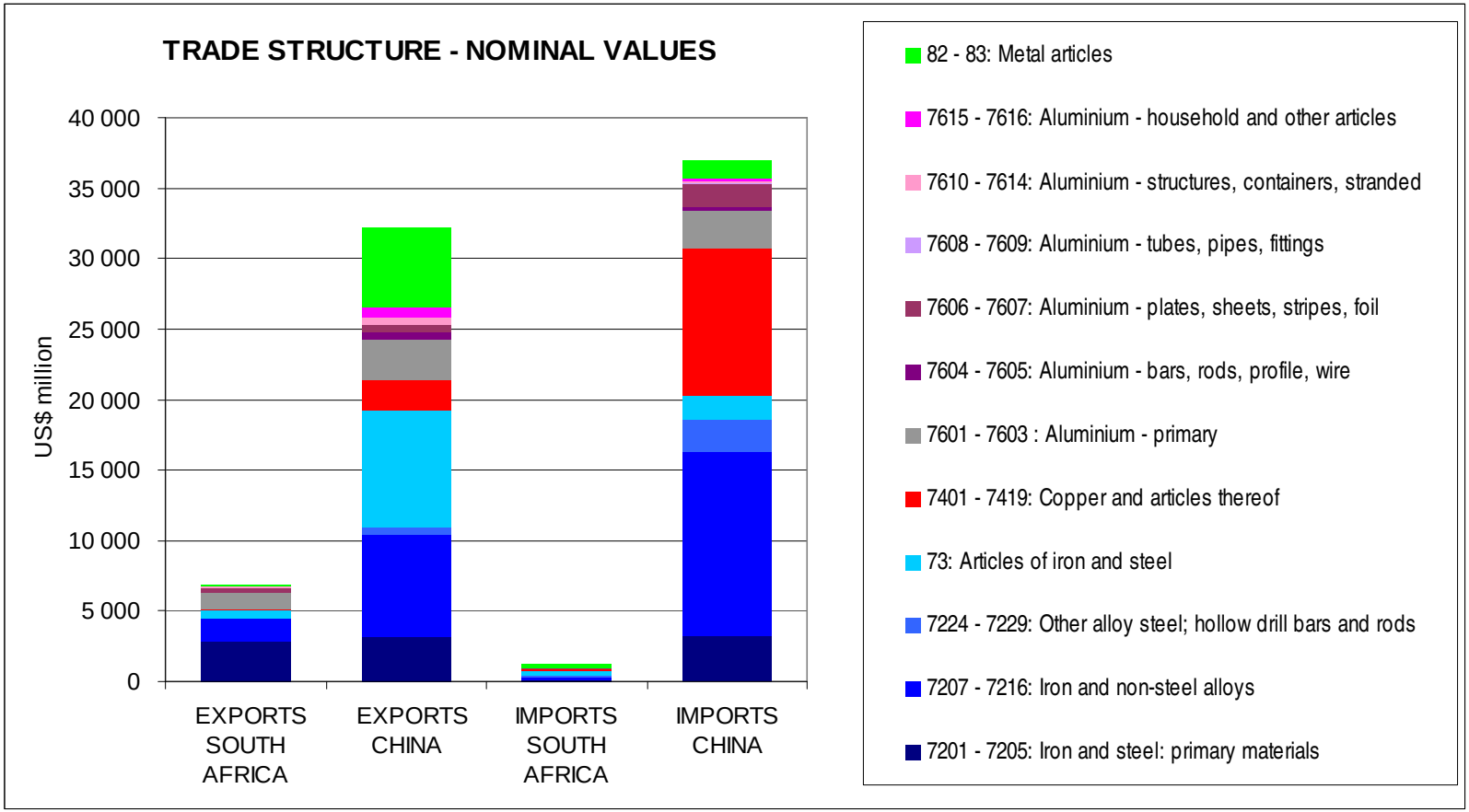
Source: Comtrade

Figure 7.1-1: Comparison of Trade Patterns for South Africa and China in Common Size Representation [%]



In a nominal value terms, the trade patterns are as follows: -

Figure 7.1-2: Comparison of Trade Patterns for South Africa and China in Nominal Terms [US$]



The focus of South Africa's metal exports is in primary metals. China's focus is on downstream products (HS 73, 82 and 83). Iron and steel alloys are also prominent. South Africa's imports are mainly downstream products, compared to China's imports in primary products: mainly iron and steel alloys, copper and copper articles, as well as aluminium and iron & steel primary materials.

7.2. IRON AND STEEL

7.2.1. Exports

The trade statistics analysed in this paragraph are based on data published by the South African Customs and Excise, expressed as monetary aggregates (value terms, R million). Stainless steel is excluded as it is the subject of another report. The table below lists South African exports of iron & steel to the World and to China, for the period 2000 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 7.2-1: Exports of Iron & Steel Products from South Africa, to the World and to China Respectively [R million]

EXPORTS TO	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7209: Flat-rolled iron/steel, >600mm, not clad, plated, etc	456	404	594	705	1 393	1 754	1 702	3	0	16	246	410	200	369
H7202: Ferro-alloys	6 477	8 531	6 914	10 844	12 323	16 798	17 797	39	286	159	96	211	391	208
H7210: Flat-rolled iron/steel, >600mm, clad, plated or coated	745	934	1 079	1 152	1 091	1 285	1 592	0	0	0	27	149	45	152
H7208: Hot-rolled products, iron/steel, width>600mm, not clad	1 301	1 860	2 055	2 384	3 397	3 199	4 765	0	149	66	0	119	18	19
H7318: Screws, bolts, nuts, rivets, washers, etc, iron, steel	66	66	83	124	126	183	180	0	0	0	0	2	21	18

EXPORTS TO	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7201: Pig iron and spiegeleisen in primary forms	539	524	868	681	568	677	986	0	4	1	1	4	10	14
H7204: Ferrous waste or scrap, ingots or iron or steel	248	203	315	562	477	565	724	0	7	2	13	35	4	14
H7213: Hot rolled bar, rod of iron/steel, in irregular coils	556	742	763	885	952	1 165	1 132	5	13	9	9	16	16	8
H7205: Granules and powders, of pig iron, iron or steel	50	63	91	161	157	183	211	0	1	2	3	5	6	7
H7207: Semi-finished products of iron or non-alloy steel	230	488	777	1 256	1 943	1 673	1 747	0	77	193	54	124	91	4
H7311: Containers for compressed, liquefied gas, iron, steel	36	24	10	11	14	12	19	8	0	0	0	0	0	0
H7216: Angles, shapes and sections of iron or non-alloy steel	742	952	879	1 008	887	891	1 076	0	0	0	0	13	0	0
H7228: Bar, rod, angle etc nes, hollow steel drill bars	25	74	27	44	109	113	206	0	38	0	0	0	0	0
OTHER HS72 AND HS 73 < R5 million	2 676	3 165	3 463	4 654	3 996	4 852	5 504	4	2	5	5	7	9	9
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	12 042	15 614	15 222	20 844	24 258	29 338	33 114	47	574	451	452	1 088	786	795
H73: ARTICLES OF IRON AND STEEL	2 105	2 418	2 699	3 627	3 176	4 011	4 527	12	2	3	3	6	25	27
TOTAL: IRON AND STEEL AND ARTICLES THEREOF	14 147	18 033	17 921	24 471	27 433	33 349	37 641	59	576	454	455	1 094	810	822

Exports of Upstream Steel Products

Exports of upstream products amounted to R33 114 million in 2005, of which R795 million went to China. South Africa's export of upstream products to China is lagging its exports to the world. Exports to the world more than doubled between 2000 and 2005, compared to exports to

China that were only 38% higher. In 2005, 2,4% of upstream exports went to China compared to a ratio of 3,8% in 2000. This trend is apparent in all upstream exports to China, namely, HS codes 7202, 7208 and 7202. The exception is HS 7210 where exports seem to turn positive with almost 10% that went to China in 2005

Exports of Downstream Steel Products

A very small amount of R27 million out of South Africa's total export of R4 527 million in downstream products listed in HS chapter 73 went to China in 2005, comprising a share of only 0,6% of exports. Only two 4-digit codes in HS chapter 73 recorded exports of more than R5 million. It can be noted that 10,5% of the exports of HS 7318 went to China.

7.2.2. Imports

The Customs and Excise statistics for South African imports of iron & steel from the World, and from China, respectively, for the period 2000 to 2005 R million, are listed in the graph below, ranked from the highest current value for values exceeding R5 million.

Table 7.2-2: Imports of Iron & Steel Products to South Africa, from the World and from China Respectively [R million]

IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7326: Articles of iron or steel nes	207	237	294	463	478	438	543	15	29	39	73	117	88	158
H7202: Ferro-alloys	113	108	84	173	379	698	803	17	29	17	76	72	117	123
H7318: Screws, bolts, nuts, rivets, washers, etc, iron, steel	327	374	455	590	546	616	702	21	29	37	47	57	72	122
H7323: Table, kitchen, household items of iron or steel nes	81	99	99	124	137	201	262	11	17	23	31	31	61	120
H7307: Pipe fittings, of iron or steel	207	235	305	440	385	374	382	23	36	47	73	79	91	94

IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7321: Stoves, ranges/barbecues,etc, non-electric, iron/steel	56	63	70	100	84	124	191	4	7	8	13	15	26	57
H7312: Stranded steel wire, cable/etc, no electric insulation	199	214	246	346	301	328	390	4	9	13	11	16	22	51
H7304: Tube or hollow profile, seamless iron/steel not cast	284	212	315	373	340	322	423	1	1	12	14	17	33	34
H7303: Tubes, pipes and hollow profiles, of cast iron	5	3	2	4	8	24	32	0	0	0	0	2	9	31
H7306: Tube, pipe of iron or steel, except seamless > 406.4mm	44	73	122	349	167	200	235	0	4	4	1	11	19	31
H7207: Semi-finished products of iron or non-alloy steel	7	12	13	20	23	8	36	0	0	0	0	0	0	31
H7315: Chain and parts thereof, of iron or steel	131	135	150	205	188	310	210	7	18	19	29	24	26	29
H7325: Cast articles, of iron or steel nes	28	25	26	45	74	39	65	2	3	6	9	8	11	27
H7217: Wire of iron or non-alloy steel	54	75	81	72	72	93	143	0	4	12	10	4	7	26
H7317: Nails, staples, etc, iron/steel, not office stationary	28	30	25	34	30	37	58	3	6	3	5	6	10	22
H7314: Iron or steel cloth, grill, fencing and expanded metal	45	47	50	64	63	60	58	1	3	5	8	8	12	20
H7324: Sanitary ware and parts thereof, of iron or steel	9	15	15	20	23	33	45	0	0	0	1	2	7	14
H7322: Radiators, non-electric heaters (with fan), iron/steel	3	4	7	11	9	7	25	0	1	1	2	3	4	14
H7310: Tank, cask, box, container, iron/steel, capacity <300l	37	32	48	50	40	52	59	1	2	4	6	3	3	7
H7308: Structures, parts of structures of iron or steel, nes	40	40	32	53	58	70	179	1	0	1	1	2	2	6
H7225: Flat-rolled alloy steel nes, width >600mm	117	129	216	261	211	202	349	0	0	0	1	1	1	6
H7229: Wire of alloy steel except stainless steel	14	19	17	22	23	28	33	5	3	0	0	0	1	3

IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7201: Pig iron and spiegeleisen in primary forms	5	7	1	0	0	6	6	0	0	0	0	0	6	2
OTHER HS72 AND HS 73 < R5 million	1 030	1 271	1 317	1 645	1 639	1 940	2 348	5	8	7	11	11	19	27
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	1 166	1 433	1 472	1 732	1 989	2 545	3 182	25	41	34	92	82	137	200
H73: ARTICLES OF IRON AND STEEL	1 907	2 027	2 520	3 733	3 292	3 666	4 394	97	167	226	329	406	508	853
TOTAL: IRON AND STEEL AND ATRICLES THEREOF	3 072	3 459	3 992	5 465	5 280	6 211	7 576	122	208	260	421	488	645	1 053

Upstream products

South African imports of upstream iron and steel products more than doubled between 2000 and 2005. Imports of the products of HS 7217 and 7225 are prominent. Imports from China increased to almost five times higher in 2005 than in 2000, although this growth was from a lo base. Imports from China nevertheless amounted to 6,3% of imports of all upstream iron and steel products in 2005.

Downstream products

Imports of downstream iron and steel products also more than doubled between 2000 and 2005, while the imports from China were five times higher. China supplied 19,4% of South African imports of downstream iron and steel products in 2005, whereas, in 2000 it was 8,2%. Import penetration by China is prominent in HS 7303 (97%); 7322 (56%); 7325 (41%); 7317 (38%); 7314 (34%); and 7324 (31%). In 2005, imports from China broadened across the majority of 4-digit headings. Experience elsewhere suggests that the import base will continue to be broadened across headings, while penetration within headings will be strengthened.

7.2.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with China.

Figure 7.2-1: Exports To and Imports From China for the 4-Digit Codes Listed in the Trade Analysis Above

7.3. COPPER

7.3.1. Exports

The trade statistics analysed in this paragraph are based on data published by the South African Customs and Excise, expressed as monetary aggregates (value terms, R million). The table below lists South African exports of copper and copper products to the World and to China, for the period 2000 to 2005 R million, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 7.3-1: Exports of Copper and Copper Products From South Africa, to the World and to China Respectively [R million]

EXPORTS TO	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7404: Copper, copper alloy, waste or scrap	241	297	414	503	476	535	1 052	9	32	51	65	182	105	135
H7403: Refined copper and copper alloys, unwrought	404	296	407	296	225	241	477	1	0	10	1	1	2	77
H7402: Unrefined copper, copper anodes, electrolytic refining	21	84	96	119	86	8	62	0	0	38	110	85	1	1
H7407: Copper bars, rods and profiles	308	273	151	181	149	148	104	38	59	33	61	28	1	1
H7411: Copper pipes, tubes	74	149	171	225	32	39	60	0	2	7	32	0	0	0
OTHER HS74 < R5 million	87	113	132	172	276	210	113	0	1	2	1	3	0	1
H74: COPPER AND ARTICLES THEREOF	1 134	1 213	1 372	1 496	1 242	1 181	1 866	48	94	141	270	300	109	215

Exports in 2005 were 50% higher than in 2000. This increase came about primarily due to the export of HS 7404 (copper; copper alloy waste or scrap being 3.5 times higher in 2005 and 2000. Exports of HS 7403 also increased but that of the rest of the headings were mostly in decline. Exports to China are products of HS 7403 (12.8%) of the total) and 7404 (16.1%).

7.3.2. Imports

The Customs and Excise statistics for South African imports of copper and products from the World, and from China, respectively, for the period 2000 to 2005 R million, are listed in the graph below, ranked from the highest current value for values exceeding R5 million.

Table 7.3-2: Imports of Copper and Copper Products to South Africa, from the World and from China Respectively [R million]

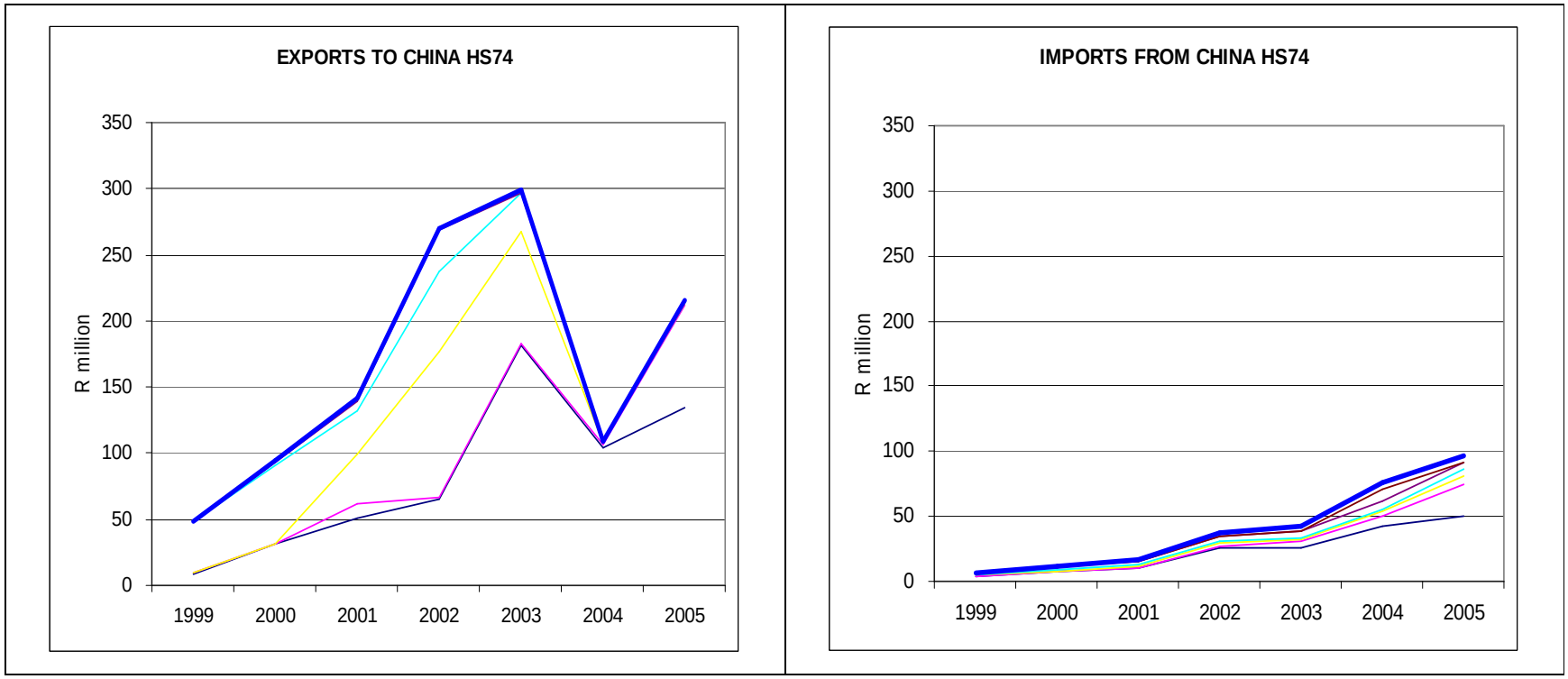
IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7412: Copper pipe and tube fittings	35	44	49	66	52	72	76	4	8	10	25	26	42	50
H7411: Copper pipes, tubes	20	31	21	26	36	44	59	0	0	0	2	5	8	26
H7418: Copper table, kitchen, household and sanitary items	3	5	7	8	8	9	12	0	0	2	2	2	4	6
H7419: Articles of copper nes	18	16	14	18	18	17	25	0	1	1	1	1	2	5
H7415: Copper nails, screws, bolts, pins, washers, etc	11	12	15	18	17	18	23	1	3	2	4	4	6	5
H7403: Refined copper and copper alloys, unwrought	18	45	64	114	19	209	242	0	0	0	0	0	10	0
OTHER HS74 < R5 million	157	177	219	280	174	408	511	1	1	1	3	4	5	6
H74: COPPER AND ARTICLES THEREOF	262	330	391	529	325	777	947	7	12	17	37	43	76	97

Imports almost trebled from 2000 to R947 million in 2005. China supplied 10% of imports in 2005 as opposed to 3,6% in 2000. Imports are mainly in items HS 7412 (66% from China) and 7411 (44%) in 2005. Chinese imports are also apparent in HS 7418 (copper kitchenware.)

7.3.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with China.

Figure 7.3-1: : Exports To and Imports From China for the 4-Digit Codes Listed in the Trade Analysis Above



7.4. NICKEL

7.4.1. Exports

The trade statistics analysed in this paragraph are based on data published by the South African Customs and Excise, expressed as monetary aggregates (value terms, R million). The table below lists South African exports of nickel and nickel products to the World and to China, for the period 2000 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 7.4-1: Exports of Nickel and Nickel Products From South Africa, to the World and to China Respectively [R million]

EXPORTS TO	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7506: Nickel plates, sheets, strip and foil	355	478	390	442	370	4 033	643	0	0	15	36	153	74	317
H7502: Unwrought nickel	104	221	143	234	357	471	838	0	0	0	0	0	0	108
OTHER HS75 < R5 million	18	17	10	8	27	125	119	0	0	0	0	0	5	0
H75: NICKEL AND ARTICLES THEREOF	476	715	543	685	754	4 629	1 600	0	0	15	36	153	79	425

South Africa is a consistent exporter of nickel plates, sheet, strip and foil to China, comprising almost 50% of South Africa's exports thereof in 2005. In 2005 South Africa also started to export unwrought nickel to China, comprising 13% out of a total of R838 million.

7.4.2. Imports

The Customs and Excise statistics for South African imports of nickel and nickel from the World, and from China, respectively, for the period 2000 to 2005 R million, are listed in the graph below, ranked from the highest current value for values exceeding R5 million.

Table 7.4-2: Imports of Nickel and Nickel Products to South Africa, from the World and from China Respectively [R million]

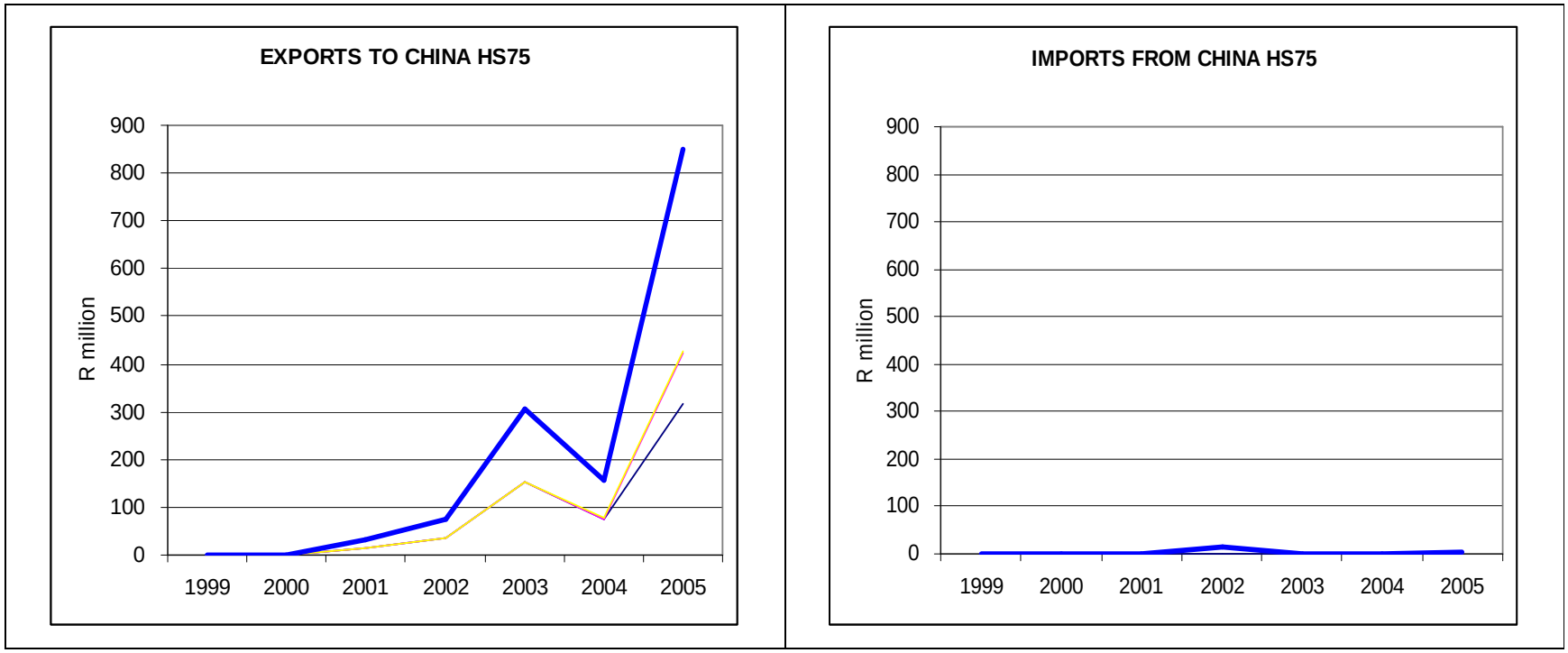
IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7508: Articles of nickel, nes	18	13	6	6	4	3	4	0	0	0	0	0	0	1
H7502: Unwrought nickel	202	500	174	753	1 129	1 073	730	0	0	0	15	0	0	0
OTHER HS75 < R5 million	33	249	43	115	124	78	67	0	0	0	0	0	0	1
H75: NICKEL AND ARTICLES THEREOF	253	762	224	874	1 256	1 154	801	0	0	0	15	1	1	2

South Africa almost exclusively imports unwrought nickel. There are only occasional imports from China at 0,2% of total imports in 2005.

7.4.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with China.

Figure 7.4-1: : Exports To and Imports From China for the 4-Digit Codes Listed in the Trade Analysis Above



7.5. ALUMINIUM

7.5.1. Exports

The trade statistics analysed in this paragraph are based on data published by the South African Customs and Excise, expressed as monetary aggregates (value terms, R million). The table below lists South African exports of aluminium and aluminium products to the World and to China, for the period 2000 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 7.5-1: Exports of Aluminium and Aluminium Products From South Africa, to the World and to China Respectively [R million]

EXPORTS TO	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7601: Unwrought aluminium	4 551	4 998	5 566	7 122	5 111	6 891	6 550	45	23	9	20	243	359	312
H7606: Aluminium plates, sheets and strip, thickness > 0.2 mm	168	653	1 022	1 448	1 728	1 861	2 712	2	2	58	90	170	172	210
H7602: Aluminium waste or scrap	86	184	202	368	302	188	293	2	5	4	10	27	20	25
OTHER HS76 < R5 million	356	428	511	704	633	839	1 265	0	0	0	0	2	5	5
H76: ALUMINIUM AND ARTICLES THEREOF	5 162	6 264	7 301	9 642	7 774	9 778	10 819	48	30	71	120	442	556	553

South Africa exports mainly unwrought aluminium, but robust growth was recorded for aluminium plates, sheets and strip. In 2005, exports thereof were more than four times higher than in 2000. About 5% of aluminium exports went to China in 2005. Exports to China picked up significantly in 2003 and 2004, and remained at the higher level in 2005.

7.5.2. Imports

The Customs and Excise statistics for South African imports of aluminium and aluminium from the World, and from China, respectively, for the period 2000 to 2005 R million, are listed in the graph below, ranked from the highest current value for values exceeding R5 million.

Table 7.5-2: Imports of Aluminium and Aluminium Products to South Africa, from the World and from China Respectively [R million]

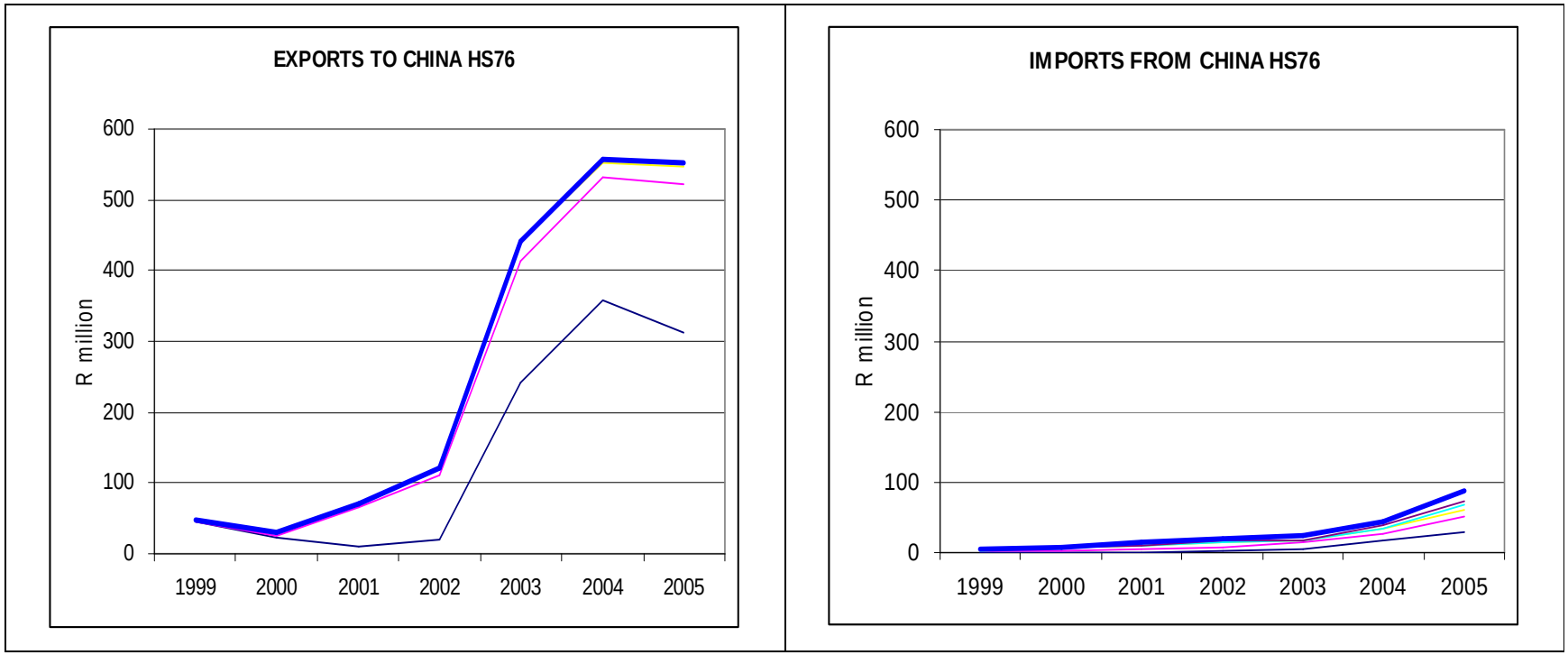
IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7604: Aluminium bars, rods and profiles	25	37	55	125	50	78	106	0	0	0	1	5	17	30
H7616: Articles of aluminium nes	41	58	91	127	116	115	147	3	3	4	6	10	10	22
H7606: Aluminium plates, sheets and strip, thickness > 0.2 mm	300	272	132	131	110	151	245	0	3	5	6	1	7	9
H7610: Aluminium structures, parts nes, for construction	14	18	17	24	26	35	68	0	0	0	0	0	1	7
H7615: Aluminium ware for table, kitchen, sanitary use	17	18	19	31	25	30	42	1	1	1	2	2	3	6
OTHER HS76 < R5 million	244	299	344	460	408	402	432	0	0	3	5	5	5	14
H76: ALUMINIUM AND ARTICLES THEREOF	640	703	657	898	735	811	1 040	4	8	13	20	23	43	88

South Africa's total aluminium imports amounted to R1 040 million in 2005, of which 8,5% was from China, mainly comprising aluminium bars and rods, as well as miscellaneous aluminium products.

7.5.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with China.

Figure 7.5-1: Exports To and Imports From China for the 4-Digit Codes Listed in the Trade Analysis Above



7.6. DOWNSTREAM BENEFICIATION

7.6.1. Exports

Although the products of HS chapters 82, 83 and 84 are not included in the Terms of Reference for the study, the analysis of trade patterns is extended into these downstream products, in order to explore additional insights and to provide further context regarding the metals industries.

The trade statistics analysed in this paragraph are based on data published by the South African Customs and Excise, expressed as monetary aggregates (value terms, R million). The table below lists South African exports of tools and implements, products of base metals, and machinery and capital equipment, to the World and to China, for the period 2000 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value. (Please note duplication with the Chinese Automotive report iro of some tariff headings.)

Table 7.6-1: Exports of Tools and Implements, Products of Base Metals, and Machinery and Capital Equipment, From South Africa, to the World and to China Respectively [R million]

EXPORTS TO	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8421: Liquid, gas centrifuges, filtering, purifying machines	2 941	4 944	9 307	9 785	8 516	8 834	10 361	73	131	332	65	151	97	106
H8479: Machines nes having individual functions	207	330	393	342	625	439	408	0	4	66	1	69	71	44
H8419: Machinery, non-domestic, involving heating or cooling	162	184	190	386	233	249	222	0	0	0	0	4	18	29
H8483: Shafts, cranks, gears, clutches, flywheel, pulleys etc	160	183	232	337	350	426	709	0	0	0	0	1	0	22
H8474: Machinery to sort, screen, wash, etc mineral products	492	603	739	939	816	930	1 117	0	7	2	2	15	25	18

EXPORTS TO	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8409: Parts for internal combustion spark ignition engines	234	373	515	772	819	879	1 003	6	26	26	10	34	17	17
H8460: Sharpening, honing, lapping, grinding machine tools	6	5	4	9	5	3	17	0	0	0	0	0	0	12
H8454: Converters, ladles, ingot moulds etc, for metallurgy	6	6	12	14	8	61	26	0	0	0	0	0	21	8
H8482: Ball or roller bearings	121	163	148	257	239	220	228	0	0	0	3	0	2	8
H8466: Parts and accessories for machine tools	41	47	72	107	58	53	67	0	0	0	0	1	13	0
H8308: Clasp, buckle, eye, etc for clothing, footwear, bags	8	8	6	8	5	13	10	0	0	0	0	0	7	0
H8447: Machines for knitting, lace, embroidery, tufting, etc	3	4	5	8	7	24	8	0	0	0	0	1	5	0
H8428: Lifting, handling, loading machinery nes	72	116	115	97	112	130	102	10	7	0	0	0	1	0
OTHER HS82 + HS83 + HS84 < R5 million	3 727	4 677	5 350	7 161	6 225	6 530	8 245	49	10	16	15	10	21	17
H82: TOOLS, IMPLEMENTS ETC.	425	1 171	597	846	767	583	651	0	1	1	0	1	2	1
H83: ARTICLES OF BASE METAL	150	178	177	301	273	311	405	0	0	0	1	0	7	0
H84: MACHINERY AND CAPITAL EQUIPMENT	7 608	10 295	16 314	19 073	16 980	17 899	21 468	139	184	442	95	285	289	281
TOTAL: HS82 + HS83 + HS84	8 183	11 644	17 088	20 220	18 019	18 793	22 523	139	185	442	96	287	297	282

Exports to China are in the early development stages, comprising only 1,3% of total exports.

7.6.2. Imports

The Customs and Excise statistics for South African imports of chapters 82,83 and 84 from the World, and from China, respectively, for the period 2000 to 2005 R million, are listed in the graph below, ranked from the highest current value for values exceeding R5 million. (Please note duplication of some of the headings with the report on the Chinese Automotive Sector.)

Table 7.6-2: Imports of Tools and Implements, Products of Base Metals, and Machinery and Capital Equipment, to South Africa, from the World and from China Respectively [R million]

IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8471: Automatic data processing machines (computers)	4 531	5 005	5 920	6 712	6 641	8 038	9 173	330	330	454	775	1 375	2 007	2 683
H8473: Parts, accessories, except covers, for office machines	2 297	2 169	2 575	3 228	3 840	5 386	5 557	173	142	197	265	497	751	981
H8418: Refrigerators, freezers and heat pumps nes	438	485	663	752	763	1 092	1 402	13	18	17	11	38	157	316
H8467: Tools for working in the hand, non-electric motor	139	161	181	533	590	670	743	0	0	1	80	123	203	219
H8415: Air conditioning equipment, machinery	340	362	385	563	525	527	657	18	11	19	43	62	100	197
H8481: Taps, cocks, valves for pipes, tanks, boilers, etc	750	822	1 042	1 401	1 280	1 241	1 377	22	40	53	94	97	137	191
H8414: Air, vacuum pumps, compressors, ventilating fans, etc	873	927	1 101	1 540	1 374	1 425	1 822	27	31	56	108	94	114	175
H8302: Base metal fittings nes for furniture, doors, cars/etc	156	184	230	310	288	340	442	10	18	31	51	53	88	130
H8477: Machinery for rubber, plastics industry	416	530	523	830	767	932	1 111	11	1	12	34	8	58	93
H8482: Ball or roller bearings	627	794	843	1 115	990	954	1 039	21	30	47	70	73	74	90
H8450: Household, laundry-type washing machine, washer-drier	183	239	238	284	273	386	451	13	19	20	20	43	52	82

IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8443: Printing and ancillary machinery	1 845	1 597	1 940	2 476	1 550	1 423	1 497	4	6	35	157	85	23	78
H8301: Padlocks, locks, clasps with locks, keys	131	140	170	213	186	228	277	33	39	46	45	47	60	71
H8424: Equipment to project, disperse or spray liquid, powder	519	443	397	757	569	540	531	2	7	11	20	24	33	70
H8483: Shafts, cranks, gears, clutches, flywheel, pulleys etc	870	903	1 086	1 490	1 356	1 339	1 389	28	36	50	67	62	61	69
H8205: Hand tools nes, anvils, clamps, vices, blow lamps etc	134	142	168	205	189	215	233	15	23	27	41	37	54	69
H8409: Parts for internal combustion spark ignition engines	563	676	754	1 117	1 062	1 028	1 122	3	3	4	23	34	54	69
H8428: Lifting, handling, loading machinery nes	266	227	237	353	261	286	401	4	3	4	3	9	21	68
H8472: Office machines, non-calculating	211	216	207	213	190	204	327	4	7	9	14	19	29	67
H8427: Fork-lift trucks, other trucks with lifting equipment	214	390	439	511	818	698	834	3	13	20	33	19	25	65
H8452: Sewing machines (not book sewing), related furniture	171	219	225	257	202	194	188	22	31	28	47	37	54	64
H8215: Spoons, forks, kitchen & table ware nes except knives	34	38	35	37	38	67	85	11	15	17	22	25	47	62
H8413: Pumps for liquids	641	753	973	1 230	1 068	1 187	1 326	3	7	11	16	26	39	58
H8470: Calculators, cash registers, ticket-machines, etc	258	141	92	116	104	115	144	27	40	35	52	48	50	56
H8465: Machine tools for wood, cork, bone, hard plastics, etc	239	163	215	246	295	307	383	6	4	8	18	14	18	54
H8207: Interchangeable tools and dies for hand or power tools	334	352	492	746	473	735	550	6	8	14	21	20	27	49
H8479: Machines nes having individual functions	809	842	1 252	1 245	1 059	1 453	1 349	25	9	11	12	13	39	43
H8421: Liquid, gas centrifuges, filtering, purifying machines	602	632	908	1 160	1 124	1 164	1 278	2	5	10	12	15	22	42
H8423: Weighing machinery except balances sensitivity > 50 mg	86	94	106	123	133	121	143	4	8	9	18	20	29	40

IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8431: Parts for use with lifting, moving machinery	755	785	983	1 330	1 162	1 147	1 391	2	8	9	18	17	25	39
H8425: Pulley tackle, hoists, winches, capstans and jacks	97	101	123	171	127	157	184	9	15	17	19	23	35	38
H8211: Knives and blades for hand use	44	47	53	58	54	65	72	9	12	15	20	20	30	36
H8407: Spark-ignition internal combustion engines	337	434	445	503	437	507	1 109	0	2	2	4	10	28	36
H8458: Lathes for removing metal	56	88	134	152	175	247	212	6	9	10	13	15	25	35
H8478: Machinery for preparing tobacco	38	24	59	63	100	53	154	0	0	3	1	4	0	32
H8429: Self-propelled earth moving, road making, etc machines	757	1 288	1 682	2 445	2 862	2 701	3 300	3	2	4	0	5	5	30
H8202: Hand saws and blades for saws of all kinds	85	95	115	137	126	126	146	2	3	7	10	13	18	28
H8422: Machinery for dish washing, bottle washing, filling	556	581	558	710	693	825	1 264	3	1	2	5	7	21	26
H8462: Machine-tools for forging, die-stamping, bending metal	75	200	186	295	311	256	351	2	2	11	4	7	13	24
H8441: Machinery for paper pulp, paper, paperboard making nes	146	172	186	270	219	292	914	2	3	0	6	13	8	22
H8203: Files, pliers, pincers, metalwork shears, etc	41	55	57	64	52	63	75	3	5	7	10	10	14	20
H8480: Moulds for metals (except ingot), plastic, rubber, etc	216	225	255	396	271	456	334	4	3	3	7	14	14	20
H8419: Machinery, non-domestic, involving heating or cooling	281	365	706	820	1 945	940	1 437	1	1	6	3	12	15	18
H8308: Clasp, buckle, eye, etc for clothing, footwear, bags	37	33	43	60	51	59	56	5	6	7	14	13	13	18
H8455: Metal-rolling mills and rolls thereof	287	201	156	242	251	484	275	5	4	4	5	10	6	18
H8474: Machinery to sort, screen, wash, etc mineral products	245	186	425	497	524	542	576	5	3	11	6	1	4	17
H8201: Hand tools for agriculture, horticulture, forestry	18	23	30	38	27	38	45	3	5	8	9	8	13	17

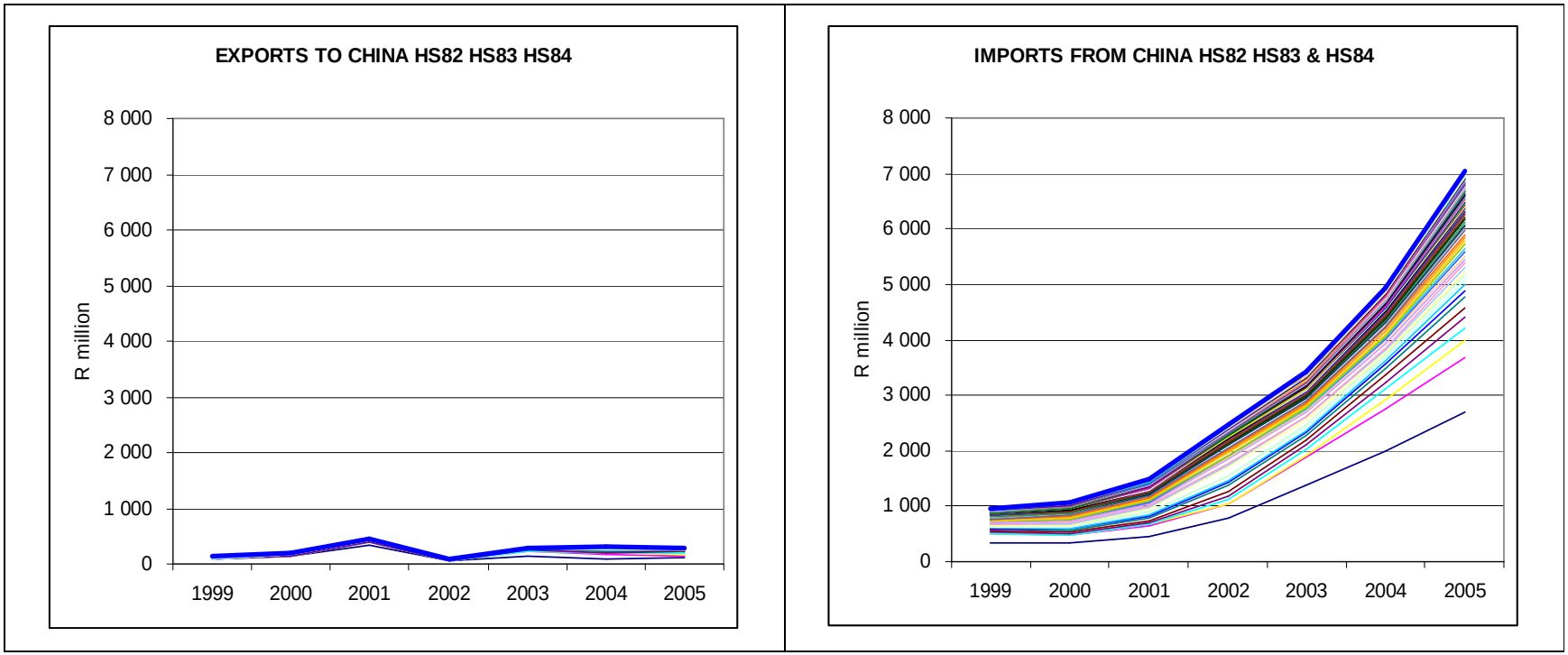
IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8306: Base metal bells, ornaments, pictures, mirror frames	29	31	29	32	30	37	40	6	7	8	8	11	12	15
H8206: Sets of hand tools, retail	14	15	19	23	22	33	47	2	3	5	7	6	8	15
H8305: Office staples, binder fittings, paper clips etc.	19	25	25	34	30	32	37	3	3	2	5	5	7	14
H8445: Machines for processing textile fibres	145	194	119	185	267	141	129	4	2	10	0	1	22	14
H8459: Machine tools except lathes to drill, bore/mill/thread	42	125	70	149	165	110	115	4	3	5	9	15	11	14
H8408: Compression-ignition engines (diesel etc)	254	318	413	603	659	805	993	0	2	2	4	4	6	14
H8204: Hand-operated spanners, wrenches and sockets	38	48	54	61	55	71	77	2	3	4	7	6	10	13
H8311: Wire, rod,etc of base metal, carbide for welding etc	42	51	61	71	67	74	96	0	1	1	2	2	3	12
H8303: Safes, strong-boxes etc, of base metal	6	6	6	10	11	14	20	0	0	2	6	5	8	12
H8438: Industrial food and drink preparation machinery nes	216	346	256	273	272	401	519	0	0	0	1	4	4	12
H8214: Cutlery nes, cleavers, mincers, office, toilet items	12	13	16	18	17	18	21	3	4	6	7	7	9	12
H8447: Machines for knitting, lace, embroidery, tufting, etc	77	97	143	119	118	103	110	1	3	4	10	11	8	11
H8417: Industrial, laboratory furnaces, ovens, incinerators	87	179	318	239	223	156	151	0	0	0	3	1	0	11
H8213: Scissors, tailors and similar shears, blades thereof	18	18	16	25	19	21	24	4	6	6	12	9	10	11
H8468: Equipment for soldering, brazing or welding	31	34	35	42	35	56	43	1	3	1	2	2	8	10
H8466: Parts and accessories for machine tools	155	203	308	355	291	346	358	2	2	4	4	6	7	10
H8212: Razors and razor blades (including blanks in strips)	124	87	126	152	123	111	103	2	4	3	5	11	8	8
H8210: Hand-operated appliances, food preparation, <10kg	17	12	14	14	13	13	13	12	7	7	6	6	8	8

IMPORTS FROM	World							China						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8451: Machinery nes, to clean, iron, impregnate textiles	109	164	186	219	180	182	160	1	3	2	10	5	6	8
H8484: Gaskets and similar joints of metal sheet	197	221	259	341	300	310	322	1	2	4	4	7	7	8
H8463: Machine-tools (metal, carbides, etc), no metal removal	58	37	63	88	85	89	132	0	1	1	1	0	1	7
H8461: Machine-tools for shaping metals, nes	29	52	72	100	61	80	78	2	3	5	4	6	4	6
H8208: Knives, cutting blades, for machines and appliances	68	70	91	117	101	108	117	0	0	1	2	4	5	6
H8433: Harvesting, produce cleaning and grading machinery	189	249	241	448	433	618	457	0	0	0	0	2	3	6
H8444: Machines to extrude, draw, cut manmade textile fibres	7	9	17	31	8	4	19	0	1	0	0	0	1	5
H8464: Machine-tool for working stone, ceramics, cold glass	29	42	86	61	66	49	89	1	1	1	1	2	3	5
H8439: Machinery for making pulp, paper, paperboard	339	137	257	301	403	946	269	0	0	0	1	2	6	5
H8453: Machinery for hide and leather work including footwear	38	52	62	45	62	59	53	1	1	5	0	2	4	3
H8416: Furnace burners, equipment	28	34	37	44	76	51	70	0	1	1	2	18	2	2
H8446: Weaving machines (looms)	53	89	93	120	69	42	56	0	0	2	0	5	0	0
OTHER HS82 + HS83 + HS84 < R5 million	2 666	3 430	3 949	5 676	5 800	6 161	5 607	8	14	15	23	24	32	49
H82: TOOLS, IMPLEMENTS ETC.	1 045	1 095	1 399	1 864	1 458	1 831	1 776	76	101	127	181	186	264	359
H83: ARTICLES OF BASE METAL	487	537	689	841	764	881	1 082	58	77	99	135	142	196	279
H84: MACHINERY AND CAPITAL EQUIPMENT	26 355	29 303	34 944	45 306	45 240	49 783	55 199	832	892	1 260	2 156	3 085	4 478	6 416
TOTAL: HS82 + HS83 + HS84	27 887	30 935	37 033	48 011	47 462	52 496	58 057	966	1 070	1 487	2 472	3 413	4 937	7 054

Imports from the world and from China are wide-ranging and substantial, with China growing into a share of 12% of the trading volumes. Imports from China include 38% computing equipment. The analysis highlights the significant import penetration by Chinese products into these South African markets. While the aggregate for the three chapters amounted to 12.2 % that of chapter 82 came to 20%(7.2% in 2000 while that of chapter 83 was a high 26%

7.6.3. Summary of Trade Patterns

Figure 7.6-1: Exports To and Imports From China for the 4-Digit Codes Listed in the Trade Analysis Above



7.7. SUMMARY OVERVIEW OF TRADE PATTERNS

The summary totals of South African trade statistics for this metals industry study and additional information of beneficiations are as follows:

Table 7.7-1: Summary of South African Trade in Metals Industry and Beneficiated Products

AMOUNTS [R million]	WORLD		CHINA	
HS CODE	EXPORTS TO	IMPORTS FROM	EXPORTS TO	IMPORTS FROM
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	33 114	3 182	795	200
H73: ARTICLES OF IRON AND STEEL	4 527	4 394	27	853
H74: COPPER AND ARTICLES THEREOF	1 866	947	215	97
H75: NICKEL AND ARTICLES THEREOF	1 600	801	425	2
H76: ALUMINIUM AND ARTICLES THEREOF	10 819	1 040	553	88
SUB-TOTAL: H72 - H76: METALS INDUSTRIES	51 927	10 364	2 015	1 240
H82: TOOLS, IMPLEMENTS ETC.	651	1 776	1	359
H83: ARTICLES OF BASE METAL	405	1 082	0	279
H84: MACHINERY AND CAPITAL EQUIPMENT	21 468	55 199	281	6 416
SUB-TOTAL: H82 - H84: BENEFICIATED AND MACHINERY	22 523	58 057	282	7 054
TOTAL: METALS INDUSTRIES AND BENEFICIATION	74 451	68 421	2 297	8 295

The clusters of graphs below present summary assessments of exports and imports, firstly for the metals industries as per the Terms of Reference, as well as for the additional analysis of downstream industry information. The changing trends of South Africa's trade patterns over the past six years are highlighted.

Figure 7.7-1: Export and Import Patterns, for South Africa's Trade with the World and with China, Respectively -- HS72, 73, 74,75 and 76

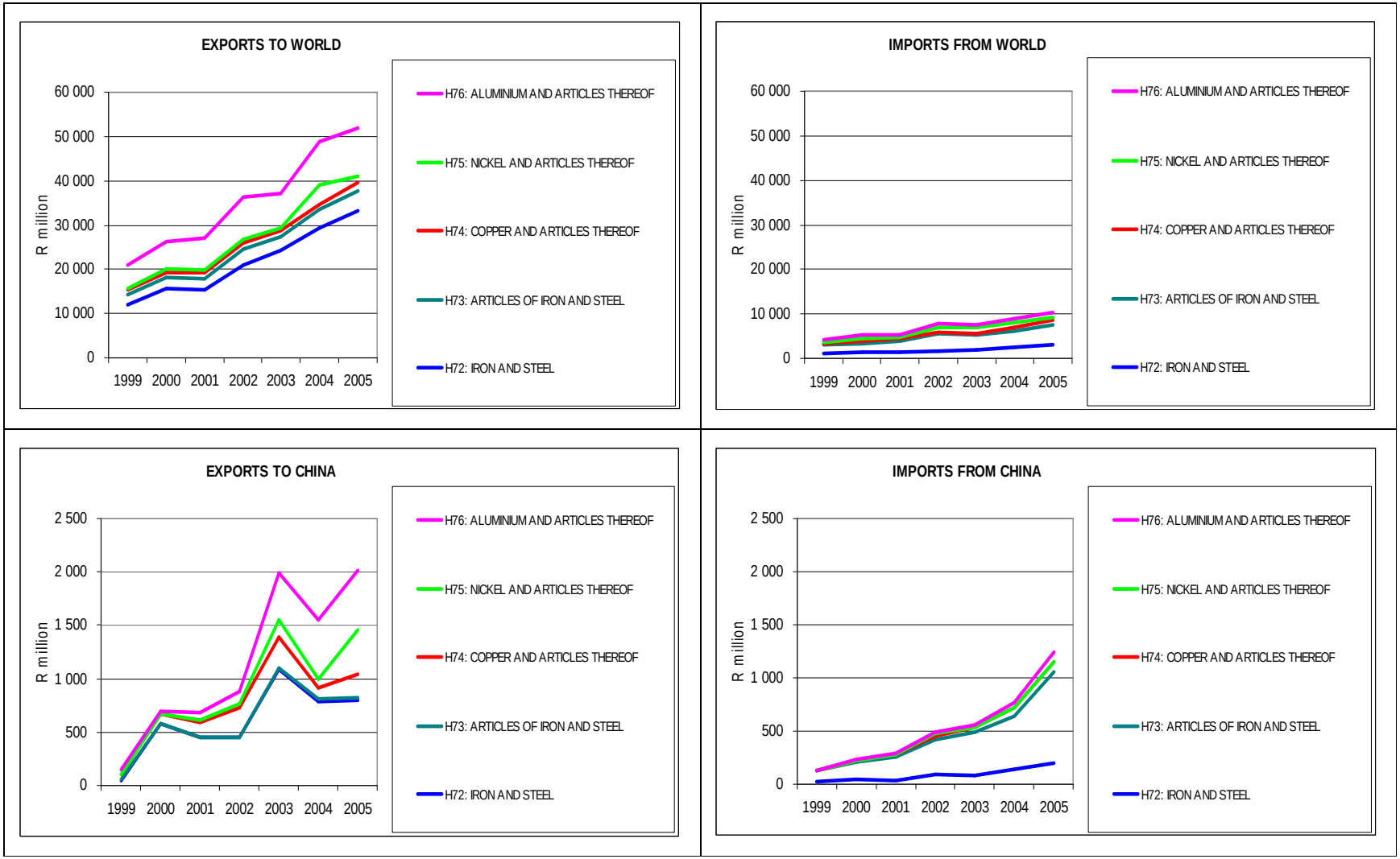
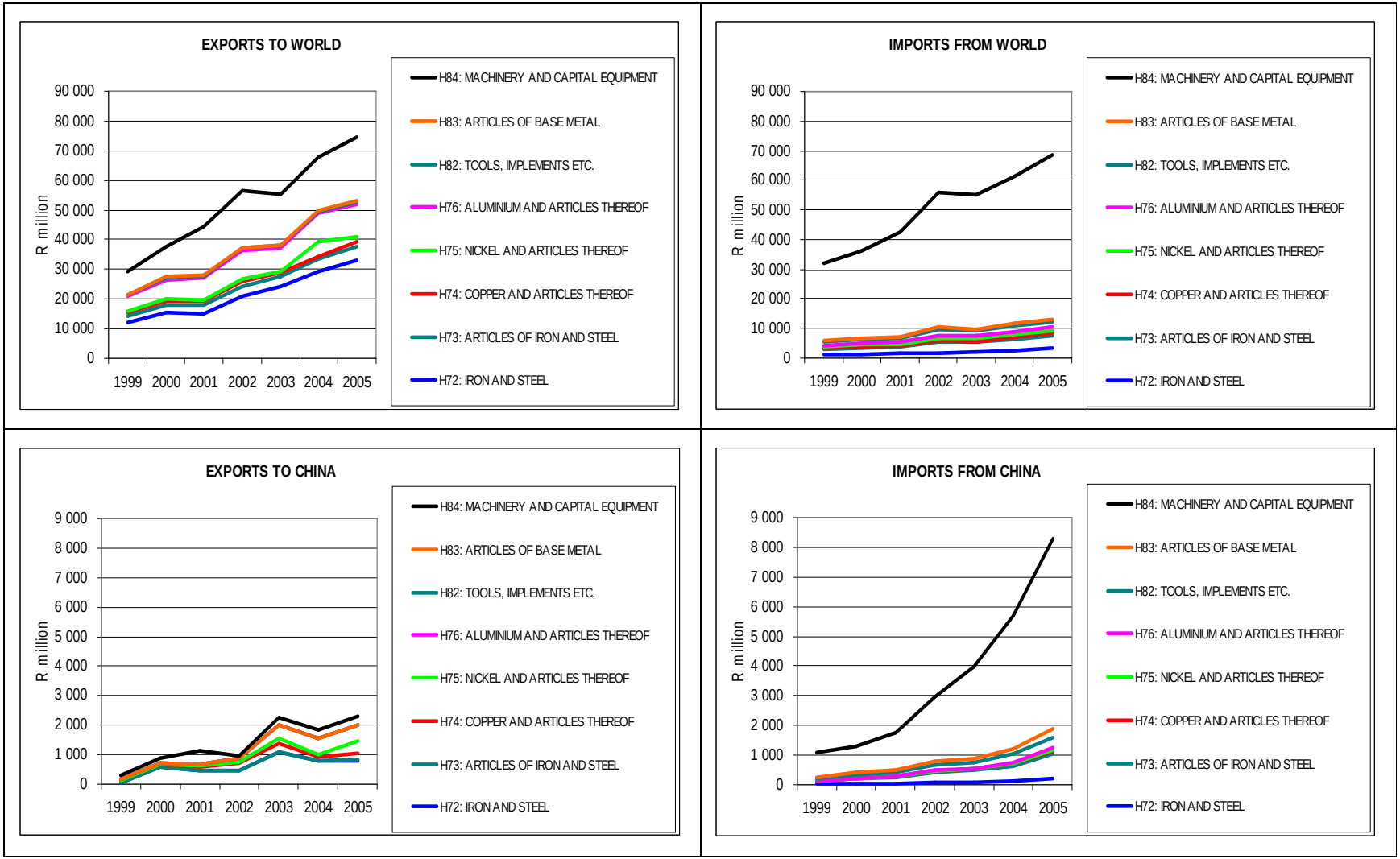


Figure 7.7-2: Export and Import Patterns, for South Africa's Trade with the World and with China, Respectively – HS82, 83 and 84 & HS72 – 76



7.8. CONSIDERATIONS

1. Of South Africa's total metal exports of US$6,8 billion in 2004, US$ 228 million (3,4%) was exported to China. In 2000 2,7% went to China. South Africa has a positive trade balance with China of US$89 million in 2004. South Africa exports mainly primary and intermediate metal products to China. China mainly exports downstream metal articles and products to South Africa. Imports of these products were about three times higher in 2004 than in 2000.

2. South Africa thus benefits from its comparative strength in the export of primary products while China focuses on its strength in downstream metal products. China's penetration of the South African market is stronger than South Africa's of China. Imports from China in 2004 were 11,1% of South Africa's metal imports as opposed to 6,3% in 2000. South African exports of metal products to China are about 0,6% of China's imports in 2004 (2000: 0,6%). China's export of metal products (US$32,2) is almost five times that of South Africa (US$6,8 billion).

3. South Africa's imports of iron and steel products are mainly downstream products. China's imports are in primary products: mainly ferrous scrap, flat-rolled iron and non- alloy steel, copper and articles and also aluminiu

4. South Africa's exports of upstream products to China are lagging its exports to the world. Exports to the world more than doubled between 2000 and 2005, while exports to China were 38% higher. In 2005, 2,4% of upstream exports went to China compared to 3,8% in 2000.

5. A very small amount of only R27 million out of South Africa's total exports of R4 527 million in downstream products of HS chapter 73 went to China in 2005, comprising only 0,6% of exports to the world. Notably, 10,5% of the exports of HS 7318 went to China.

6. Imports from China were almost five times higher in 2005 than 2000, but this growth was from a low base. Imports from China nevertheless amounted to 6,3% of all imports from the world of upstream iron and steel products in 2005. China supplied 19,4% of South African imports of downstream iron and steel products in 2005, compared to 8,2% in 2000. Import penetration by China is prominent in a number of 4-digit codes, namely HS 7303 (97% of all imports); 7322 (56%); 7325 (41%); 7317 (38%); 7314 (34%); and 7324 (31%).

Table 7.8-1: South African Imports of Metals Industry Products Relative to Exports

COMPARISONS OF IMPORTS TO EXPORTS [%]	WORLD	CHINA
HS CODE	IMPORTS: EXPORTS	IMPORTS: EXPORTS
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	10%	25%
H73: ARTICLES OF IRON AND STEEL	97%	3208%
H74: COPPER AND ARTICLES THEREOF	51%	45%
H75: NICKEL AND ARTICLES THEREOF	50%	0%
H76: ALUMINIUM AND ARTICLES THEREOF	10%	16%
SUB-TOTAL: H72 - H76: METALS INDUSTRIES	20%	62%

8. SYNTHESIS AND RECOMMENDATIONS

8.1. POLICY AND PERFORMANCE

1. China has a well functioning policy formulation and implementation mechanism in its successive five year plans that among others ensures continuity and policy stability and transparency. South African economic development policy making process appears to be trapped in the problem statement stage. South Africa is required to move forward to policy functionality encompassing strategy, its resourcing and implementation.

2. The Chinese metal industries are in a robust growth phase as the outcome of a previously devised, well articulated and resourced sector strategy. South Africa's metal sector policy, in contrast, is still under wraps.

3. As South Africa is playing catch up in the policy/strategy/implementation stakes; and as industrial policies and strategies have a decisive impact on competitiveness when engaging the likes of China, South Africa is at a disadvantage in entering into trade agreements in this context.

4. China needs to adapt to WTO requirements that will water down its existing battery of subsidies, incentives and other means of industrial development support. With South Africa embarking on the upgrading of its incentives, some convergence of the impact of the respective sets of support may happen somewhere in future.

5. China has embarked on an unprecedented growth and development path, supported by a mix of market–oriented policies, very high levels of investment in industrial, developmental and infrastructure projects, targeted initiatives and sectors using state-owned enterprises with ready access to capital, combined with the privatisation of ineffective enterprises to management entrepreneurs, as well as rapid large-scale urbanisation, increasing per capita wealth levels and a growing middle-class of consumers, resulting in demand for products from construction and consumer products industries with a virtuous circle of ever-increasing supply from globally-competitive industries.

6. China is the top-ranked or highly ranked producer in a number of metals and commodity industry sectors The metals sectors of China and South Africa in a global context comprise the following relative production volumes and market shares: -

Table 8.1-1: Key Figures for Metals Sectors in China and South Africa

METAL SECTOR	WORLD	CHINA		SOUTH AFRICA	
	VOLUME [Mtpa]	VOLUME [Mtpa]	SHARE OF WORLD [%]	VOLUME [Mtpa]	SHARE OF WORLD [%]
Steel	1 050	273,0	26,0%	9,5	0,9%
Aluminium	29,90	6,67	22,3%	0,860	2,9%
Copper	15,5	1,80	11,6%%	0,090	0,6%
Nickel	1,240	0,065	5,2%	0,041	3,3%

7. The steel industry in China has tripled its outputs in the past 11-years, from 90 Mtpa in 1993 to the present level of 270 Mtpa. China is the dominant steel producer, more than twice the size of 2nd ranked Japan, and it is responsible for the bulk of the volume growth globally in the steel industry. China recently became a net exporter of steel in volume terms, although its exports are mainly in lower-end long products, while it still imports higher value flat products and steel sheet. China is a large importer of iron ore for 36% of its steelmaking raw materials requirements

8. The aluminium industry in China has tripled its production in the past seven years, from 2 Mtpa in 1997, to more than 6 Mtpa presently. China has become a net exporter of aluminium, but it is dependent upon some 50% of its raw materials in the form of alumina. In reaction to relatively high price levels of alumina, numerous new projects and expansions were announced that may lead to short-term over-supply and long-term depletion of reserves, prompting the government to introduce stricter policy and control measures to rationalise future capacity roll-out.

9. China has become the largest copper consuming country and it is the 2nd ranked copper producer, but can only meet 25% of the demand for metal for its downstream manufacturing sectors, supplying the construction, electrical, industrial and transport applications. It is, however, an exporter of copper products.

10. China supplies some 50% of the nickel volumes for captive applications in its stainless steel manufacturing sector. In an attempt to avoid the high cost of imported nickel, it opted for substitution by low-nickel stainless steel grades, but these grades are limited to non-industrial applications only and the strong demand for nickel is expected to be sustained.

11. The strong growth in demand for consumer products, as well as the high levels of investment in industrial and infrastructure projects, from China and neighbouring India, all contributed to a high level of demand for metal and energy input commodities, resulting in an upward shift in commodity price trends, which may become a long-term structural adjustment if the demand levels are sustained.

12. China's industrial policies are aimed at rationalising and consolidating production capacities into large-scale, more efficient and competitive operations, as well as increased control over the exploitation of reserves and promotion of materials recycling – by means of the "circular economy" – and a "scientific" approach to development, which strives for the optimal positioning of new projects relative to available raw materials and energy resources, as well as least environmental impact.

13. 0n the macro-level China has a competitive advantage on South Africa in respect of labour costs while its companies benefit from lower capital costs. In terms of energy cost, South Africa attains the top ranking in the world but the economy is also highly energy intensive and is faced with future real increases in energy prices. . Benchmarking the production of cost with the help of published data reveals that:

14. South Africa has a 20% higher average selling price than China, with 10% lower operating costs, although general overheads (including labour costs) are similar. Profitability of the South African steel industry is substantially higher, at an EBITDA of US$395/t compared to US$241/t in China.

15. Per US$1,00 of turnover revenue, South African steel manufacturers require: US$1,73 of new steel plant as opposed to US$ 1.18 in China. The capital cost per plant (as fixed assets per tonne of steel produced, in US$/t) is 40% lower for China, depreciation charges are 30% less and interest payments only ½ of that paid locally. Asset productivity (revenue turnover earned relative to fixed capital cost) is accordingly 30% higher in China. South Africa is thus at a severe disadvantage regarding capital related costs.

16. South Africa's total operating costs, on the other hand, are 45¢ per US$1.00 in turnover compared with China's 60¢ on account of South African raw materials and energy being raw 36¢ (China 45¢) and ; plus 9¢ of overheads of which 5¢ is labour costs and 4¢ general & other costs (China 11¢ of overheads of which 5¢ labour and 6¢ general & other costs).

17. Lower Chinese headline earnings profitability (as EBITDA) of only 61%, due to 17% lower selling prices and 24% higher raw materials costs and 10% higher operating cost.

18. Down stream iron and steel industries in South Africa is at a 20% cost disadvantage in respect of material inputs compared to their Chinese counterparts. The Chinese government generally supports the production of products which are important input products of the downstream manufacturing industry. Policy-makers have used SOEs in the heavy industry sector to reduce key costs of production for the export-orientated manufacturing sector. This cannot be categorically substantiated in the case of steel but opportunities are present in terms of SOE's in steel production and electricity supply. At the other end of the scale South African down stream industries are faced with import parity pricing practices**.**

19. Imports from China were almost five times higher in 2005 than 2000, but this growth was from a low base. Imports from China nevertheless amounted to 6,3% of all imports from the world of upstream iron and steel products in 2005. China supplied 19,4% of South African imports of downstream iron and steel products in 2005, compared to 8,2% in 2000. Import penetration by China is prominent in a number of 4-digit codes, namely HS 7303 (97% of all imports); 7322 (56%); 7325 (41%); 7317 (38%); 7314 (34%); and 7324 (31%).

20. Imports of copper are mainly in the 4-digit codes of HS 7412 (66% from China) and 7411 (44%), with occasional imports in HS 7418. Imports of copper and products almost trebled from 2000 to R947 million in 2005. China supplied 10% of imports in 2005 as opposed to 3,6% in 2000. China is a consistent importer of nickel plates, sheet, strip and foil from South Africa, taking in almost 50% of South Africa's exports thereof in 2005. Exports of aluminium plates, sheets and strip to China increased significantly in 2003 and 2004 and remained at the higher level in 2005

21. Imports of downstream products of chapters 82 and 83 and computing and office equipment of chapter 84 show significant import penetration by Chinese products.

8.2. DEFENSIVE POSITION

1. The metal sector is prominent among the South African manufacturing sectors due to its size, export orientation of some sub-sectors and employment and labour intensiveness of others. Growth in South Africa's value added of basic iron and steel

production was 9,9% p.a. between 2000 and 2005. This was the second highest growth rate of all manufacturing sectors over this period and exemplary for a primary industry. The growth of value added by the non-ferrous basic industries was 0,7% and of the more labour intensive metal products sector 1,8% p.a. conformed to the average in manufacturingThe fixed capital stock of the non-ferrous basic metals increased between 2000 and 2005, but declined with respect to the basic iron and steel and the metal product sectors. Conditions are thus not in support of an enlargement of capacity as yet

2. In 2005 the metal sectors employed 12.4% of manufacturing labour. The metal products sector is the labour intensive one among these and employs 8.8% of the manufacturing labour force. Employment in total .manufacturing changed little between 2000 and 2005. However, employment in the basic iron and steel industry increased by 1.1% p.a. over this period and that in the metal product sector by 1.7% p.a.. The metal sector is thus starting to generate employment following restructuring in the industry. This is to be welcomed from a socio-economic perspective and trade negotiations should avoid negative impacts in this respect.

3. China became a substantial exporter of iron and steel products the past years. Greater penetration into foreign markets may now become a reality especially with the ever present fears of the creation of extensive excess capacity by China.

4. The emerging trade pattern between China and South Africa in metals and metal products is one of South Africa being relatively stronger in primary and intermediate products while Chinese exports are making inroads in the South African downstream market for metal articles and metal products. These are the labour intensive segments of the metal industries. South Africa should endeavour not to be marginalised by China in the domestic market for these products.

5. China has a major push in downstream metal products exports. Between 2000 and 2004 Chinese exports of Chapter 73 of the Harmonised Code increased by 160%. High increases were recorded over a range of sub headings.This trend is also apparent in Chinese exports to South Africa..

6. The Chinese applied tariffs on metals are moderate to low on upstream metal products where South Africa's comparative advantages are found. Concessions will thus carry limited benefits for South Africa. South Africa's tariffs on metal products are comparatively high and concessions will benefit China. This will be a threat to the more

labour intensive part of the South African metals sector with detrimental socio-economic consequences.

RECOMMENDATIONS

From a cross cutting perspective

By considering that:

- The Chinese economic system is in transition from a communist to a social market economy.
- Pockets of the economy are “marketised” but a mixture of market conditions and state intervention apply in many others including the metal sector.
- The state (central, provincial and local) participates in capital formation and directs bank financing.
- Preferential interest and tax rates, subsidies contingent on exports and favourable financing of target industries apply.
- The Chinese government officials intervene in the economy in a way inconsistent with market principles.
- Subsidies are non-transparent.
- Irrational investment practices lead to the creation of unsustainable and surplus capacity.
- Pricing is non-transparent and divorced from market discipline due to interventions and support.
- China is obliged to do away with trade related investment measures but that progress seems to be slow.
- The undervalued Chinese currency contributes considerably to competitiveness in international markets.
- China tend to marginalize the manufacturing sectors of developing countries especially those of Africa.
- The Chinese economy is 9 times South Africa’s and its population 28 times that entails a huge difference in capacity to trade in China’s favour

- NAMA introduces a degree of uncertainty with respect to future MNF tariff levels that may render bi-lateral concessions pre-mature

the cross cutting threats that it poses with regard to trade is reason to resist the granting of preferential access to Chinese products in the SACU market at least until such time as its economy becomes fully marketised, it fully complies with WTO obligations and a market determined exchange rate has replaced the undervaluation of its currency.

These threats also manifest themselves in a sector specific manner.

Sector specific aspects

1 .Because:

- China has a clearly articulated development strategy for its metal sector that proves itself in the growth performance of the sector while South Africa is still struggling to put a strategy together.

- China embarked on an aggressive capacity building and expansion programmes in the metals industries, such as steelmaking and aluminium, recording growth rates of exceeding 200% over the past seven to ten years. In the steel industry specifically, China most recently recorded an annual expansion in production of 28%, resulting in production levels exceeding Japan, the 2nd ranked country, by a factor of 2 ½-times;

- China has become a net exporter in steel and aluminium products. Given that these trade flows are from a very high baseline, any marginal increase in production can be expected to translate into substantial increases in exports relative to previous volumes;

- There is an apparent inability (alternatively, a reluctance) of the Chinese officials across the government tiers to calm down run-away capacity expansion;

- China is making inroads in the South African market for intermediary and downstream metals industry products, rendering some tariff protection by South Africa necessary for local producers. Trade between China and South Africa is progressing from a low base but China is posing a serious threat to down stream production of metal products with a 20% cost advantage over South Africa in the supply of iron and steel inputs.
- Penetration of down stream metal products exports by China in South Africa's imports are rapid without the benefit trade preferences

- South Africa present positive trade position in the Chinese market with certain metals products may suffer some deterioration;

- There is a threat of marginalisation of domestic incumbents in the markets of third countries, due to aggressive increases in competition from Chinese exports;
- The South African metal sector is a large employer and changes in its fortunes would have important socio-economic implications.
- China's overwhelming size and inherent competitiveness enable it to marginalise the manufacturing industry of smaller economies.

the question can be raised why China would need trade concessions in the light of the access it is achieving in the South African metal market. South African metal products are increasingly threatened by imports from China. Trade negotiators should thus resist the granting of concessions to China in metal products. **No bi-lateral concessions on metals products should be contemplated in favour of China.**

2. In view of the removal of duties on iron and steel of Chapter 72, South Africa does not have a defensive position in respect of these products.

3. Should any offers be contemplated they need to be worked out in conjunction with the constituents of the metal sector. Especially treatment of the downstream segment of the metal industry may require more investigation than the Terms of Reference of the present study provided for.

8.3. THE OFFENSIVE POSITION

2. China is the world's leading producer and consumer of a number of metal sector commodities and value-added industrial and consumer products. Its market reforms and development initiatives, based on urbanisation and people development, as well as very high levels of investment in production operations and infrastructure projects, all contribute to a sustainable development path for China. As long as investment in physical assets remain high the demand for metals will rise at a pace equal to or exceeding growth in the economy at present running at 10% p.a.

3. Although China adopted a policy of self sufficiency rapid growth will create gaps to be filled by imports. South Africa may benefit from trade concessions with a focus on upstream industries.

4. China has reduced its applied customs tariffs over the last number of years with its accession to the WTO. NTBs remain a problem for exporters to China. However, there are no NTB's specific to metals. The NTBs with the most affect on exports to China are the concerns raised by exporters generally and relate to lack of transparency policy unpredictability and uncertainty; and customs procedures and delays.

5. South African companies in the metals industries, first and foremost, regard China as a dominant new global force, as competitor and as a market There is little doubt that the South African metal industries are to benefit from a the Chinese economy. However, it is doubtful whether tariff concessions on a bi-lateral basis will be of more than marginal value to South African metal and metal product exporters.

RECOMMENDATIONS

From a cross cutting perspective

1. Opportunities of a cross cutting nature lie in the sustained high growth in its economy that makes China a prominent modern day wealth creator. South Africa shares in the prosperity that is generated by the Chinese economy. However, bureaucracy, NTB's and the inclination of the state to employ trade remedies as allowed by the WTO, frustrates access of manufactured exports into the Chinese market.

2. Competition and cooperation:

    - It is a contention of this report that the South African metals sectors are faced by strong competition from the dominant Chinese sectors, in the international and in

the local market. This situation requires a twofold approach. First and foremost, South African companies should be prepared to compete directly with their Chinese counterparts in any marketplace; however, they should also recognise the Chinese situation as an opportunity to cooperate and be willing to engage in business and trade – as is the case already – as well as possibly in joint-projects and shared investment in a cooperative manner.

- To compete *and* cooperate is not a new concept, and is not a unique challenge for the metals industry. It is a trade-off that has become the modern-day reality, even for many large countries and companies. Smaller countries or companies cannot escape this challenge and should develop ways cope with it. While facing each other in the marketplace, competing directly with products, brand names, quality, service levels, value-for-money and customer loyalty, many of these competitors also cooperate closely to mitigate high risk levels, in research and development, technology platforms, capital intensive production capacities and generic input costs.

- The consideration is that the notion of compete *and* cooperate creates a new mindset, moving away from an over-reliance on defensive strategies, into a mode of focusing on offensive strategies as well.

<u>From a sector specific perspective</u>

3. By considering that:

    - China's metals market is on a strong growth path

    - The growing metals market has offered an increasing number of export opportunities to South African business.

    - China is increasingly becoming a net exporter of steel and aluminium

It therefore follows that trade concessions should be requested from China. Although the Chinese duties on metals are relatively low at mostly 4% to 8%, duty-free access to the Chinese market would assist South African producers to improve their competitive position relative to competitors in other countries. In the case of iron and steel of Chapter 72, where South Africa now has zero duties, it is essential that China also offer duty-free access for our products to their market.

6. However, opportunities for South African metal exporters outside primary and intermediate products are limited and any request for concessions should be drafted in conjunction with the industry and mindful of the risks inherent in counter requests by China that trade preferences be granted to its exports of downstream products..

7. Companies that contemplate entry of the Chinese market should preferably conclude a partnership with a Chinese counterpart.

8. The following issues may complicate negotiations:

    - The difference in competitiveness arising from interventions by the Chinese government.
    - The undervalued Chinese currency.
    - Apparent limited new opportunities for South African exporters in the more labour intensive downstream products.
    - The barriers posed by non-tariff measures and protective practices.
    - The inherent asymmetry to benefit from trade due to the (economic) size difference in favour of China.
    - China's massive increase in production capacity in various metals and it, in fact, becoming a net exporter.

7.4 OTHER MATTERS THAT THE CONSULTANTS WISH TO COMMENT ON

Competitiveness and pricing iro the South African metals industries determine the defensive and offensive positions in trade negotiations. Issues require resolution on an industry-wide scale, based to some extent on the following considerations:

- The primary defensive strategy for any business is about the threshold marketing factors of price, quality and service (which mirror the fundamentals of project management, being "QTC" – quality, time and cost). Of these factors, pricing became a prominent issue in the local steel market in the recent past. Import parity pricing ("IPP") – or as described by the steel industry as international

pricing policy – resulted in higher prices for the local market than for export customers. This seems to be the situation in most steel producing countries

- Pricing should be a strategic issue for the whole industry value chain. It is an acknowledged business principle that excessive profits – starting with price levels being too high – tend to attract competitors. Given this, pricing can therefore become part of a defensive strategy.

- For a better defensive strategy, a number of issues have to be refined. The investment philosophy and propensity should be improved, with upward adjustments, for capacity creation at international standards. Investment support and incentives, as well as financing solutions, are inadequate to stimulate higher levels of investment in productive capacity.

9. ADDENDUM A – SOUTH AFRICAN POLICY ENVIRONMENT

9.1. Developmental Challenges

South Africa's policy environment can best be understood in the context of the following statement, quoted from a research report by **the dti**, entitled " South African Labour Market: Benchmarking against Selected Economies," stating that:

> In summary, it is strange that South Africa has a very firm and stable economic footing, has made advancements in education, has a relatively good diffusion of technology and in many ways appears to be emerging as a first world nation but also has severe poverty and human development problems."

South Africa's macro-economic policies are essentially about how to address this somewhat unique ("strange") situation, with a more inward-looking approach. The following summaries of the most current policy statements will serve to highlight these policy challenges.

9.2. Macro-Economic Environment – The Asgi-SA Initiative

Policy Announcement

At a media briefing on 6 February 2006 by Deputy President of South Africa, Ms. Phumzile Mlambo-Ngcuka, announced the the Accelerated and Shared Growth Initiative for South Africa ("Asgi-SA"), which is summarised as follows: -

The Development Challenge

In 2004, the South African government stated its objective to reduce poverty and unemployment by one-half by 2014. These objectives are attainable, based on a steady improvement in economic performance, supported by good economic policies, positive domestic sentiment, and a favourable international environment.

Although unemployment remains high at over 26% -- which is considerably better than the peak of a 32% unemployment rate some time ago – there is still a major challenge to reduce unemployment to below 15%. This challenge cannot be achieved without effective economic

leadership from Government and effective partnerships between government and other key stakeholders such as organised labour and business.

The Accelerated and Shared Growth Initiative for South Africa ("Asgi-SA") is rather positioned as a **national shared growth initiative**, instead of a "government programme". The GDP growth targets are for two phases, namely 4,5% per year for the first phase, between 2005 and 2009, and at least 6% per year for the second phase, between 2010 and 2014. Furthermore, the conditions for more labour-absorbing economic activities have to be considerably improved, in order to move towards the complete elimination of poverty and reduction of inequalities.

The vision is a development path for: -

- a vigorous and inclusive economy
- with diverse production of products and services
- more value is added to basic products and services
- costs of production and distribution are reduced
- labour is readily absorbed into sustainable employment, and
- new businesses are encouraged to proliferate and expand.

Despite the recent economic growth trend, certain unwanted outcomes also followed. The growth resulted from a combination of strong commodity prices, strong capital inflows and strong domestic consumer demand, with a foothold in government's poverty alleviation efforts, growing employment, and rising asset prices. The effect of these economic conditions was to strengthen the currency and maintain its strength. As a result it became more difficult for exporters outside the commodity sector or those who compete with imports to remain competitive. These conditions led to a trade deficit of nearly 4.5% of GDP in 2005. This deficit is presently well financed by capital inflows.

It does, however, demonstrate the challenge faced by South Africa to compete effectively outside of the commodity sector. The risk areas are an unbalanced economy and the uncertainty regarding the sustainability of commodity prices, capital flows, and the domestic consumption boom. Many South African households are still trapped in poverty and a third do not yet benefit directly from the improved economic conditions. With such a significant part of the population excluded from the mainstream economy, growth potential remains constrained.

The target of a sustainable growth rate of 6% would require that these two imbalances – the strength of the currency and its effects on competitiveness, as well as poverty and people excluded from formal economic activity – be addressed.

This would be through a strategy for accelerated and shared growth.

It is based on a growth diagnostic method of analysis – the identification of the "binding constraints" impeding achievement of developmental objectives. Whereas all successful economies have certain threshold characteristics in common, namely a well managed fiscal and monetary policy, and competent government administration, there are other, different, country-specific challenges impeding attempts to move from mediocre to successful.

Binding Constraints

A succinct and focused set of binding constraints allows for a coherent and consistent set of responses. The key issues for South Africa presently are: -

- **The volatility and level of the currency**

  Despite major improvements in the administration of fiscal and monetary policy, currency volatility is a deterrent for investment tradable goods and services outside of the commodity sector. The rand remains somewhat volatile, although it is assumed that the degree of volatility may be reducing. When the relative volatility is accompanied by an overvalued currency – resulting in economic resources being diverted into narrow areas of investment – such as presently, uncertainty is created and the effects of volatility are compounded. Macro-economic policies and implementation can be further improved by means of better expenditure management, notably in government capital investment.

- **The cost, efficiency and capacity of the national logistics system.**

  The cost of transporting goods and conveying services to other destinations is relatively high. It is due to backlogs in infrastructure, investment, inadequate planning, anti-competitive market structures The effects are exaggerated by South Africa being a fairly large country, with considerable concentration of production inland, some distance away from major industrial markets destinations.

- **Shortage of suitably skilled labour amplified by the cost effects on labour of apartheid spatial patterns.**

  Those parts of the legacy of apartheid most difficult to unwind are the deliberately inferior system of education and the irrational patterns of population settlement. The lack of skilled professionals, managers and artisans is a constraint for growth. The

uneven quality of education remains problematic. Furthermore, the price of labour of the poor is pushed up by transport costs of the large number of people living great distances from their places of work.

- **Barriers to entry, limits to competition and limited new investment opportunities.**

  The South African economy remains relatively concentrated, especially in upstream production sectors such as iron and steel, paper and chemicals and inputs such as telecommunications and energy. This market structure has a negative effect on the potential to develop downstream production or service industries. This problem has to be addressed by competition law and industrial policies.

- **Regulatory environment and the burden on small and medium businesses.**

  The small, medium and micro enterprise ("SMME") sector struggles to perform in terms of contribution to GDP and employment creation. This problem partly arises from the sub-optimal regulatory environment, including the overhead burdens of the administration of taxation, the planning system requirements, municipal regulations, the administration of labour law, and in specific sectors, unnecessarily constraining regulatory environments.

- **Deficiencies in state organisation, capacity and leadership.**

  There are weaknesses in the way government is organised and in the capacity of key institutions that have to provide economic services. Furthermore, South Africa's growth potential is negatively affected by indecisive leadership in policy development and implementation.

Interventions: Decisive interventions are required to counter these "binding" constraints. A shift in economic policy is not required. Instead, a set of responses to these constraints and initiatives designed to achieve South Africa's development objectives more effectively should be designed, essentially in the following six categories:

- Infrastructure programmes;
- Sector investment strategies or industrial development strategies;
- Skills and education initiatives,
- Second economy interventions;
- Macroeconomic issues; and
- Public institutions effectiveness.

Infrastructure Investment

The South African government has started to increase public sector investment. Public sector investment previously reduced to below 4% of GDP, but more recently recovered to above 6% of GDP. In future, public sector investment has to increase to a level of 8% of GDP in order erase the backlogs in the public infrastructure sector. The gaol is to improve the availability and reliability of infrastructure services in response to rapidly growing demand. Projects are distributed to provincial and local government by means of the municipal and provincial infrastructure grant programmes, while provinces and most municipalities have funds collected from their own revenue sources for capital expenditure. The target areas for expenditure road networks, bulk water-supply infrastructure and networks, energy distribution, housing, schools and clinics, business centres, sports facilities, and multipurpose government service centres, including police stations, courts and correctional facilities.

Furthermore, electronic communications can be considered a key area in commercial and social infrastructure. Planning for this sector comprise: -

- The expansion of the country's broadband network;
- The reduction of telephony costs that are high by international standards;
- The completion of a submarine telecommunications cable project, providing access to international destinations in Africa and Asia; and
- The provision of incentives for business development in poor areas.

Another challenge in the infrastructure sector is to prepare for the 2010 FIFA World Cup, including the building and improvement of stadiums, the environs and access to the stadiums.

Research and development infrastructure also requires further development. Public-private-partnerships ("PPPs") are advantageous in the development and maintenance of public infrastructure, and should therefore be employed more effectively.

Sector Strategies

Sector strategies are being compiled for the purpose of promoting private sector investment. A **National Industrial Policy** is also being prepared as a broad framework for sector development, for adoption by the South African government.

The purpose of ASGISA is to direct and focus developmental efforts. The first priority sectors are: -

- Business process outsourcing; and
- Tourism.

The second priority sector (due to the fact that it is still in a less developed stage) is: -

- Biofuels

These first and second priority industry sectors have a number of shared characteristics, namely, they are: -

- Labour intensive;
- Rapidly growing sectors world wide;
- Suited to South African circumstances and conditions;
- Open to opportunities for Broad Based Black Economic Empowerment ("BBBEE") and small business development;
- Earning (saving) foreign exchange

The third priority sectors, which are – in the assessment of Asgi-SA – in a less advanced stage of development, include: -

- Chemicals;
- Metals beneficiation, including the downstream capital goods sector;
- Human creative endeavours, including crafts, film and television content, and music;
- Clothing and textiles;
- Durable consumer goods; and
- Wood, pulp and paper (as represented in provincial projects).

There are several crosscutting industrial policy challenges that are being addressed to negate the constraints faced by these target industries, including: -

- Lack of competition and import parity pricing stifling downstream developments;
- Capacity for trade negotiations and purposeful participation;
- A more coordinated Africa development strategy;
- Better incentives for private R&D investment; and
- Better use of BBBEE to encourage industry transformation, beyond the transfer of equity.

Education and Skills Development

A shortage of skilled people is the single greatest impediment for both the public infrastructure and the private investment programmes. This shortage of professional skills – engineers and scientists, as well as financial, personnel and project managers – and skilled technical personnel – artisans and IT technicians – is due to apartheid era policies, combined with inability of the education and skills development institutions to match people development with the rate of economic growth. A number of measures are being implemented to address the skills challenge in the educational arena.

Eliminating the Second Economy

Sustained economic growth in South Africa would not be attained without direct interventions to address and reduce historical inequalities, to bridge the gap with the second economy, and ultimately to eliminate the second economy.

The first set of interventions to address the Second Economy challenges comprises the leveraging of the first economy, as follows: -

- Leverage the increased levels of public expenditure, especially investment expenditure, to develop small businesses and broad based empowerment.
- The other form of leverage will be that all of the sector strategies, such as the strategies for tourism or business provcess outsourcing will have elements addressing development goals in the second economy.
- The other intervention designed to support small businesses is financing, including:
    - Business loans in the gap between R10 000 and R250 000;
    - Government support for new venture funds for SMMEs, for the business development stage;
    - A Small Enterprise Development Agency based at t**he dti**, adding to its capacity to promote small businesses into manufacturing;
    - Pursuing regulatory reform for small businesses.

The second set of interventions is the Expanded Public Works Programme ("EPWP"), which will be expanded in terms of Asgi-SA.

- Firstly, its mandate has been extended to a larger number of roads and some larger road projects, as well as maintenance and small contractor teams;

- Other new elements of the EPWP will be a concerted roll-out of its Early Childhood Development component, home based care and the finalisation of a process to support local governments in developing larger EPWP projects.

The third set of interventions is centred on the challenge of realising the value of dead assets – land, houses, livestock, skills, indigenous knowledge and other assets that have intrinsic value not currently realised, including: -

- Formalisation of land tenure;
- The livestock improvement programme;
- Implementation of the financial services charter commitment on housing finance;
- Improvements in planning and zoning capacities, and
- Support for the development of cooperatives.

Macro-Economic Issues

Regarding macroeconomic issues,

- The first challenge is to find strategies to reduce the volatility and overvaluation of the currency;
- The second challenge is to ensure that, within an inflation targeting regime, fiscal and monetary policy can be co-ordinated to stimulate sustained and shared growth;
- The third challenge is to improve budgeting in government, addressing the problems of underestimating revenue and overestimating expenditure;
- The fourth challenge is in government capital investment, both in terms of under-spending and depletion of funding – an innovation to be introduced in 2006 dealing with this problem is the development of a new capital expenditure management information system by the National Treasury

Institutional Interventions

Institutional interventions are expensive and should be minimised. New functions and responsibilities would have to be assumed by incumbent institutions in order to assist with implementation. Current initiatives being implemented are: -

- The Growth and Development Summit
- The President's Joint Working Group
- The agreed BEE Charters
- Offsets (associated with the armament procurement programme)

- Addressing the skills problems identified in Project Consolidate, through the deployment of experienced professionals and managers to local governments to improve project development implementation and maintenance capabilities.

The South African government is committed to the participation and the functioning of the institutions mandated to support development, by means of: -

- A review of its "Big-4" development finance institutions ("DFIs"), namely the IDC, the Land Bank, the DBSA and the NDA, to ensure their effective role in developmental efforts and support.
- Establishing access for investors to a one-stop trouble-shooting centre (probably located at Trade and Investment South Africa, "TISA").
- The Joint Initiative on Priority Skills Acquisition ("JIPSA"), a new institution, lead by a committee headed by the Deputy President, and including key leaders from government, business, labour and the education and training fields. The National Business Initiative will be providing support services for JIPSA.
- The institution of a system of regulatory impact analysis ("RIA"), an innovative way to use a set of well-designed procedures to reduce or eliminate unintended consequences of laws and regulations that may have negative impacts, especially on job creation.

A final key area requiring institutional reform is the framework for the planning and management of land use. The provincial planning and zoning systems, as well as the cumbersome Environmental Impact Assessment ("EIA") system delay many projects and investment. The reform of the EIA system is intended to reduce unnecessary delays, without sacrificing environmental standards. The planning and zoning systems of provincial and local governments should also be improved.

<u>Towards Implementation</u>

The Asgi-SA implementation plan still has to be refined. Progress will be reviewed and evaluated regularly, involving government and its social partners.

Expert review will also be procured from international participants, economists and social scientists.

The ultimate objective of Asgi-SA is shared economic growth. It will contribute to the attainment of South Africa's social objectives, and meeting the Millennium Development Goals.

The second decade of the democratic era of South Africa freedom will be dedicated to the reduction of inequality and the elimination of poverty, through co-operation around the Asgi-SA initiative, with the support of the nation.

9.3. A Status Report from The Ministry of Trade and Industry

The Minister of Trade and Industry, Mr M Mpahlwa, presented his budget speech to the South African Parlaiment on 29 March 2006, and provided an overview of economic, trade and industry conditions, as well as an assessment of **the dti**'s role in driving forward economic growth. The main considerations as summarised below highlight the latest industry policy issues.

Against the background of good economic performance and growth, a number of conditions and structural changes require attention. The current growth is based on a boom in commodity prices and a positive consumer sentiment, both of which can be transitory. Key decisions are now required for sustainable growth.

The near-term focus will be to address some of the main constraints to growth and thereby to unlock the full potential of the South African economy. In this regard **the dti** has been central in the Accelerated and Shared Growth Initiative for South Africa ("Asgi-SA"). AsgiSA is a growth strategy comprising targeted interventions to overcome constraints to development in the macro-economic environment, in infrastructure and logistics provision, in skilled labour availability, in the competitive environment and cost structure of the economy as well as in the regulatory environment and in the institutional capacity of government to deliver.

The dti specifically will focus on those dimensions of Asgi-SA addressing industrial development, sector strategies, enterprise development as well as second economy initiatives more broadly, and will initiatives on skills and public investment. The mandate of **the dti** is very broad, with the following strategic objectives, key projects and initiatives: -

- First, implementation of commitments to Asgi-SA;
- Second, promoting direct investment and growth in the industrial and services economy;
- Third, promoting broader participation, equity and redress in the economy;
- Fourth, raising the level of exports and promoting equitable global trade;
- Fifth, contributing towards the development and regional integration of Africa within the New Partnership for Africa's Development ("NEPAD") framework.

The dti is busy with the compilation of an overarching Industrial Policy Framework, aimed at harnessing the capacity of industries, in the manufacturing, selected primary and services sectors. Such an industrial policy is necessary to accelerate industrial development, and to focus human and financial resources on a narrower range of high impact sectors. Increased financing and improved incentives for industrial development will form part of such a focus. Furthermore, the compilation of Customised Sector Programmes (CSPs) will be completed. An effective industrial development strategy also requires adequate and appropriate financial resourcing. **The dti** package of incentives is also being refined for this purpose.

The downstream value-addition or beneficiation of raw materials may possibly be constrained by high input costs, typically arising from the anti-competitive pricing practices of monopolistic enterprises. These situations have prompted a review of competition policy, measures to address import parity pricing ("IPP") and investigations into beneficiation incentives. The South African government will pursue a phasing out of price discrimination between domestic and export customers in key intermediate input sectors in the economy.

Further measures comprise: -

- The strengthening of the Competition Act to deal with the high levels of concentration in certain sectors of the economy and the resulting uncompetitive outcomes;
- Fiscal support by government or public enterprises will be subject to a policy of non-discriminatory pricing between the domestic and export markets;
- Import tariff protection on product lines subject to IPP will be removed and any protection will be amended to ensure that anti-dumping and countervailing duties do not serve as a form of protectionism to inhibit imports of such products;
- The development by government of a state-owned enterprises (SOEs) pricing and procurement framework, rendering SOE pricing and procurement practices subject to the market behaviour of their supply chain industries;
- The development of a new set of downstream beneficiation incentives, in order to address the lack of development in key downstream beneficiation sectors, namely the metal fabrication, machinery & equipment, and plastics sectors;

The measures to deal with IPP form part of a broader strategy of promoting downstream beneficiation. The steel industry is subject to specific attention and engagement with Mittal Steel, as the dominant supplier, would essentially be to reduce the cost of key manufacturing inputs. It has accordingly been established that a five percent import tariff on certain primary carbon and stainless steel products would not be required any more and that this duty should be removed with immediate effect.

Priority sectors for **the dti** are those that are labour absorbing and in which South Africa has a comparative advantage, such as business process outsourcing ("BPO") and tourism. Other focus areas include chemicals, creative and cultural industries, metals processing and beneficiation, agro-processing, and textiles and clothing.

The Motor Industry Development Programme ("MIDP") is being reviewed, with an objective to seek sustainable ways of maintaining and improving its performance to date, and ensuring that it receives support on par with international norms and standards.

The Clothing and Textile sector and its challenges have to be addressed in a comprehensive manner, focusing on both immediate issues such as very high levels of imports and its competitiveness in the long-term.

The Duty Credit Certificate Scheme will continue until March 2007, but will now only be restricted to manufacturers.

New plans for the support of manufacturing exports and investments will be announced during the year.

Enterprise development, especially the small and medium enterprise sector, the micro-enterprise sector, and cooperatives, would be key for broader economic participation. The focus areas are financial support and non-financial support (management advice). The institutions platying a role in this regard are the National Empowerment Fund, the Industrial Development Corporation ("IDC"), and the initiative by Khula and Business Partners to create an instrument for SMME start-up funding. The Small Enterprise Development Agency ("SEDA") will facilitate dedicated non-financial support, such business development information, as well as mentoring and hand-holding, to small businesses in priority sectors.

Government will further contribute to SMME development through favourable procurement policies and prompt payment for business service providers (within 30 days). The network of micro-finance services will be expanded with the launch of the APEX fund.

The progress with Black Economic Empowerment ("BEE") is encouraging, as evidenced by the increase in the number of deals and the breadth of their coverage, which includes sectors like women and communities. Imminent outcomes are the conclusion of the Codes of Good Practice, the ratification of the Industry Charters and the launch of the BEE Advisory Council.

Consumer protection will be accorded by the Consumer Bill, to be introduced introduced into Parliament, and the establishment of the National Credit Regulator. Global trade negotiations will be in the context of the conclusion of the Doha Round. The strengthening of institutional capacity of **the dti** would be crucial for success in attaining its ambitious goals for developing trade and industry.

Industrial Policy

The Deputy Minister of Trade and Industry, Dr Rob Davies, provided a status report on industrial policy and international trade negotiations in his budget speech to the South African Parliament on 29 March 2006.

The point of departure is an acknowledgement that South Africa does not have a strong and robust industrial policy. Furthermore, for developing countries to break out of the constraints of mere producers of raw materials, active industrial policies would be required.

Industrial policy is defined as …

- A series of state interventions
- … in which the focus is redirected from the accumulation process
- … towards acceleration of the pace of accumulation.

The successes of the development of East Asian countries can be ascribed to very active industrial policies, redirecting investments into the development of lines of industrial activity and subsequently the establishment of a major competitive advantage.

The Accelerated and Shared Growth Initiative for South Africa ("Asgi-SA"), the latest macro-economic policy framework, expresses the need for a more robust and active industrial policy. Such a broad strategic framework document is presently being promoted through the government processes. Once available, this framework should, however, be followed by strategies on key areas of industrial policy and development, namely: -

- Industrial finance (funding)
- Capacity building
- Sectoral strategies

Since democratisation in 1994, South Africa has produced a number of policy documents and sectoral strategies. This most successful industry sector benefiting from such a focussed strategy is the automotive industry, through the Motor Industry Development Programme ("MIDP"). It has to be acknowledged that, in the past, that initiatives were too dispersed, too unfocussed, and with inadequate resources deployed to have a meaningful impact on the activities and performance of industry sectors.

South Africa has a fairly diversified industrial sector with competitive strengths in different areas. A first step would be to identify sectors that should be targeted with development strategies. Furthermore, certain areas should receive more focussed attention, namely: -

- Sectors identified by Asgi-SA for growth and job creation in the short-term, with the potential for early-stage successes, namely business process outsourcing (call centres) and tourism;
- Sectors with medium-term potential, but would need restructuring and reorganisation to unlock growth potential, such as the sectors identified by the 2003 Growth and Development Summit and subject to Customised Sector Programmes ("CSPs"), namely clothing and textiles, the motor industry, the chemicals industry, and agro-industries;
- Sectors excluded from industrial policy initiatives to date, but which could provide significant growth potential, as well as linkages into the so-called "second economy" (informal sector), for example ranging from bio-fuels to non-tradable services – repair shops, personal care and social services;
- Sectors where South Africa can develop cutting edge technologies and strong global competitive positions, such as aerospace, hydrogen energy, medical technology and biotechnology.

The way forward requires a self assessment (self discovery, in the words of the Deputy Minister) to formulate actions plans for industry sectors. The contributions from government, business, labour and social partners need to be identified. Government, as a case in point, has to be willing to apply its resources in a much more focussed and concentrated way.

Industrial finance solutions and incentives have to be aligned with sector development plans. The conditionality and reciprocity (counter-performance) for incentive programmes should also be assessed. While the government should be willing to offering significant support incentives to businesses, it should also be an accepted principle that such support can be withdrawn if the agreed outcomes, for example restructuring and development, are not attained.

These development initiatives should be seen in the context of the cross cutting interventions identified in the Micro Economic Reform Strategy programme, as refined in Asgi-SA. The relevant areas are the infrastructure development programme and regulatory reviews, as well as the skills development and training programmes of the Joint Initiative on Priority Skills Acquisition ("JIPSA").

Any effective and robust industrial policy initiative would require that the challenge of capacity building be addressed. The first step is to enhance capacity within **the dti** and to optimise it within the respective divisions. Furthermore, mechanisms are required to utilise existing capacity, skills and expertise elsewhere, such as the Industrial Development

Corporation ("IDC"), other government departments, universities, research institutions and industry sectors.

South African Perspective of Global Trade Negotiations

The World Trade Organisation ("WTO") Doha negotiations are presently at a critical stage. The Ministerial Conference in Hong Kong, China, at the end of 2005, were intended to give effect to the principles agreed at Doha in 2001, with regard to agricultural, non-agricultural and service negotiations. Despite intensive activities to promote it, the possibility of a developmental outcome still appears to be elusive. The developing countries originally presented a strong case for the redress of a number of imbalances and inequities, namely agricultural trade and subsidies, as barriers to an equitable world trading system. Previous multi-lateral trade agreements up to Marrakesh in 1994 steered clear of the system of protectionism of the agricultural industry in developed countries through high subsidies and tariffs.

The mandate of the Doha round was supposed to be the interests of developing countries. The subsequent period was, however, characterised by efforts to dilute adjustments required from developed countries and to pose ambitious new demands to so-called advanced developing countries, linked with demands for non-agricultural access.

South Africa assumed a leadership position in a group of developing countries, the so-called NAMA 11, which presented the "Reclaiming Development" paper at the Hong Kong. It proposed proposrtionality in negotiations, whereby the most significant adjustmnents would be required from the most distorted sector, namely agriculture. The NAMA 11 group resisted a premature agreement on modalities for non-agricultural market access without significant breakthrough on issues of agricultural protection.

In summary, it should be noted that if an equitable global trading system cannot be negotiated at a forum such as the WTO, then the danger is that developing countries may be faced with the alternative of aggressive bilateral trade negotiations. All the ambitions of major economic powers which they could not realise in multilateral negotiations would then be redirected to bilateral trade negotiations without recognising the problems of different stages of development or principles of asymmetry of economic power. The problem is exacerbated by the introduction of so-called "new generation" issues of competition policy, state procurement, and intellectual property rights.

These difficulties are further complicated for South Africa as it has to negotiate within the context of the South African Customs Union ("SACU"). AS has been experiences in the negotiations with the USA, the different members of SACU have quite divergent positions on the relevant issues and tend to be inflexible in negotiations. The same problem of inflexibility is faced in the negotiation of the Economic Partnership Agreement between the South

African Development Community ("SADC") and the European Union ("EU"), which can only be resolved by a focus on the objectives of development needs and regional cooperation.

This problem highlights the challenge of regional integration. The barriers to intra-regional trade are not tariffs and regulations, but poorly developed production capabilities and inadequate infrastructure. The way forward would be regional co-operation on a policy, sectoral and developmental basis, otherwise ambitions for customs and monetary unions would not be viable.

Trade policies should recognise the emergence of important new players in the global economy, such as China and India. South Africa should have a specific strategy in this regard. There may be opportunities for the trade of mineral products and beneficiated mineral products with these countries. At the same time, China and India countries may also have become strong competitors in a range of industrial sectors. A thorough analysis is required for an informed "programme of economic diplomacy aimed at reaching mutually beneficial and development oriented agreements" with these countries.

9.4. Black Economic Empowerment

Black economic empowerment ("BEE") is the fundamental platform for economic policy in South Africa. It is a systematic policy to allow previously disadvantaged people to gain access to the benefits of and to play a meaningful role in the economy.

The BEE policy framework comprises: -

- The Broad-Based Black Economic Empowerment Act no. 53 of 2003
- Government's Black Economic Empowerment Strategy
- Industry Charters, such as the Mining Charter, the Financial Services Charter and various sector specific charters
- The Codes of Good Practice compiled by **the dti**, aimed at providing principles and guidelines for the implementation of broad-based BEE in a meaningful and sustainable way.

9.5. Customised Sector Policies

Sector-specific policies are also being compiled by **the dti**, but the process is still in a confidential stage and not available for the benefit of this report.

9.6. Assessment

East Asian countries have industrial policies that are simply entitled, "the 1st Five Year Plan", followed in due time by the 2nd, and 3rd, up to the latest. This approach creates a perspective of continuity and consistency, even if there are significant changes in direction from one period to the next, as well as a sense of time frames for the development objectives.

In contrast, South Africa's policies are entitled with acronyms, such as RDP, GEAR, BEE, NEPAD and Asgi-SA. Whereas such branding is convenient for communication and promotion of business ventures, it is primarily used in the marketing of products and services to differentiate. Acronyms are also popular in information technology jargon and American management fads. In the policy environment, such differentiation and faddishness should be questioned, as it creates a perception of a stand-alone approach, which is exactly the opposite of what a policy framework should attain. Instead, industrial policies should strive for predictability, a perception of a systematic process and a notion of moving forward from a previous base, towards objectives within a specific time frame.

Historically, since the start of South Africa's democratic era in 1994, government policy revealed a general reluctance to target specific industries or sectors with development initiatives or incentives. The approach was instead rather to lower the tax burden for companies in general, to the present level of 29%, down from the 40%-plus levels initially.

Incentives for investment, such as accelerated depreciation (wear and tear) write-offs for tax purposes, or other alternatives, were not pursued pro-actively.

Industrial development policies appear to be still trapped in the problem statement stage – a "talks about talks" milieu. What is required is for the process to move forward to a method statement stage, and then into implementation.

The dominant macro-economic policies were BEE, and supporting initiatives such as employment equity. Essentially policies of combining asset-distribution with better access to opportunities, these policies were spectacularly effective, despite isolated areas of criticism. These policies created a completely new emerging market sector with positive results for overall market growth, based on very strong consumer demand growth. This demand growth trend is unfortunately not supported industrial supply-side capacity development.

10. ADDENDUM B –DEVELOPMENT INCENTIVES

10.1. INCENTIVES - CHINA

10.1.1. Export-Contingent Tax Reduction for FIEs in Special Zones

Foreign-invested enterprises (FIEs) located within Special Economic Zones, Economic Technological Development Zones, Open Coastal Economic Zones and Old Urban Areas that export at least 70 per cent of their production are assessed the lowest rate of the national income tax, i.e., 10 per cent. FIEs which do not meet the 70 per cent export requirement are taxed at rates of 12, 15 or 24 per cent. The relevant measure is the *Detailed Implementation Rules of the Income Tax Law of the People's Republic of China of Foreign Investment Enterprises and Foreign Enterprises,* promulgated by Decree No. 85 of the State Council on 30 June 1991 (effective 1 July 1991). Article 75.7 of this measure states that "for the Special Economic Zones and Economic and Technological Development Zones and other export-oriented enterprises where income tax has already been reduced to 15% and above requirements are met, the enterprise income tax shall be levied at 10%".

10.1.2. Income Tax Refund for Foreign Investors Investing in Export-Oriented Businesses

Foreign investors in FIEs that reinvest their profits in export-oriented businesses for at least five consecutive years qualify for a 100 per cent refund of the income tax paid on the amount of reinvestment. On the other hand, foreign investors that reinvest in non-export-oriented businesses in China for at least five years qualify for only a 40 per cent refund of income tax paid on the amount of reinvestment. This programme is described in the *Detailed Implementation Rules of the Income Tax Law of the People's Republic of China of Foreign Investment Enterprises and Foreign Enterprises*, promulgated by Decree No. 85 of the State Council on 30 June 1991 (effective 1 July 1991). Article 81 of this measure states that "the case in which a foreign investor, who makes direct re-investment in establishing or expanding an export-oriented enterprise or a technologically advanced enterprise in China . . . may get a full refund of enterprise income tax paid on the reinvested amount".

10.1.3.Special Steel for Processing Exports Policy

A full rebate of the 17 per cent value-added tax (VAT) is provided on sales of steel to manufacturing enterprises that use the steel for manufacturing products to be exported. A circular issued in 2002 by the former State Economic and Trade Commission, the Ministry of Finance, the State Taxation Administration, the General Administration of Customs, and the State Administration on Foreign Exchange changed the name of this programme in 2002 from *Steel Import Substitution Policy* to *Special Steel for Processing Exports Policy.* The circular entrusts the China Iron and Steel Association to supervise steel companies' sales to export-oriented manufacturing companies and to coordinate the steel companies' tax rebate questions. For this programme, in addition to the information requested above, please explain whether, and if so how, this programme is consistent with Annex II of the SCM Agreement, if applicable.

10.1.4.Export-Contingent Income Tax Reduction for FIEs or Tax Allowance for FIEs

Article 75.7 of the *Detailed Implementation Rules of the Income Tax Law of the People's Republic of China of Foreign Investment Enterprises and Foreign Enterprises*, promulgated by Decree No. 85 of the State Council on 30 June 1991 (effective 1 July 1991), states that an FIE exporting at least 70 per cent of its output in a given year receives a 50 per cent income tax reduction.

10.1.5. Export Subsidies for High-Technology Products

The Ministry of Commerce (MOFCOM), the Ministry of Science and Technology (MOST) and the Ministry of Information Industry administer a programme designed to increase exports of high-technology products. This programme offers, *inter alia*, subsidies to export-oriented firms in the electronics, bio-medical, new materials and other high-technology sectors.

10.1.6. Customs Duty and VAT Refund on Imported Capital Equipment Used for Production of Products for Export

Enterprises that import capital equipment used exclusively to produce export products are eligible to receive a full refund of customs duties and VAT on the imported capital equipment. Enterprises receive 20 per cent of the tax refund each year the equipment is used exclusively for export production, resulting in a full tax refund at the end of a five-year period. Enterprises that wish to receive this tax refund are investigated every year for five consecutive years to verify that the equipment is used only for export production.

10.1.7. Guangdong Grants Provided for Export Performance

The Guangdong provincial government has introduced a programme to provide RMB 25 million in grants over five years to export-oriented companies. These grants will be provided to companies meeting specific export targets as an incentive to increase export sales.

10.1.8. VAT Rebate on Purchases of Domestic Equipment by FIEs

Pursuant to the *Notice of the Trial-Implementation Measures for the Administration of Tax Refund on Domestic Equipment Purchased by Enterprises with Foreign Investment*, issued by the State Administration of Taxation on August 20, 1999, a full VAT rebate is provided to manufacturers that purchase domestically made machinery and equipment. This incentive will be available through the end of 2010.

10.1.9. Enterprise Income Tax Reduction for Purchase of Domestically Made Machinery and Equipment

According to paragraph 1 of the *Notice Concerning Some Issues on the Deduction of the Investment Made by Enterprises with Foreign Investment and Foreign Enterprises in Purchasing Domestic Equipment from Enterprise Income Tax*, issued jointly by the Ministry of Finance and the State Administration of Taxation on 14 January 2000, "40 per cent of the investment made in purchasing domestic equipment can be deducted from the increment of enterprise income tax".

10.1.10. Assumption of Interest on Loans for Technology Upgrades

China has a policy of paying the interest on bank loans for the technology upgrades of state-owned enterprises. Under this programme, the government pays interest expenses for certain facilities for a particular number of years. Recipients include the textile, petrochemical and paper industries, but may include other industries as well.

10.2. INCENTIVES – SOUTH AFRICA

10.2.1. Incentives: General

The dti applies a wide range of incentives and support programmes, called the dti's offerings. The offerings more directly aimed at the promotion of industry and trade can be listed as follows, with some brief detail:

10.2.2. Export Marketing and Investment Assistance Scheme ("EMIA")

The EMIA comprises:

- Primary Export Market Research
- Foreign Direct Investment Research
- National Pavilions
- Individual Exhibitions
- Outward Selling Trade Missions
- Outward Investment Recruitment Missions
- Inward Buying Trade Missions
- Inward Investment Missions
- Sector Specific Assistance

10.2.3. Foreign Trade

Export Advisory Service (advice on how to export through at least 31 clearly defined FAQ's with answers on exporting from SA, reasons on why an exporter should export from South Africa, clearly illustrated export processes and cycles, and additional information such as tariff codes, forms, and documentation that needs to be completed)

Export Market Information (provides customers with information on export markets and opportunities, answers to frequently asked questions, country reports, market survey reports and booklets on free trade agreements)

Export readiness assessment kit (a self help questionnaire to assist prospective exporters to determine their state of export readiness)

Matching South African exporters with foreign buyers (link South African exporters of export ready companies with foreign buyers or potential importers. The offering enables South African exporters to broaden their foreign markets)

10.2.4. Investment Support

Black Business Supplier Programme, an 80:20 cost-sharing, cash grant incentive scheme, which offers support to black-owned enterprises in South Africa

Critical Infrastructure Fund, a cash grant incentive for projects that are designed to improve critical infrastructure in South Africa. The incentive covers up to 30% of the cost of development costs in qualifying infrastructure

The Small and Medium Enterprise Development Programme (SMEDP) which is a two year investment grant for firms that invest not more than R100 million in land, buildings, plant and equipment in new projects or in expanding existing projects. It is in the form of a tax-free cash grant

Foreign Investment Grant (FIG), a cash incentive scheme for foreign investors who invest in new manufacturing businesses in South Africa. The foreign entrepreneur is compensated for the qualifying costs of moving new machinery and equipment (excluding vehicles) from abroad. The FIG will cover up to 15% of the costs of moving new machinery and equipment, to a maximum amount of R3 000 000 (three million rand) per entity

Skills Support Programme, a cash grant for skills development with the objective of encouraging greater investment in training and creating opportunities for the introduction of new advanced skills

Strategic Industrial Projects, an investment grant, in the form of tax relief, to qualifying industrial projects with an investment of more than R50 million. This scheme has now lapsed.

10.2.5. Finance

Industrial Development Corporation (IDC). The IDC provides finance for the establishment and expansion of economically viable industries. Finance is provided for plant and equipment, factory buildings and the fixed portion of working capital. The IDC also provides finance in the form of equity participation in major projects.

Access to Finance Programme (The objective is to establish an Integrated Financing Institution with key components focused on empowerment and small businesses (consolidation of existing vehicles). It also focuses on Micro Finance; Incentives; Guarantees; Grant facilities; Risk capital facility; Specialist funds: youth, women, rural; Debt and Equity (start-up to big ticket); Promoting and supporting alternative financial institutions and second

tier institutions (revolving credit facilities\regulatory environment), community-based saving schemes; Disclosure & community re-investment legislation for financial sector)

10.2.6. Customs tariffs

Customs tariffs on imported goods support domestic industries and agriculture by assisting them to compete against imported goods. The tariff structure is characterized by low tariffs on inputs and capital equipment, generally somewhat higher rates on intermediates and the highest rates on manufactured goods in order to give more support for downstream more labour intensive activities.

Rebates and Drawbacks of customs duties on inputs for manufacturing and on inputs used in the production of goods for export / exported assist domestic manufacturers to be more competitive in the domestic market and foreign markets.

10.2.7. Industrial Development Zone (IDZ) Programme

This is designed to encourage international competitiveness in South Africa's manufacturing sector. An IDZ is a purpose-built, industrial estate linked to an international airport or port, which contains a controlled Customs Secured Area (CSA). A CSA is exempt from duties, VAT and import duty on machinery and assets

10.2.8. Innovation and Technology

Technology Transfer Guarantee Fund (to allow for access to local and international technology by introducing a technology transfer guarantee fund to facilitate access by SMMEs to local or international technology)

10.2.9. Scientific Research

Council for Scientific and Industrial Research (CSIR): The CSIR offers research expertise and capacity in respect of Biotechnology; Building & Construction; Chemicals; Crime Prevention; Defense and Aeronautics; Food, Beverage and Fishing; Information Technology; Manufacturing and Materials; Mining, Metals and Minerals; and Water, Environment and Forestry

10.2.10. Enterprise and Other Support Programmes

The Enterprise Organisation administers various other programmes, in addition to the investment support programmes already mentioned, such as the Competitiveness Fund and the Sector Partnership Fund.

10.2.11. Incentives: Automotive

The Motor Industry Development Programme (MIDP) is by far the principal support instrument for the automotive industry in South Africa.

The Productive Asset Allowance (PPA) is an additional programme specifically for the automotive industry and has become part of the MIDP. It was introduced in 2000. The purpose of this programme is to reduce the amount of vehicle platforms and models locally assembled coupled with increased investment and exports with increased local content. The incentive provided is in the form of import rebate credit certificates to off-set import duties on built up vehicle imports.

Manufacturers that have been granted other government investment incentives may not apply for the PAA.

Participants in the MIDP may benefit from other trade and industry support programmes (subject to the limitation in respect of the PAA).

11. ADDENDUM C – COMPETITIVENESS ANALYSIS

11.1. GENERAL COMPETITIVENESS FACTORS

As an introduction to the analysis of competitiveness in the metals industries, it is useful to review a number of general factors first to gain an understanding for the operating environment of companies in the industry. It is important to re-iterate the notion that competitiveness is attained at company-level – although this point will be elaborated upon in the discussion below. Country factors essentially support or detract from the competitiveness of the companies in its industries.

The World Competitiveness Yearbook ("WCY") publishes detailed competitiveness indicators with rankings on a country-by-country basis. Selected key figures are listed in the table below and relevant competitiveness measures are presented in the subsequent graphs, for the purpose of highlighting the rankings of the study countries: -

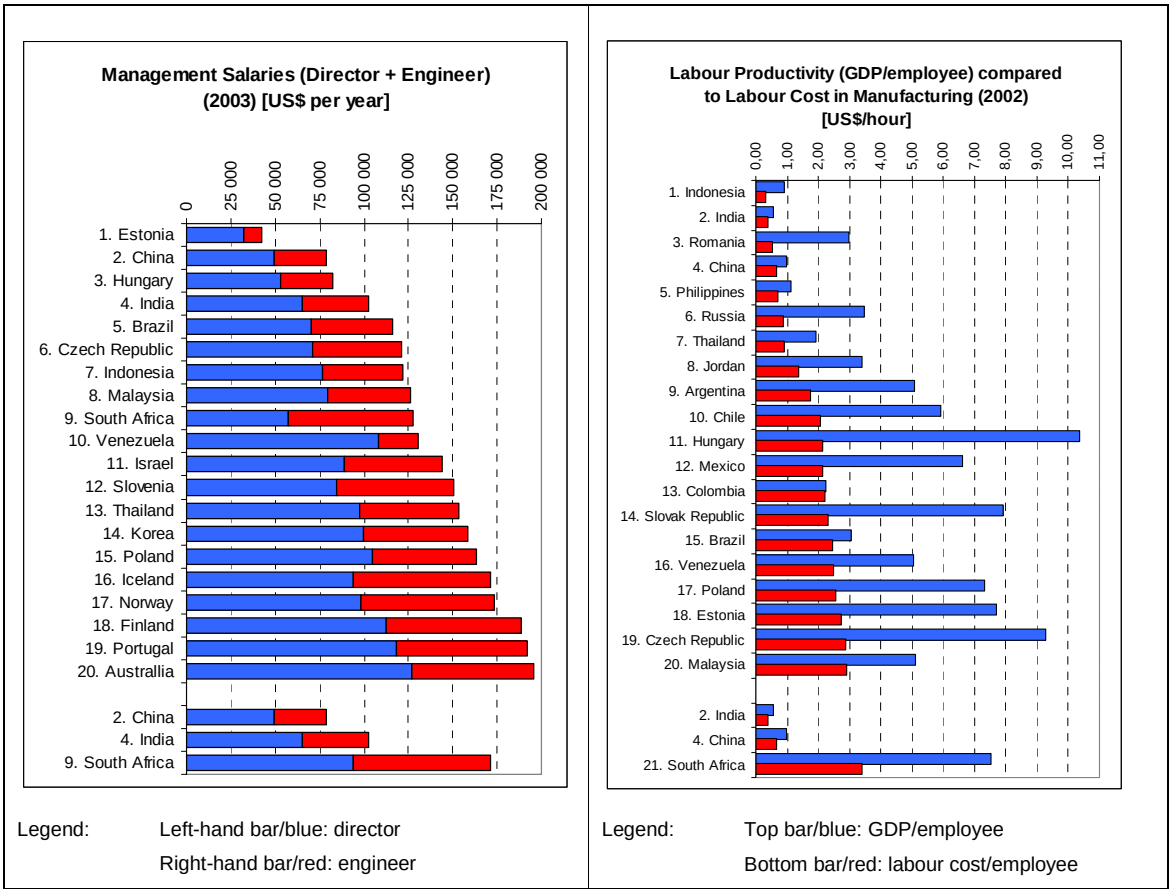
Table 11.1-1: Competitiveness Parameters and Rankings of the Study Countries

CONSIDERATION	VALUE			RANKING			COMPARISON RELATIVE TO SOUTH AFRICA ("SA")	
	CHINA	INDIA	SOUTH AFRICA	CHINA	INDIA	SOUTH AFRICA	CHINA: SA [TIMES]	INDIA: SA [TIMES]
Area [million sq km]	9,40	3,17	1,20	4	7	11	7,8	2,6
People [million]	1 292	1 048	46	1	2	17	28	23
GDP (2003) [US$ billion]	1 410	547	160	7	12	33	8,8	3,4
GDP (PPP) (2003) [US$ billion]	6 394	3 026	465	2	4	20	13,8	6,5
GDP per capita [US$/capita]	1 091	522	3 444	51	55	42	0,32	0,15
GDP (PPP) per capita [US$/capita]	4 948	2 886	10 025	45	51	35	0,49	0,29
Gross Domestic Investment [US$ billion]	590	118	25	3	11	33	23,4	4,7
Investment -- GDI : GDP (2003) [%]	40%	26%	16%	1	9	48	2,5	1,6
Unitary Investment GDI per capita [US$/capita]	398	115	542	48	53	42	0,73	0,21

CONSIDERATION	VALUE			RANKING			COMPARISON RELATIVE TO SOUTH AFRICA ("SA")	
	CHINA	INDIA	SOUTH AFRICA	CHINA	INDIA	SOUTH AFRICA	CHINA: SA [TIMES]	INDIA: SA [TIMES]
Total Exports [US$ billion]	477	54	34	4	30	38	14,0	1,6
Trade : GDP Ratio [%]	28%	16%	32%	40	49	32	0,88	0,50
Direct Investment Stock Inwards [US$ billion]	447	25	51	5	39	24	8,8	0,49
Direct investment Flows Inwards [US$ billion]	49,0	3,0	1,0	2	28	44	49,0	3,0

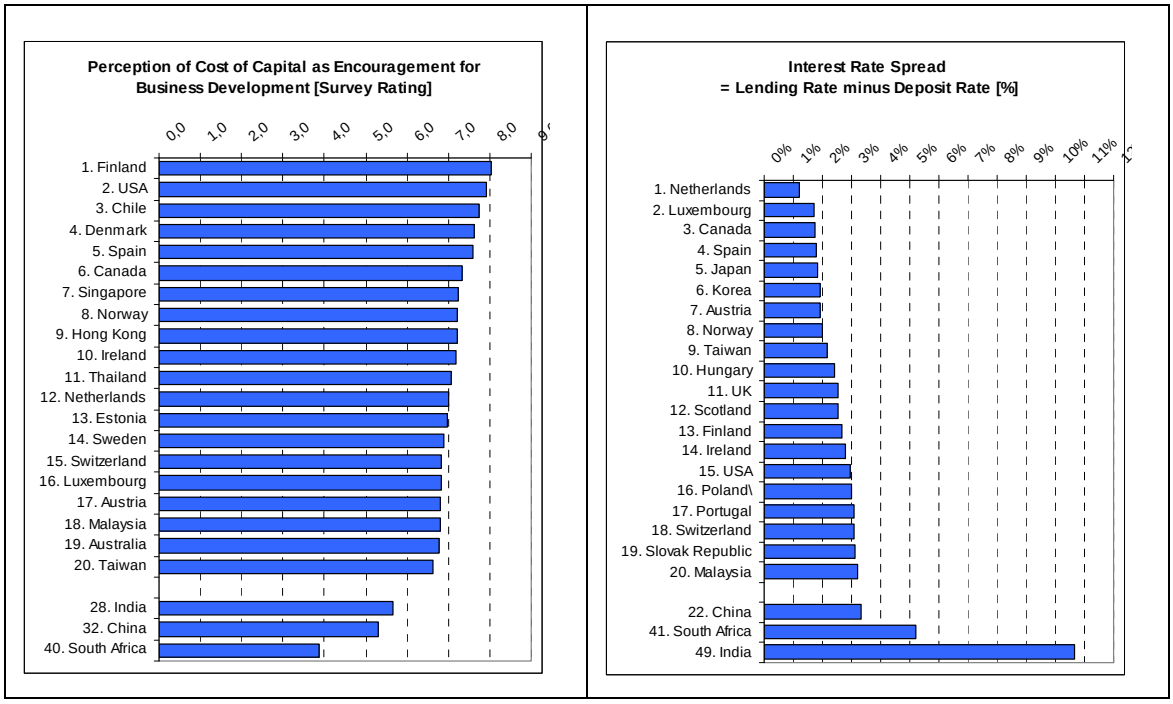
Source: WCY 2005

Figure 11.1-1: Country Rankings on Personnel Costs and Labour Costs Relative to Productivity



China is a vast country, the 4th largest in the world, 8-times the size of South Africa, with 28 times as many people. Its GDP per capita on a purchase price parity ("PPP") basis is 50% of that of South Africa, but it is experiencing high growth rates and an increasing middle-class from it large population base. Its investment relative to GDP of 40% is 2½-times higher than the 16% of South Africa, thereby underpinning its growth and development efforts. China's export performance is constantly improving and its trade propensity, measured as trade relative to GDP, is 80% of South Africa's levels.

Figure 11.1-2: Cost of Capital and Interest Rate Spread



Comparisons on labour costs and labour productivity, cost of capital and interest rate spreads, as well as energy costs, as presented in the graphs below, clearly illustrate the competitiveness factors to the advantage of industries and companies operating in China.

In terms of energy cost, South Africa attains the top ranking in the world.

This raises the issue of vulnerability to energy costs, however, which is indicated by South Africa's very high consumption of energy relative to commercial output. Any increase in energy cost would therefore have a higher than average impact on commercial activities.

Figure 11.1-3 Energy Cost to Industry and Intensity of Energy Use for Production Purposes

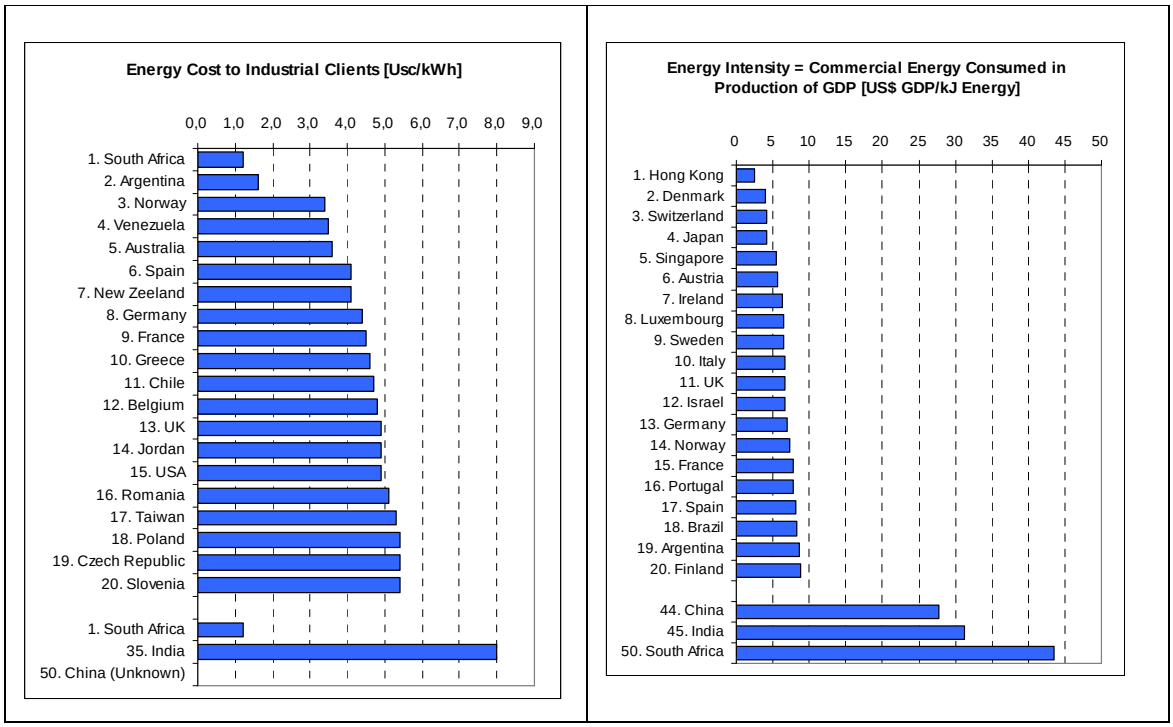
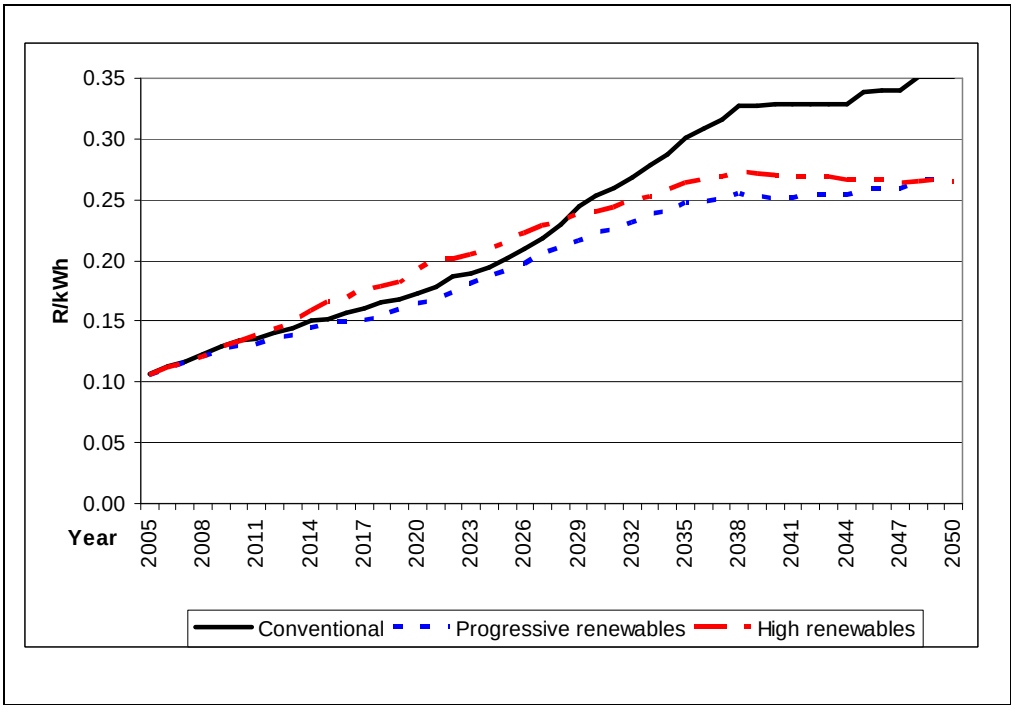


Figure 11.1-4: Long-term Cost Curve for Energy Cost in South Africa



Source: SECCP

The long-term projection for energy cost in South Africa, based on a scenario study conducted by SECCP on the deployment of conventional and renewable energy sources, indicates a possible doubling of unit costs in real terms over the next 20 years (refer nearby graph)

This assessment is based on the assumption that the energy portfolio would be built up over time by the implementation – in phases – of the most economic alternative available at that time that would provide the required additional capacity.

11.2. INDUSTRY COMPETITIVENESS FACTORS

11.2.1. About Benchmarking

While the analysis above provides a generic understanding of competitiveness in the business environment, and could possibly influence investment decisions on new projects, a more in-depth analysis is required to understand the competitiveness of existing operations in the metals industries.

The most informative approach is through benchmarking. The typical application of benchmarking is a comparison of a company against the best-in-class rival(-s) globally. For example, since its inception, China Steel (Taiwan) used Iscor (South Africa, now Mittal Steel) as its benchmark, identifying areas for improvement and striving for specific operating parameters.

Company-to-company benchmarking offers valuable insights. As a note of caution, however, it has to be recognised that the analysis at company level provides a limited perspective. The importance of a wider, industry value chain approach to competitiveness, especially with respect to operating efficiency, is explained in the next section.

11.2.2. World Cost Curve

Competitiveness as company level is still the fundamental building block of competitiveness of industries and countries. The Global Steel Cost Service, jointly published by Metal Bulletin Research and American Metal Market Research, is an example of a global, industry-wide, generic benchmarking study with a world cost curve as an output. Although it involves a number of approximations, such as generic input cost parameters, plant specific operating configurations are taken into account for individual plants. Especially raw materials costs

(net of revenues from sale of intermediate products), energy costs, labour complements, fixed assets, operating overheads are modelled with plant-specific parameters.

The cost curve for steel indicates the relative competitive position for a specific steel plant, by means of a ranking of operating costs relative to other plants, in terms of cumulative capacity. The most relevant steel product to reflect a competitive position is hot rolled coil, for which the cost curve for the world's steel plants is presented below, highlighting the Chinese and South African plants: -

Table 11.2-1: Major Hot-Rolled Coil Steel Producers - According to World Production Cost Curve (Lower 25%), and Chinese and South African Listings

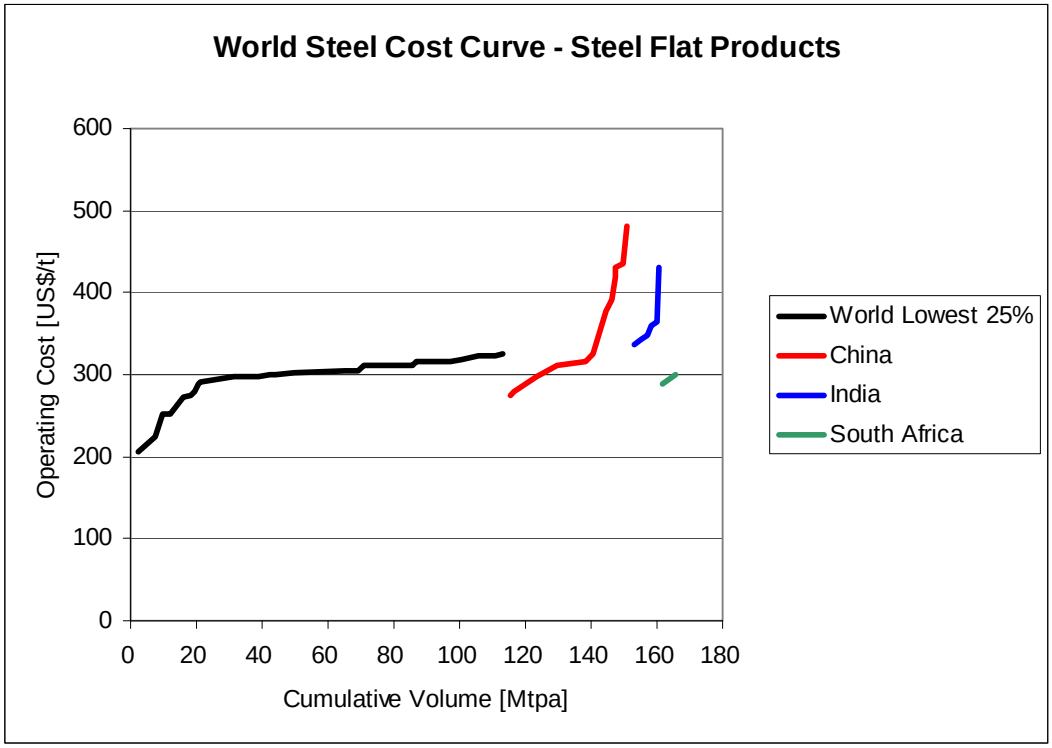
Rank	Company	Country	Capacity	Operating Cost	Total Production Cost	Cost Percentile
BOTTOM QUARTILE OF COST CURVE						
1	Sidor	Venezuela	2,50	205	228	0,5%
2	CSN	Brazil	5,00	225	267	1,8%
3	CST	Brazil	2,30	252	316	2,2%
4	AHMSA	Mexico	2,32	252	307	2,7%
5	BlueScope	Australia	3,94	273	330	3,6%
6	**Boatou**	**China**	**2,00**	**275**	**321**	**4,0%**
7	**Handan I&S**	**China**	**1,23**	**279**	**350**	**4,3%**
8	Saldanha	South Africa	1,25	289	352	4,5%
9	Esco	Iran	0,60	291	367	4,7%
10	Magnitogorsk	Russia	10,50	298	338	7,0%
11	**Boashan**	**China**	**7,00**	**298**	**360**	**8,6%**
12	Ispat (Mittal)	South Africa	3,75	301	345	9,4%
13	Hylsamex	Mexico	1,50	301	361	9,7%
14	NLMK	Russia	5,70	303	348	11,0%
15	Posco	Korea	15,78	304	367	14,5%
16	Usiminas	Brazil	3,52	305	348	15,3%
17	Algoma	Canada	2,00	311	370	15,8%
18	Cosipa	Brazil	2,10	312	363	16,2%
19	**Anshan**	**China**	**6,20**	**312**	**349**	**17,6%**
20	China Steel	Taiwan	6,75	312	363	19,1%
21	ANSDK	Egypt	1,00	316	389	19,3%
22	**Wuhan**	**China**	**8,50**	**316**	**383**	**21,2%**
23	Lisco	Libya	0,58	316	379	21,3%
24	Ezz Flat Products	Egypt	1,00	317	359	21,6%

Rank	Company	Country	Capacity	Operating Cost	Total Production Cost	Cost Percentile
25	Kobe Steel	Japan	3,60	318	397	22,4%
26	Ispat Karmet	Kazakhstan	5,20	322	372	23,5%
27	Mittal Bethlehem	USA	2,44	323	392	24,1%
28	Siderar	Argentina	2,50	323	391	24,6%
29	Benxi	China	2,50	326	368	25,2%
	SUB-TOTAL		100,61	296	351	13,0%
		CHINESE STEEL PLANTS				
6	Boatou	China	2,00	275	321	4,0%
7	Handan I&S	China	1,23	279	350	4,3%
11	Boashan	China	7,00	298	360	8,6%
19	Anshan	China	6,20	312	349	17,6%
22	Wuhan	China	8,50	316	383	21,2%
29	Benxi	China	2,50	326	368	25,2%
71	Z Runzhong	China	4,00	378	439	57,2%
77	Shougang	China	0,50	383	445	60,9%
84	G Zhuijiang	China	0,97	391	422	63,7%
99	Chonjing I&S	China	1,00	418	463	73,4%
105	Anyang	China	0,40	430	471	77,1%
110	Taiyuan	China	2,15	436	478	79,0%
132	Shanghai Pud.	China	1,39	480	506	89,2%
140	Laiwu	China	0,20	511	558	92,6%
141	Shanghai No 5	China	2,00	512	545	93,1%
146	Shanghai Mei.	China	1,15	566	585	94,8%
			41,19	394	440	53,9%
		SOUTH AFRICAN STEEL PLANTS				
8	Saldanha	South Africa	1,25	289	352	4,5%
12	Ispat Iscor (Mittal)	South Africa	3,75	301	345	9,4%
			5,00	295	349	7,0%
		SUMMARY TOTALS				
162	World Total		449,2	382	436	
124	Western Hemisphere		353,7	388	443	

Source: MBR – AMM Global Steel Cost Service, July 2005

In graphical form, this table represents the following cost curve (value for India added for comparison purposes): -

Figure 11.2-1: Comparison of Cost Curves for Chin, India and South Africa relative to the Lowest Quartile of Steel Companies Globally



WCC based on data in the table above.

11.2.3. Company Assessments per Country

Financial and operating key figures for flat steel producers are extracted and listed in the tables in this section. Flat steel products represent the more stringent product quality requirements of the industry. Combined with cost competitiveness, it would therefore indicate a strong overall competitive position. The table below lists financial and key figures for the major South African plants.

Table 11.2-2: South African Steel Companies

STEEL PLANT LOCALITY	Mittal Vanderbijl Park	Mittal Saldanha	South Africa Average
Sales price of goods shipped [US$/t]	734,76	677,00	720,97
Raw material costs [US$/t]	145,89	172,15	152,16
Energy & Reductants [US$/t]	114,27	83,11	106,83
Overheads [US$/t]	76,07	38,24	67,04
Labour costs [US$/t]	43,72	11,63	36,06
G&A; Maintenance [US$/t]	32,35	26,61	30,98
Total operating costs [US$/t]	336,23	293,50	326,03
EBITDA [US$/t]	398,53	383,50	394,94
Interest [US$/t]	55,44	44,21	52,76
Depreciation [US$/t]	25,59	31,25	26,94
Total costs [US$/t]	417,26	368,96	405,73
Earnings before tax [US$/t]	317,50	308,04	315,24
KEY FIGURES			
Finished product volumes [Mtpa]	3,39	1,06	2,83
Worker-hours per tonne shipped [hours/tonne]	6,6	1,8	5,5
Total employment [people]	10 878	907	8 497
Total fixed capital cost - historic [US$ billion]	3,19	0,73	2,60
Total fixed capital cost - replacement [US$ billion]	4,39	0,81	3,54
Employment cost [US$/h]	6,64	6,64	6,64
Electricity cost [US$/kWh]	0,037	0,037	0,037
Other energy cost [US$/GJ]	3,25	3,25	3,25

The inland Vanderbijl Park plant attains higher average selling price levels than the coastal Saldanha Steel plant, which is more focused on the global export market. This financial summary illustrates import price parity problem, whereby the captive inland market is subject to substantially higher prices than elsewhere in the global market, resulting in downstream products being uncompetitive against international rivals after taking logistics and transport costs into account. This problem also applies for the cost of capital equipment and fixed industrial plant installations.

The next two tables list financial and key figures for seven major Indian steel plants (with production outputs exceeding 1 Mtpa) manufacturing flat steel products..

Table 11.2-3: Indian Steel Plants (Summary 1/2)

STEEL PLANT	SAIL	Essar	Jindal Vijay	Tata
LOCALITY	Bokaro	Hazira	Toranagallu	Jamshedpur
Sales price of goods shipped [US$/t]	978,90	934,63	897,90	801,59
Raw material costs [US$/t]	18,33	236,63	194,11	58,42
Energy & Reductants [US$/t]	206,80	80,97	149,07	189,25
Overheads [US$/t]	170,99	48,80	61,97	76,09
Labour costs [US$/t]	94,88	16,86	11,73	31,00
G&A; Maintenance [US$/t]	76,11	31,94	50,24	45,09
Total operating costs [US$/t]	396,12	366,40	405,15	323,76
EBITDA [US$/t]	582,78	568,23	492,75	477,83
Interest [US$/t]	41,66	51,42	71,67	32,45
Depreciation [US$/t]	47,04	58,19	53,39	30,08
Total costs [US$/t]	484,82	476,01	530,21	386,29
Earnings before tax [US$/t]	494,08	458,62	367,68	415,30
KEY FIGURES				
Finished product volumes [Mtpa]	2,98	1,95	1,07	2,35
Worker-hours per tonne shipped [hours/tonne]	35,0	6,2	4,3	11,4
Total employment [people]	51 122	5 935	2 264	13 190
Total fixed capital cost - historic [US$ billion]	3,88	2,16	1,19	2,16
Total fixed capital cost - replacement [US$ billion]	5,13	2,36	1,27	2,57
Employment cost [US$/h]	2,71	2,71	2,71	2,71
Electricity cost [US$/kWh]	0,048	0,032	0,048	0,048
Other energy cost [US$/GJ]	4,45	2,87	4,45	4,45

Table 11.2-4: Indian Steel Plants (Summary 2/2)

STEEL PLANT	SAIL	SAIL	Ispat Industr.	India
LOCALITY	Rourkela	Bhilai	Dolvi-Raigad	Average
Sales price of goods shipped [US$/t]	801,95	717,33	547,48	801,60
Raw material costs [US$/t]	60,38	72,83	106,56	92,65
Energy & Reductants [US$/t]	175,36	159,59	121,63	158,40
Overheads [US$/t]	104,23	107,67	29,94	91,92
Labour costs [US$/t]	54,84	58,01	10,37	44,86
G&A; Maintenance [US$/t]	49,39	49,66	19,57	47,06

STEEL PLANT	SAIL	SAIL	Ispat Industr.	India
LOCALITY	Rourkela	Bhilai	Dolvi-Raigad	Average
Total operating costs [US$/t]	339,97	340,09	258,13	342,97
EBITDA [US$/t]	461,98	377,24	289,35	458,62
Interest [US$/t]	38,65	29,83	26,88	38,53
Depreciation [US$/t]	21,67	23,79	31,79	36,38
Total costs [US$/t]	400,29	393,71	316,80	417,88
Earnings before tax [US$/t]	401,66	323,62	230,68	383,72
KEY FIGURES				
Finished product volumes [Mtpa]	1,86	3,08	2,48	2,44
Worker-hours per tonne shipped [hours/tonne]	20,2	21,4	3,8	16,5
Total employment [people]	18 422	32 338	4 655	21 738
Total fixed capital cost - historic [US$ billion]	1,95	2,81	1,63	2,44
Total fixed capital cost - replacement [US$ billion]	2,36	3,60	1,79	2,99
Employment cost [US$/h]	2,71	2,71	2,71	2,71
Electricity cost [US$/kWh]	0,048	0,048	0,034	0,044
Other energy cost [US$/GJ]	4,45	4,45	3,11	4,04

Indian steelmakers benefit from very favourable raw materials costs. The competitiveness study data reflects net costs, which may be reduced in the case of certain plants selling intermediate products or surplus raw materials, thereby reducing the input costs for the specific plant.

The 15 major Chinese steel plants producing flat products, as included in the competitiveness study, are listed in the tables below, ranked in order from the highest level of profitability in terms of headline earnings (EDITDA).

Table 11.2-5: Chinese Steel Plants (Summary 1/4)

STEEL PLANT	Baotou	Baoshan	Wuhan	Handan I&S
LOCALITY	Baotou	Baoshan	Wuhan	Handan
Sales price of goods shipped [US$/t]	721,11	679,80	664,74	618,35
Raw material costs [US$/t]	116,37	198,42	144,28	122,63
Energy & Reductants [US$/t]	105,55	80,28	120,47	97,33

STEEL PLANT	Baotou	Baoshan	Wuhan	Handan I&S
LOCALITY	Baotou	Baoshan	Wuhan	Handan
Overheads [US$/t]	86,69	52,98	73,77	76,46
Labour costs [US$/t]	36,61	19,49	30,60	33,98
G&A; Maintenance [US$/t]	50,08	33,49	43,17	42,48
Total operating costs [US$/t]	308,61	331,68	338,52	296,42
EBITDA [US$/t]	412,50	348,12	326,22	321,93
Interest [US$/t]	35,69	27,86	23,10	31,20
Depreciation [US$/t]	28,84	50,02	27,17	46,10
Total costs [US$/t]	373,14	409,56	388,79	373,72
Earnings before tax [US$/t]	347,97	270,24	275,96	244,62
KEY FIGURES				
Finished product volumes [Mtpa]	2,74	6,28	6,62	1,81
Worker-hours per tonne shipped [hours/tonne]	18,1	9,1	14,4	15,9
Total employment [people]	20 393	23 628	39 103	11 835
Total fixed capital cost - historic [US$ billion]	2,21	6,41	5,09	1,74
Total fixed capital cost - replacement [US$ billion]	2,61	7,04	6,00	1,92
Employment cost [US$/h]	2,13	2,13	2,13	2,13
Electricity cost [US$/kWh]	0,049	0,049	0,049	0,049
Other energy cost [US$/GJ]	4,52	4,52	4,52	4,52

Table 11.2-6: Chinese Steel Plants (Summary 2/4)

STEEL PLANT	Anshan	Chonqing I&S	Benxi I&S	Taiyuan
LOCALITY	Anshan	Chonqing	Benxi	Taiyuan
Sales price of goods shipped [US$/t]	645,14	689,69	635,38	638,22
Raw material costs [US$/t]	144,66	49,99	181,48	132,44
Energy & Reductants [US$/t]	108,56	208,06	100,37	180,72
Overheads [US$/t]	73,67	126,96	72,01	92,88
Labour costs [US$/t]	30,82	59,49	29,56	44,31
G&A; Maintenance [US$/t]	42,85	67,47	42,45	48,57
Total operating costs [US$/t]	326,89	385,01	353,86	406,04
EBITDA [US$/t]	318,25	304,68	281,52	232,18
Interest [US$/t]	20,04	32,50	31,24	25,29
Depreciation [US$/t]	17,57	20,79	22,39	17,39

STEEL PLANT	Anshan	Chonqing I&S	Benxi I&S	Taiyuan
LOCALITY	Anshan	Chonqing	Benxi	Taiyuan
Total costs [US$/t]	364,50	438,30	407,49	448,72
Earnings before tax [US$/t]	280,64	251,39	227,89	189,50
KEY FIGURES				
Finished product volumes [Mtpa]	8,38	1,14	2,59	2,39
Worker-hours per tonne shipped [hours/tonne]	14,5	29,7	13,9	20,8
Total employment [people]	49 839	13 131	14 764	20 471
Total fixed capital cost - historic [US$ billion]	5,34	1,13	1,93	1,34
Total fixed capital cost - replacement [US$ billion]	6,43	1,43	2,36	1,72
Employment cost [US$/h]	2,13	2,13	2,13	2,13
Electricity cost [US$/kWh]	0,049	0,049	0,049	0,049
Other energy cost [US$/GJ]	4,52	4,52	4,52	4,52

Table 11.2-7: Chinese Steel Plants (Summary 3/4)

STEEL PLANT	Anyang	Shougang	Maanshan	Laiwu
LOCALITY	Anyang	Beijing	Maanshan	Laiwu
Sales price of goods shipped [US$/t]	630,77	587,53	640,20	578,65
Raw material costs [US$/t]	193,96	137,88	310,02	163,42
Energy & Reductants [US$/t]	117,03	128,83	64,55	144,26
Overheads [US$/t]	89,18	98,02	50,62	80,50
Labour costs [US$/t]	43,34	43,97	21,84	36,72
G&A; Maintenance [US$/t]	45,84	54,05	28,78	43,78
Total operating costs [US$/t]	400,17	364,73	425,19	388,18
EBITDA [US$/t]	230,60	222,80	215,01	190,47
Interest [US$/t]	33,40	32,27	26,63	28,24
Depreciation [US$/t]	16,07	31,25	23,13	18,97
Total costs [US$/t]	449,64	428,25	474,95	435,39
Earnings before tax [US$/t]	181,12	159,28	162,25	143,26
KEY FIGURES				
Finished product volumes [Mtpa]	1,05	1,87	3,79	1,22
Worker-hours per tonne shipped [hours/tonne]	20,3	20,6	10,2	17,2
Total employment [people]	8 752	15 884	15 966	8 646
Total fixed capital cost - historic [US$ billion]	0,73	1,79	2,45	0,72
Total fixed capital cost - replacement [US$ billion]	0,91	2,15	2,74	0,85

STEEL PLANT	Anyang	Shougang	Maanshan	Laiwu
LOCALITY	Anyang	Beijing	Maanshan	Laiwu
Employment cost [US$/h]	2,13	2,13	2,13	2,13
Electricity cost [US$/kWh]	0,049	0,049	0,049	0,049
Other energy cost [US$/GJ]	4,52	4,52	4,52	4,52

Table 11.2-8: Chinese Steel Plants (Summary 4/4)

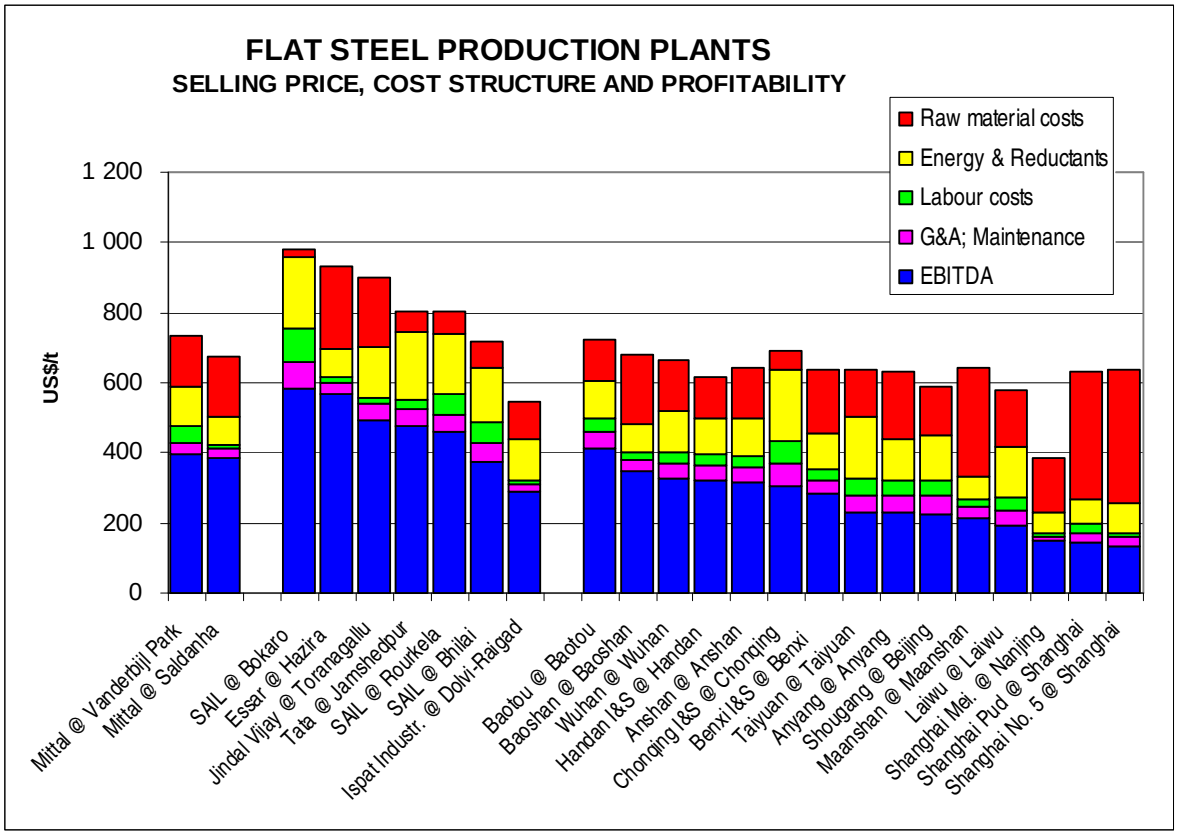
STEEL PLANT	Shanghai Mei.	Shanghai Pud	Shanghai No. 5	China
LOCALITY	Nanjing	Shanghai	Shanghai	Average
Sales price of goods shipped [US$/t]	383,27	629,66	637,05	600,46
Raw material costs [US$/t]	152,85	363,94	379,79	188,29
Energy & Reductants [US$/t]	57,86	67,88	83,61	103,58
Overheads [US$/t]	23,36	55,72	40,72	67,19
Labour costs [US$/t]	11,21	24,50	14,65	29,53
G&A; Maintenance [US$/t]	12,15	31,22	26,07	37,66
Total operating costs [US$/t]	234,07	487,54	504,12	359,06
EBITDA [US$/t]	149,20	142,12	132,93	241,40
Interest [US$/t]	11,00	23,89	26,30	23,98
Depreciation [US$/t]	6,95	9,60	15,23	19,17
Total costs [US$/t]	252,02	521,03	545,65	402,21
Earnings before tax [US$/t]	131,25	108,83	91,40	197,90
KEY FIGURES				
Finished product volumes [Mtpa]	4,27	1,80	1,50	4,13
Worker-hours per tonne shipped [hours/tonne]	5,3	11,5	6,9	13,9
Total employment [people]	9 241	8 514	4 231	22 392
Total fixed capital cost - historic [US$ billion]	0,92	0,50	0,56	2,43
Total fixed capital cost - replacement [US$ billion]	1,10	0,73	0,84	2,92
Employment cost [US$/h]	2,13	2,13	2,13	2,13
Electricity cost [US$/kWh]	0,049	0,049	0,049	0,049
Other energy cost [US$/GJ]	4,52	4,52	4,52	4,52

The larger Chinese plants tend to be more profitable. The higher level of integration possible provides some protection against relatively high raw materials costs. An integrated steel

plant with a number of sequential process steps can reduce its cost structure by minimising transfer costs, by minimal profit-taking between different steps.

The graph below is a representation of data extracted from the tables above. The first grph shows the cost and profitability of steel plants in the study countries, with the combined items adding up to the total selling price (US$/t). The steel plants are ranked in order of profitability.

Figure 11.2-2: Comparison of Steel Plants Ranked in Terms of Headline Profitability



Note: Plants grouped for South Africa, India and China, respectively

From this graph it appears that more profitable plants start off with relatively higher selling prices.

The graph also shows that there may be large variations between cost items, such as raw materials and energy costs, from plant to plant. These variations can be ascribed to different processes and plant types. A more detailed analysis is provided below in the paragraph on cost trade-offs.

By excluding the profitability line from the data, a perspective of the operating cost levels of these plants can be presented, as in the first graph below. For South Africa and India, lower profitability, which correlates with lower selling prices, is also generally associated with lower cost structures. In the case of China, which does not have a large variation in selling prices, lower profitability strongly correlates with higher cost structures.

In the second graph below, the total cost structure is presented for the steel plants in the study group.

Figure 11.2-3: Operating Cost Structure for Steel Plants in the Competitiveness Study

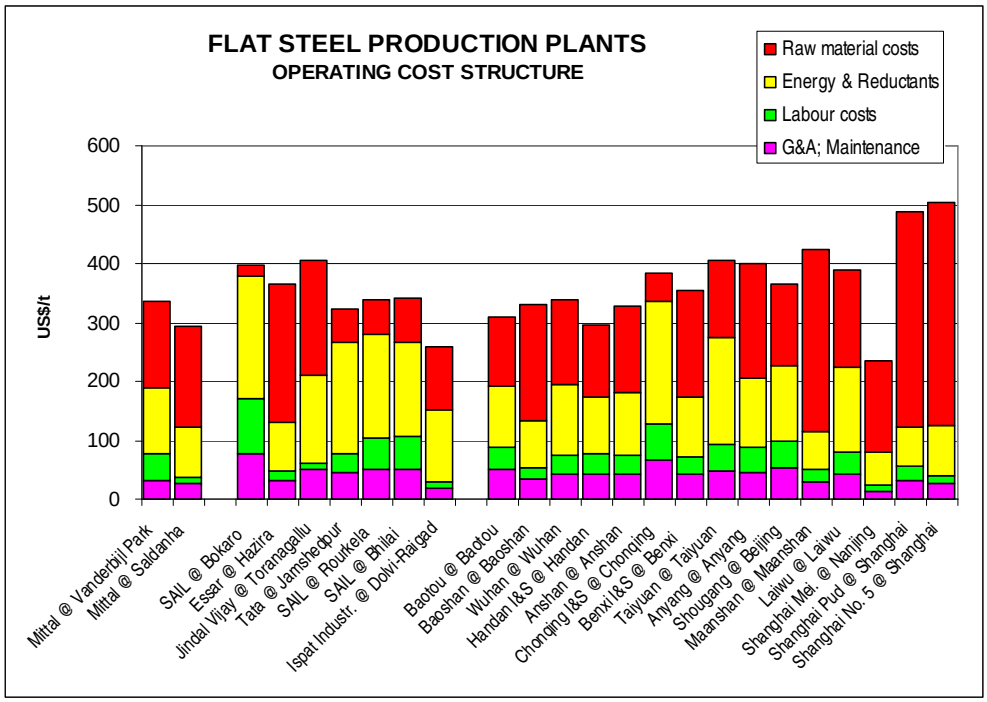
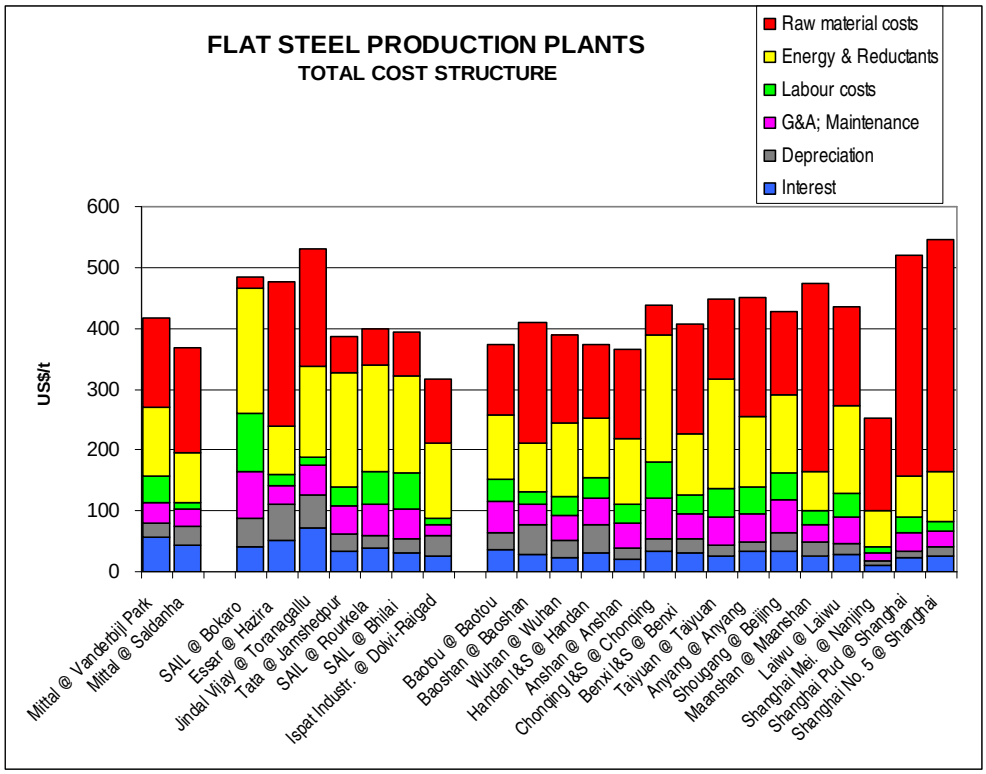


Figure 11.2-4: Total Cost Structure of steel Plants in the Study



The comparisons of summary totals and averages of the study countries provide significant insights into their steel industries.

Table 11.2-9: Comparison of Country Averages of Financial Key Figures of Steel Plants

COUNTRY	South Africa	India	China
Number of steel plants in study group	2	7	15
Total production volume of study group [Mtpa]	4,45	15,77	31,80
Total employment in study group [people]	11 785	127 926	264 398
AVERAGES			
Sales price of goods shipped [US$/t]	720,97	801,60	600,46
Raw material costs [US$/t]	152,16	92,65	188,29
Energy & Reductants [US$/t]	106,83	158,40	103,58
Overheads [US$/t]	67,04	91,92	67,19
Labour costs [US$/t]	36,06	44,86	29,53
G&A; Maintenance [US$/t]	30,98	47,06	37,66

COUNTRY	South Africa	India	China
Total operating costs [US$/t]	326,03	342,97	359,06
EBITDA [US$/t]	394,94	458,62	241,40
Interest [US$/t]	52,76	38,53	23,98
Depreciation [US$/t]	26,94	36,38	19,17
Total costs [US$/t]	405,73	417,88	402,21
Earnings before tax [US$/t]	315,24	383,72	197,90
KEY FIGURES			
Finished product volumes [Mtpa]	2,8	2,4	4,1
Worker-hours per tonne shipped [hours/tonne]	5,5	16,5	13,9
Total employment [people]	8 497	21 738	22 392
Total fixed capital cost - historic [US$ billion]	2,60	2,44	2,43
Total fixed capital cost - replacement [US$ billion]	3,54	2,99	2,92
Total fixed capital cost - historic [US$/t]	918,82	998,87	588,89
Total fixed capital cost - replacement [US$/t]	1 247,98	1 227,38	707,07
Employment cost [US$/h]	6,64	2,71	2,13
Electricity cost [US$/kWh]	0,04	0,04	0,05
Other energy cost [US$/GJ]	3,25	4,04	4,52
Asset productivity (Revenue/asset value) [%]	78%	80%	102%

South Africa has a 20% higher average selling price than China, with 10% lower operating costs, although general overheads (including labour costs) are similar. Profitability of the South African steel industry is substantially higher, at an EBITDA of US$395/t compared to US$241/t in China.

China has relatively larger steel plants (at an average of 4,1 Mtpa, 50% larger than the South African average of 2,8 Mtpa), with more substantial employment levels of 22 400 workers per plant (2 1/2 –times that of South Africa). The cost of a new steel plant in China, at US$707/t, is more than 40% lower than in South Africa, at US$1 247/t.

The individual cost items should not be reviewed in isolation. The steel plants may involve different technologies, ranging from integrated steel plants (a low raw material input cost, with higher levels of processing cost, essentially energy and labour costs) to mini-mills (a higher raw material input cost linked with a lower processing cost).

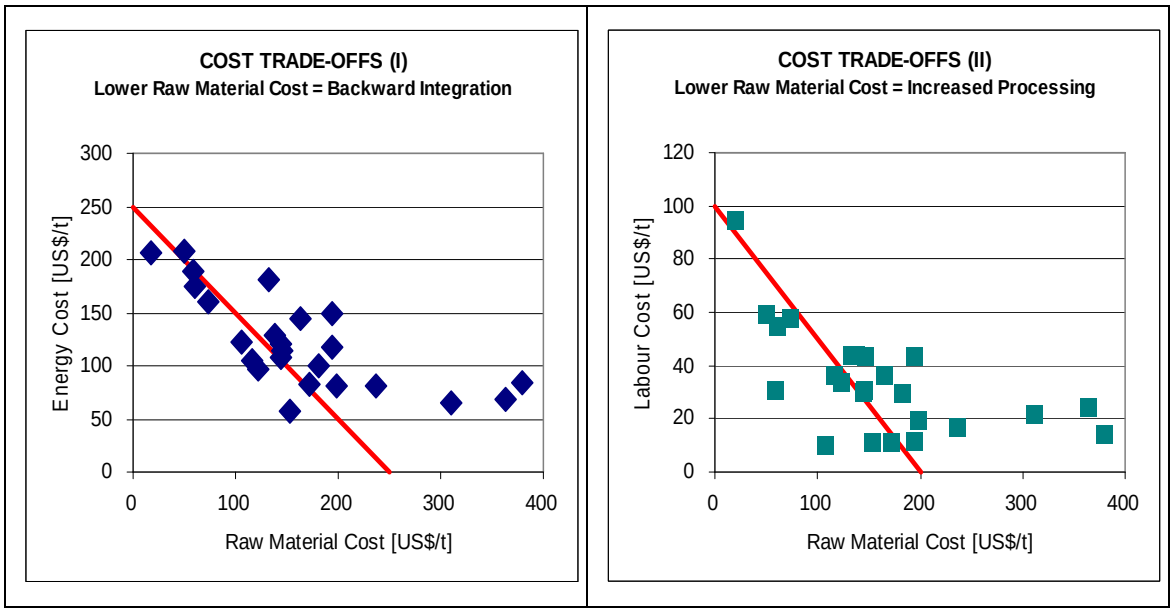
A trade-off can therefore be expected between certain cost factors, depending on the degree of backward integration, for example:

iii. Between raw materials and energy costs

iv. Between raw materials and labour costs

These cost factors are plotted for all the steel plants listed in this analysis above. The trade-off relationships are clearly illustrated for the majority of data points, as presented in the graphs below, although there are a few exceptions for very high raw material costs. Other factors may also be applicable in these cases.

Figure 11.2-5: Examples of Cost Trade-offs



By means of a summary of summaries, the average cost structure and profitability of steel plants per country can be expressed in the unitised unity, relative to each US$1 of revenue turnover. It allows for certain per country conclusions to be drawn, as follows: -

Table 11.2-10: Financial Key Figures in Unity Format per Country

COUNTRY	South Africa	India	China
Sales price of goods shipped [US$/t]	1,00	1,00	1,00
Raw material costs [US$/t]	0,21	0,12	0,31
Energy & Reductants [US$/t]	0,15	0,20	0,17
Overheads [US$/t]	0,09	0,11	0,11
Labour costs [US$/t]	0,05	0,06	0,05
G&A; Maintenance [US$/t]	0,04	0,06	0,06
Total operating costs [US$/t]	0,45	0,43	0,60
EBITDA [US$/t]	0,55	0,57	0,40
Interest [US$/t]	0,07	0,05	0,04
Depreciation [US$/t]	0,04	0,05	0,03

COUNTRY	South Africa	India	China
Total costs [US$/t]	0,56	0,52	0,67
Earnings before tax [US$/t]	0,44	0,48	0,33
Total fixed capital cost - historic [US$/t]	1,27	1,25	0,98
Total fixed capital cost - replacement [US$/t]	1,73	1,53	1,18

Per US$1,00 of turnover revenue, South African steel manufacturers require: US$1,73 of new steel plant, with 36¢ of raw materials and energy; plus 9¢ of overheads (5¢ labour costs and 4¢ general & other), for a total operating cost of 45¢

Per US$1,00 of turnover revenue, Chinese steel manufacturers require: US$1,18 of new steel plant, with 45¢ of raw materials and energy; plus 11¢ of overheads (5¢ labour costs and 6¢ general & other), for a total operating cost of 60¢

Furthermore, the steel industry figures in China and India relative to South Africa can be compared as follows: -

Table 11.2-11: Comparison of Financial and Key Figures of Study Countries to South Africa

COUNTRY		India	China
Number of steel plants in study group	[times]	3,5	7,5
Total production volume of study group	[times]	3,5	7,1
Total employment in study group	[times]	10,9	22,4
AVERAGES			
Sales price of goods shipped	[%]	111%	83%
Raw material costs	[%]	61%	124%
Energy & Reductants	[%]	148%	97%
Overheads	[%]	137%	100%
Labour costs	[%]	124%	82%
G&A; Maintenance	[%]	152%	122%
Total operating costs	[%]	105%	110%
EBITDA	[%]	116%	61%
Interest	[%]	73%	45%
Depreciation	[%]	135%	71%
Total costs	[%]	103%	99%
Earnings before tax	[%]	122%	63%
KEY FIGURES			
Finished product volumes	[%]	86%	146%

COUNTRY		India	China
Worker-hours per tonne shipped	[%]	303%	255%
Total employment	[%]	256%	264%
Total fixed capital cost (per tonne of steel) - historic	[%]	109%	64%
Total fixed capital cost (per tonne of steel) - replacement	[%]	98%	57%
Employment cost	[%]	41%	32%
Electricity cost	[%]	118%	132%
Other energy cost	[%]	124%	139%
Asset productivity	[%]	102%	130%

On average steel plants in China, compared to South Africa, have: -

- A production capacity of 1 ½-times higher and an employment absorption of three-times more;
- An employment cost per worker of only ⅓, but worker-hours per tonne of steel produced of 2 ½-times;
- Lower headline earnings profitability (as EBITDA) of only 61%, due to 17% lower selling prices and 24% higher raw materials costs and 10% higher operating costs;
- Energy and reductants are 30% more expensive in terms of unit costs but total average cost is comparable – which can be ascribed to the process-related trade-offs as discussed above;
- The capital cost per plant (as fixed assets per tonne of steel produced, in US$/t) is 40% lower, resulting in 30% lower depreciation charges and only ½ of the interest payments; asset productivity (revenue turnover earned relative to fixed capital cost) is accordingly 30% higher.

11.3. SOURCES OF COMPETITIVENESS – FURTHER CONSIDERATIONS

11.3.1. Sources of Competitive Advantage

Fundamentally, there are two sources of competitive advantage: superior resources; and superior skills. These two factors can be seen as a continuum. At the company level, which is the reference point for competitiveness, a mix of these two factors can be employed to create competitive advantage. Superior resources and superior skills should also not be regarded as two distinct and different factors, as they are interconnected at business level.

Skills and resources analysed separately but they are integrated in deployment. Superior skills can also be restated as human resources – competitiveness is therefore ultimately about doing business with superior human and natural resources.

11.3.2. Superior resources

In order to create superior resources, the complete product value chain should be assessed in more detail.

Natural resources: The natural resource and energy source endowment or ability procure these commodities at favourable terms is a crucial starting point. It is also possible to gain better access to resources through backward integration in the value chain, thereby by-passing the market intermediaries, essentially by more control over the levels of profit-taking at intermediate steps. This is a strategy followed by Chinese metals industries by acquiring mining rights or entering into joint ventures. South Africa has access to a wealth of natural resources, including low cost electricity for industrial applications

Value chain: The value chain is also affected by logistics costs, which is a factor of the quality of infrastructure and operating efficiency. The importance of infrastructure can be illustrated by the Sishen-Saldanha rail line for the export of iron ore, which through its efficient link with the seaborne transport system, results in iron ore supplied to Posco in Korea at a lower cost than deliveries to domestic inland steel plants at Vanderbijl Park and Pretoria.

Supply chain management ("SCM"): SCM was pioneered in Hong Kong, China, for its trading system and can be described as a system intent on eliminated the next $1 of unnecessary cost or wastage or time delay from the trading system. In its best application it creates an industry value chain, whereby businesses do not operate as discrete units, but the whole industry value chain operates as an integrated business with the same trading technology and logistics platform. Why would this be an important consideration? Industry cluster studies carried out by the IDC highlighted that, although local companies could match the best-in-class international counterparts directly, when operating as an industry value chain they could not compete due to the inefficiencies of logistics and operation in-between companies.

Pricing strategy: Dominant players at the early stages of the value chain may exploit their relative position of power through monopolistic behaviour and adopt pricing policies resulting in excessive profit-taking. With import parity pricing ("IPP") a supplier would set its price levels at the production cost of its competitors abroad plus inbound logistics costs plus tariff

protection. For a downstream value-added value chain to be competitive internationally, an export pricing parity strategy ("EPP") should be followed, which implies that the input cost for beneficiation operations should be at a level low enough to allow for marketing and transport logistics costs to be added, while still being competitive in the destination markets. South Africa is presently in the midst of facing the problem of IPP in the steel industry. When Government and Mittal Steel could not reach agreement on this matter, it was decided to remove tariff protection for the applicable steel product lines.

Local industry development strategy: Different stages of the industry value chain may be targeted for development, for example either the downstream beneficiation operations or the upstream primary and intermediary stages. If the objective is beneficiation, then global procurement will be encouraged with minimum tariff protection for the upstream stages. If, however, the primary and upstream commodity stages are important to the economy of the country, then maximum tariff development may be afforded in that case to ensure a captive local market, which would strengthen the competitive position of those industries in the global market.

South Africa appears to be trapped in the situation of, one the one hand, the benefit of a world-class primary industry sector in contest with, one the other hand, a stated development objective of beneficiation. The industry development policies also tend to grapple with these opposing concepts – one an unappreciated reality, the other an unattained aspiration.

How should this be taken forward? What are the competitiveness issues that need to be addressed of progress on these development challenges?

11.3.3. Superior skills

How can the notion of superior skills be developed and made a reality at industry cluster level? The answers can be founds in an array of development initiatives, among other (which are not presented in detail, as such a strategy is beyond the scope of this report):

- Industry clusters, which are aimed at creating small company responsiveness combined with big company resources, in a pooling of skills and resources in an integrated niche industry, focussing on maximising geographical features
- Sectoral development plans, supporting industry clusters and strengthening industry value chain featuring
- Marketing orientation to align with a growing domestic market

- Skills development and developing the skills pool
- Support industries for industry clusters
- Technology and innovation support as building blocks for beneficiation and high value-added industry sectors
- Incentives, especially aimed at new business development and bridging the financing gap for worthy ventures lacking start-up capital
- Beneficiation and value-added strategies that are attainable, and supported by all role players in industry, government and labour.

11.3.4. Hypothesis

How can South Africa move forward with competitive industries and business ventures? The following hypothesis is based on a specific point of departure: South African are uniquely skilled in dealing with and management of diversity. This superior skill can be expanded into a unique venture design of the entrepreneurial business. The entrepreneurial business combines a number of features of which no specific aspect is dominant. It exploits locally available raw materials (without being solely reliant on low cost materials), it uses midrange technology and a certain level of semi-automation (without being very capital-intensive), requires semi-skilled workers for assembly-type manufacturing activities (and can therefore afford workers at better than minimum wage conditions), can cope with short production runs (based on the flexibility to adjust to requirements and the ability to customise), and can address niche markets globally (which would still result in substantial capacity in South African terms). It is evident that the nature of this venture would require a high level of entrepreneurial skill to integrate the diverse aspects into a single viable operation. Different aspects may be more dominant in certain cases and some of the aspects may be absent.

South Africa has a number of successful case studies in this regard, namely:

- Catalytic converters (beneficiated platinum industry)
- Alloy wheels (aluminium casting technology)

There are other opportunities presently being developed or that can be developed, namely: -

- Heat exchangers (aluminium, with plastic components)
- Air bags (nylon textiles, with electronic control systems)

- Automotive on-board computers (electronics)

11.3.5. Competitive scenarios

Local industries and businesses facing the challenges of ever-increasing Chinese imports into their domestic markets, have to balance two scenarios, namely: -

1. How to compete

2. How to co-operate