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
Al	Aluminium (atomic symbol); also aluminium (American term)
BIS	Bureau of Indian Standards
BTP	Bio-technology Park
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
EHTP	Electronic hardware technology park
EOU	Export-oriented unit
EPCG	Export promotion capital goods
EU	European Union
EXIM	Export-import
FDI	Foreign-direct investment
Fe	Iron (atomic symbol)
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
HS	Harmonised System
ISO	International Standards Organization

ABBREVIATION	DESCRIPTION
MFN	Most favoured nation
MOU	Memorandum of understanding
MRP	Maximum retail price
Mtpa	Million tonne per annum
Ni	Nickel (atomic symbol)
NTB	Non-trade barrier
Pa	Per annum; per year
PGM	Platinum-group metals
PTA	Preferential trade agreement
Rs	Rupees
QR	Quantitative Restrictions
SECCP	Sustainable energy & climate change project
SEZ	Special Economic Zone
SME	Small and medium-sized enterprise
STP	Software technology park
The dti	The Department of Trade and Industry
Tpa	Tonne per annum
TPR	Trade policy review
UNCTAD	United Nations Trade Agency
USD, US$	US dollar
USTR	United States Trade Report
WTO	World Trade Organisation

CONTENTS

EXECUTIVE SUMMARY

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

Policy

1. South African economic development policies appear to be trapped in the problem statement stage. India follows the practice of successive five year plans. Among others that ensures continuity and policy stability and transparency.
2. The Indian steel industry is promoted according to the National Steel Policy 2005. South Africa's new metal sector policy is under wraps now for a while.
3. India needs to adapt to WTO requirements that should lead to the eventual elimination of subsidies and incentives in favour of exports. This could result in the convergence of the support that India and South Africa extend to their respective industries.
4. India applies a vast array of export support schemes that are applicable to all industrial sectors and from which the metals sector benefits, comprising: duty exemption and remission schemes; export promotion of capital goods schemes; export oriented units, electronics hardware technology parks, software technology parks, and bio-technology parks, and special economic zones; free trade and warehousing zones; deemed exports; promotional measures such as assistance to states for infrastructure development of exports

Economic Development

5. Sustained rapid growth, high investment, a large population, and a willingness to support development with incentives, promise to propel the Indian economy to one of the largest mass markets of the world. The Indian economy is already the 10th largest in the world. Indian firms can thus expect to benefit from economies of scale and a large home base. Competition from Indian producers will in all probability be a threat to their South African counterparts. However, opportunities for South African business are bound to arise.

6. India is a large country with vast human and natural resources. Its development policies are now starting to bear results, after it changed the growth patterns to higher levels of 8% to 10% pa over recent years. The minerals industries in India are specifically targeted for increased private sector participation and investment in order to improve the supply of raw materials to the growing needs of the metals sectors. The characteristics of sector development policies are detailed analysis of the situation, quantification of challenges and a bottom-up forecast of growth areas.

Growth and expansion possibilities

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

Table: Key Figures for Metals Sectors in India and South Africa

METAL SECTOR	WORLD	INDIA		SOUTH AFRICA	
	VOLUME [Mtpa]	VOLUME [Mtpa]	SHARE OF WORLD [%]	VOLUME [Mtpa]	SHARE OF WORLD [%]
Steel	1 050	32,0	3,0%	9 5	0,9%
Aluminium	29,90	0,86	2,9%	0,860	2,9%
Copper	15,5	0,39	2,5%	0,090	0,6%
Nickel	1,240	--	--	0,041	3,3%

8. India has the potential to expand iron ore and bauxite production by three to five times in the next decade, and double the contribution of its steel and aluminium metals sectors, if it is able to manage the potential properly. India could become one of the top five global producers and markets for steel and aluminium products by 2015. The driving forces for these metal sectors would be a combination of increasing unit consumption (measured as kg/capita) in the domestic market and increasing exports, mainly to the neighbouring China.

9. The challenges for industrial development in general, and the metals sectors specifically, are the triad of impediments faced by India, namely: poorly developed infrastructure, bureaucratic overhead, and limited private sector participation due to historical regulatory restrictions. The current policies are aimed to create more opportunities for private sector and foreign investor participation in new industrial initiatives.

10. India is deficient in nickel and has a scarcity of copper reserves for exploitation. It is vulnerable to increases in global nickel prices, although this may be part of a general trend of systemically higher commodity prices. The growth prospects of the Indian copper industry depend on the one hand on increasing unit consumption in line with increasing wealth, countered by substitution with mobile technologies and fibre optics on the other hand.

Cost

11.. 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

12 The average selling price of steel ex-factory in India is 11% higher than that of South Africa. Raw material cost for Indian producers is 60% of that of South Africa. However, South Africa has a cost advantage in most of the other operating cost items especially energy. South African operating cots are thus 95% of that of India. India's interest charges are 74% of that of South Africa. In the end India's total cost is 3% higher than South Africa's, with higher Indian earnings before tax that remain to explain why selling prices of Indian producers are significantly higher than that of South African plants. Although South Africa's hourly employment cost is 2.45 times that of India, tonnes shipped per worker is 3 times higher.

13. South African steel manufacturers require: US$1,73 of new steel plant compared to US$1.53 for India. Together with the lower interest charges South Africa is at a disadvantage iro capital related costs.

14. The metal sector of South Africa is prominent among manufacturing sectors because of its size, export orientation of some sub-sectors and employment and labour intensiveness of others.

15. 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. that is about equl to the average for total manufacturing.

16. 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.

Trade

17. The South African 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 and some intermediates..

18. Exports of upstream iron and steel products to India is lagging its exports to the world. Exports to the world more than doubled between 2000 and 2005. In 2004 exports to India were 14% less than in 2000. However, in 2005 exports were 3.5 times higher than in 2004.raising upstream iron and steel exports to India to almost R1 billion. It is to be seen if the higher level of exports to India is to be sustained. Large increases in exports in 2005 happened in the exports of HS codes 7202, 7204, 7207, 7208, 7210 and 7216. Upstream iron and steel exports to India was 3% of the total in 2005.

20. A very small amount of R20 million out of South Africa's total export of R4 527 million in downstream products listed in HS chapter 73 went to India in 2005, comprising a share of only 0,4% of exports. Nothing exciting is happening on the 4 digit HS level.

21. South African imports of upstream iron and steel products more than doubled between 2000 and 2005. Upstream imports from India are concentrated in HS 7210. India supplied 27.6% of South Africa's imports under this heading in 2005.

22. India supplied 3% of South African imports of downstream iron and steel products in 2005, a marginally higher percentage than in 2000. .Import penetration by India is prominent in HS 7323 (14.5%); 7325 (12.3%). In 2005, imports from India broadened to include the majority of 4-digit headings. .

23 Exports of copper to India are products of HS 7404 (2.3% of the total) and 7403 (1.5%) and imports products of heading HS 7415 (26% of the total)

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24. Trade in nickel and products with India is sporadic at best.

25. Aluminium exports to India are mainly unwrought aluminium and aluminium waste and scrap .In 2005, exports of unwrought aluminium declined to R72 million from significantly higher levels before. About 1% of South African aluminium is exported to India. South Africa's total aluminium imports amounted to R1 040 million in 2005, of which 3.9% was from India, mainly comprising aluminium foil as well as aluminium casks, drums etc.

26. Exports to India of HS 82, 83 and 84 are in the early development stages, comprising only 0.9% of total exports and found mostly in HS 84 (machinery). Imports from the world and from India are wide-ranging. Imports from India is 0.8% of the total with the focus on HS 82 4.1% of imports and HS 83 5.8% of imports under these headings.

Tariffs and protection

27. India's bound tariffs, in terms of the percentage of bound line for each of the chapters covered by this study and the range of rates per chapter, compared to South Africa's range of bound rates, are as follows: -.

Table: Comparison of Bound Tariffs

Chapter	India's % of bound lines (6-digit level)	India's bound rates [%]	South Africa's most common rates [%]
72	94	40	5/10
73	61	40	15/30
74	0	40	5/15/20/30
75	95	40	5/15
76	0	nb	5/15/30

28 Basic applied tariffs: India's applied tariffs are 15%, but based on CIF values plus various additional duties, resulting in an average basic tariff of 31,1%. This is compared to South Africa's applied tariff based on FOB values, with an average applied rate for industrial products of 11,4%.

29. India has an apparently simple and uniform tariff structure, with a duty of 15% in most chapters, except for Chapter 72, which is 20%. In reality, however, India's customs tariff system is extremely complex and lacks transparency. This situation is due to numerous 'notifications' or 'general exemptions' that exempt certain products from a duty or reduce the rate (sometimes for specified uses or subject to elaborate conditions). Many of the 'notifications' and 'exemptions', dating back to the nineties, but still applicable, are not incorporated in a single tariff book with schedules, as in the

case of South Africa. As a result, it is difficult to determine the actual duties (and additional duties) applicable on the importation of certain products.

30. Non-tariff barriers ("NTBs") comprise wide ranging documentary and procedural requirements, measures or situation (other than ordinary customs tariffs) with the effect – by default – of impeding, discouraging or restricting trade flows, specifically imports of competing products. Such NTBs typically comprise: -

- Trade policy measures – import licensing, import quotas, state trading enterprises, additional taxes, reference prices, export assistance, subsidies, anti-dumping and countervailing duties and safeguards, and are affected by extent of policy predictability, transparency and the regularity of changes in policy and policy measures, or the lack thereof;

- Technical regulations – standards and technical specifications that are aimed at protecting health, safety, the environment and the interests of consumers;

- Administrative procedures – a wide range of regulations, procedures and other factors – typically burdensome customs procedures; a lack of transparency or consistency in customs and other import procedures; slow customs clearing causing delays; and services that are not user-friendly -- that restrict or discourage imports.

India's problematic approach with regard to NTBs is alluded to in this report. There are, however, no specific metals sectors NTBs that could be identified in this assessment.

Recommendations from a defensive position.

The cross cutting perspective

Because

31. The Indian economy is 4 times South Africa's and the population 23 times. India's economy is the 10th largest in the world with high growth potential. South Africa is more open to international trade (66% of GDP) than India (31%). Indian exports to South Africa are expanding and because of the difference in size and trade intensity, the impact of concessions can be much more extensive on the South African market than the other way round.

32. Uncertainties on future tariff levels are introduced by NAMA that may render bi-lateral concessions premature.

Negotiators should be careful in the formulation of trade concessions for metals to India.

The sector specific perspective

General

33. By considering that India's metal sectors are:

- expanding at a rate equal to high growth in gdp.
- supported by a clear development strategy as developed in the Steel Plan 2005 to become internationally competitive and penetrate export markets,
- backed by government development incentives and support to exports;

should cause negotiators to be careful in granting concessions on metal products to India.

Upstream

34 Because both the Indian steel and aluminium industries are set for rapid expansion excesses in capacity may pose a threat to local industry if concessions are granted to India.

Downstream

35 India is more competitive in down stream products than in the upstream ones in its trade with South Africa. South Africa's tariffs on downstream products are comparatively high and India may benefit significantly should concessions be granted on them.

36The threat to downstream products that were excluded from this study (HS 82 and 83) could be more severe than for those covered in this report and is recommended for further investigation for economic and social reasons.

36. Indian exports of downstream products may be competitive with or without a PTA.

Because of these reasons negotiators should be extremely careful in granting concessions on metal products to India

37. Negotiations may be complicated by:

the Doha Round. 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 Recommendations from an offensive position

Recommendations from an offensive position.

From a cross cutting perspective

38. By considering that

- India is the second fastest growing economy of the world;
- Already is the 10th largest and destined to become even more important with sustained high growth caused by increases in prosperity to be generated by exports, India's IT services sector and its growing segment of middle class 3939consumers;

suggest that opportunities for concessions on South African exports of metal products be pursued.

From a sector specific perspective

Upstream

39. Fast growth in demand implies that gaps will arise and that they will to be filled by imports for the benefit of upstream products..

Downstream

39. South Africa is not known for comparative advantages in the export of metal products. However, because of fast growth in the Indian market sporadic opportunities may arise from which the metal products sector may benefit.

The above could make it worth while for South Africa to request tariff concessions from India.that have been formulated by the constituents of the metal sector including government.

40. Negotiations can be complicated by South Africa's very narrow range of downstream metal products on offer that limit its ability to benefit from PTA's. This could become an issue where India may request concessions over a range of down stream products where South Africa is at a competitive disadvantage. Indian NTB' s, furthermore, are a major deterrent to imports. Negotiators need to ensure that tariff concessions are real

and not eroded by non-tariff barriers; Uncertainty on future tariff levels because of NAMA may render bi-lateral concessions as premature.

41. Prospective exporters should enter the Indian market preferably in partnership with an Indian counterpart in view of the NTB's and other issues in doing business in India. .

- uncertainty with respect to future MNF tariff levels that may render bilateral concessions premature; and
- WTO unfriendly subsidies and incentives that may be enjoyed by Indian firms when competing in the local market..

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1. BACKGROUND

1.1. OBJECTIVES OF THE STUDY

NEDLAC launched a study into the implications of the envisaged trade agreement between SACU and India for a number of South African manufacturing sectors. It is accepted that the trade agreement with India initially will be selective in the format of a Preferential Trade Agreement (PTA) instead of a Free Trade Agreement (FTA). The primary objectives of the study are to obtain an insight into the environment of doing business in India and among others into the attributes of its metals sectors.

A number of aspects cut across the different sectors that NEDLAC singled out for investigation. These aspects are: bi- and multi-lateral trade agreements that India has entered into; macro aspects; the business environment; and the general trade and industrial policies as opposed to sector specific ones. Although they are important in the formulation of sector strategies in the coming trade negotiations it was required that they be reported on separately. Thus, some of the more important implications for sector strategies following the analysis of cross cutting aspects are recapped in the following paragraphs.

1.2. TRADE AGREEMENTS

India supports multi-lateral trade relations through the WTO. Since it beliefs that the multilateral system cannot drive south-south trade as such, India is pursuing bilateral and regional trade agreements. These economic cooperation agreements need to be the building blocs and drivers of global trade. India does not want to be omitted from the preferential benefits of such trade arrangements and is willing to open its economy and import more from regional countries

Implementation of the policy entails numerous trade agreements with regions-, trading blocks- and bi-lateral ones. India's current strategy is to secure economic relations with key developing countries, firstly within the Asian region and secondly with selected countries in other regions. India seeks to tie the trade interests of its South Asian neighbours with its own growing economy. While the agreements focus on trade facilitation a number of them extend beyond that in the form of Comprehensive Economic Cooperation agreements.

In negotiating future FTAs, with developed countries in particular, India will seek to secure benefits for its service sectors where its economy enjoys comparative advantages while at

the same time protecting some Indian services. India will also be cautious to sign an FTA with China given China's comparative advantage in manufacturing, discrepancies like the low cost of finance in China and the notion that China will benefit more than India because India's tariffs are higher than China's.

Negotiations for a PTA between South Africa and India will depart from a position where average tariffs levied on imports from India are substantially lower than that faced by South African exports to India. The Indian metal industry is among those expected to benefit from trade agreements. India would probably also negotiate for benefits in the South African services sectors. However, it need to be mentioned that India's priority would be trade with its Asian partners and PTA with South Africa, although important, would possibly lie on the periphery of the bigger picture of India's trade interests.

1.3. MACRO MATTERS

The South African and Indian economies are adapting to the demands of the global economy coming from trade protective pasts. Both economies are relatively stable with inflation under control and lower than 5%. Growth in the in Indian economy is substantially more robust on the back of an investment ratio to GDP of almost 28% compared with South Africa's 16.5%. The norm for growth in GDP in recent years came to 6% for India and 4% for South Africa. India strives to raise growth to 8% and South Africa has a vision of 6% growth.

Investment in India and the financing thereof is fundamentally on a much sounder footing than found in South Africa. However, growth in the Indian economy is constrained by bottle necks in all spheres of infrastructure and by its stringent labour regulations and opposition to privatisation. Therefore, inefficiency overhangs persists in large pockets of the Indian economy that are in the hands of the public sector.

Bold programmes are underway to improve the supply of infrastructure. Construction of infrastructure is a source of growth in its own right. In the mean time private concerns find it necessary to erect own infrastructure to safeguard their operations.

India's population is 23 times that of South Africa and its GDP just less than four times. Sustained rapid growth and a large population promise to propel the Indian economy to one of the largest mass markets in the world in the longer term. The Indian economy is already the 10th largest in the world. Indian firms can thus expect to benefit from economies of scale. Competition from Indian producers will in all probability be a threat to their South African counterparts but Indian markets will offer opportunities to South Africans**.**

The production structure of India portrays the pattern found in developing countries with a dominating agricultural sector. The manufacturing sector is more prominent in the South African economy than the contribution that manufacturing is making to the Indian economy. The South African economy (66%) is substantially more exposed to international trade than India's (31%). Both countries run deficits in the import and export of merchandise. However, India balances its deficit with strong IT export services and by remittances from Indians living abroad. South Africa relies on capital inflows to balance the trade account.

In 2004 the value of the Rand in $, and that of the Rupee, was practically the same as in 1999 at 7 Rupee to the Rand. The effect of the intermittent currency upheaval of 1999/2001 thus disappeared. If at all, future changes in the Rupee/Rand rate should reflect a weakening of the Rand because of the fundamentals of the Indian balance of payments being stronger than South Africa's.

1.4. BUSINESS ENVIRONMENT

India is relatively stable politically although terrorist activity (Kashmir) is the second highest in the world. Tensions that may arise between the centre and state governments some times may project some measure of political instability.

The Indian government has traditionally had a legacy of protectionism toward the economy and this has translated into a bureaucratic system that is inefficient and infected with some measure of corruption. However, as part of the reform process, the government has endeavoured to address bureaucratic obstacles for foreign investors through the creation of investment agencies for investment approvals, reducing the necessary licensing requirements and ceding more authority to state governments to allow for easier investment and business facilitation. The government has made it a priority to reduce corruption.

An Inter-State Trade Council was established to promote involvement of the States in export promotion; assist in developing export related infrastructure; assist in removing taxes and local levies imposed on inputs required for export production. The Indian Government has a range of incentives and concessions available to eligible corporations in certain specific industries. Broadly, the tax incentives include tax holidays for corporate profits, accelerated depreciation allowances and deductibility of certain expenses subject to certain conditions. Concessions apply to profits from new undertakings and location in special economic zones. Various rebate and duty drawback schemes exist to promote exports.

India has implemented significant economic reforms, but still suffers from an underdeveloped financial sector while India's infrastructure faces the twin challenges of expansion and modernisation. The major area requiring upgrading and investment is the transportation sector – roads, ports and airports, which is currently far below standard of other emerging market economies and which poses a serious obstacle to development.

Incentives are to be introduced for investment in certain sectors, which include telecommunication, ports, airports, railways, roads, energy and construction development with a view to improving competitiveness of the Indian economy. Tax incentives, customs duty concessions for imports of equipment/machinery and the implementation of Special Economic Zones within the country would be further incentives for investment.

In recent years, India has emerged as a favourable investment destination. India has emerged as an across the board low cost base. FDI into India targets the IT and automotive industries and some metal industries.

Intellectual property rights in India, including patents, trademarks, copyright issues and industrial designs is protected by a well-established statutory, administrative and judicial framework that is constantly improved. However, the protection of intellectual property remains an area of concern for foreign investors.

1.5. POLICY FRAMEWORK – INDIA'S TENTH FIVE-YEAR PLAN

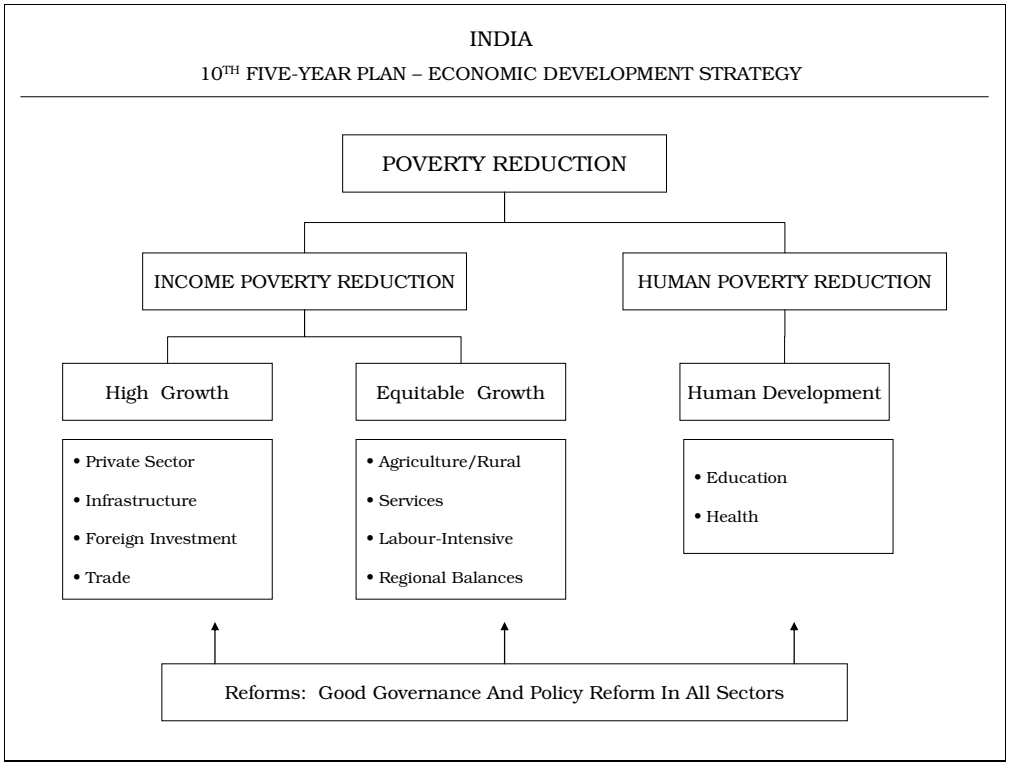
The economic polices of Government of India ("GoI") and the implementation thereof was traditionally shrouded behind a veil of secrecy and somewhat blunted by a large bureaucratic overhead, almost as a throwback to the pre-1947 colonial era.

More recently, this situation has started to improve. There is now a clearer definition of the roles and responsibilities of Government and the private sector respectively. India's 10th Five-Year Plan for 2002-2007 is a progression on previous Plans, as it does not only put forward quantitative targets, but also creates a policy framework with measures on how the targets should be attained.

The 10th Five-Year Plan is the culmination of a comprehensive planning process, based on the widest possible consultation of stakeholders. It targets a growth rate of 8% per year, aimed at increasing the per capita income, job creation and a wide range of development outcomes (preface). The Plan comprises four main chapters, namely: high growth; equitable growth; human development; and reforms, as depicted the diagram below.

It is evident that the policy on trade and industry would have to be the driver for growth, as it is the dominant factor of the high growth chapter of the Plan. It would be supported by good governance and policy reforms, the fourth objective that would have to interact with the other three factors.

Figure 1.5-1: General Development Policy Framework



The acceleration in growth rate can essentially be attained by a significantly higher level of engagement with the global economy, regarding markets, investments and technology: -

- External sources of demand to be pursued through export, to generate a larger flow of external funds
- Foreign direct investment to stimulate corporate entrepreneurial activity in India
- A lower cost of transaction and communication to stimulate the increased interaction with the global economy

1.6. TRADE AND INDUSTRIAL POLICIES

To further internationalisation, competitiveness and investment in industry, India undertook a number of reforms that included the adoption of a market related exchange rate; the privatisation of industries and their deregulation (de-licensing). On the back of this India is receiving foreign direct investment that, together with the vibrant IT services sector and the upcoming middle class consumers, is expected to support high growth. A range of tax and other incentives are also applied to stimulate growth.

The sectors that have been opened up to foreign competition by the liberalising reform program are contributing to significant expansion in the production and quality of durable consumer goods; motor cars; scooters; consumer electronics; computer systems; and white goods. However, future manufacturing performance will depend on further reform especially with regard to heavy industry largely still owned by the state. The appetite for reform by the present coalition government seems to be less than that of its predecessors.

Inadequate infrastructure, bureaucracy, restrictions in hiring and firing in the labour market and improper access to finance for the small scale sector are the major impediments to growth in India. The main obstacles that need to be addressed by the government include reducing entry and exit barriers for the manufacturing sector and reducing and then removing infrastructure bottlenecks. Bureaucracy proved to be a major obstacle as well as investment in infrastructure by firms to avoid disruption of activities.

The foregoing serves as background to the sector analysis of the metals industry and the formulation of a strategy for the sectors to be followed in trade negotiations. The emphasis of the sector analysis would be on features of the relevant Indian sectors, the markets and on protection and associated aspects and the determinants of competitiveness. No evaluation of trade flows is to be undertaken. Threats and opportunities are to be identified and defensive and offensive strategies developed with regard to the envisaged trade deal.

In terms of the Harmonised Code, the metals sector has been defined as consisting of chapters 72 to 76 as per the Terms of Reference excluding tariff headings for stainless steel. Stainless steel is dealt with as a separate sector. According to the Standard Industrial Classification products at the two digit level would be that of chapter 35. However, chapter 35 goes further in terms of the Harmonised Code to include chapters 82 and 83 that mainly deal with the manufacture of metal articles. Information on chapters 82 and 83 that may appear in this report is incidental to the abovementioned classification peculiarities. It is not part of the core of the study as originally specified.

CROSS CUTTING THREATS AND OPPORTUNITIES.

These can be summarised as below.

THREATS

1 The Indian economy is adapting from a protective past to the demands of becoming a globalised economy. A number of reforms were introduced to achieve that and growth progressed to more than 6% p.a. with a vision to sustain 8% growth p.a. However, the reforms are threatened by serious infrastructure constraints, stringent labour regulations and opposition to privatisation.

2. A range of incentives is in force that includes tax holidays, accelerated depreciation, tax concessions, EPZ and other development zones' Liberal draw back of duty compensation to exporters apply and exporters have preferential access to finance.

3 India's priority is to conclude trade agreements with Asian countries/trading blocks. A PTA with South Africa may thus be less important than with its Asian neighbors.

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

5. The Indian economy is 4 times South Africa's and the population 23 times. Its economy is the 10th largest in the world with high growth potential. South Africa is more open to international trade (66% of gdp) than India (31%) Indian exports to South Africa are expanding and because of the difference in size and trade intensity, the impact on the South African market can be much more extensive than the other way round.

7. Although legislation is considered to be sufficient concerns about the safeguarding of international property rights continue to prevail among foreign investors..

OPPORTUNITIES

8 A PTA with India will start off with South African tariffs lower than India's with the benefit of the likelihood that Indian tariffs being lowered more than South Africa's.

9. The Indian market is expanding and thus offers business opportunities Growing prosperity is expected to be sustained by exports, India's IT services sector and its growing segment of middle class consumers.

10. Prevalence of non-tariff barriers, cumbersome bureaucracy and a predilection for the use of trade remedies may distract from the attractiveness of trade barriers. The Indian market should preferably be entered in partnership with a local business counterpart.

Conclusion

Indian economic prosperity offers opportunities for South African business. A number of threats are apparent for Indian exports to South Africa to cause injury to South African industry. Some of them are WTO unfriendly and cause for caution on South Africa's part when concluding agreements with China.

These threats and opportunities manifest themselves on the sector level.

2. SECTOR DEVELOPMENT POLICIES

2.1. INDUSTRY POLICIES – INDIA

Since political independence in 1947 to the late 1970's, India's economy was dominated by central government planning and policies of import substitution. Economic production was transformed from primary industries to heavy secondary industries; however, the agriculture sector still employs the majority of the population. Over the past 20 years, public sector participation increased, specifically after the liberalisation policies of the 1990's. Growth rates increased to between 4% and 7% pa, on average more than double the 3% pa of the previous four decades.

The official policies adopted by the Department of Industrial Policy and Promotion of the Ministry of Commerce & Industry recognise the important role of foreign capital in the economic development of India. Foreign capital is not only regarded as a source of funding – as a non-debt inflow – but also as a tool to transfer knowledge and technology to India, as well as building international linkages with multi-national companies.

Foreign investment in manufacturing can be made under the "automatic route" – requiring notification only to the Reserve Bank of India. Infrastructure is a focus area, namely energy and power, telecommunications, and township development.

2.2. NATIONAL STEEL POLICY – INDIA

India published a National Steel Policy in 2005, of which the main features are: -

OBJECTIVE

The long-term strategic objective of the Indian steel policy is that the country should have a modern and efficient steel industry of world standards, with the ability to meet a diversified demand. The focus of the policy is not only global competitiveness in cost, quality and product mix, but also global benchmarks of efficiency and productivity.

INDUSTRY SITUATION

The long-term perspective of the Indian steel industry is informed by the following situational analysis: -

- The growth in global steel consumption, which has reached a billion tonne per annum recently, has accelerated from 2% per annum ("pa") over the past fifteen years, to a

level of 3% pa, which is to continue over the next decade, with steel consumption expected to grow to 1,4 billion tonne per annum in a decade's time.

- The growth rate of steel production in India was 7,0% pa over the past fifteen years and it is projected to continue growing at that level, in line with the projected GDP growth rate of 7% to 8% pa for India – thereby the income elasticity of steel demand is approximating unity.

"SWOT" ANALYSIS FOR NATIONAL STEEL POLICY

The national steel policy of India addresses the following perceived and real characteristics of the industry in terms of a "SWOT" analysis: -

- Strengths: availability of iron ore and coal; low labour costs; abundance of quality human resources; mature production base
- Weaknesses: unscientific mining techniques; low productivity; dependence on imported coking coal; low investment in research and development ("R&D"); high cost of finance; inadequate infrastructure
- Opportunities: unexplored rural market; growing domestic demand; export potential; consolidation possibilities of production capacity
- Threats: China becoming a net exporter of steel; protectionism in Western Hemisphere markets; dumping by competitors

STRATEGY

The demand-side strategy is to create incremental demand through promotional and awareness efforts, as well as improving delivery channels to rural areas.

The supply-side strategy is to facilitate additional capacity, removal of constraints around inputs such as iron and coal, investment in R&D and human resource development, and encouragement of improvements in infrastructure such as roads, railways and ports

DEMAND-SIDE

Steel consumption in India compared with global averages for various sectors is: -

Consideration	kg/capital
World average	150
Developed world average	350
Average for India	30
Urban consumption – presently	77
Projected to 2020 @ 5% pa growth	165
Rural consumption – presently	2
Projected to 2020 @ 4,4% pa growth	4

India therefore has substantial potential to increase steel domestic consumption in future. Exports, presently at 11% of total production, are targeted to attain a 25% export share of production by 2020. Exports are supported by international cost competitiveness, strategic alliances and export-oriented units ("EOUs"), as well as Government's contribution to trade policy by means of export credit, the provision of trade information, a reduction in transaction costs and encouragement of value-added products.

Due to slow progress with multi-lateral trade negotiations, India will pursue regional trade agreements instead.

SUPPLY-SIDE

The rich endowments of India with iron ore, non-coking coal and labour cost advantages are neutralised by low efficiencies, poor quality and productivity, and the high cost of coking coal, power, freight and finance.

For India to reach its target of 110 Mtpa steel production by 2020, it has to increase the availability of the input materials. Substantial iron ore reserves and coal reserves are present in India, but 85% of coking coal requirements will have to be imported. Technologies and investments to improve the supply of better quality coking coal will be encouraged by the Government of India.

2.3. INCENTIVES AND SCHEMES – INDIA

India applies a vast array of export support schemes that are applicable to all industrial sectors and from which the metals sector benefits. These schemes appear in Addendum A. One set of schemes is based on the draw back of duty principle and called the Duty

Exemption and Remission Scheme that enables duty free import of inputs required for export production.

The scheme lacks a built-in obligation to import only goods that are consumed in production of the exported goods. There is no verification system in place to check whether the imports are actually consumed in the production process. It is not a substitution drawback scheme because the imported goods do not need to be of the same quantity and characteristics as the domestically sourced inputs that were used for export production. Exporting producers are eligible for the DEPB benefits regardless of whether they import any inputs at all. An exporter obtains the benefit by simply exporting goods without the need to show that any input material was indeed imported; thus, exporting producers which procure all of their inputs locally and do not import goods which can be used as inputs are still entitled to the DEPB benefits.

The second set of incentives is a range of development zones. Producers in these zones, in addition to duty draw backs benefit from tax concessions and relief from other taxes such as services taxes.

India also has export finance, insurance, guarantee, export promotion and marketing assistance schemes. In addition, their priority-sector lending requirements require domestic banks to allocate 12% of total annual lending for exports.

2.4. POLICY ENVIRONMENT – SOUTH AFRICA

2.4.1.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.

2.4.2. 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.

2.4.3. 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.

2.4.4. 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.

2.4.5. 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

2.4.6. Considerations

1. South African economic development policies appear to be trapped in the problem statement stage. India follows the practice of successive five year plans. Among others that ensures continuity and policy stability and transparency.
2. The Indian steel industry is promoted according to the National Steel Policy 2005. South Africa's new metal sector policy is under wraps now for a while.
3. India needs to adapt to WTO requirements that should lead to the eventual elimination of subsidies and incentives in favour of exports.

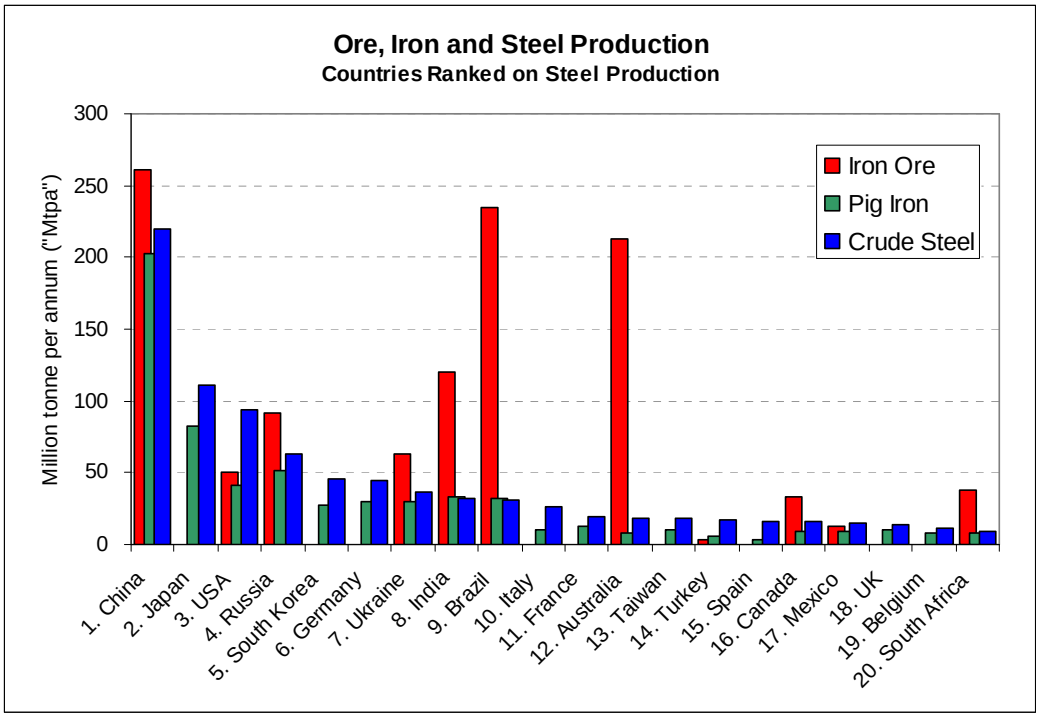
3. OVERVIEW OF MARKETS

3.1. IRON AND STEEL

3.1.1. World Iron and Steel

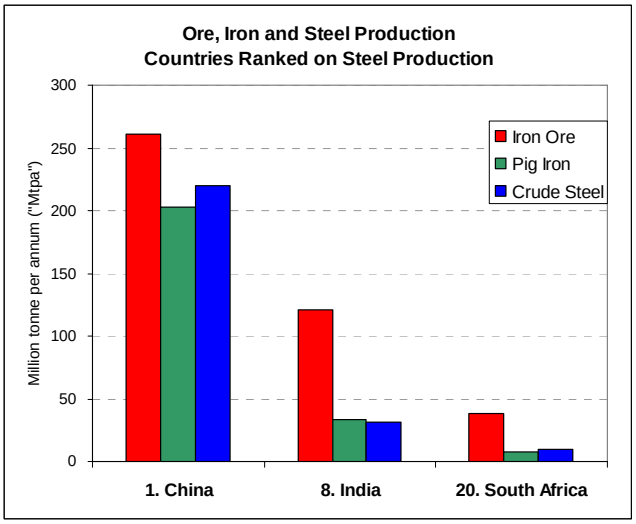
Iron ore is a very common element in the crust of the earth. It is mainly produced from two ore minerals, namely hematite (Fe_2O_3) and magnetite (Fe_3O_4). Iron is exploited commercially in greater quantities than any other metal. Iron ore is the primary feedstock for the manufacture of iron, steel 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 3.1-1: Steel Producing Countries



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 3.1-2: Comparative Ore, Iron and Steel Production



Source: USGS

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.

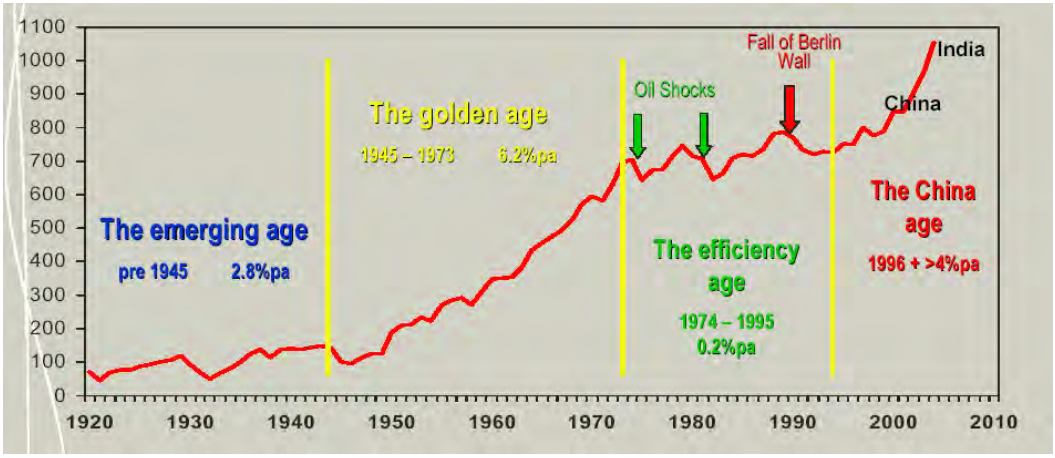
Table 3.1-1: World Crude Steel Production [Mtpa]

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%
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%

COUNTRY	2000	2001	2002	2003	2004	SHARE
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%

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 3.1-3: Phases of Growth and Stagnation in the Global Steel Industry



Source: BHP-Billiton

3.1.2. Indian Iron and Steel

India has substantial reserves of iron ore, supporting established steel and downstream engineering products sectors. The key figures for the Indian iron and steel industry are: -

Table 3.1-2: Iron and Steel Production – India

Iron and steel [1 000 t]	1999	2000	2001	2002	2003	2004
Iron ore and concentrate:						
Gross weight	70 220	75 950	79 200	86 400	99 100	126 000
Fe content	44 940	48 600	50 700	55 300	63 400	80 600
Metal:						
Pig iron	20 139	21 321	21 900	24 315	24 000	25 000
Direct-reduced iron	5 220	5 440	5 590	5 731	5 800	5 800
Steel, crude	24 269	26 924	27 291	28 814	31 779	32 000
Semi-manufactures	12 000	12 000	13 000	13 500	14 000	14 000

Iron ore production increased by more than 10% pa over the past five years, whereas crude steel production increased by 3,5% pa.

3.1.3. South African Iron and Steel

Table 3.1-3: 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	6 300	5 800	5 800	6 234
Direct-reduced iron	1 260	1 530	1 560	1 700	1 542
Crude steel	6 830	8 481	8 821	9 100	9 384

3.2. ALUMINIUM

3.2.1. 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.

Historical dates in the commercialisation of aluminium are: -

- In 1808, Sir Humphry Davy (Britain) established the existence of aluminium and named it.
- In 1821, P. Berthier (France) discovered a hard, reddish, clay-like material containing 52 per cent aluminium oxide near the village of Les Baux in southern France. He called it bauxite, the most common ore of aluminium.
- In 1825, Hans Christian Oersted (Denmark) produced minute quantities of aluminium metal by using dilute potassium amalgam to react with anhydrous aluminium chloride, and distilling the resulting mercury away to leave a residue of slightly impure aluminium.
- In 1827, Friedrich Wöhler (Germany) described a process for producing aluminium as a powder by reacting potassium with anhydrous aluminium chloride. In 1845, Wöhler established the specific gravity (density) of aluminium, and one of its unique properties - lightness.
- In 1854, Henri Sainte-Claire Deville (France) improved Wöhler's method to create the first commercial process. The metal's price, initially higher than that of gold and platinum, dropped by 90% over the following 10 years. The price was then still high enough to inhibit its widespread commercialisation and adoption by industry. (Emperor Napoleon III

of France was known to insist that he and his most important guest should be served meals on an aluminium plate, while his guests had to settle for solid gold plates).

- In 1855, a bar of aluminium, the new precious metal, was exhibited at the Paris Exhibition.

- In 1857, writer Charles Dickens provided commentary on aluminium as follows: "Within the course of the last two years, a treasure has been divined, unearthed and brought to light... what do you think of a metal as white as silver, as unalterable as gold, as easily melted as copper, as tough as iron, which is malleable, ductile, and with the singular quality of being lighter that glass? Such a metal does exist and that in considerable quantities on the surface of the globe."

  "The advantages to be derived from a metal endowed with such qualities are easy to be understood. Its future place as a raw material in all sorts of industrial applications is undoubted, and we may expect soon to see it, in some shape or other, in the hands of the civilised world at large."

- In 1885, Hamilton Y. Cassner (USA) improved on Deville's process. The total aluminium output was 15 tonnes per annum.

- In 1886, two unknown young scientists, Paul Louis Toussaint Héroult (France) and Charles Martin Hall (USA), working independently and unaware of each other's work, simultaneously invented a new electrolytic process, the Hall-Héroult process, which is the basis for all aluminium production today. They discovered that if they dissolved aluminium oxide (alumina) in a bath of molten cryolite and passed a powerful electric current through it, then molten aluminium would be deposited at the bottom of the bath.

- In 1888, the first aluminium companies were founded in France, Switzerland and the USA.

- In 1889, Karl Josef Bayer (Austria), son of the founder of the Bayer chemical company, invented the Bayer Process for the large scale production of alumina from bauxite.

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

Figure 3.2-1: Historical Development of the Aluminium Industry

YEAR	OUTPUT [tpa]	GROWTH RATE [% pa]	OVER TIME PERIOD [YEARS]
1913	65 000	17,5%	13

YEAR	OUTPUT [tpa]	GROWTH RATE [% pa]	OVER TIME PERIOD [YEARS]
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 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 .

Aluminium value chain:

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

Main steps in primary aluminium production:

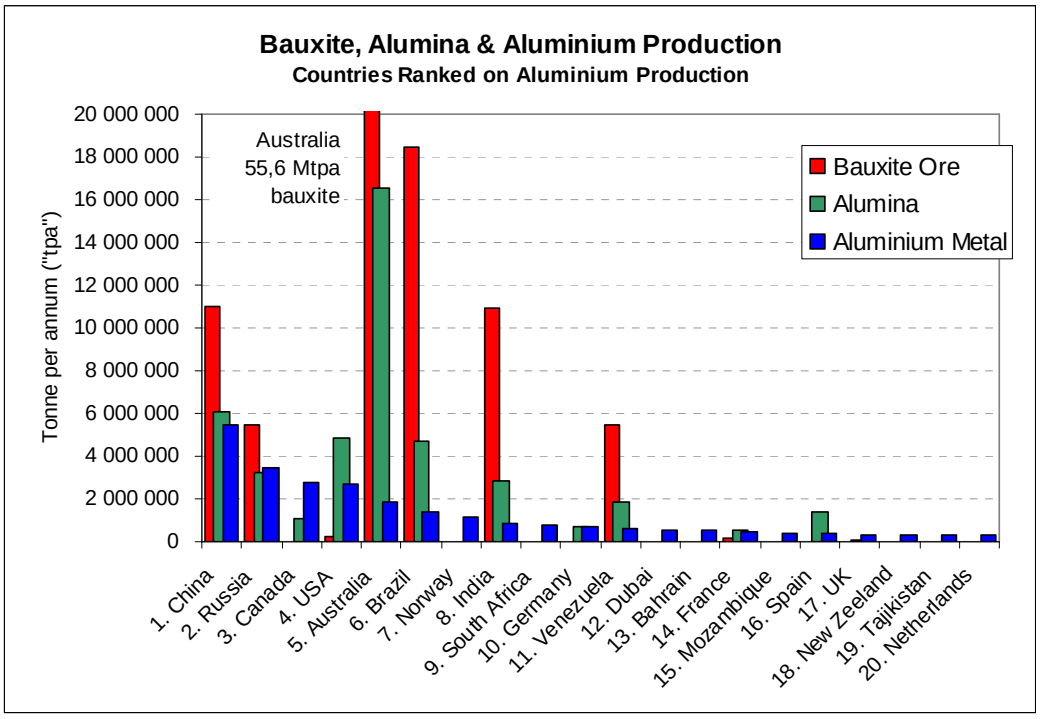
1. Bauxite mining: the mining of bauxite is the first step in aluminium production.
2. Production of alumina: aluminium oxide, the raw material for primary aluminium production, is refined from bauxite.
3. Production of primary aluminium: primary aluminium is produced by electrolysis.

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.

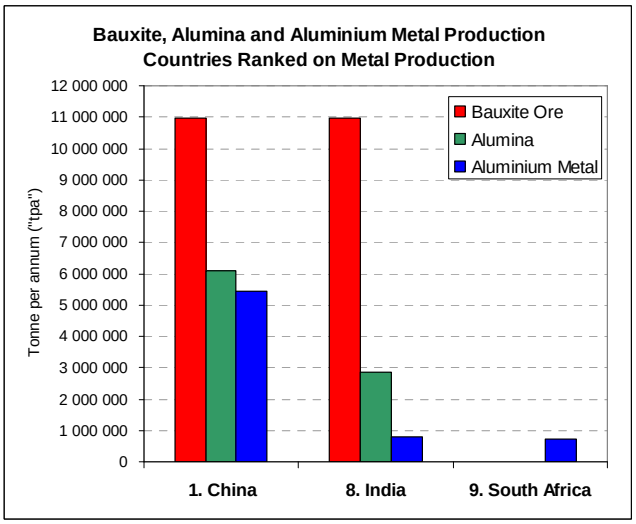
The main aluminium producing countries are shown in the graph below, followed by a comparison of the production values for India compared to South Africa: -

Figure 3.2-2: Aluminium Producing Counties



Source: World Metals % Minerals Review 2005

Figure 3.2-3: Comparison of Aluminium Production in India and South Africa



Source: World Metals % Minerals Review 2005

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 3.2-1: 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, Dubai	470	500	536	560	683	2,3%
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

3.2.2. Indian Aluminium

India has its own reserves of bauxite to support its aluminium value chain.

Table 3.2-2: Aluminium Raw Materials and Production – India

Aluminium [1 000 t]	1999	2000	2001	2002	2003	2004
Bauxite, gross weight	6 712	7 562	7 864	9 647	10 414	11 275
Alumina, Al_2O_3 equivalent	2 080	2 280	2 400	2 800	2 500	2 600
Metal, primary	614	644	624	671	799	862

3.2.3. South African Aluminium

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

Table 3.2-3: 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

3.3. COPPER

3.3.1. 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.

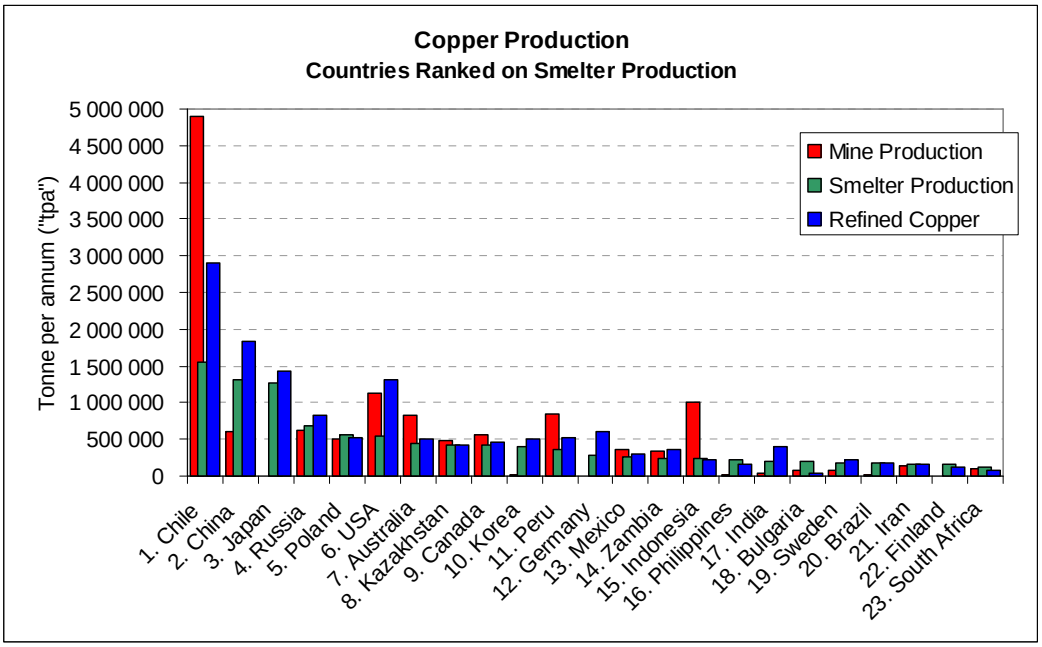
Used in large amounts by the electrical industry in the form of wire, copper is second only to silver in electrical conductance. Since it resists corrosion from the air, moisture and seawater, copper has been widely used in coins. Although once made nearly entirely from copper, American pennies are now 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.

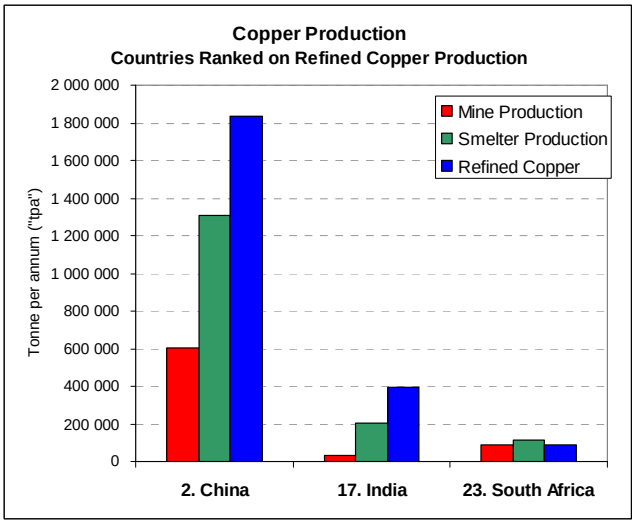
Modern day applications of copper are in the construction industry (air conditioning units, cabling and wiring); electrical products (telecommunications, power and electronic products) industrial machinery and equipment (generators and transformers); and transport (vehicles and radiators). The world's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

Figure 3.3-1: Copper Producing Countries



Although India does not have significant copper reserves for mining production, it does have smelter and primary production, ranking 17th in the world.

Figure 3.3-2: Copper Production in the Study Countries



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.

3.3.2. Indian Copper

In terms of its own industrial mineral assessment, India has a scarcity of copper ore as a natural resource. The key figures for the industry are: -

Table 3.3-1: Copper Industry Production – India

Copper [1 000 t]	1999	2000	2001	2002	2003
Mine output, Cu content	34,1	31,9	32,4	31,5	28,4
Metal, primary:					
Smelter	224,4	256,0	293,0	251,4	252,0
Refinery					
Electrolytic, cathode	200,0	234,0	310,0	353,7	375,0
Fire refined	8,0	9,0	18,0	20,0	19,0
Total refinery	208,0	243,0	328,0	374,0	394,0

Note: Electrowon refers to high grade electrowon cathodes

Source: USGS

Despite a stagnant or declining copper mining output, the Indian copper industry has entered in a growth phase, at a rate of more than 11% pa.

3.3.3. South African Copper

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

Table 3.3-2: 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.

3.4. NICKEL

3.4.1. 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.

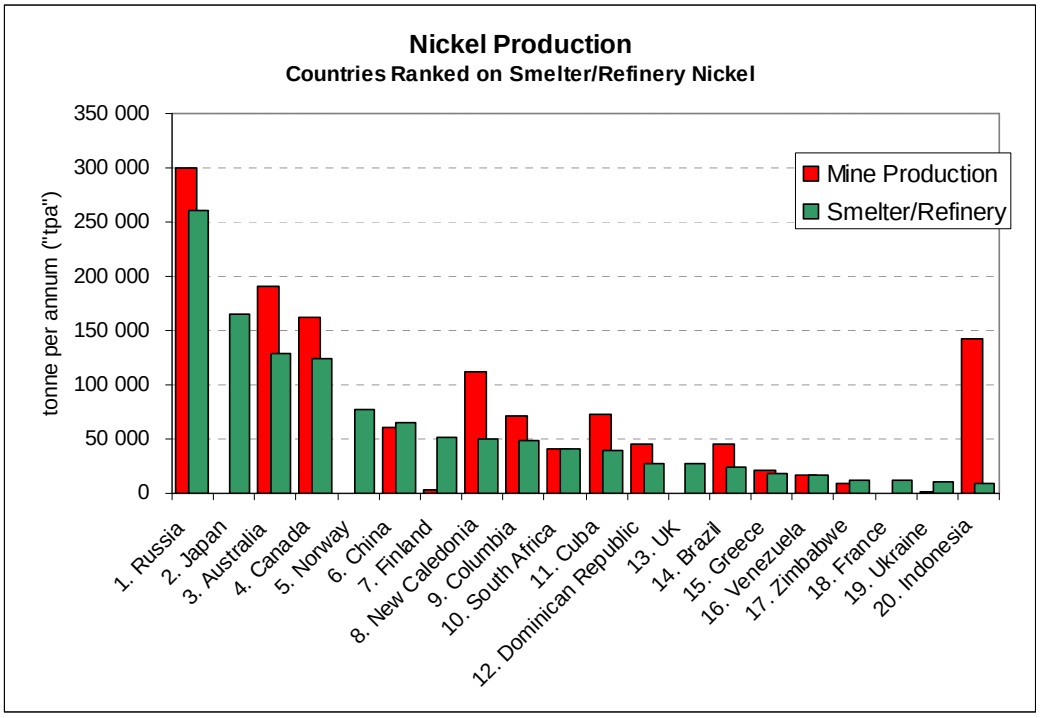
The regional mix of demand and supply is presented in the table below: -

Table 3.4-1: 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%
Oceania, Africa & Other	50 000	4%	240 000	19%
TOTAL	1 240 000	100%	1 240 000	100%

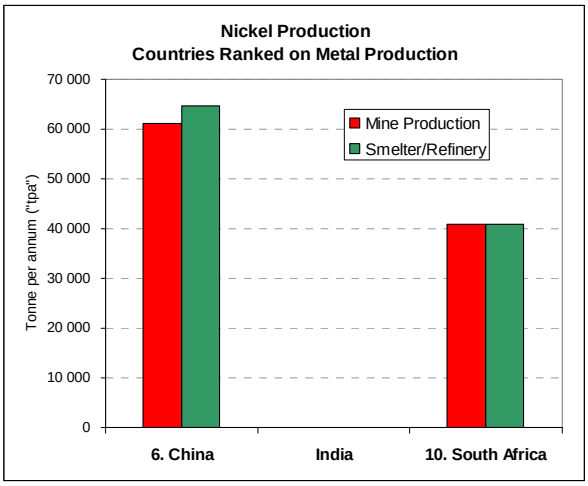
The leading nickel producing countries are Russia, Japan, Australia and Canada, as illustrated in the graph below: -

Figure 3.4-1: Nickel Production Countries



India does not have a nickel industry, as shown in the graph below: -

Figure 3.4-2: Nickel Production in Study Countries



3.4.2. Indian Nickel

Nickel is classified as a scare natural resource by India. Accordingly, India's policies are promoting exploration for nickel. Exploration activities are, however, not confined to landmass only, but were extended to off-shore and deep ocean regions. In this way, India discovered petroleum and, at a depth of 3 000 m below sea level, also cobalt, nickel, copper and manganese, for which the country earned the status of Pioneer Investor in seabed mining.

3.4.3. 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 3.4-2: Nickel Production -- South Africa

NICKEL [1 000 t]	1999	2000	2001	2002	2003
Mine output, concentrate, nickel content	36,2	36,6	36,4	38,5	40,8
Metal, electrolytic	28,3	30,9	30,5	31,6	25,5

3.5. SUMMARY TOTALS

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

Table 3.5-1: Comparative Output of Primary Metals for Study Countries [tonne per annum]

PRODUCTION	STEEL	ALUMINIUM	COPPER	NICKEL
World	1 050 000 000	29 900 000	15 500 000	1 240 000
China	273 000 000	6 670 000	1 800 000	65 000
India	32 000 000	860 000	390 000	0
South Africa	9 500 000	860 000	90 000	41 000

Table 3.5-2: Comparative of Counties on Share of World Market

MARKET SHARE	STEEL	ALUMINIUM	COPPER	NICKEL
China	26,0%	22,3%	11,6%	5,2%
India	3,0%	2,9%	2,5%	0,0%
South Africa	0,9%	2,9%	0,6%	3,3%

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

Table 3.5-3: Market value of primary Products [US$ billion per year]

VALUE	STEEL	ALUMINIUM	COPPER	NICKEL
World	262,5	53,8	38,8	18,6
China	68,3	12,0	4,5	1,0
India	8,0	1,5	1,0	--
South Africa	2,4	1,5	0,2	0,6

4. FEATURES OF INDUSTRIES

4.1. INDIAN MINERAL RESOURCES FOR METAL SECTOR

India has a vast geological potential of more than 20 000 known deposits and a well-developed mining industry to realise its potential. It has

Figure 4.1-1: Mineral Resources for Metal Sectors in India

Mineral/Ore		Recoverable reserves [million tonne]	Classification of reserves
Coal		210 000	Non-coking coal: Abundant Coking coal: Deficient
Iron ore	– hematite – magnetite	10 000 3 400	Abundant
Bauxite		2 500	Metallurgical grade: Abundant Chemical/refractory grade: Deficient
Copper		460	Deficient
Nickel			Scarce

The vast majority of mining is from open pit operations.

The National Mineral Policy (1993) opened up the mineral industry for private sector investment. The policy allowed, among others, the development of captive mines to ensure supply of raw materials for processing units funded with foreign equity participation. This policy resulted in a significant increase in prospecting and processing activities.

4.2. 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.

4.3. WORLD STEEL INDUSTRY

4.3.1. 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 4.3-1: 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%

RANK	COUNTRY	PRODUCTION [Mtpa]	SHARE [%]
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 (data for China, the 1st ranked producer is not available): -

Table 4.3-2: World Iron Ore Reserves (Proven Resources)

RANK	COUNTRY	RESERVES - IRON CONTENT [Mtpa]	SHARE [%]
1	Russia	14 000	20,0%
2	Australia	11 000	15,7%
3	Ukraine	9 000	12,9%
4	Brazil	4 800	6,9%
5	India	4 200	6,0%
6	Kazakhstan	3 300	4,7%
7	Venezuela	2 400	3,4%
8	Sweden	2 200	3,1%
9	USA	2 100	3,0%
10	Canada	1 100	1,6%
11	Iran	1 000	1,4%
12	South Africa	650	0,9%
13	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 230 000 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 4.3-3: 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%
21	Netherlands	5,9	0,8%
22	Turkey	5,7	0,8%
23	Poland	5,6	0,8%
24	Czech Republic	5,2	0,7%
25 – 59	Rest of World (35 countries)	54,0	7,7%
59	World Total	705,4	100,0%

Source: US Geological Survey Minerals Yearbook, 2004

India has a 10% share in iron ore production, 4,8% in pig iron and 3,3% 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 4.3-4: 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%

RANK	COUNTRY	PRODUCTION [Mtpa]	SHARE [%]
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 1 037 Mtpa.

4.3.2. 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 4.3-5: 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

4.3.3.Trade Structure – Imports and Exports

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

Table 4.3-6: 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 4.3-7: 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	0,0%	9,4%	4,1%
Imports of iron ore	25,4%	0,1%	0,0%
Exports of steel scrap	0,0%	0,0%	0,5%
Imports of steel scrap	13,1%	2,8%	0,2%

4.3.4. Competitive Analysis

The contents of this paragraph are sourced from ADDENDUM C.

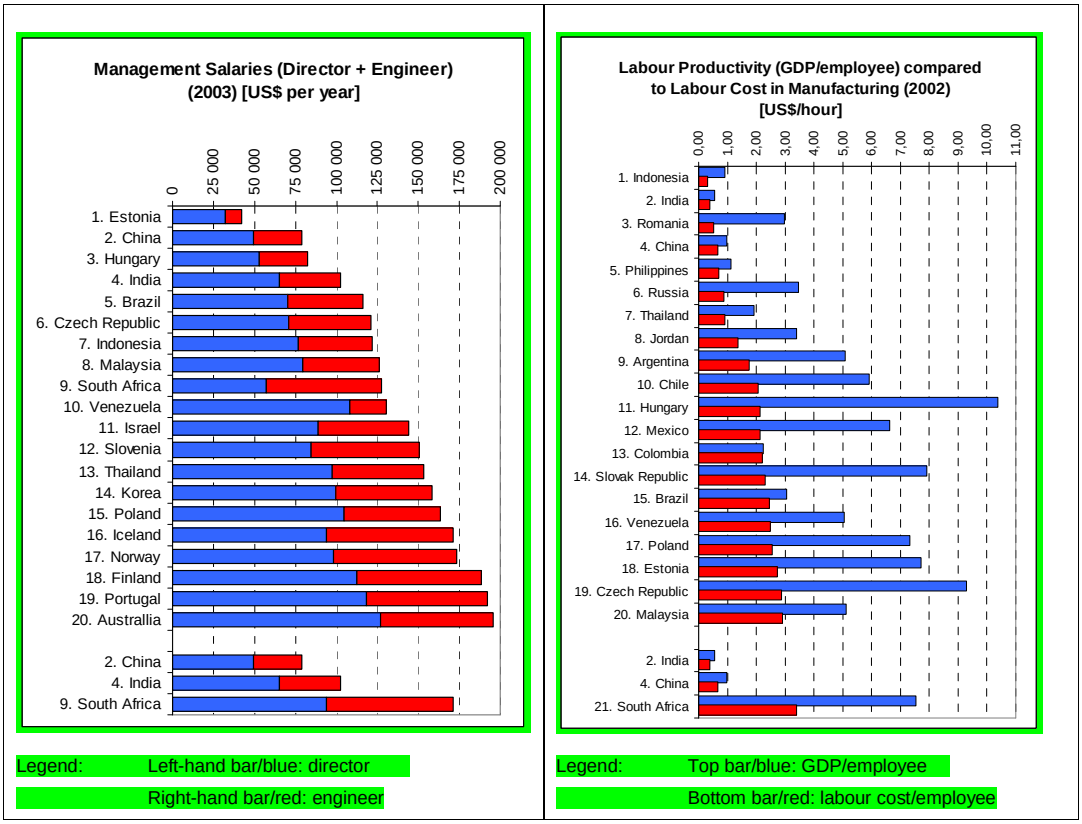
4.3.4.1 General

As an introduction to the analysis of competitiveness in the metals industries, it is important to re-iterate the notion that competitiveness is attained at company-level. Country factors essentially support or detract from the competitiveness of the companies in its industries. The contents of the graphs below indicate the cost competitiveness of India on the macro level comparative to South Africa .

4.3.4.2 Labour costs.

The contents of figure 4.3-1 show the advantage of India over South Africa in respect of labour costs.

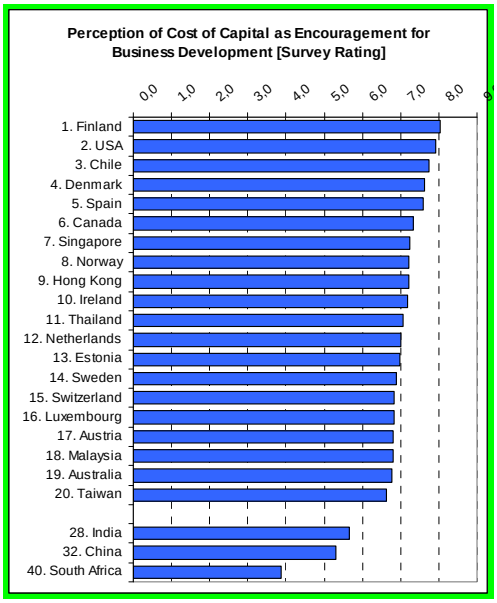
Figure 4.3-1 Country rankings on personnel costs and labour costs relative to productivty

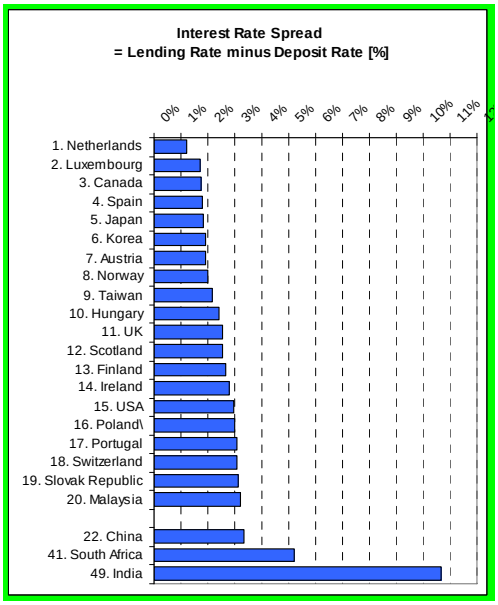


4.3.4.3 Cost of capital

Comparisons of cost of capital and interest rate spreads, as presented in graph 4.3-2 illustrate the capital related competitiveness factors for India and South Africa not to be far apart.

Figure 4.3-2: Cost of Capital and Interest Rate Spread





4.3.4.4 Energy

In terms of energy cost, South Africa attains the top ranking in the world (Figure 4.3-3). 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 4.3-4).

Figure 4.3-3 Energy Cost to Industry and Intensity of Energy Use for Production

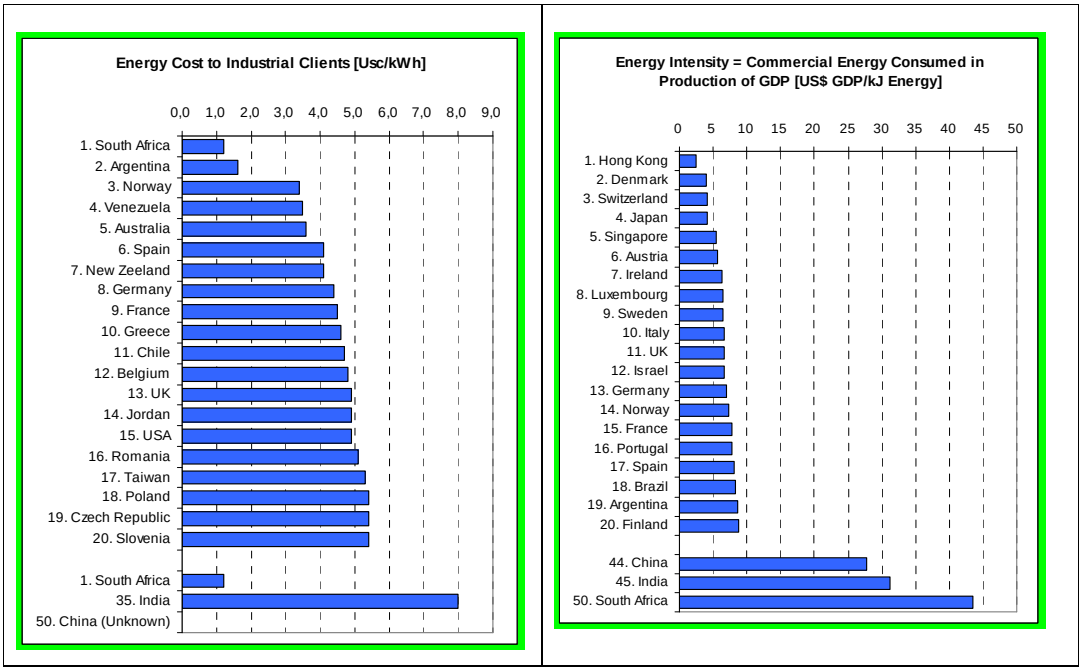
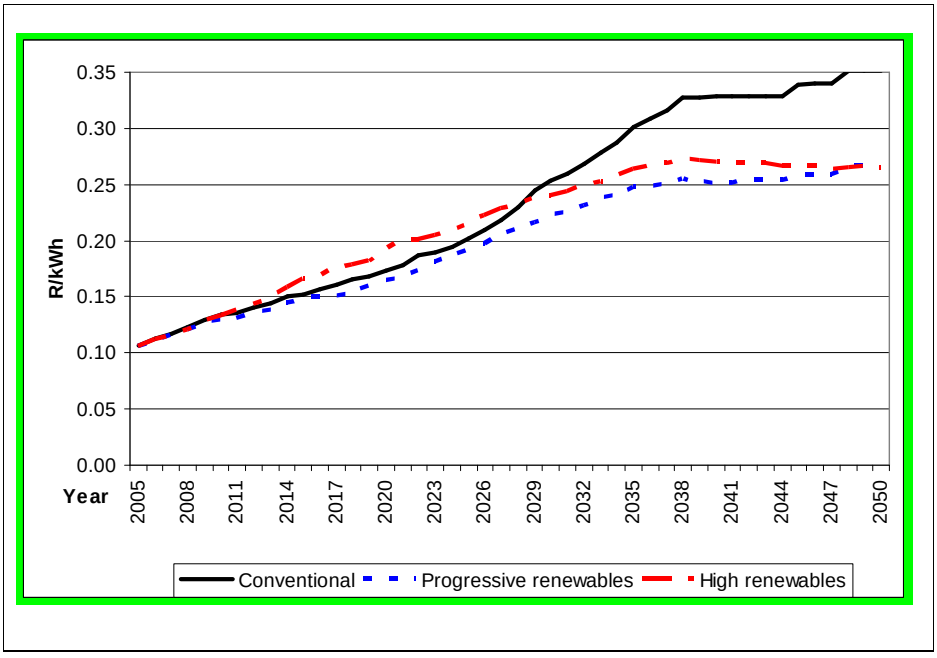


Figure 4.3-4: Long-term Cost Curve for Energy Cost in South Africa



Source: SECCP

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.

4.3.4.5 Industry Competitiveness Factors.

4.3.4.5 1 About Benchmarking

While the analysis above provides a partial 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.

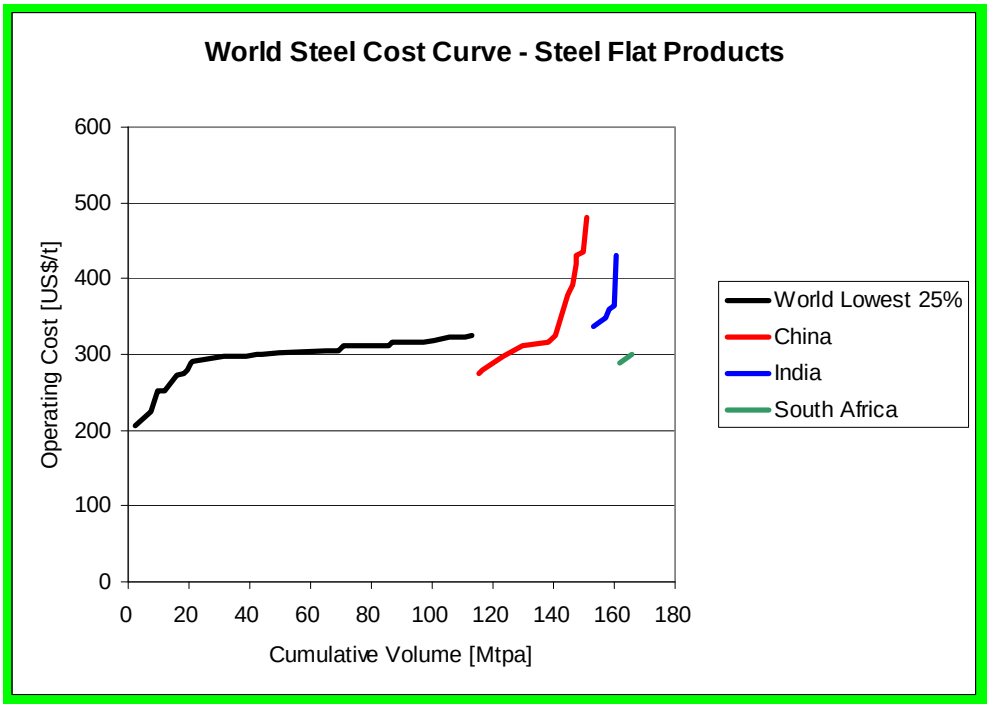
Company-to-company benchmarking offers valuable insights. As a note of caution, however, it has to be recognised that the analysis at company level provides a limited perspective. The importance of a wider, industry value chain approach to competitiveness, especially with respect to operating efficiency,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

4.3.4.5.2 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.

Figure 4.3-5



WCC based on data in the table above.

4.3.4.5.3 Summary Company Assessments for RSA and China

The contents of the table below 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 4.3-1: Comparison of Country Averages of Financial Key Figures of Steel Plants

COUNTRY	South Africa	India
Number of steel plants in study group	2	7
Total production volume of study group [Mtpa]	4,45	15,77
Total employment in study group [people]	11 785	127 926

COUNTRY	South Africa	India
AVERAGES		
Sales price of goods shipped [US$/t]	720,97	801,60
Raw material costs [US$/t]	152,16	92,65
Energy & Reductants [US$/t]	106,83	158,40
Overheads [US$/t]	67,04	91,92
Labour costs [US$/t]	36,06	44,86
G&A; Maintenance [US$/t]	30,98	47,06
Total operating costs [US$/t]	326,03	342,97
EBITDA [US$/t]	394,94	458,62
Interest [US$/t]	52,76	38,53
Depreciation [US$/t]	26,94	36,38
Total costs [US$/t]	405,73	417,88
Earnings before tax [US$/t]	315,24	383,72
KEY FIGURES		
Finished product volumes [Mtpa]	2,8	2,4
Worker-hours per tonne shipped [hours/tonne]	5,5	16,5
Total employment [people]	8 497	21 738
Total fixed capital cost - historic [US$ billion]	2,60	2,44
Total fixed capital cost - replacement [US$ billion]	3,54	2,99
Total fixed capital cost - historic [US$/t]	918,82	998,87
Total fixed capital cost - replacement [US$/t]	1 247,98	1 227,38
Employment cost [US$/h]	6,64	2,71
Electricity cost [US$/kWh]	0,04	0,04
Other energy cost [US$/GJ]	3,25	4,04
Asset productivity (Revenue/asset value) [%]	78%	80%

The average selling price of India is 11% higher than that of South Africa. Raw material cost for Indian producers is 60% of that of South Africa. However, South Africa has a cost advantage in all of the other operating cost items especially energy. South African operating cots are thus 95% of that of India. India's interest charges are 74% of that of South Africa. In the end India's total cost is 3% higher than South Africa's, with higher Indian earnings before tax that remain to explain why selling prices of Indian producers are significantly higher than that of South African plants. Although South Africa's hourly employment cost is 2.45 that of India, tonnes shipped per worker is 3 times higher. Consequently, South Africa's labour cost prt tonne is 20% less than India's.

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 0: Financial Key Figures in Unity Format per Country

COUNTRY	South Africa	India
Sales price of goods shipped [US$/t]	1,00	1,00
Raw material costs [US$/t]	0,21	0,12
Energy & Reductants [US$/t]	0,15	0,20
Overheads [US$/t]	0,09	0,11
Labour costs [US$/t]	0,05	0,06
G&A; Maintenance [US$/t]	0,04	0,06
Total operating costs [US$/t]	0,45	0,43
EBITDA [US$/t]	0,55	0,57
Interest [US$/t]	0,07	0,05
Depreciation [US$/t]	0,04	0,05
Total costs [US$/t]	0,56	0,52
Earnings before tax [US$/t]	0,44	0,48
Total fixed capital cost - historic [US$/t]	1,27	1,25
Total fixed capital cost - replacement [US$/t]	1,73	1,53

Per US$1,00 of turnover revenue, South African steel manufacturers require: US$1,73 of new steel plant compared to US$1.53 for India. South African operating cost is 45¢ while that of India is 43¢ thanks to advantages in raw material costs and in interest charges.

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

- An employment cost per worker of only 41%, but worker-hours per tonne of steel produced of 3 times;
- Higher headline earnings profitability (as EBITDA) of 16%, due to 11% higher selling prices.
- Advantages in raw material costs that is 61% and interest that is 73% of South Africa's. 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.

4.4. INDIAN STEEL INDUSTRY

4.4.1. Production, Number of Producers, Capacity

INDUSTRY STRUCTURE

The structure iron and steel industry in India comprises: -

- Main producers: SAIL, TISCO and RINL have integrated steelmaking plants, utilise iron ore and coal/gas as raw materials, with a total combined capacity of 19,3 Mtpa and a capacity utilisation of 104%;
- Other major producers: ESSAR, ISPAT and JVSL have a total combined capacity of 6,4 Mtpa and a capacity utilisation of 97%;
- Secondary producers, a widely dispersed group with a total combined capacity of 42 Mtpa, namely:
  - Backward linkages from 120 sponge iron producers (capacity 13 Mtpa, capacity utilisation 75%)
  - 650 mini blast furnaces, electric arc furnaces, induction furnaces and energy optimising furnaces (14 Mtpa, 58%)
  - Small and medium enterprises with forward linkages with 1 200 re-rollers (15 Mtpa, 55%)

The iron ore producers in India are: -

Table 4.4-1 : Iron Ore Producers - India

OPERATING COMPANIES	MAJOR EQUITY OWNERS	LOCATION OF MAIN FACILITIES	CAPACITY [Mtpa]
Kudremukh Iron Ore Co. Ltd.	Indian Government, 100%	Kudremukh, Chikmagalur District, Karnataka	10,30
National Mineral Development Corp. Ltd.	Indian Government, 100%	Bailadila, Madhya Pradesh	9,0
National Mineral Development Corp. Ltd.	Indian Government, 100%	Donimalai, Karnataka	9,0
Steel Authority of India Ltd.	Indian Government, 100%	Bastar and Durg District, Madhya Pradesh	7,0

OPERATING COMPANIES	MAJOR EQUITY OWNERS	LOCATION OF MAIN FACILITIES	CAPACITY [Mtpa]
Steel Authority of India Ltd.	Indian Government, 100%	Singhbhum District, Bihar	3,5
Tata Iron and Steel Co. Ltd.	Tata Group of Companies	Singhbhum District, Bihar	3,5
Steel Authority of India Ltd. (Indian Government, 100%)	Indian Government, 100%	Kendujhar District, Orissa	3,0
Chowgule and Co. Ltd.	Privately Owned	Goa	2,5
Dempo Mining Corp. Ltd.	Privately Owned	Goa	2,5
V.M. Salgaocar & Bros. Pvt. Ltd.	Privately Owned	Goa	2,5
Indian Iron and Steel Co. Ltd.	Wholly owned subsidiary of Steel Authority of India Ltd., Indian Government, 100%	Singhbhum District, Bihar	2,5
Tata Iron and Steel Co. Ltd.	Tata Group of Companies	Kendujhar District, Orissa	2,0
Sesa Goa Ltd.	Privately Owned	Codli and Sonshi, Goa	1,0
TOTAL			58,3

Source: US Geological Survey Minerals Yearbook, 2004

The steel producers in India are: -

Table 4.4-2: Crude Steel Producers -- India

OPERATING COMPANIES	MAJOR EQUITY OWNERS	LOCATION OF MAIN FACILITIES	CAPACITY [Mtpa]
Steel Authority of India Ltd.	Indian Government, 100%	Bhilai steel plant, Madhya Pradesh	4,00
Steel Authority of India Ltd.	Indian Government, 100%	Bokaro steel plant, Bihar	4,00
Tata Iron and Steel Co. Ltd.	Tata Group of Companies	Jamshedpur steel plant, Bihar	3,20
Rashtriya Ispat Nigam Ltd.	Mittal Group of Companies	Visakhapatnam steel plant, Andhra Pradesh	3,20

OPERATING COMPANIES	MAJOR EQUITY OWNERS	LOCATION OF MAIN FACILITIES	CAPACITY [Mtpa]
Steel Authority of India Ltd.	Indian Government, 100%	Rourkela steel plant, Orissa	1,80
Steel Authority of India Ltd.	Indian Government, 100%	Durgapur steel plant, West Bengal	1,60
Indian Iron and Steel Co. Ltd.	Wholly owned subsidiary of Steel Authority of India Ltd., Indian Government, 100%	Burnpur steel plant, West Bengal	1,50
Visvesvaraya Iron and Steel Ltd.	Karnataka State, 60%; Steel Authority of India Ltd., Indian Government, 40%	Bhadravati steel plant, Karnataka	0,18
Ministeel plants (180 plants)	Privately owned	Located throughout India	4,70
TOTAL			24,18

Source: US Geological Survey Minerals Yearbook, 2004

4.4.2. Performance Outlook – Expansion/Decline

INDUSTRY SITUATION

The key figures and features of the Indian steel industry in global context are: -

- World steel consumption has reached 1 000 million tonne per annum ("Mtpa") in 2004, with a growth rate of 2% per annum ("pa") over the past fifteen years. The growth rate has accelerated and is projected at 3% pa over the next decade, with steel consumption expected to grow to 1 400 Mtpa by 2015.
- The growth rate of steel production in India was 7,0% pa over the past fifteen years. It projected growth rate of 7,3% pa is in line with the projected GDP growth rate of 7% to 8% pa for India, with an income elasticity of steel demand approximating unity.
- The production, trade and consumption patterns for the Indian steel industry, presently and projected future situation, is as follows: -

Table 4.4-3: Indian Steel Industry -- Present and Future

CONSIDERATION	Presently: 2004/05 [Mtpa]	Growth Rate [% pa]	Future: 2020 [Mtpa]
PRODUCTION	38	7,3%	110
+ IMPORTS	2	7,1%	6
- EXPORTS	4	13,3%	26
= CONSUMPTION	36	6,9%	90

DEMAND-SIDE

Steel consumption in India compared with global averages for various sectors is as follows, with an indication of the magnitude of potential growth in consumption in the local markets: -

Table 4.4-4: Steel Consumption Key Figures

CONSIDERATION	CONSUMPTION [kg/capita]
World average	150
Developed world average	350
Average for India	30
Urban consumption – presently	77
Projected to 2020 @ 5% pa growth	165
Rural consumption – presently	2
Projected to 2020 @ 4,4% pa growth	4

Over the past decade exports have grown at 10% pa, from a very low base, to reach 4 Mtpa, which is 11% of total production. The target is a 25% export share of production by 2020, which requires a growth in exports of 13% pa.

Exports are supported by international cost competitiveness, strategic alliances and export-oriented units ("EOUs"), as well as Government's contribution to trade policy by means of export credit, the provision of trade information, a reduction in transaction costs and encouragement of value-added products. Due to slow progress with multi-lateral trade negotiations, India will pursue regional trade agreements instead.

SUPPLY-SIDE

The rich endowments of India with iron ore, non-coking coal and labour cost advantages are neutralised by low efficiencies, poor quality and productivity, and the high cost of coking coal, power, freight and finance.

For India to reach its target of 110 Mtpa steel production by 2020, it has to increase the availability of the following input materials: -

Table 4.4-5: Raw Materials Requirements to Sustain Growth in Indian Steel Production

MATERIALS [Mtpa]	PRESENTLY: 2004/05	PROJECTED: 2020
Iron ore	54	190
Coking coal	27	70
Non-coking coal	13	26

Substantial iron ore reserves are present in India, in the form of 11,4 billion tonne of hematite and 10,7 billion tonne of magnetite ore (although only 8,7% of hematite is in the form of high quality lumpy ore, the remainder being ore fines). Of a total of 600 mining leases, only 246 are in operation, with a capacity of 175 Mtpa, producing 145 Mtpa, with 54 Mtpa for local production and 78 Mtpa was exported. Additional capacity of 200 Mtpa will be encouraged by the Government of India, by means of renewal of idle mining leases only against credible mining investment plans, pre-specified time frames for environmental certificates, iron ore trading practices, better utilisation of ore fines, and prescribed minimum economic sizes for mines and consortia of small miners to increase viability.

Exports of iron ore were stagnant at a level of 24 Mtpa for a decade up to 2000, but increased to 78 Mtpa by 2004. This growth was in the form of ore fines and concentrates exported to China. Export volumes are projected to reach a maximum of 100 Mtpa by 2020. Export of high grade lumpy ore will be leveraged to procure imports of scarce coking coal.

Although India has coking coal reserves of 4,6 billion tonnes, the quality is generally not suitable for steelmaking and only 29 Mtpa coking coal is presently produced. A volume of 8 Mtpa low quality local coking coal has to be blended with 19 Mtpa imported coking coal to meet local steelmaking quality and volume requirements of 27 Mtpa. Of the 70 Mtpa coking coal required by 2020, 85% will have to be imported. Technologies and investments to improve the supply of better quality coking coal will be encouraged by the Government of India.

Total reserves of non-coking coal are estimated at 74 billion tonnes. Sponge iron production may develop as a substitute for coking coal as it uses higher grade non-coking coal as input material. The present sponge iron capacity of 13 Mtpa is expected to increase to 38 Mtpa by 2020. The demand for higher grade non-coking coal is then expected to be 26 Mtpa.

AN INDEPENDENT ASSESSMENT

According to an assessment by the McKinsey Quarterly, India has the potential to double the contribution of the iron and steel sector to its economy, and could become one of the top five producers and markets for steel products by 2015. It is possible to expand iron ore production by three to five times in the next decade, but it has to be managed properly, avoiding the pitfalls of poor infrastructure, inappropriate regulation, and bureaucratic meddling. There are opportunities for both local companies and multinationals.

The aluminium and steel sectors combined offer investment opportunities of between US$75 to US$120 billion, resulting in the creation of one million new jobs, doubling the present employment levels in these sectors.

4.4.3. Presence of Multinationals

The Indian steel industry is dominated by public and private companies, with no participation by multinationals. The Mittal Steel group of companies, which has since become a leading global steel company, has its roots in India.

4.5. SOUTH AFRICAN STEEL INDUSTRY

4.5.1. Production, Number of Producers, Capacity

Kumba exports more than 21 million tonne per annum ("Mtpa") iron ore from SOIC, which is the second largest single open-pit mine in the world. The 860 km rail system that links SOIC 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 exports 21 Mtpa of its production of 33 Mtpa iron ore. It has a 3,5% world market share, making it the 5th largest supplier in the world.

SOIC 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 mine has proven reserves of more than 717 million tonne and a life-of-mine of 19 years, taking the expansion programme into account. Total mineral reserves are 1 600 million tonne.

The local steel companies are: -

Figure 4.5-1: South African Steel Companies

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

Table 4.5-1: South African Steel Industry Key Figures [tpa]

CONSIDERATION	2004	2005
PRODUCTION	7 434 100	7 296 300
Flat	4 381 600	4 331 700
Profile	3 052 500	2 964 600
LOCAL SALES	4 505 400	4 230 000
Flat	2 482 800	2 271 600
Profile	2 022 600	1 958 400
EXPORTS	3 237 000	3 397 600
Flat	2 141 200	2 314 200
Profile	1 095 800	1 083 400
IMPORTS	308 300	331 300
Flat	242 400	254 100
Profile	65 900	77 200

Source: SAISI

Relative to the total production volumes, these key figures can be stated as: -

Table 4.5-2: Analysis of South African Steel Industry Key Figures

CONSIDERATION	2004	2005
PRODUCTION	100%	100%
Flat	59%	59%
Profile	41%	41%
LOCAL SALES	61%	58%
Flat	33%	31%
Profile	27%	27%
EXPORTS	44%	47%
Flat	29%	32%
Profile	15%	15%
IMPORTS	4%	5%
Flat	3%	3%
Profile	1%	1%

4.5.2. 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 4.5-3: Applications of South African Steel Products [tpa]

SECTOR	2002	2003	2004	2005 [1]
Mining	125 000	110 500	145 800	151 300
Manufacturing	2 648 700	2 207 400	2 519 800	2 248 800
Packaging	313 000	281 900	260 700	250 800
Structural metal	1 069 100	781 300	982 300	858 900
Tube & pipe	522 600	396 300	527 600	426 800
Plate & sheet metal works	475 000	355 600	432 300	398 100
Roofing & cold forming	71 500	29 400	22 400	34 000
Agricultural	29 400	41 500	38 600	31 700
Automotive	308 000	236 100	311 800	295 000
Electrical apparatus/white goods	56 200	54 300	49 200	48 500
Cables, wire products & gates	672 200	617 200	647 100	572 000
Fasteners	52 100	49 300	57 100	48 000
Other	148 700	145 800	173 000	143 900

SECTOR	2002	2003	2004	2005 [1]
Building & construction	1 033 900	864 900	966 000	898 400
Unallocated	676 900	564 700	861 605	782 300
TOTAL	4 484 500	3 747 500	4 493 205	4 080 800

Source: SAISI

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

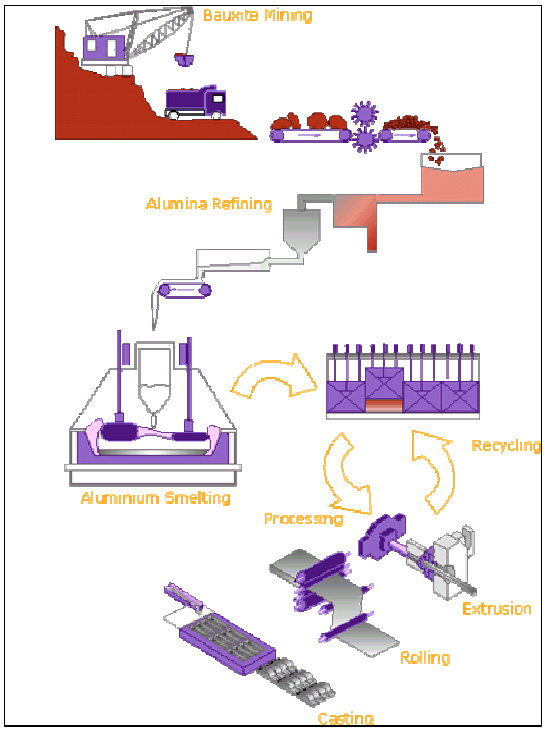
4.5.3. Presence of Multinationals

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

4.6. WORLD ALUMINIUM INDUSTRY

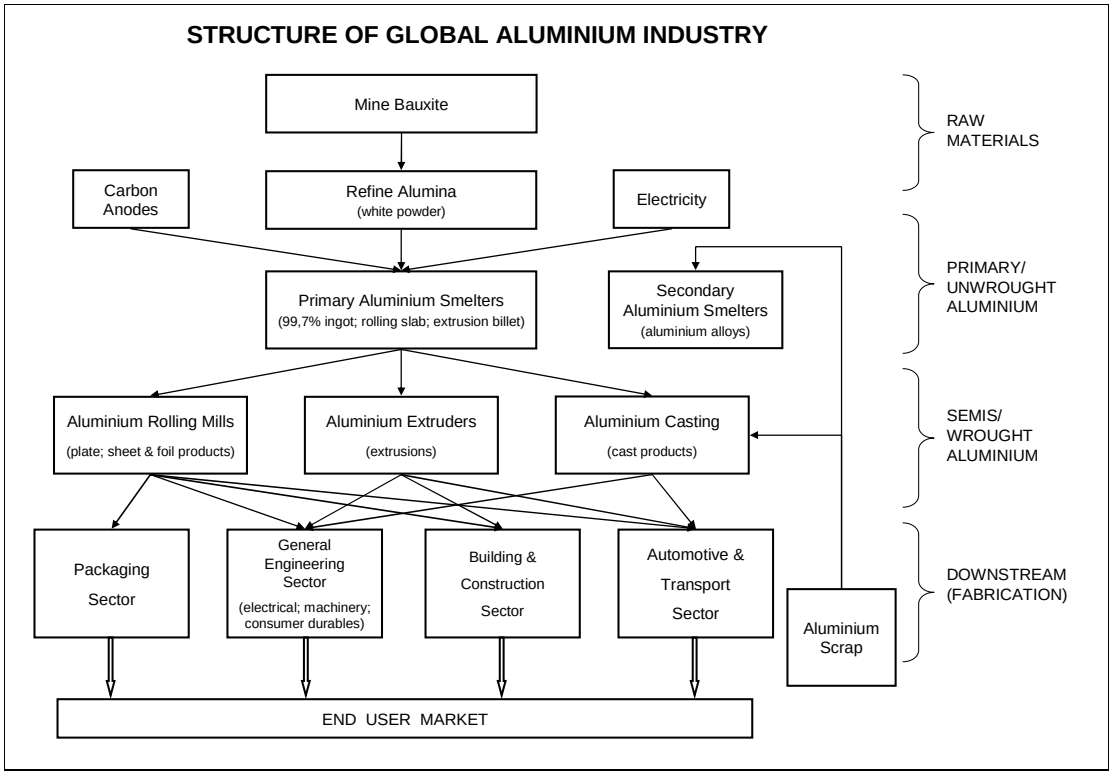
Presently, the only ore exploited for aluminium production is bauxite, a mixture of aluminium and iron oxides. Bauxite is processed to alumina, a pure aluminium oxide. Alumina is treated by electrolysis to produce primary aluminium metal. Approximately four tonnes of bauxite yields two tonnes of alumina,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

Figure 4.6-1: Aluminium Production



The structure of the industry is illustrated as follows: -

Figure 4.6-2: The Structure and Linkages of the Aluminium Industry



Source: Hulett Alluminium

The world reserves of bauxite comprise: -

Table 4.6-1: 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 4.6-2: 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 4.6-3: 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%)

4.7. INDIAN ALUMINIUM INDUSTRY

4.7.1. Production, Number of Producers, Capacity

India has substantial bauxite resources, ranked fifth amongst bauxite producing countries in the world.

Table 4.7-1 Bauxite Producers - India

Major operating companies	Major equity owners	Location of main facilities	Capacity [tpa]
National Aluminium Co. Ltd. ("NALCO")	Indian Government, 100%	Panchpatmali Hills, Koraput District mines, Orissa	2 400 000
Hindalco Aluminium Co. Ltd. ("HINDALCO")	Birla Group, 33%; foreign investors, 26%; private Indian investors, 23%; financial institutions, 18%	Lohardarga District mines, Jharkland	750 000
Indian Aluminium Co. Ltd. ("INDALCO")	Indian interests, 60.4%; Alcan Aluminium Ltd. (Canada), 39.6%	Kolhapur District mines, Maharashtra	600 000
Gujarat Mineral Development Corp.	Gujarat State Government, 100%	Kutch and Saurashtra Mines, Gujarat	500 000
Bharat Aluminium Co. Ltd. ("BALCO"0	Indian Government, 49%; Sterlite Industries Ltd., 51%	Amarkantak Mine, Madhya Pradesh	200 000
Indian Aluminium Co. Ltd.	Indian interests, 60.4%; Alcan Aluminium Ltd. (Canada), 39.6%	Lohardarga District mines, Jharkland	200 000

Major operating companies	Major equity owners	Location of main facilities	Capacity [tpa]
National Aluminium Co. Ltd.	Indian Government, 100%	Richuguta, Palamau District mines, Jharkland	200 000
TOTAL			4 850 000

Source: USGS

Some 60% of bauxite produced in India is used for the production of alumina and aluminium. The remainder is used in the cement, refractory, metallurgical and abrasive industries. India also exports bauxite to counties such as China, Korea, Ukraine and Saudi Arabia. The installed capacity for alumina production is: -

Table 4.7-2 Alumina Producers - India

OPERATING COMPANIES	MAJOR EQUITY OWNERS	LOCATION OF MAIN FACILITIES	CAPACITY
National Aluminium Co. Ltd.	Indian Government, 100%	Dhamanjodi Refinery, Orissa	1 050 000
Utkal Alumina International Ltd.	Norsk Hydro A/S (Norway), 45%; Alcan Aluminium Ltd. (Canada), 35%; Hindalco Industries Ltd., 20%	Koraput Refinery, Orissa	1 000 000
Hindalco Aluminium Co. Ltd.	Birla Group, 33%; foreign investors, 26%; private Indian investors, 23%; financial institutions, 18%	Renukoot Refinery, Uttar Pradesh	450 000
Indian Aluminium Co. Ltd.	Indian interests, 60.4%; Alcan Aluminium Ltd. (Canada), 39.6%	Belgaum Refinery, Karnataka	280 000
Bharat Aluminium Co. Ltd.	Indian Government, 49%; Sterlite Industries Ltd., 51%	Korba Refinery, Chhattisgarh	200 000
Indian Aluminium Co. Ltd.	Indian interests, 60.4%; Alcan Aluminium Ltd. (Canada), 39.6%	Muri Refinery, Jharkhand	88 000
Madras Aluminium Co. Ltd.	Alumix SpA (Italian Government), 27%; R. Prabhu and Associates, 24%; Tamil Nadu Industrial Investment Corp., 11%; others, 38%	Mettur Refinery, Tamil Nadu	60 000
TOTAL			3 128 000

Source: USGS

Alumina is exported or used for local production of primary aluminium, as follows: -

Table 4.7-3 Aluminium Producers - India

OPERATING COMPANIES	MAJOR EQUITY OWNERS	LOCATION OF MAIN FACILITIES	CAPACITY
Hindalco Aluminium Co. Ltd.	Birla Group, 33%; foreign investors, 26%; private Indian investors, 23%; financial institutions, 18%	Renukoot Smelter, Uttar Pradesh	275 000
National Aluminium Co. Ltd.	Indian Government, 100%	Angul Smelter, Orissa	230 000
Bharat Aluminium Co. Ltd.	Indian Government, 49%; Sterlite Industries Ltd., 51%	Korba Smelter, Chhattisgarh	100 000
Indian Aluminium Co. Ltd.	Indian interests, 60.4%; Alcan Aluminium Ltd. (Canada), 39.6%	Belgaum Smelter, Karnataka	70 000
Indian Aluminium Co. Ltd.	Indian interests, 60.4%; Alcan Aluminium Ltd. (Canada), 39.6%	Hirakud Smelter, Orissa	30 000
Madras Aluminium Co. Ltd.	Alumix SpA (Italian Government), 27%; R. Prabhu and Associates, 24%; Tamil Nadu Industrial Investment Corp., 11%; others, 38%	Mettur Smelter, Tamil Nadu	25 000
Indian Aluminium Co. Ltd.	Indian interests, 60.4%; Alcan Aluminium Ltd. (Canada), 39.6%	Alupuram Smelter, Kerala	20 000
TOTAL			750 000

Source: USGS

All Indian producers are vertically integrated, with operations ranging from captive bauxite mining and power generation to production of aluminium products. Although high bauxite quality is the overriding source of competitive advantage in the Indian alumina industry, this is largely offset by the high capital cost of setting up captive power plants in the aluminium production process. Companies build aluminium plants close to coal fields to ensure steady input into power plants and to minimise transport costs.

4.7.2. Performance Outlook – Expansion/Decline

National Aluminium Co. Ltd. (“Nalco”) reportedly received Governmental approval of its UD$900 million expansion plan, including the company’s bauxite, alumina, and aluminium operations. Accordingly, bauxite production from Nalco’s mines in the Koraput District would increase from 4,8 Mtpa to 6,3 Mtpa. Capacity at the alumina refinery in Damanjodi would increase from 1,6 Mtpa to 2,1 Mtpa., and the Angul smelter’s capacity would increase from 345 000 Mtpa to 460 000 Mtpa. The expansion also would require an increase in Nalco’s electricity generation capacity from the current level of 960 megawatts (“MW”) 1 200 MW (Mining Journal, 2004).

According to an assessment by the McKinsey Quarterly, India has the potential to double the contribution of the aluminium metals sector to its economy, and could become one of the top five producers and markets for aluminium products by 2015. It is possible to expand bauxite production by three to five times in the next decade, but it has to be managed properly, avoiding the pitfalls of poor infrastructure, inappropriate regulation, and bureaucratic meddling. There are opportunities for both local companies and multinationals.

The aluminium and steel sectors combined offer investment opportunities of between US$75 to US$120 billion, resulting in the creation of one million new jobs, doubling the present employment levels in these sectors.

4.7.3. Presence of Multinationals

Multinational companies active in the Indian aluminium industry comprise:-

- Alcan Aluminium Ltd. (Canada), 39.6% shareholding in Indian Aluminium Co. Ltd and 35% in Utkal Alumina International Ltd
- Norsk Hydro A/S (Norway), 45% shareholding in Utkal Alumina International Ltd
- Alumix SpA (Italian Government), 27% in Madras Aluminium Co. Ltd.

4.7.4. Trade Structure – Imports and Exports

India is a major exporter of: -

- Bauxite: 1,8 Mtpa
- Alumina: 1,1 Mtpa
- Unwrought aluminium: 35 000 tpa

4.7.5. Competitive Analysis

McKinsey Quarterly estimates that India is the lowest cost producer for alumina and aluminium, as follows: -

Table 4.7-4: Comparative Operating Costs for Aluminium Plants in Different Countries

COUNTRY	ALUMINA OPERATING COSTS [US$/t]	COUNTRY	ALUMINIUM OPERATING COSTS [US$/t]
India	78	India	827
Australia	84	Australia	828
Venezuela	99	South Africa	857
Brazil	114	North America	914
Europe	130	Middle East	943
North America	135	Europe	1 020

Source: McKinsey Quarterly

The competitive advantages are, however, eroded by high transport costs due to inadequate infrastructure and inadequate rail services. Inland freight and port costs for the best case exporters in India amount to US$10/t, which is five times higher than similar operations in Australia and Brazil.

4.8. SOUTH AFRICAN ALUMINIUM INDUSTRY

4.8.1. 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: -

Figure 4.8-1: 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.

4.8.2. 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: -

Figure 4.8-2: 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.

4.8.3. 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.

4.8.4. 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).

4.8.5. 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.

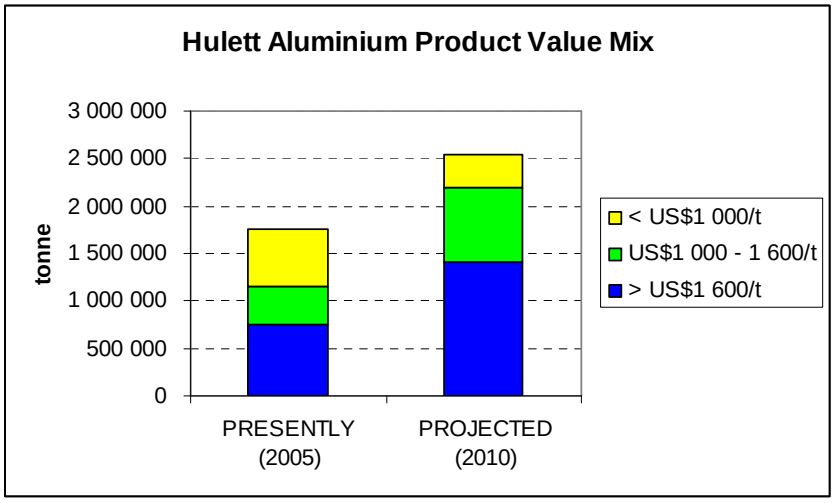
Shape and Alloy Premiums: A further price premium is added for value-added products supplied by BHP-Billiton, other than unalloyed metal in ingot form. Typical shapes include rolling slabs, extrusion billet, rim alloy blocks, and rod for cable and wire. These additional charges are determined by global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

4.8.6. 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 4.8-3: 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?

4.9. 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 4.9-1: 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 4.9-2: 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%

COUNTRY/ PROCESS STAGE	1999	2000	2001	2002	2003	SHARE
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%
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%

COUNTRY/ PROCESS STAGE	1999	2000	2001	2002	2003	SHARE
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%
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%

COUNTRY/ PROCESS STAGE	1999	2000	2001	2002	2003	SHARE
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

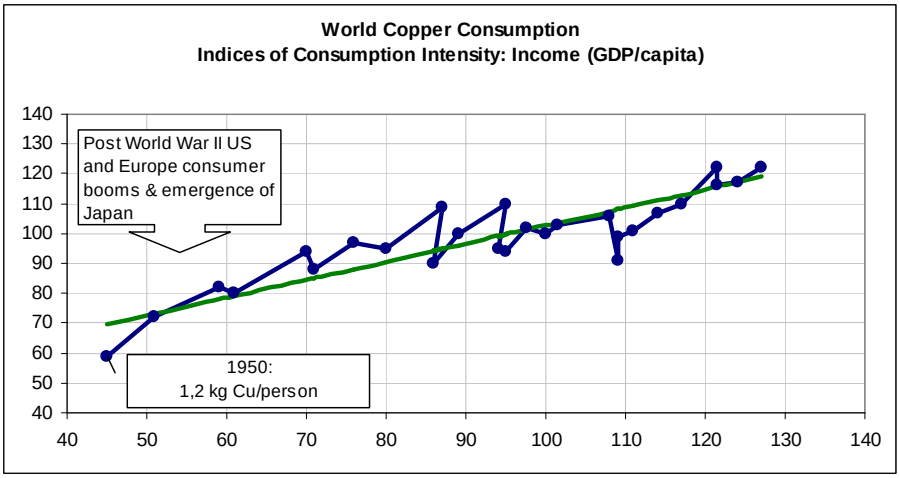
India is the 14th largest producer of copper with a market share of 2,6% and South Africa is the 24th largest with a share of 0,9%.

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.

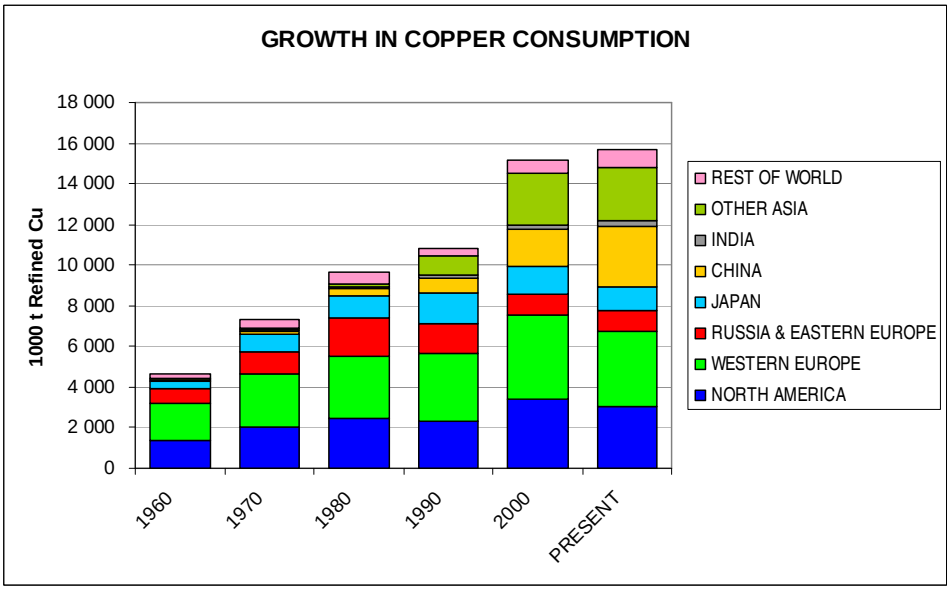
In the long-term, copper cabling and wiring used in the telecommunications industry may be under thread of substitution from fibre-optic cables, but that is not yet seen in the demand for copper. Consumption of copper is directly related with wealth creation, as illustrated in the graph below, which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

Figure 4.9-1: 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 4.9-2: Long-term Growth Trends in Copper Consumption for Regions and Major Countries



Source:

It can be seen that India is still not a major source of demand for copper products, but its role has started to increase.

4.10. INDIAN COPPER INDUSTRY

4.10.1. Production, Number of Producers, Capacity

The following plants in India produce copper: -

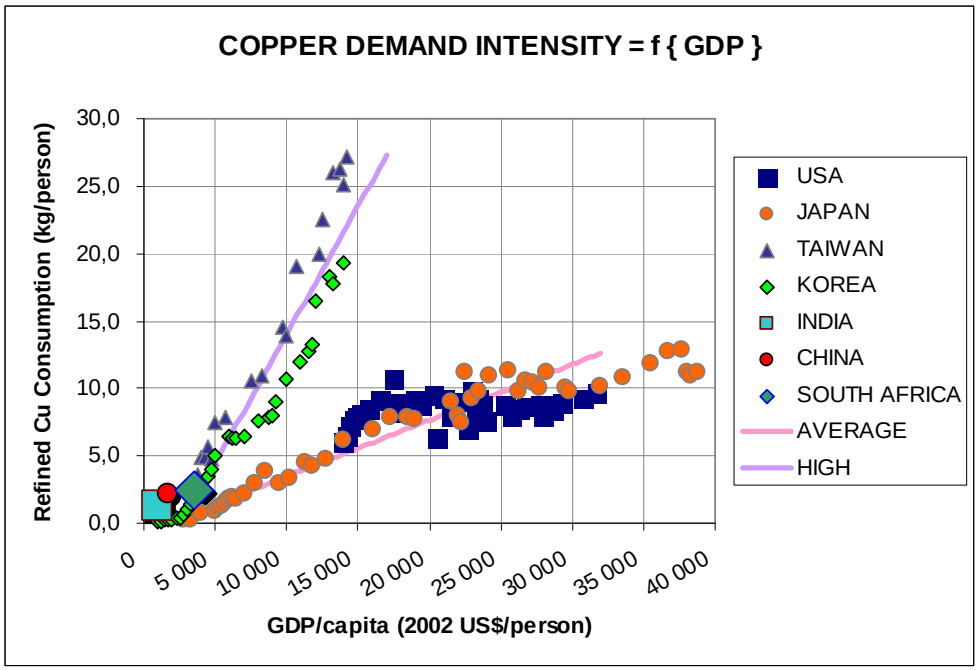
Figure 4.10-1: Copper Production in India

LOCALITY NAME	MAJORITY OWNERSHIP OR OPERATING COMPANY	PROCESS TYPE	CAPACITY [TPA]
Dahej (Birla Copper)	Indo Gulf Fertilisers and Chemical Corp.	Outokumpu Flash	150 000
Tuticorin	Sterlite Industries (India) Ltd.	Isasmelt	150 000
Bharuch (Jhagadja)	Swil Ltd.	Boliden Process	50 000
Khetri	Hindustan Copper Ltd.	Outokumpu Flash	35 000
Ghatsila	Hindustan Copper Ltd.	Outokumpu Flash	27 000
TOTAL CAPACITY			412 000

4.10.2. 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 4.10-2: Consumption Patterns for Copper as a Factor of Wealth



Source:

India has a copper consumption of 1,3 kg/capita against a wealth factor of US$1 000/capita. It is still at the very bottom of the development scenarios for copper, and any of the average or high paths would result in substantial increases in the world market for copper.

4.11. SOUTH AFRICAN COPPER INDUSTRY

4.11.1. Production, Number of Producers, Capacity

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

Figure 4.11-1: 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

LOCALITY NAME	MAJORITY OWNERSHIP OR OPERATING COMPANY	PROCESS TYPE	CAPACITY [TPA]
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

4.12. WORLD NICKEL INDUSTRY

4.12.1. Resources and Production

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

Table 4.12-1: 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

COUNTRY	SULPHIDES	LATERITES	TOTAL RESERVES [Ni CONTENT]	RESERVES [Ni]	RESOUR-CES [Ni] [1]
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

4.12.2. 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.

4.12.3. 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.

4.13. INDIAN NICKEL INDUSTRY

India has to import its nickel requirements for its stainless steel industry. Presently, India has an installed capacity for 1,4 Mtpa stainless steel, but it has expansion plans to increase production by 100% in the medium-term. The high levels of raw materials prices currently prevailing in the world commodity markets, including nickel, would be a threat to these expansion plans.

4.14. SOUTH AFRICAN NICKEL INDUSTRY

4.14.1. Production, Number of Producers, Capacity

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

Table 4.14-1: 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.

4.14.2. 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.

4.14.3. 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.

4.14.4. 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.

4.15. 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.

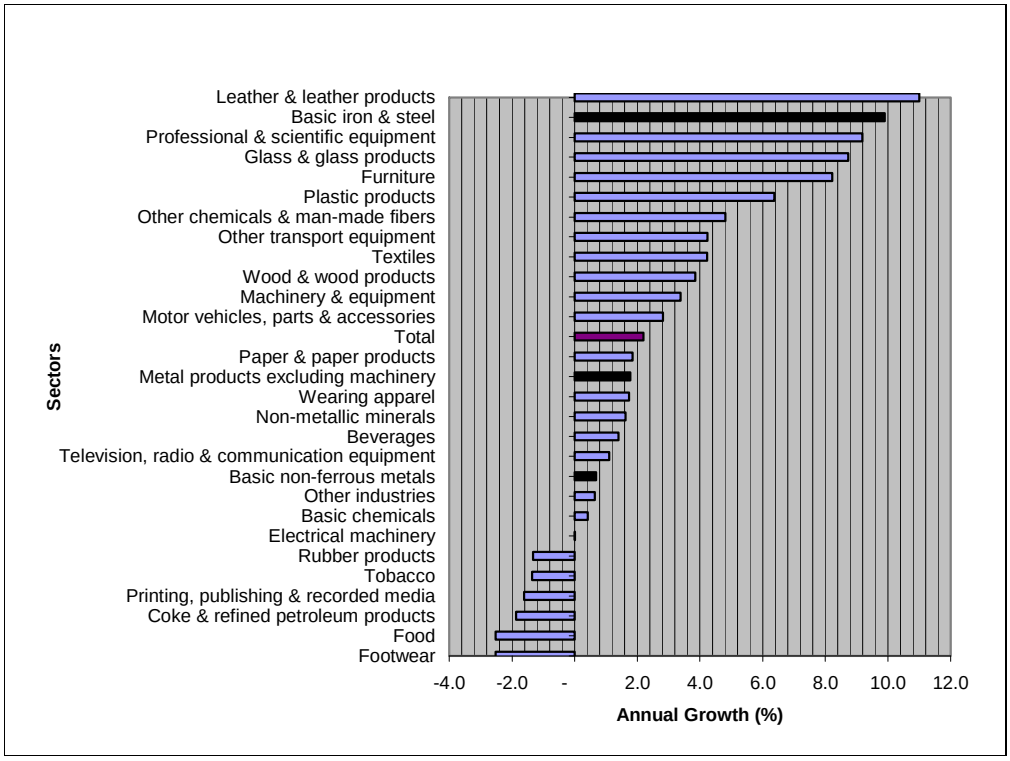
4.15.1. Value added

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.

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

Figure 4.15-1: Growth in the value added by manufacturing sectors 2000 to 2005 percent p.a. constant 2000-prices.



4.15.2. 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.

Graph 4.10.2 Growth in the capital stock of manufacturing sectors 2000 to 2005 percent p.a. constant 2000 prices

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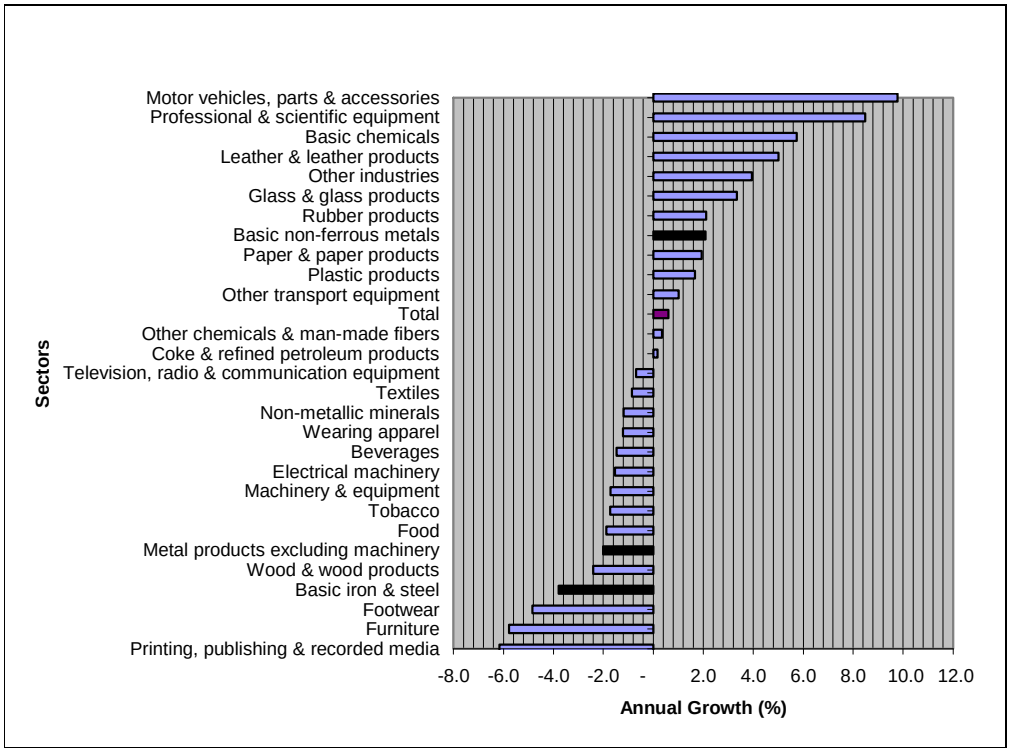
Figure 4.15-2:

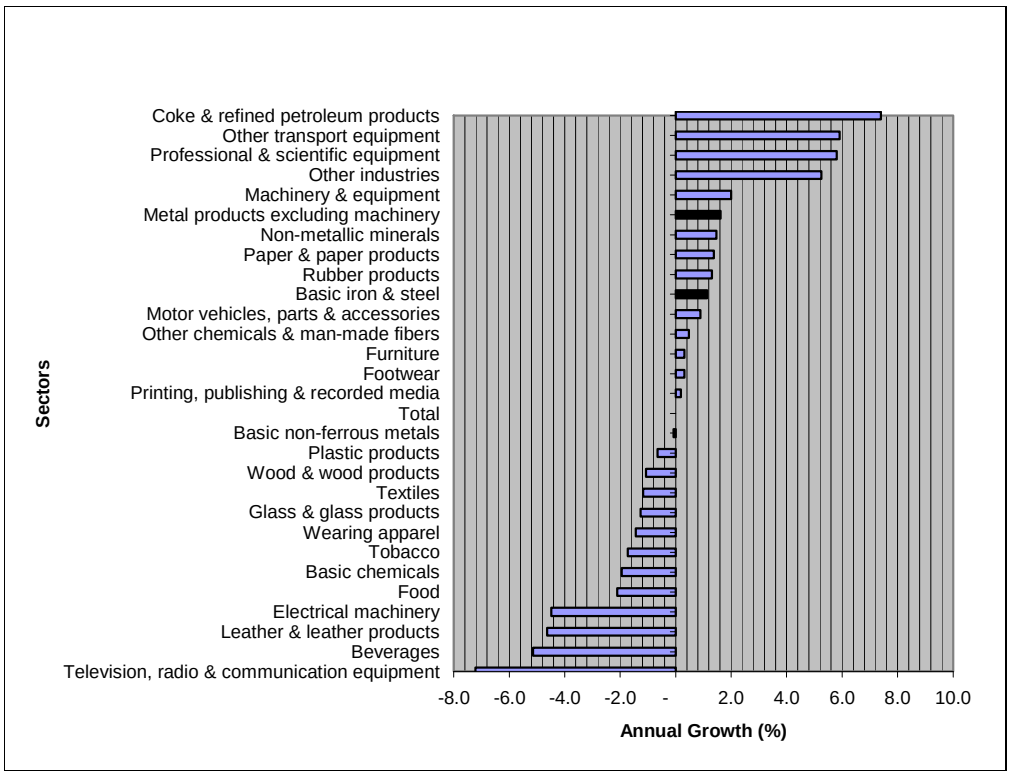


4.15.3. Employment

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.

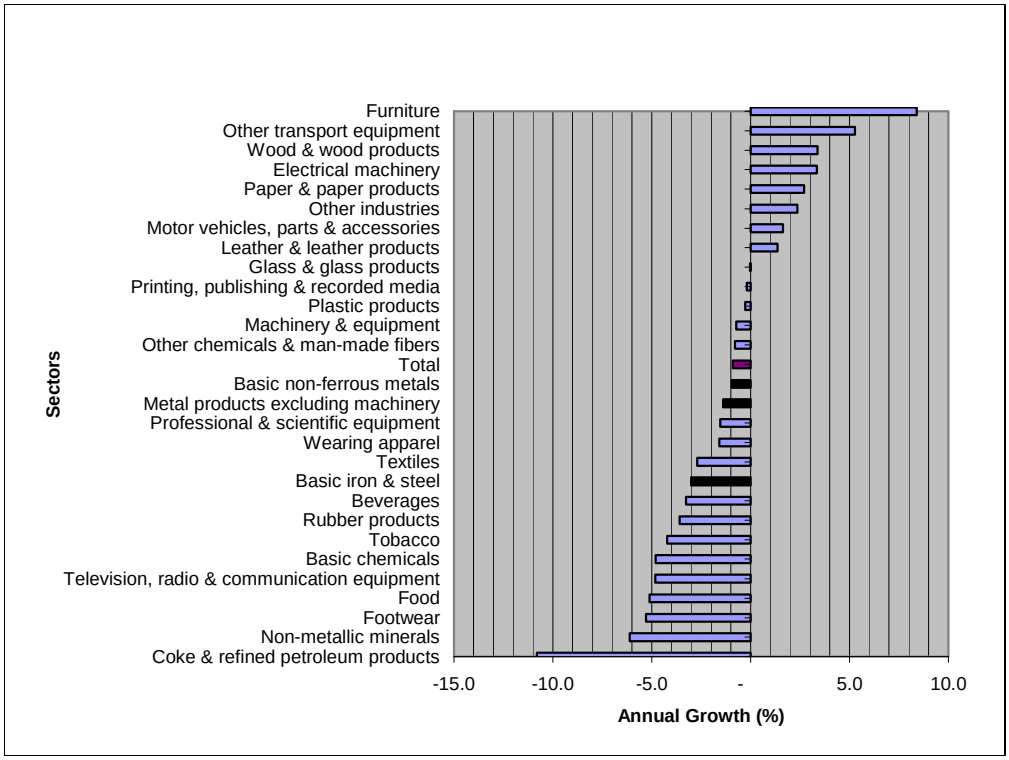
Graph 4.10.3 Growth in the employment of manufacturing sectors 2000 to 2005 percent p.a



4.15.4. 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%.

Graph 4.10.4 Growth in the labour remuneration of manufacturing sectors 2000 to 2005 percent p.a. (Metal sectors highlighted)



4.15.5. 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 4.10.1 Demand variables 1994 to 2005

Basic iron & steel	2000	2001	2002	2003	2004	2005
1. Sales Rbill	42.0	42.3	56.9	61.9	67.8	70.2
2. Exports Rbill	20.1	17.5	23.0	26.7	31.3	35.3
3. Imports Rbill	2.4	2.6	2.7	3.3	3.6	3.7
4 Total demand Rbill (1+3)	44.4	44.9	59.6	65.2	71.4	73.9
5 Domestic demand (4 less 2)	24.3	27.3	36.7	38.4	40.2	38.6

Basic iron & steel	2000	2001	2002	2003	2004	2005
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.

4.16. CONSIDERATIONS

1. India is a large country with vast human and natural resources. Its development policies are now starting to bear results, after it changed the growth patterns to higher levels of 8% to 10% pa over recent years.

2. Export performance to date was moderate, but it is expected to become a focus area in future, building on the strong performance of India' domestic economy and its ongoing investment in world-class production technology.

3. The minerals industries in India are specifically targeted for increased private sector participation and investment in order to improve the supply of raw materials to the growing needs of the metals sectors. The characteristics of sector development policies are detailed analysis of the situation, quantification of challenges and a bottom-up forecast of growth areas.

4. India's National Steel Policy of 2005 provides specific s guidelines for the growth paths of this industry sector. India has vast reserves of iron ore, but a shortage of good quality coal for the production of coking coal. Public ownership is still high, but in line with the general policies of India, private sector participation is encouraged through increasing deregulation. Historically, steel exports were relatively stagnant at modest levels, but have entered a growth phase. The potential drivers for growth in the Indian steel industry are the automotive and capital equipment sectors, exploiting cost advantages for competitiveness in the target markets.

5. India also has vast resources of bauxite ore for its aluminium industry. Primary aluminium is, however, produced with energy-intensive processes. The supply-and-demand problems in the petroleum industry are already partly attributed to India's growing energy needs. The expansion prospects for the aluminium industry therefore have to be assessed against the background of high energy costs and India's lagging infrastructure capacity.

6. India has the potential to double the contribution of the steel and aluminium metals sectors to its economy, and to expand iron ore and bauxite production by three to five times in the next decade, if it is able to manage the potential properly. India could

become one of the top five producers and markets for steel and aluminium products by 2015.

7. India has a scarcity of copper reserves, but its copper industry is expected to grow in line with increasing economic activity and wealth.

8. India does not have a domestic nickel mining or production industry. It is fully dependent upon imported raw materials for its stainless steel industry.

9. 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

10 The average selling price steel ex-factory in India is 11% higher than that of South Africa. Raw material cost for Indian producers is 60% of that of South Africa. However, South Africa has a cost advantage in most of the other operating cost items especially energy. South African operating cots are thus 95% of that of India. India's interest charges are 74% of that of South Africa. In the end India's total cost is 3% higher than South Africa's, with higher Indian earnings before tax that remain to explain why selling prices of Indian producers are significantly higher than that of South African plants. Although South Africa's hourly employment cost is 2.45 times that of India, tonnes shipped per worker is 3 times higher.

11. South African steel manufacturers require: US$1,73 of new steel plant compared to US$1.53 for India. Together with the lower interest charges South Africa is at a disadvantage iro capital related costs.

40. The metal sector is prominent among manufacturing sectors because of its size, export orientation of some sub-sectors and employment and labour intensiveness of others.

41. 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.

42. 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.

43. 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.

44. 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. South Africa (US$ 6.8 billion) and India (US$ 6.6 billion) are about of similar size in the export of metals and products to the world. South Africa's exports to India equalled 1.8% of India's imports while India' exports to South Africa equalled 7% of South Africa's imports. South Africa's export focus is on primary metals. India's is on alloys and metal articles. While South Africa had a positive trade balance with India in 2000 a negative balance was recorded in 2004.

19 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. India is comparatively stronger in metal products manufacture and South Africa in primary products.

5. PROTECTION AND ASSOCIATED ASPECTS

5.1. TARIFFS

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

5.1.1. 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".

5.1.1.1 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%.

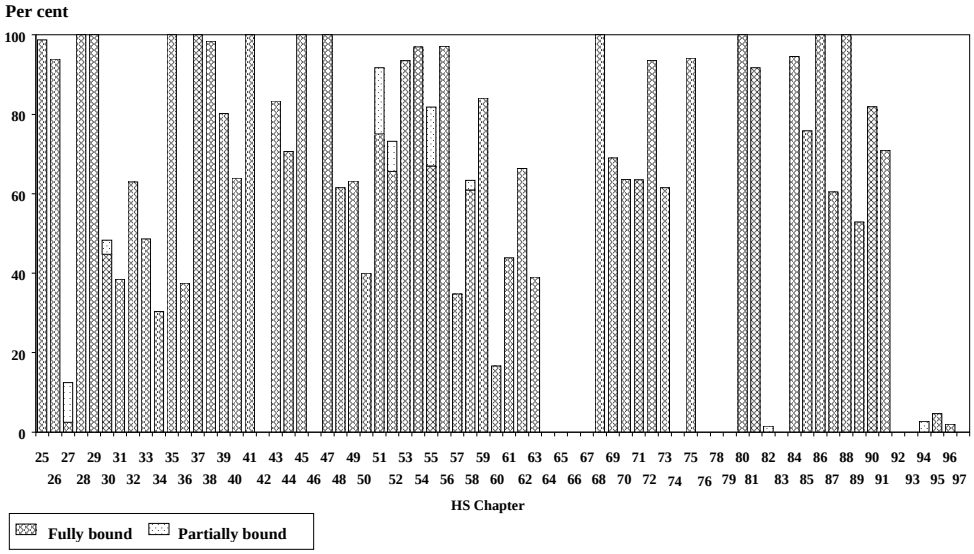
The average bound rate for industrial products is 16.6%. The highest bound rate is 30% with the exception of two product groups, namely clothing (45%) and motor vehicles (50%).

5.1.1.2 India

Only 68.2% of India's tariff lines for industrial products are bound. Bindings are at the 6-digit level, as India implemented an 8-digit tariff system only in 2003. The average bound rate for industrial (non-agricultural) products is 37.7%.

The following is a chart showing India's bound rates per chapter taken from the WTO Secretariat's Report for the Trade Policy Review of India in 2002 (WTO Report):

Chart III.1
Share of bound tariff lines in manufactured products by HS chapter, 2001/02



HS Chapter	Description
25	Salt; sulphur; earths and stone, etc.
26	Ores, slag and ash
27	Mineral fuels, mineral oils, etc.
28	Inorganic chemicals; org. or inorg. compounds of precious metals, etc.
29	Organic chemicals
30	Pharmaceutical products
31	Fertilizers
32	Tanning or dyeing extracts etc.
33	Essential oils & resinoids; perfumery, cosmetic/toilet prep.
34	Soap, organic surface-active agents washing prep., etc.
35	Albuminoidal substances; modified starches; glues, etc.
36	Explosives; pyrotechnic products; matches, etc
37	Photographic or cinematographic goods
38	Miscellaneous chemical products
39	Plastics and articles thereof
40	Rubber and articles thereof
41	Raw hides and skins and leather
42	Articles of leather, etc.
43	Furskins and artificial fur; manufactures thereof
44	Wood and articles of wood, etc.
45	Cork and articles of cork
46	Manuf. of straw, of esparto, etc.
47	Pulp of wood or of other fibrous cellulosic material
48	Paper and paper board, etc.
49	Printed books, newspapers, etc.
50	Silk
51	Wool; fine/coarse animal hair, etc.
52	Cotton
53	Other vegetable textile fibres
54	Man-made filaments
55	Man-made staple fibres
56	Wadding, felt and non-wovens; special yarns; twine, cordage, etc.
57	Carpets; other textile floor coverings
58	Special woven fabrics; lace, etc.
59	Impregnated, coated, covered or laminated textile fabrics, etc.
60	Knitted or crocheted fabrics
61	Articles of apparel and clothing accessories, knitted or crocheted
62	Articles of apparel and clothing accessories, not knitted, etc.
63	Other made-up textile articles; sets, worn clothing, etc.
64	Footwear, gaiters, etc.
65	Headgear and parts thereof
66	Umbrellas, walking-sticks, etc.
67	Prepared feathers and down, etc.
68	Articles of stone, plaster, etc.
69	Ceramic products
70	Glass and glassware
71	Natural or cultured pearls, precious/ semi-prec. stones, prec. metals, etc.
72	Iron and steel
73	Articles of iron and steel
74	Copper and articles thereof
75	Nickel and articles thereof
76	Aluminium etc.
78	Lead and articles thereof
79	Zinc and articles thereof
80	Tin and articles thereof
81	Other base metals, etc.
82	Tools, implements, cutler spoons and forks, etc.
83	Misc. articles of base metals
84	Nuclear reactors, boilers, machinery, etc.
85	Electrical machinery and equipment, etc.
86	Railway or tramway locomotives, etc.
87	Vehicles other than railway or tramway rolling-stock; etc.
88	Aircraft, spacecraft, etc.
89	Ships, boats, etc.
90	Optical, photographic, etc. apparatus
91	Clocks and watches, etc.
92	Musical instruments, etc.
93	Arms and ammunition, etc.
94	Furniture, bedding, etc.
95	Toy, games, etc.
96	Miscellaneous manuf. articles
97	Works of art, antiques, etc.

***Source*: WTO Secretariat calculations, based on data provided by the Indian authorities.**

The table below shows the percentage of bound line for each of the chapters covered by this study (according to the WTO Report), the range of rates per chapter (according to India's goods schedule under the Uruguay Round) and the comparative South African range of bound rates.

In the case of some chapters, the WTO report shows a certain percentage of lines as bound but India's schedule does not contain any lines of such chapters. This is confusing. An enquiry was sent to the WTO and details are awaited.

Table 5.1-1 India's % bindings and the bound tariff rates of India and South Africa

Chapter	India's % of bound lines (6-digit level)	India's bound rates: % (nb = not bound)	South Africa's most common rates: %
28	100	40	0/5/10
29	100	40 (few at 25%)	10/15
30	48	40 (few at 25%)	10/15/20
31	38	5	10
32	63	40 (few at 25%)	0/10/15
33	48	40	20
34	32	40	10/15/20
35	100	40	10/20
36	37	40	10/15
38	98	40	10/15
39	80	40	15/20/30
40	64	40	15/20/30
41	100	25	15
42	0	nb	30
50	40	? *	17.5/30
51	93, some partially	40	17.5/30
52	74, some partially	Yarn 25/40; fabrics nb	17.5/30
53	95	Yarn 40	0/17.5
54	97	Yarn 40	17.5/30
55	82, some partially	Fibres/yarn 40	17.5/30
56	98	40	17.5/20
57	36	? *	30
58	63	40	25
59	85	40	25/30
60	17	? *	25
61	44	? *	45
62	67	? *	45
63	40	? *	30
64	0	nb	20/30
72	94	40	5/10
73	61	40	15/30
74	0	40	5/15/20/30
75	95	40	5/15
76	0	nb	5/15/30

*Chapters where the WTO Report shows some lines to be bound but the chapters are not included in India's goods schedule.

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

India's binding schedule consists mostly of ceiling bindings with more than 90% of the lines bound at a rate of 40%.

5.1.2. Applied Tariffs

5.1.2.1 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 Indian applied rates in respect of the tariff lines under the chapters covered by this study follows in par 9.1.3.

5.1.2.2 India

India'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. Furthermore, the assessable value is CIF + 1%. This has the following affect:

	Basic customs duty	Effective customs duty
South Africa	15%	15%
India	15%	18.15%

In addition to the basic duty, India applies additional duties. These are dealt with under non-tariff barriers.

The WTO Report shows an average MFN (most-favoured-nation) applied tariff rate of 31.1% for India in 2001/02.

The table below shows the average rates and range of rates per main category in 1997/98 and 2001/02. Over the period of three years there was only a slight reduction in the average rates per category in most categories although this was more pronounced in textiles and clothing, footwear & leather and electrical machinery.

Table 5.1-2 Summary analysis of India's MFN tariff, 1997/98 and 2001/02

CONSIDERATION	No. of lines	MFN 1997/1998		MFN 2001/02	
		Average (%)	Range (%)	Average (%)	Range (%)
Non-agricultural products (excl. petroleum)	4,435	35.4	0-192	31.1	0-170
Mineral products, precious stones, etc.	335	37.5	0-45	30.6	0-55
Metals	588	32.5	10-45	32.0	5-35
Chemicals and photographic supplies	840	34.6	0-192	33.8	0-170
Leather, rubber, footwear, travel goods	146	39.8	0-45	32.1	0-35
Wood, pulp, paper and furniture	248	30.1	0-45	29.3	0-35
Textiles and clothing	830	43.7	25-55	31.3	15-35
Transport equipment	122	41.7	3-45	40.5	3-105
Non-electric machinery	525	27.1	10-45	25.9	0-35
Electric machinery	257	34.7	15-45	26.8	0-35

Source: WTO Secretariat Report for the TPR of India in 2002.

Since then, India has substantially reduced the basic duties. The most common rate in 2004/05 was 20%. Most of the basic duty rates were cut in the 2005/06 budget and the current rates on almost all of the products covered by this investigation are 15% as from 1 March 2005. The major exception is Chapter 72 where a rate of 20% is shown (although this is not the effective applicable rate see par 5.3).

On the surface, India's tariff structure, at least in respect of the basic duties, looks very simple and uniform. In some chapters the duty shown in Schedule 1 is 15% without any exceptions.

However, these rates may not be the actual rates as there are numerous 'notifications' or 'general exemptions' that exempt certain products from a duty or reduce the rate (sometimes for specified uses or subject to elaborate conditions). In fact, India's customs tariff system is extremely complex and lacks transparency. This is confirmed in the WTO (TPR) Report which states that "… the tariff remains complex and a number of exemptions applied to products, industries, and end-users add to its complexity and lack of transparency". Similar statements are made a number of times in the Report and in other study reports.

Many of the 'notifications' and 'exemptions', dating back to the nineties, although still applicable, are not incorporated in a single tariff book with its schedules as in the case of South Africa. It makes it difficult to establish what actual duties (and additional duties) are applicable on the importation of certain products.

5.1.3 Comparison

This section attempts to show a summary comparison of the customs duties of India and South Africa, as in January 2006. The South African duties are at various rates and the comparison is confined to a summary of rates.

The sources of tariff information for India for the comparison that follows are the website of the Central Board of Excise and Customs, www.cbec.gov.in, and a regularly updated publication by R.K.Jain, probably India's foremost customs and excise expert, under the title:

> R.K. Jain's Foreign Trade Policy ITC (HS) Classifications of Export & Import Items with Customs Tariff Rates & Exemptions; 2004-09 (Vol. 3) Oct. 2005 – 8th Edition; CENTAX PUBLICATIONS PVT.LTD

While the Central Board's databases for various duties, cesses, exemptions etc are separate, R. K. Jain's publication attempts to capture these in one publication (of 1 712 pages). Its Schedule 1 shows basic duties, additional duties, cesses and total duty. Its various parts also cover export policy with duty rates; additional duty (CVD); MRP based valuation for additional duty; educational cess; other cesses; special duties of customs; import tariff general exemptions; safeguard duties; anti-dumping duties; etc. The publication has extensive footnotes linking the rates to general exemptions and general notifications. However, it is still very difficult and sometimes not possible to ascertain the effective rates payable.

Table 5.1-3 Metals: Summary Comparison Between SA and India (basic) Duty Rates per Chapter: January 2006

Chapter	Brief description	India: %	RSA: %	Comments
72	Iron and steel	20	0/5	Primary and some intermediates – 0
73	Articles of iron & steel	15	0/5/10/15/20	Household articles at 20
74	Copper & articles	15	0/10/20	Household articles at 20

76	Aluminium & articles	15	0/5/10/20	Household articles at 20	

Although the basic duty rate shown for Chapter 72 is 20%, domestic exporters report that the actual basic duty payable is only 5%. Every effort was made to establish the source for this, tracking the schedules, exemption notices and available notifications, but without success. The trail stopped at Exemption Notice 107 in terms of which imports under Chapter 72 are exempted from basic duties of more than 10%.

However, according to the website of India's Ministry of Steel, the following duty structure on metals and associated products/inputs applies since the 2005-06 budget (March 2005) (see http://steel.nic.in/duty_structure.htm):

Table 5.1-4 Duty Structure -- An Overview (As at 15 March 2005)

Item	CTH No	Basic Custom Duty in 2002-03	Basic Custom Duty 2003-04	Changes made in Jan.'04	Changes made in Feb'04	Basic Custom Duty 2004-05 (8.7.2004)	As on 20.8.2004	Post Budget 2005-06
Pig Iron	72.01	15%	15%	15%	5%	5%	5%	5%
Semis	72.07	25%	25%	20%	15%	10%	5%	5%
Bars & Rods	72.13	30%	25%	20%	15%	10%	5%	5%
Structurals	72.16	30%	25%	20%	15%	10%	5%	5%
HR Sheets/ Plates	72.11	30%	25%	20%	15%	10%	5%	5%
HR Coils	72.08	25%	25%	20%	15%	10%	5%	5%
CR Coils/ Sheets	72.09	30%	25%	20%	15%	10%	5%	5%
GP/GC Sheets	72.10	30%	25%	20%	15%	10%	5%	5%
HRGO/HRNGO	72.08 72.11	25%	25%	20%	15%	10%	5%	5%
HR alloy steel (flat rolled)	72.25 72.26	30%	25%	20%		15%	15%	10%
Tinplates W/W and TFS seconds	72.10 72.12	40%	40%	40%		40%	40%	20%*
Defectives/CR/ Coils	72.09	40%	40%	40%		40%	40%	20%*
Stainless steel	72.19	0%	25%	20%		15%	15%	10%

Item	CTH No	Basic Custom Duty in 2002-03	Basic Custom Duty 2003-04	Changes made in Jan.'04	Changes made in Feb'04	Basic Custom Duty 2004-05 (8.7.2004)	As on 20.8.2004	Post Budget 2005-06
HR Coils for coin blanks								
Melting Scrap	72.04	5%	5%	5%		5%	Nil	Nil
Re-rollable scrap	72.07	25%	25%	20%	15%	10%	10%	5%
Ships for breaking	89.08	15% but no SAD & CVED	15% but no SAD & CVED	15% but no SAD & CVED		15% no SAD & CVED	5% + CVED	5% + CVED
Limestone Flux	25.21					15%	15%	15%
Iron Ore	26.01					5%	5%	5%
Coking Coal of ash content below 12%	27.01	5%	5%		0%	0%	0%	0%
Coking Coal of ash content above 12%							15%	5%
Non-coking coal	27.01	25%	25%	15%	5%	5%	5%	5%
Metcoke	27.04	15%	10% (No SAD)	10% (No SAD)	5%	5%	5%	5%
Charge Nickel	75.01	5%	10% (No SAD)	5% (No SAD)		5%	5%	5%

1. *Customs Duty on seconds & defectives has been reduced from 40% to 20% w.e.f. 1.1.2005.

2. Customs Duty on alloy steel and ferro alloys reduced from 15% to 10% in General Budget 2005-06.

3. Customs Duty on refractories (6902 & 6903) and refractory making inputs reduced to 10% in the General Budget 2005-06.

4. Excise Duty on steel hike from 12% to 16% in the General Budget 2005-06.

The tariffs in respect of downstream metal products identified for coverage in the study are as follows (January 2006):

Table 5.1-5 Downstream metal products

HEADING	Description	INDIA: %	RSA: %
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 tooling agriculture, horticulture or forestry.	15	0/15/20
8202	Hand saws; blades for saws of all kinds (including slitting, slotting or toothless saw blades).	15	0/10/20
8203	Files, rasps, pliers (including cutting pliers), pincers, tweezers, metal cutting shears, pipe-cutters, bolt croppers, perforating punches and similar hand tools.	15	0/15/20
8204	Hand-operated spanners and wrenches (including torque meter wrenches but excluding tap wrenches); interchangeable spanner sockets, with or without handles.	15	0/20
8205	Hand tools (including glaziers' diamonds), not elsewhere specified or included; blow lamps; vices, clamps and the like (excluding accessories for and the parts of, machine tools); anvils; portable forgers; hand or pedal- operated grinding wheels with frame	15	0/20
8206	Tools of two or more of the headings nos.82.02 to 82.05, put up in sets for retail sale.	15	0
8208	Knives and cutting blades, for machines or for mechanical appliances.	15	0
8209	Plates, sticks, tips and the like for tools, unmounted, of cermets	15	0/15/20
8210	Hand-operated mechanical appliances, of a mass of 10 kg or less, used in the preparation, conditioning or serving of food or drink.	15	20
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.	15	20
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 no.94.03).	15	20

HEADING	Description	INDIA: %	RSA: %
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.	15	20
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.	15	0
8307	Flexible tubing of base metal, with or without their fittings.	15	10
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 band spangles, of base metal:	15	0/15
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.	15	5/14
8310	Sign-plates, name-plates, address-plates and similar plates, numbers, letters and other symbols, of base metal,(excluding those of heading no.94.05).	15	20
8311	Wire, rods, tubes, plates, electrodes and similar products, of base metal or of metal carbides...	15	0/10

5.2. NON-TARIFF BARRIERS ("NTBs")

5.2.1. 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.

5.2.2. NTBs in Import Regimes

Substantial differences exist in the import regimes of countries and/or trade blocks. Some countries apply virtually no trade policy measures to imports; have standards that conform to international norms; and have efficient customs procedures. Such an import regime does not have a significant negative effect on imports. At the other extreme, cases exist of import regimes consisting of various, sometimes not transparent, trade policy measures; complex and burdensome standards; and complex slow customs procedures that cause delays. Such a regime will have a significant affect on imports and in fact discourage imports. If an exporter in a particular country considers exports to another country, the market potential

and customs tariffs may not be the main considerations while NTBs in the other country may be an equal or even more significant factor that restrict or discourage imports.

5.2.3. NTBs in India: General

According to reports, the trading and import environment in respect of India is complex and difficult although the situation has improved over the past few years.

Most of the information in respect of India has been obtained from:

- The WTO Secretariat's Report for India Trade Policy Review (TPR) of May 2002
- Doing Business In India: A Country Commercial Guide for U.S. Companies (2005)
- USTR 2005 National trade Estimate Report on Foreign Trade Barriers
- The EU Market Access Sectoral Database for individual countries
- India Profile: Doing business – For Australian Exporters – Export assistance: The Australia Trade Commission's website under AUSTRADE.
- A report: "Identification of concrete trade obstacles to be removed through the future WTO negotiations on trade facilitations or other negotiations in the framework of the Doha development agenda: Study for the Market Access Unit of Directorate General Trade European Commission – June 2004" funded by the European Commission (EU Trade Obstacles Report)
- Market Access Analysis to identify and update the existing information on trade barriers in third countries affecting EU exports of textiles and clothing, footwear and leather: A report funded by the EC Commission: 1 March 2005
- R.K. Jain's Foreign Trade Policy: "ITC (HS) Classification of Export & Import Items, Vol. 3, 8th Edition, Oct. 2005.
- Various government sources, particularly the Central Board of Excise and Customs and the Director-General of Foreign Trade websites, including the Customs tariff before and since the 2005-06 Budget, the numerous schedules, annexures, and exemption and general notifications.

Exporters to India and Indian importers suffer from policy unpredictability.

The EU Trade Obstacles Report summarises the situation as follows:

"The rules of EXIM (export and import) Policy are published and available to operators.

However, it cannot be denied that import and export rules are complex and frequently modified. This obliges operators to be constantly aware of the EXIM Policy rules and their modifications. These constant changes in EXIM policy engender an obstacle for EU SME wishing to develop trade with India. These companies must work in close co-operation with Indian partners.

The importers and exporters stated that the transparency and their understanding of EXIM policy and other trade rules affecting their daily trade could be improved through consultation with private sectors prior to adoption of the rules.

According to private sector, over-regulation is one of the main problems of doing business in India. In several cases, the rules are adopted without prior notification and explanation of rules to private sectors' representatives."

Infrastructure in respect of ports and internal transport are major problems.

Red tape is also a disincentive. The World Bank estimates that Indian senior managers spend about 14 percent of their time dealing with regulatory issues (compared with about 8 percent for their Chinese counterparts). Starting a business in India takes 89 days, on average—more than twice as long as in China. Closing a business is just as difficult.

Metals and products thereof do not appear to be subject to sector specific NTBs. They would however be affected by some of the issues covered in the relevant paragraphs of this section.

5.3. ADDITIONAL DUTIES AND TAXES

The EU Trade Obstacles Report sums up the situation in India as follows:

"Multiplicity and complexity of import, and to a lesser extent, export rules, has been identified as a real concern for private operators.

For example, India's duty calculation is highly complex. According to Member States, trade representatives, importers and EU companies, despite the duty structure rationalisation of January 2004, duties remain high. The method of calculation of import duties and the administration of tariffs through numerous notifications makes the tariff structure extremely complicated and non-transparent."

The duty structure has however been substantially simplified through the removal of some of the additional duties.

In addition to the ordinary rate of duty – called the 'basic duty' - there are an 'Additional Duty of Customs' – also called a 'Countervailing Duty (CVD)' – which is generally 16% but different for certain products. This is actually a central excise duty or value added tax. There also used to be a 'Special Additional Duty of Customs', also called an 'Additional Duty for Special Excise Duty' of 8% or 4%. Some products were exempted from these 'additional' duties or a lower rate applied. This duty has been removed for most products.

In addition to the basic duty and the additional duty, India also applies an educational cess of 2% to imports. This calculated on the sum of the basic and CVD. The basic and additional duties and other charges are calculated on a compounded (cumulative) basis.

A levy of 1% is added to the CIF value to come to the assessable value.

When the transport and insurance costs cannot be established, or is challenged, 20% is added to the invoice price to come to the CIF value.

5.4. CUSTOMS PROCEDURES AND DELAYS

Even if applied tariffs remain high for various products a survey (EU Trade Obstacles Report) confirmed that business losses suffered through delays at borders and complicated customs procedures may exceed in many cases the costs of tariffs.

In the case of India, this involves a complex array of sometimes opaque documentation requirements, valuation issues and multiple submissions of data to different agencies (Customs, Ministry of Health, Ministry of Agriculture, etc …). Various surveys have already stressed how these problems represent a serious threat in meeting trade commitments and development objectives.

These burdensome requirements combined with delays in clearance of goods, lack of appropriate infrastructures for the storage of goods or their testing negatively affect importers daily business.

Delays are apparently caused mainly by:

- Compliance with requirements to be followed prior to import;
- Inadequate port facilities leading to congestion

- Burdensome documentary requirements;
- Customs valuation and classification issues; and
- Inspections to verify products' compliance to requirements of other agencies.

5.5. IMPORT RESTRICTIONS AND CONDITIONS

Import of goods into and export of goods out of India is governed by the Export-Import Policy, 2002-2007 (EXIM policy), which is framed every five years. India's current five-year trade policy has further liberalised imports and exports.

India used to have extensive import restrictions but has had to remove these in terms of its Uruguay Round WTO commitments. The removal of import restrictions did not happen at the entry into force of the Uruguay Round Commitments but substantially later and over an extended period of time, partly after pressure from other WTO members (consultations by several countries and a dispute by the US). In many cases this was accompanied by an increase in tariffs.

For the most current information on India's Prohibited Import List, see

http://exim.indiamart.com/freedlist/prohibited.html.

There are currently 58 items on the list, most of which are animal, plant food products..

5.6. LICENSING

In April 2001, the Indian Authorities implemented a significant liberalisation of the import restrictions through the removal of Quantitative Restrictions (QRs). All goods not classified as prohibited or restricted in the ITC (HS) Classification of Export and Import of items can be freely imported. Goods still subject to licensing are not available as the list is being reviewed.

According to the EU Trade Barriers Report, the removal of trade barriers has in some instances been followed by an increasing number of new non-tariff barriers affecting the importation of EU products. In particular, India has strengthened the implementation of labelling and certification requirements.

According to the report:

"Sensitive products are subject to **burdensome**, **time consuming**, and sometimes **discretionary controls** by various Indian Authorities on their composition and compliance with Indian standards (foodstuffs, textiles, cosmetics, mineral water, etc..).

There are basically **four types of concern**:

1. The standards are complex and sometimes difficult to comply with (e.g. for food products);

2. There is a lack in personnel (health officers) and infrastructures to send samples to the laboratories, to conduct the testing in accredited laboratories, lack of testing equipment;

3. There is a multiplication of authorities involved in the same type of controls;

4. There is a lack of efficient appeal procedures to challenge the ruling made after controls."

Certain industries are still subject to compulsory industrial licensing, namely the following:

a) Distillation and brewing of alcoholic drinks

b) Cigars and Cigarettes of Tobacco and Manufactured Tobacco substitutes

c) Electronic, Aerospace and Defence Equipment: all types

d) Industrial explosives including detonating fuses, safety fuses, gun powder, nitrocellulose and matches

e) Hazardous chemicals

f) Drugs and pharmaceuticals (according to modified Drug Policy, 1994 as amended in 1999)

5.7. CUSTOMER VALUATION

According to the EU Trade Obstacles Report, Customs are alleged to challenge discretionary and quite systematically the declared value of specific products. (Textile and clothing, watches, cosmetics and other consumer products). The importer is required to deliver documents proving the accuracy of the declared value. In addition to the invoice and the packing list, the importer must supply a price declaration assessment together with a

document from the chamber of commerce of the country of origin. In some cases, catalogues of the product are required in order to prove the accuracy of the declared value.

In several cases, these investigations are justified by the high level of under-invoicing. However, these procedures are also considered in many cases as completely discretionary.

In practice, given the limited efficiency of appeal procedures, importers prefer to settle the problems directly with Customs than to wait for a lengthy appeal decision confirming the first customs decision (demurrage costs). While the difference in estimation remains “bearable” (20%), the importer will prefer accepting the modified customs value than paying demurrage costs.

5.8. REFERENCE PRICING AND MINIMUM IMPORT PRICES

The Government of India fixed minimum import prices for certain imported steel products, including hot rolled steel coils, cold rolled steel coils, hot rolled sheets, tin plates, electrical sheets, and alloy steel bars and rods. Whether to impose or withdraw the minimum import price for these products is the subject of an Indian government legal confrontation with the Indian courts. (US Trade Summary Report, 2004).

5.9. LABELLING REQUIREMENTS

In April 2001, Indian Authorities implemented a significant liberalisation of the import restrictions (removal of Quantitative Restrictions (QRs) and a reduction of import duties. All goods not classified as prohibited or restricted in ITC (HS) Classification of Export & Import of items can be freely imported. However, since November 2000, the DGFT has started the imposition of various non tariff barriers: the extension of packaging and labelling requirements to imported consumer goods, the extension of mandatory registration of BIS standards to imported products, etc.

India applies stringent labelling requirements in respect of pre-packaged goods.

All pre-packaged commodities, imported into India, shall in particular carry the following declarations:

a) Name and address of the importer;

b) Generic or common name of the commodity packed,

c) Net quantity in terms of standards units;

d) Month and year of packing in which the commodity is manufactured or packed or imported; and

e) The maximum retail sale price (MRP) at which the commodity packaged form may be sold to the ultimate consumer. "This price shall include all taxes local or otherwise, freight, transport charges, commission payable to dealers, and all charges towards advertising, delivery, packing, forwarding and the like, as the case may be."

The MRP is calculated on the basis of different criteria (freight, insurance, internal taxes). In India, each State has a different rate of sales tax and other taxes. Sales tax varies from 8% to 20% in the state of final destination. It is often not possible to know in advance the identity of products and of consumers, as well as the quantities, which will be sold. Even if the importer can give to the exporter an accurate indication of internal taxes to the importer, he will not be able to guarantee that the information on the exchange rate is correct.

If an exporter supplies products aimed to be sold in various states, he will have to produce as many different labels as there are States of final destination for each item sold. This results in significant additional costs.

This issue is further complicated by the Customs requirement to provide one invoice by different MRP, even for the same items (e.g. same watches aimed to be distributed and sold in various States). According to various freight forwarders, if the importer cannot comply with this requirement, Customs will charge the additional duty on the highest MRP.

Compliance of the above-stated requirements has to be ensured before the import consignments are cleared by Customs in India. The import of pre-packaged commodities Such as raw materials, components, bulk import etc., that need to undergo further processing before they are sold to end consumers are not included under this labelling requirement.

5.10. STANDARDS

Indian standards are formulated by the Bureau of Indian Standards (BIS), which was established as a statutory body under the Bureau of Standards Act, 1986, and became operational on 1 April 1987. Standards are developed through 15 division councils, covering a wide number of sectors. From its formation until 1 April 2001, the BIS had developed 17,428 voluntary standards relating to a number of sectors. In order to ensure their

continued relevance, Indian standards are reviewed as and when considered necessary, but at least once every five years.

Indian and foreign manufacturers who meet a BIS standard may carry the BIS Certification Mark. The BIS Certification Mark was made mandatory for 133 items (both locally produced and imported). The BIS laboratories provide conformity testing for products (both domestic and imported) requiring BIS certification. Voluntary certificates are also issued for environmentally friendly products (Ecomark), environmental management systems, quality systems, and hazard analysis and critical control points (HACCP). Licences granted for quality systems, environmental management systems, and HACCP are valid for three years and must be renewed. The BIS carries out regular surveillance audits and inspections to ensure that the systems and products meet the relevant standards. All the BIS certification schemes are operated according to the relevant ISO/IEC guides.

BIS is operating a product certification scheme for foreign manufacturers. In this scheme, a licence can be granted for any product against an Indian Standard specifying product characteristics, which is amenable to certification. The schemes operate on self-certification basis, whereby the manufacturer is permitted to apply the Standard Mark on the product after ascertaining its conformity to the Indian Standard licensed for. Through its surveillance operations the Bureau maintains a close vigil on the quality of goods certified. Those desirous of obtaining the BIS licence have to apply to BIS in the prescribed application form, which can also be downloaded from BIS web-site at http://www.bis.org.in along with an application fee of Rs.1000/-.

The foreign manufacturer must set up a liaison/branch office located in India with the permission of Reserve Bank of India, which shall meet all liabilities with respect to BIS Act, Rules and Regulations for purpose of the BIS licence. The requirement to set up an office in India shall not apply, if BIS enters into an MOU with the respective Foreign Government for implementation of BIS Act, Rules, and Regulations including the punitive provisions, or if the foreign manufacturer nominates an Authorised representative located in India who declares his consent to be responsible for compliance provisions of BIS Act 1986, Rules and Regulations on behalf of the manufacturer as per terms and conditions of the Agreement signed between BIS and the foreign manufacturer. Processing charges of US $ 300 are required to be paid after scrutiny and recording of application.

The applicant has to bear expenditure of travel, stay, miscellaneous expenses like visa etc and per diem as applicable by BIS regulations for a team of officers (normally not more than 2 officers) for their inspection visit to the manufacturing premises.

5.11. GOVERNMENT PROCUREMENT

It has been reported that Indian government procurement practices and procedures are neither transparent nor standardized. Foreign firms do not generally win Indian government contracts.

5.12. INVESTMENT

According to the US Trade Summary of India (2004), Press Note 18, introduced by the Ministry of Industry on December 14, 1998, poses major impediments to investment in India. The following are the two most restrictive provisions of Press Note 18:

1) The automatic approval route is not available to foreign investors who wish to set up new ventures in India or who wish to enter into new technical collaborations or trademark agreements in India, if such foreign investors have or have previously had any joint venture, technology transfer or trademark agreement in the same or allied field in India. Such foreign investors would have to obtain an approval from the Indian government; and

2) In its application, such foreign investor would have to give reasons for which it finds it necessary to set up a new venture or enter into a technical collaboration or trademark agreement. The onus is on the investor to provide adequate justification to the satisfaction of the Indian government that its new proposal would not jeopardize the interests of the existing venture or the stakeholders thereof.

The government may, at its discretion, approve or reject the application giving reasons for such rejection.

In addition, the foreign investors who already have an equity stake in a venture in India, and who want to increase their equity stake in the company, are required to obtain a resolution of the Board of Directors of the Indian company prior to seeking Indian government permission.

India also has extensive rules in regard to setting up an office in India, in terms of what each type of office is allowed to do and not allowed to do.

Generally, FDI rules have been substantially liberated and FDI of up to 100% equity is allowed under Automatic Route for all sectors/ activities except the following:

i. Industries retained under compulsory licensing:

ii. Manufacture of items reserved for small scale sector by non-SSI units; and

iii. When the proposed location attracts locational restriction.

5.13. ANTI-COMPETITIVE PRACTICES

India suffers from a slow bureaucracy and regulatory bodies that reportedly apply monopoly and fair trade regulations selectively. With little or no fear of government action and with a clogged court system where cases languish for years, Indian firms face few if any disincentives to engaging in anticompetitive business practices.

5.14. EXPORT TAXES

Various exports have been subject to export taxes but these have been or are being removed. The export of raw hides and skins is subject to an export duty of 60%.

5.15. INTELLECTUAL PROPERTY RIGHTS

India is on the USA's IPR "Priority Watch List" of 14 countries for due to continuous serious concerns about copyright and trademark infringements, inadequate enforcement of intellectual property rights, and the need to greatly improve the processing of patent applications in a manner that is consistent with their international obligations. This is according the 2005 Special 301 Report.

5.16. THE PROPENSITY TO USE TRADE REMEDIES

Trade remedies are anti-dumping and countervailing (anti-subsidy) duties aimed at countering unfair international trade practices.

5.17. NON-TARIFF BARRIERS ("NTBs")

5.17.1. Anti-Dumping Duties

India and South Africa are some of the most frequent users of anti-dumping measures. Table 7.5 shows the number of anti-dumping measures imposed from January 1995 to 30

June 2005 (the latest data on the WTO website) by the top ten users of this measure and their percentages of the total.

Table 5.17-1 Anti-Dumping Measures per Country 1995 – 30/06/2005

Country/Bloc	Number of measures	% of total measures
India	309	17.9
United States	229	13.2
European Community (EU 15)	200	11.6
Argentina	139	8.0
South Africa	113	6.5
Turkey	81	4.7
Mexico	71	4.1
Australia	65	3.8
Brazil	63	3.6
China	62	3.6
Other	536	23.0
Total	1 729	100.0%

Anti-dumping measures per country in respect of the sectors covered by the investigations for India are shown in the following table:

Table 5.17-2 Sectoral Distribution of Measures by Importing Member from 1 January 1995 to 30 June 2005

Member	Chemi-cals	Plastics	Rubber	Textiles	Foot-wear	Metals	Total
Argentina	5	9	0	8	0	51	**73**
Australia	8	16	0	5	0	15	**44**
Brazil	15	7	0	1	0	20	**43**
Canada	2	0	0	0	2	60	**64**
Chile	0	0	0	0	1	4	**5**
China	31	16	0	1	0	5	**53**
Colombia	1	1	0	0	0	9	**11**
Egypt	1	13	0	0	0	8	**22**
EU	38	15	1	21	5	70	**150**
India	142	48	0	39	1	29	**259**
Indonesia	7	0	0	0	0	12	**19**
Israel	0	1	0	2	0	2	**5**
Jamaica	1	0	0	0	0	0	**1**
Japan	0	0	0	3	0	0	**3**

Member	Chemi-cals	Plastics	Rubber	Textiles	Foot-wear	Metals	Total
Korea, Rep. of	14	1	0	0	0	5	**20**
Lithuania	1	0	0	0	0	0	**1**
Malaysia	3	2	0	0	0	0	**5**
Mexico	14	4	0	2	0	38	**58**
New Zealand	0	0	0	0	0	4	**4**
Pakistan	3	2	0	0	0	1	**6**
Paraguay	1	0	0	0	0	0	**1**
Peru	1	1	0	4	4	15	**25**
Philippines	1	1	0	2	0	3	**7**
Poland	1	2	0	2	0	0	**5**
Singapore	0	0	0	0	0	2	**2**
South Africa	18	20	0	10	0	30	**78**
Thailand	1	0	0	0	0	23	**24**
Trinidad and T.	0	1	0	1	0	0	**2**
Turkey	7	32	0	18	0	13	**70**
United States	29	10	0	5	0	139	**183**
Venezuela	0	3	0	2	4	14	**23**
Totals 01/01/95 - 30/06/05	**345**	**205**	**1**	**126**	**17**	**572**	**1266**

Anti-dumping measures have become a major trade policy instrument of India since 1995 when the country had to start phasing out import restrictions as required by its obligations under the Uruguay Round of the WTO. India is now the single biggest user of anti-dumping measures with 17.9% of the total number of measures imposed by all countries over the period concerned.

Base metals and articles (Chapters 72 to 83) and chemicals (Chapters 28 to 38) are the sectors most subject to anti-dumping measures with 33.1% and 20.0%, respectively, of all measures. Plastics attracted 11.9% and textiles 7.3% of all measures. 46.0% of India's measures are in respect of chemicals.

India is fifth on the list of countries against which most anti-dumping investigations have been initiated up to 30 June 2005, with 115 cases (4.2% of the total). China tops the list with 434 cases (15.8%) followed by the Republic of Korea with 212 cases (7.7%).

5.17.2. Countervailing Duties

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Countervailing duties are applied against subsidies by exporting countries. Such duties can be applied against prohibited subsidies, which are subsidies contingent on export performance or upon the use of domestic over imported goods, or actionable subsidies. The latter category, briefly, refers to financial contributions by a government or a public body (such as a direct transfer of funds, government revenue foregone, the provision of goods or services by a government, other than general infrastructure, and if a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out any of these functions; or if there is any form of price or income support; and a benefit is thereby conferred. A countervailing duty may be applied against an actionable subsidy only if it is specific to an enterprise or industry or a group thereof.

During the period January 1995 to 31 December 2004, 108 countervailing duties have been imposed by all countries. India has not imposed any countervailing duties.

India is on top of the list of counties against which countervailing duties have been imposed. Of the total of 108 countervailing duties, 25 or 23.1% have been imposed against India. Of these, 14 were in respect of metals, 3 in chemicals, 4 in plastics and 2 in textiles.

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5.17.3. Safeguard Measures

A safeguard is an action taken to protect a specific industry from such increase in imports as to cause, or threaten to cause, serious injury. It is intended to prevent or remedy serious injury and to facilitate adjustment. Safeguard action is taken if the measure a country wish to impose would breach its WTO obligations, i.e. if the tariff would exceed the bound rate of duty or if the country wishes to impose quantitative restrictions on imports. Unlike anti-dumping and countervailing duties, which are applied to specific countries and exporters, safeguard measures have to be applied to a product imported irrespective of its source.

Currently a total of 68 safeguard measures or provisional safeguard measures are applied by all countries. Of these, 8 are applied by India (11.8%), namely 7 in respect of chemicals and 1 in plastics.

5.18. OTHER TRADE DISCRIMINATORY MEASURES

India applies a vast array of export support schemes base on the duty rebate and drawback principles.

The Government of India introduced the Duty Entitlement Pass Book (DEPB) Scheme in April 1997 by means of Customs Notification 34/97, after the abolishment of the Passbook Scheme. The objective of the measure is to provide duty free imports for export production, in other words to neutralise the incidence of customs duty on the import content of the export product. The neutralisation is provided by way of grant of duty credit against the export product. Thus, for exporters not desirous of going through the licensing route, an optional facility is given under DEPB Scheme. In contrast to the usual temporary duty-free importation of goods for processing, the Pass Book Scheme may lead to an indirect subsidy of local Indian production.

The Duty Entitlement Pass Book (DEPB) Scheme entitles an exporter (both a manufacturer-exporter and a merchant-exporter) for credit as a specified percentage of FOB value of exports, made in freely convertible currency. The credit is available against such export products and at such rates as specified by the Directorate General of Foreign Trade (DGFT) by way of Public Notice, for import of raw materials, intermediates, components, parts, packaging material etc.

The DEPB is valid for a period of 12 months from the date of issue. The DEPB and/or the items imported against it are freely transferable and, as a consequence, frequently sold.

The DEPB has emerged as a favourite instrument of export promotion. The DEPB rates are available on wide-variety of items compared to the coverage under the drawback scheme, which is limited to a few items. The DEPB entitlement is also liberal compared to the drawback rate. Imports through the DEPB Scheme are exempt from special additional duties (SAD) and therefore, SAD can be avoided by duty payment through DEPB.

The scheme lacks a built-in obligation to import only goods that are consumed in production of the exported goods. There is no verification system in place to check whether the imports are actually consumed in the production process. It is not a substitution drawback scheme because the imported goods do not need to be of the same quantity and characteristics as the domestically sourced inputs that were used for export production. Exporting producers are eligible for the DEPB benefits regardless of whether they import any inputs at all. An exporter obtains the benefit by simply exporting goods without the need to show that any input material was indeed imported; thus, exporting producers which procure all of their inputs locally and do not import goods which can be used as inputs are still entitled to the DEPB benefits.

5.19. CONSIDERATIONS

1. India's bound tariff rates for industrial products are quite high, mostly at 40%. Many sensitive products are not bound against tariff increases. Footwear (Chapter 64), copper (Chapter 74) and aluminium (Chapter 76) are not bound at all; in the chemicals, plastics and rubber sectors many lines are not bound; while in respect of textiles and clothing there is a lack of clarity about bindings. All South Africa's tariff lines in the relevant sectors are bound with the exception of a few chemical lines.

2. India has substantially reduced its customs tariffs over the last number of years. The basic duties are very uniform, mostly at 15% (as from 1 March 2005). However the tariff structure is not transparent with the contents of a large number of notifications and general exemption notices not incorporated in Schedule 1 (basic duty schedule). There are a large number of partial exemptions, mostly reductions/exemptions for specified uses, projects etc. The actual basic duties on certain products may be lower than those indicated in Schedule 1, such as in the case of steel (actually applied duty of 5% compared to 20% shown in Schedule 1).

3. Tariff concessions granted by India may, therefore, in certain cases be of no real value. During negotiations on tariff concessions, SACU should make sure that the preferences offered by India will result in actual reductions in the currently applied rates. Applied rates on primary products and semis are low. The result is that tariff concessions by India will be mild on the products where South Africa has a comparative advantage. The reverse may be true for India since South Africa has in place substantial tariff rates on downstream products where India benefits from comparative advantages.

4. India applies additional taxes on imports and the structure is not transparent. The most important of these is an additional duty of generally 16% (lower for certain products including some textiles), also called a CVD, which is actually a central excise or value added duty. A further additional duty of 4/8% applicable earlier has been removed in respect of almost all products. The situation in respect of additional taxes/duties has been simplified and these are lower than those previously applicable. However, in the case of textiles and clothing the system of applying the additional duty on the maximum retail price (MRP) is a major complication.

5. NTBs remain a major problem for exporters to India although the situation has improved over the past few years. The NTBs with the most affect on exports to India are policy unpredictability and uncertainty; customs procedures and delays; customs

valuation; port and other transport infrastructural problems; general burdensome red tape; and labelling requirements.

6. India has become the country that uses anti-dumping duties most of all countries. The sectors most subject to anti-dumping measures imposed by India are base metals and products thereof (33.1%), chemicals (20%), plastics (11.9%) and textiles (7.3%). India also has more safeguard measures in place than any other country, of which all but one is in respect of chemicals.

7. Of countries against which anti-dumping investigations have been initiated, India is fifth on the list in regard to the number of initiations. India is subject to more countervailing measures than any other country.

6. SOUTH AFRICA – INDIA TRADE ANALYSIS

6.1. TRADE STRUCTURES

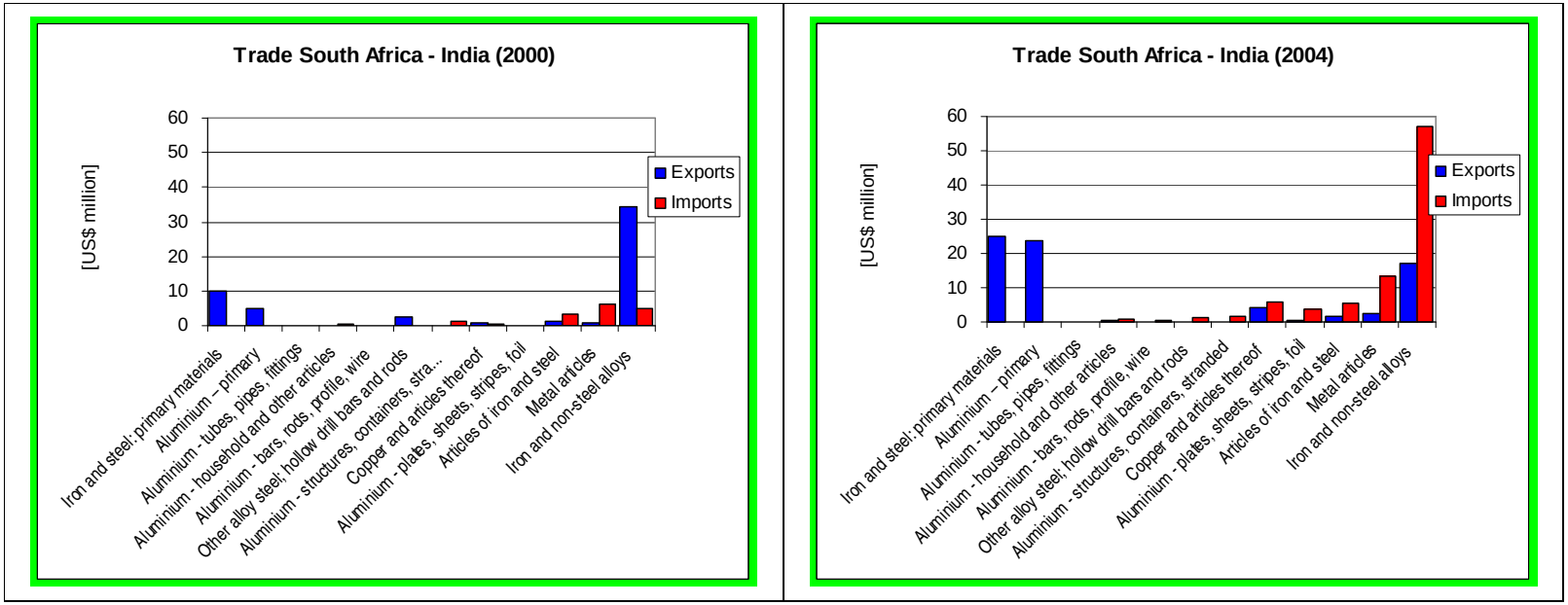
The table below presents a summary of general trade patterns for the study countries, with the data analysed in the subsequent graph.

Table 6.1-1: Structure of South African and Indian Metal Exports and Imports [US$ million]

SUB-GROUP	HS	2000			2004		
	CODE	Exports	Imports	Balance	Exports	Imports	Balance
Iron and steel: primary materials	7201 - 7205	10,1	0,0	10,1	25,2	0,1	25,1
Aluminium – primary	7601 - 7603	4,9	0,0	4,9	23,9	0,0	23,9
Aluminium - household and other articles	7615 - 7616	0,0	0,3	-0,3	0,5	0,7	-0,2
Aluminium - bars, rods, profile, wire	7604 - 7605	0,0	0,0	0,0	0,0	0,6	-0,6
Other alloy steel; hollow drill bars and rods	7224 - 7229	2,4	0,1	2,3	0,1	1,2	-1,1
Aluminium - structures, containers, stranded	7610 - 7614	0,0	1,1	-1,1	0,0	1,5	-1,5
Copper and articles thereof	7401 - 7419	0,9	0,6	0,3	4,2	5,8	-1,6
Aluminium – plates, sheets, stripes, foil	7606 - 7607	0,0	0,1	-0,1	0,6	3,6	-3,0
Articles of iron and steel	73	1,4	3,5	-2,1	1,7	5,3	-3,6
Metal articles	8201 - 8205 & 8310 - 8311	1,0	6,1	-5,1	2,7	13,2	-10,5
Iron and non-steel alloys	7207 - 7216	34,2	5,1	29,1	16,9	57,2	-40,3
TOTAL	SELECTED ITEMS 72 - 83	54,9	16,8	38,1	75,6	89,0	-13,4

Source: Comtrade

Figure 6.1-1: Comparison of Trade Patterns for South Africa and India for 2002 and 2004 [US$]



The focus of South Africa's metal exports is in primary metals. India'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 India's imports in primary products: mainly iron and steel alloys, copper and copper articles, as well as aluminium and iron & steel primary materials.

6.2. IRON AND STEEL

6.2.1. 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 India, for the period 1999 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 6.2-1: Exports of Iron & Steel Products from South Africa, to the World and to India respectively [R million]

EXPORTS TO				World							India			
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7207: Semi-finished products of iron or non-alloy steel	230	488	777	1 256	1 943	1 673	1 747	17	14	23	9	3	1	305
H7204: Ferrous waste or scrap, ingots or iron or steel	248	203	315	562	477	565	724	33	40	82	146	141	121	216
H7208: Hot-rolled products, iron/steel, width>600mm, not clad	1 301	1 860	2 055	2 384	3 397	3 199	4 765	141	181	90	8	42	75	205
H7202: Ferro-alloys	6 477	8 531	6 914	10 844	12 323	16 798	17 797	29	35	26	34	18	42	107
H7216: Angles, shapes and sections of iron or non-alloy steel	742	952	879	1 008	887	891	1 076	15	4	7	0	5	22	57
H7211: Flat-rolled iron/steel, <600mm, not clad, plated, etc	13	10	11	17	13	22	65	0	0	0	0	0	0	36
H7210: Flat-rolled iron/steel, >600mm, clad, plated or coated	745	934	1 079	1 152	1 091	1 285	1 592	26	20	9	0	2	0	24

EXPORTS TO				World							India			
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7213: Hot rolled bar, rod of iron/steel, in irregular coils	556	742	763	885	952	1 165	1 132	0	0	0	0	5	5	13
H7201: Pig iron and spiegeleisen in primary forms	539	524	868	681	568	677	986	3	3	5	3	4	7	9
H7306: Tube, pipe of iron or steel, except seamless > 406.4mm	176	256	346	640	493	576	545	1	2	3	4	7	6	4
H7308: Structures, parts of structures of iron or steel, nes	746	815	762	1 174	969	1 468	1 775	0	9	17	2	4	2	3
H7209: Flat-rolled iron/steel, >600mm, not clad, plated, etc	456	404	594	705	1 393	1 754	1 702	29	15	3	2	2	0	0
H7304: Tube or hollow profile, seamless iron/steel not cast	192	236	286	268	266	354	439	0	6	1	1	0	0	0
H7312: Stranded steel wire, cable/etc, no electric insulation	187	163	210	277	243	264	291	0	0	0	0	0	7	0
H7224: Alloy steel in ingots in primary form or semi-finished	95	239	103	50	13	1	0	9	15	13	0	0	0	0
OTHER HS72 AND HS 73 < R5 million	1 444	1 674	1 957	2 567	2 406	2 658	3 004	5	6	4	5	8	14	18
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	12 042	15 614	15 222	20 844	24 258	29 338	33 114	305	332	260	205	227	280	977
H73: ARTICLES OF IRON AND STEEL	2 105	2 418	2 699	3 627	3 176	4 011	4 527	3	17	22	9	16	22	20
TOTAL: IRON AND STEEL AND ARTICLES THEREOF	14 147	18 033	17 921	24 471	27 433	33 349	37 641	308	349	282	214	243	302	998

Exports of Upstream Steel Products

Exports of upstream iron and steel products to the world amounted to R33 114 million in 2005, recording an increase of 175% from 1999 (a growth rate of 16% pa). Comparatively, exports to India were R977 million, at an increase of 221% over the same six-year period (a growth rate

of 21% pa). In 2004, however, exports to India were still 14% lower than in 2000, with strong growth only materialisng in 2005, resulting in exports being 3 ½ times higher than in 2004. It remains to be seen whether the higher level of exports to India would be sustained. India's share of exports of upstream products increased from 2,5% in 1999, to 3,0% in 2005. The main export categories were HS codes 7207 (semi-finished, steel slabs), 7204 (scrap steel) and 7208 (hot-rolled coil).

Exports of Downstream Steel Products

A very small amount of only R20 million out of South Africa's total exports of R4 527 million in downstream iron and steel products listed in HS chapter 73 went to India in 2005, comprising a share of only 0,5% of exports. The 2005-value of exports is an increase of 628% (a growth rate of 39% pa) over the very modest 1999-base of R3 million, which was then 0,1% of exports. The main export product is in HS 7306 (large diameter, non-seamless, i.e. welded steel pipes).

6.2.2. Imports

The Customs and Excise statistics for South African imports of iron & steel from the World, and from India, respectively, for the period 2000 to 2005 R million, are listed in the table below, ranked from the highest current value for values exceeding R5 million.

Table 6.2-21: : Imports of Iron & Steel Products to South Africa, from the World and from India respectively [R million]

IMPORTS FROM				World							India			
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7210: Flat-rolled iron/steel, >600mm, clad, plated or coated	238	265	351	377	439	706	723	23	17	55	23	97	275	195
H7323: Table, kitchen, household items of iron or steel nes	81	99	99	124	137	201	262	6	12	11	14	19	29	38
H7318: Screws, bolts, nuts, rivets, washers, etc, iron, steel	327	374	455	590	546	616	702	5	7	7	12	16	23	23

IMPORTS FROM	World							India						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7217: Wire of iron or non-alloy steel	54	75	81	72	72	93	143	2	2	1	1	0	5	20
H7304: Tube or hollow profile, seamless iron/steel not cast	284	212	315	373	340	322	423	8	6	5	10	8	5	12
H7320: Springs and leaves for springs, of iron or steel	56	70	81	113	101	114	113	1	1	3	2	3	9	11
H7212: Flat-rolled iron/steel, <600mm, clad, plated or coated	33	31	39	39	35	47	71	0	3	5	6	6	7	10
H7325: Cast articles, of iron or steel nes	28	25	26	45	74	39	65	3	5	5	4	7	10	8
H7307: Pipe fittings, of iron or steel	207	235	305	440	385	374	382	3	3	7	12	8	8	8
H7326: Articles of iron or steel nes	207	237	294	463	478	438	543	3	3	4	3	4	3	6
H7208: Hot-rolled products, iron/steel, width>600mm, not clad	116	164	64	61	83	95	123	17	11	2	0	10	22	6
H7321: Stoves, ranges/barbecues,etc, non-electric, iron/steel	56	63	70	100	84	124	191	1	2	2	2	2	4	5
H7315: Chain and parts thereof, of iron or steel	131	135	150	205	188	310	210	1	2	3	5	4	4	5
H7209: Flat-rolled iron/steel, >600mm, not clad, plated, etc	68	82	50	30	61	53	61	0	0	0	0	35	34	2
H7312: Stranded steel wire, cable/etc, no electric insulation	199	214	246	346	301	328	390	8	6	6	1	2	2	1
H7214: Iron/steel bar, only forged hot-rolled drawn, extruded	25	30	34	21	12	45	40	0	0	0	0	0	21	0

IMPORTS FROM	World							India						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
OTHER HS72 AND HS 73 < R5 million	961	1 147	1 331	2 067	1 944	2 307	3 135	7	9	8	8	13	19	26
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	1 166	1 433	1 472	1 732	1 989	2 545	3 182	43	36	64	31	155	377	247
H73: ARTICLES OF IRON AND STEEL	1 907	2 027	2 520	3 733	3 292	3 666	4 394	42	55	59	72	79	104	131
TOTAL: IRON AND STEEL AND ARTICLES THEREOF	3 072	3 459	3 992	5 465	5 280	6 211	7 576	85	91	123	103	235	481	377

Upstream products

South African imports of upstream iron and steel products increased by 173% between 1999 and 2005, at a growth rate of 18% pa, to R3 183 million. Imports from India increased by 478% between 1999 and 2005, a growth rate of 34% pa, although this growth was from a very low base of only R43 million, to reach a level of R247 million. Imports from India nevertheless amounted to 7,8% of imports of all upstream iron and steel products in 2005, compared to 3,7% in 1999, mainly comprising imports of the products of HS 7210 (coated flat-rolled steel). India supplied 27.6% of South Africa's imports this heading in 2005.

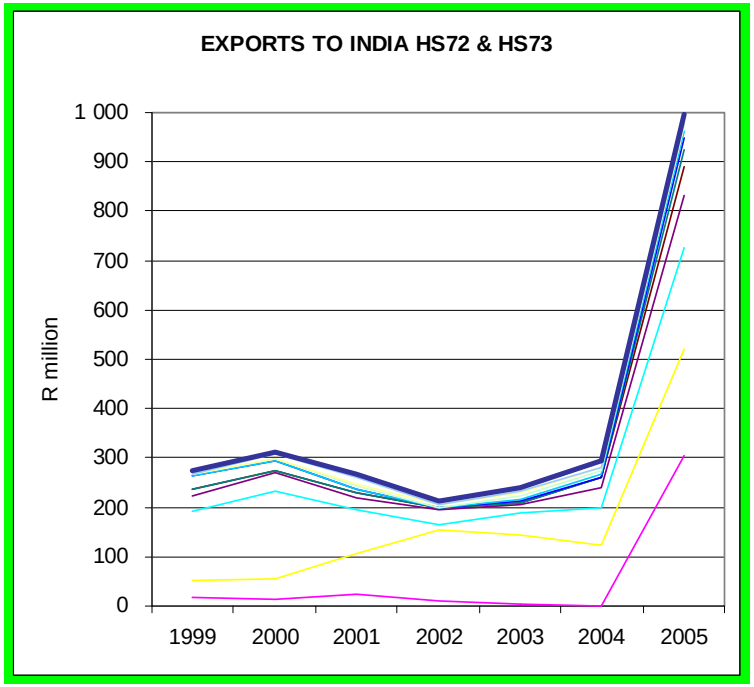
Downstream products

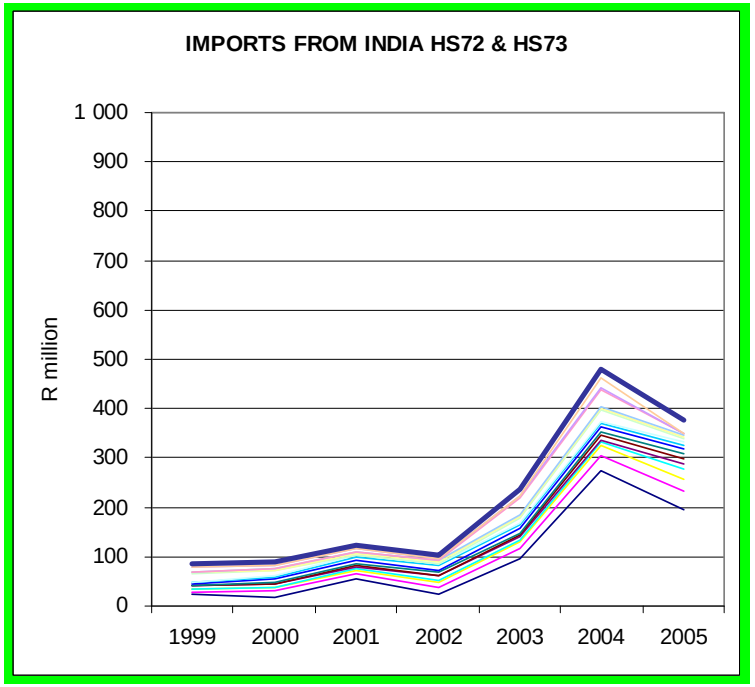
Imports of downstream iron and steel products also more than doubled between 1999 and 2005, with an increase of 130% (a growth rate of 15% pa), to R4 394 million. Imports from India were more than three times higher, being an increase of 213% (a growth rate of 21% pa), to reach R131 million. India supplied 3,0% of South Africa's imports of downstream iron and steel products in 2005, whereas, in 1999 it was 2,2%, comprising mainly products of HS 7304 (seamless hollow tubes), 7320 (steel springs); and 7307 (pipe fittings). Relative import penetration by India is prominent in HS 7323 (kitchen and household items) at 14,5%; and 7325 (cast iron and steel items) at 12,3%. In 2005, imports from India broadened to include the majority of 4-digit headings. .

6.2.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with India.

Figure 6.2-2: Exports To and Imports From India for the 4-Digit Codes Listed in the Trade Analysis Above





6.3. COPPER

6.3.1. 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 India, for the period 1999 to 2005 R million, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 6.3-1: Exports of Copper and Copper Products from South Africa, to the World and to India respectively [R million]

EXPORTS TO	World							India						
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	16	6	14	15	11	23	24
H7403: Refined copper and copper alloys, unwrought	404	296	407	296	225	241	477	3	0	2	3	2	1	7
H7407: Copper bars, rods and profiles	308	273	151	181	149	148	104	9	0	0	1	0	0	0
H7402: Unrefined copper, copper anodes, electrolytic refining	21	84	96	119	86	8	62	0	0	26	0	0	0	0
OTHER HS74 < R5 million	161	262	303	396	308	250	172	2	0	0	0	1	3	2
H74: COPPER AND ARTICLES THEREOF	1 134	1 213	1 372	1 496	1 242	1 181	1 866	30	6	41	19	15	27	33

Exports of copper products to the world increased by 65% between 1999 and 2005, at a growth rate of 9% pa, to reach R1 866 million. This increase was primarily as a result of exports of HS 7404 (copper; copper alloy waste or scrap). Exports to India remained at very modest

levels, increasing by only 12% between 1999 and 2005, at a growth rate of 1,2% pa, to a level of R33 million, with a variable trend in the interim years. Exports are mainly products of HS 7404 (waste copper) and 7403 (primary copper), respectively 2,3% and 1,5% of total exports.

6.3.2. Imports

The Customs and Excise statistics for South African imports of copper and products from the World, and from India, 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 6.3-2: Imports of Copper and Copper Products to South Africa, from the World and from India Respectively [R million]

IMPORTS TO	World							India						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7415: Copper nails, screws, bolts, pins, washers, etc	11	12	15	18	17	18	23	1	0	1	0	1	1	6
H7411: Copper pipes, tubes	20	31	21	26	36	44	59	0	1	0	1	6	2	3
H7408: Copper wire	83	92	121	161	86	295	374	0	0	1	1	0	30	0
OTHER HS74 < R5 million	148	196	234	324	185	420	492	2	3	3	5	5	4	4
H74: COPPER AND ARTICLES THEREOF	262	330	391	529	325	777	947	3	4	5	7	12	37	14

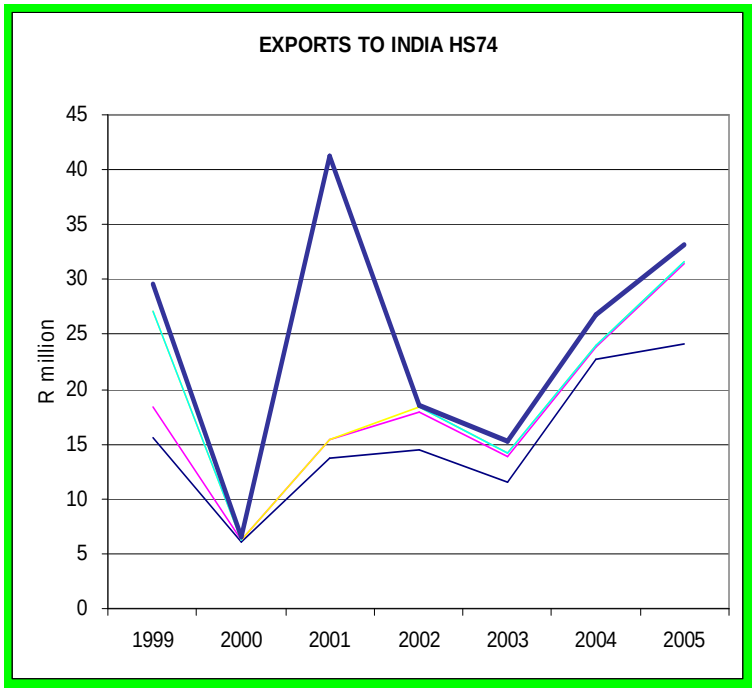
Imports of copper products from the world increased consistently by 261% between 1999 and 2005, to a level of R947 million in 2005, at a growth rate of 24% pa. India supplied only R14 million imports in 2005, which is 1,4% of total imports, as opposed to 1,2% in 1999. The increase in imports from India of 323% over the six-year period is equivalent to a growth rate of 27% pa, mainly consisting of products of

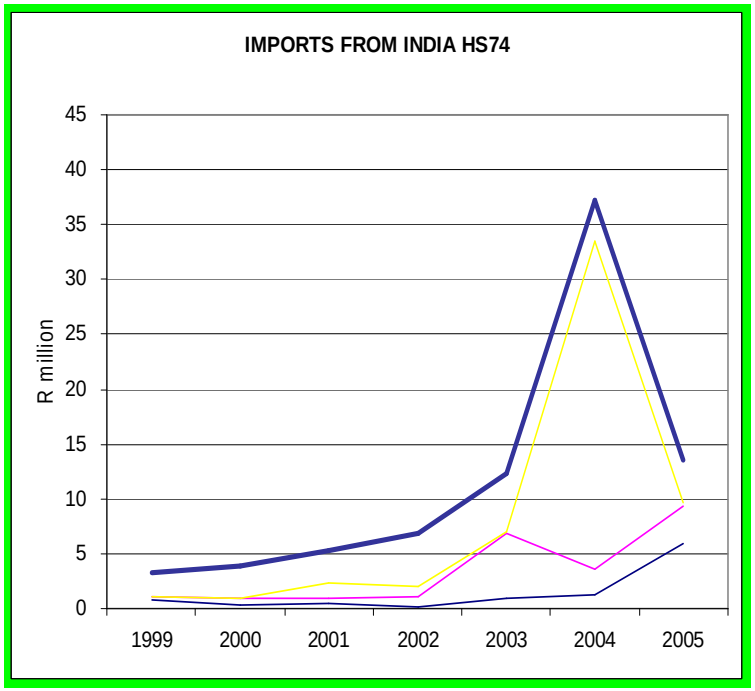
HS 7415 (copper nails, screws, pins and washers), comprising 26% of total imports. Generally, trade with India in copper products is variable from a trend at a relatively low to modest base line.

6.3.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with India.

Table 6.3-3: Exports To and Imports From India for the 4-Digit Codes Listed in the Trade Analysis Above





6.4. NICKEL

6.4.1. 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 India, for the period 1999 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 6.4-1: Exports of Nickel and Nickel Products From South Africa, to the World and to India Respectively [R million]

EXPORTS TO	World							India						
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	403	643	4	0	134	162	4	25	22
H7502: Unwrought nickel	104	221	143	234	357	471	838	0	0	0	0	0	0	5
OTHER HS75 < R5 million	18	17	10	8	27	125	119	0	0	0	0	0	0	0
H75: NICKEL AND ARTICLES THEREOF	476	715	543	685	754	4 629	1 600	4	0	134	162	4	25	27

South Africa is a consistent exporter of nickel plates, sheet, strip and foil, as well as primary nickel. Exports to the world amounted to R1 600 in 2005, an increase of 236% from 1999, at a growth rate of 22% pa. Exports of nickel products to India are modest, comprising only 1,7% of total exports. There are, however, sporadic export spikes, such as in 2001 and 2002, with the share of exports to India increasing to more than 20% of the total.

6.4.2. Imports

The Customs and Excise statistics for South African imports of nickel and nickel from the World, and from India, respectively, for the period 1999 to 2005 R million, are listed in the table below, ranked from the highest current value for values exceeding R5 million.

Table 6.4-2: Imports of Nickel and Nickel Products to South Africa, from the World and from India respectively [R million]

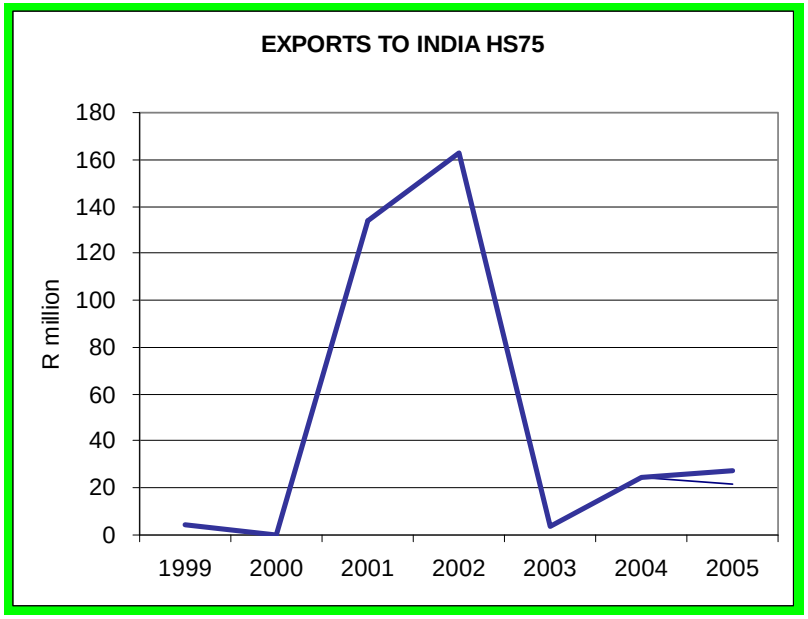
IMPORTS TO	World							India						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7505: Nickel bars, rods, profiles and wire	16	22	24	25	26	28	27	0	0	0	0	0	1	1
OTHER HS75 < R5 million	238	740	200	849	1 231	1 127	774	0	0	0	0	0	0	0
H75: NICKEL AND ARTICLES THEREOF	253	762	224	874	1 256	1 154	801	0	0	0	0	0	1	1

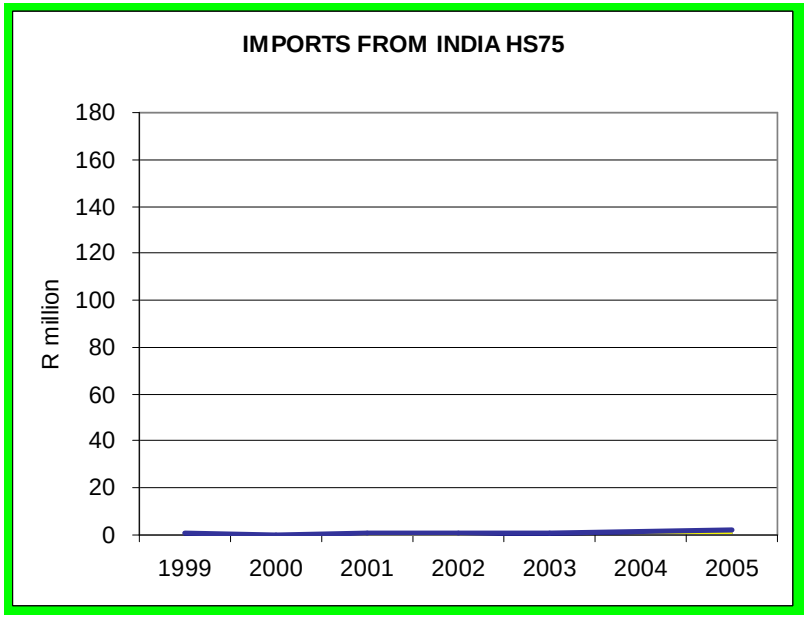
South Africa almost exclusively imports unwrought nickel, with the total value to the world amounting to R801 in 2005, an increase of 216% from 1999, at a growth rate of 22%. Imports of nickel products from India are either non-existent or statistically inconsequential.

6.4.3. Summary of Trade Patterns

The graphs below reflect the variable and modest trade patterns with India.

Table 6.4-3: Exports To and Imports From India for the 4-Digit Codes Listed in the Trade Analysis Above





6.5. ALUMINIUM

6.5.1. 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 India, for the period 1999 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 6.5-1: Exports of Aluminium and Aluminium Products From South Africa, to the World and to India Respectively [R million]

EXPORTS TO				World							India			
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	27	26	73	172	107	119	72
H7602: Aluminium waste or scrap	86	184	202	368	302	188	293	5	8	60	90	64	35	28
OTHER HS76 < R5 million	525	1 081	1 533	2 152	2 361	2 700	3 976	0	0	0	2	2	7	8
H76: ALUMINIUM AND ARTICLES THEREOF	5 162	6 264	7 301	9 642	7 774	9 778	10 819	33	34	133	264	172	160	108

South Africa recorded a consistent growth of exports in aluminium to a value of R10 819 million in 2005, an increase of 110% over 1999, at a growth rate of 13% pa. Exports comprised mainly unwrought (primary) aluminium, but there was also robust growth for aluminium plates, sheets and strip. Exports to India, which attained levels of more than R250 million in 2002, are at R108 million in 2005, an increase of 232% over 1999, equivalent to an average growth rate of 22% pa. The share of exports to India was 1,0% in 2005, compared to 0,6% in 1999 and 2,7% in 2002. Exports were mainly in products of HS 7601 (primary aluminium) and 7602 (aluminium scrap).

6.5.2. Imports

The Customs and Excise statistics for South African imports of aluminium and aluminium from the World, and from India, respectively, for the period 1999 to 2005 R million, are listed in the graph below, ranked from the highest current value for values exceeding R5 million.

Table 6.5-2: Imports of Aluminium and Aluminium Products to South Africa, from the World and from India Respectively [R million]

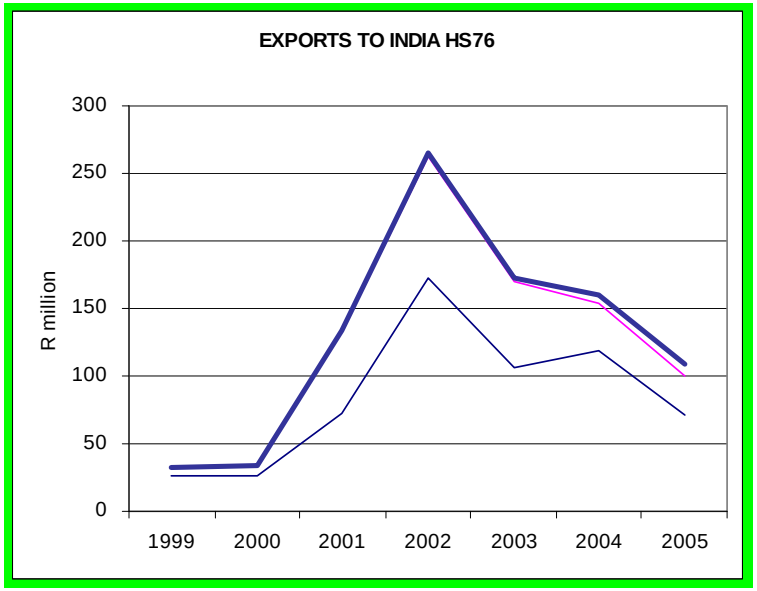
IMPORTS FROM	World							India						
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H7607: Aluminium foil of a thickness < 0.2mm	32	45	48	84	77	139	138	1	1	1	1	1	23	18
H7612: Aluminium casks, drums, boxes, etc. capacity <300l	23	30	41	69	51	46	51	5	6	12	15	11	8	7
H7604: Aluminium bars, rods and profiles	25	37	55	125	50	78	106	0	0	0	0	0	3	5
OTHER HS76 < R5 million	560	591	513	620	557	548	745	3	4	5	6	6	7	11
H76: ALUMINIUM AND ARTICLES THEREOF	640	703	657	898	735	811	1 040	10	11	18	21	18	41	41

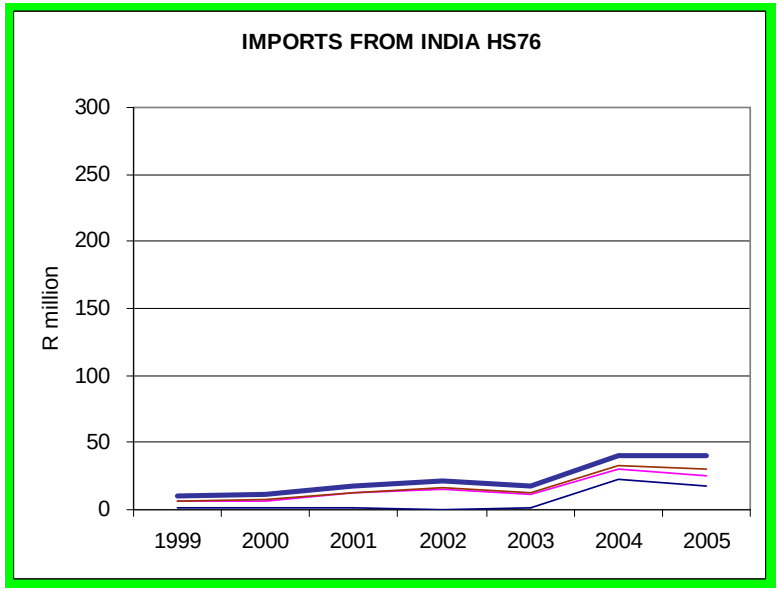
South Africa's total aluminium imports amounted to R1 040 million in 2005, an increase of 63% over 1999, at a growth rate of 8% pa. Imports from India, mainly in products of HS 7606 (aluminium foil) and 7612 (casks, drums and boxes), reached a level of R41 million in 2005, an increase of 326% from 1999, at a growth rate of 27% pa. The share of imports from India increased from 1,5% in 1999 to 3,7% in 2005.

6.5.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with India.

Table 6.5-3: Exports To and Imports From India for the 4-Digit Codes Listed in the Trade Analysis Above





6.6. DOWNSTREAM BENEFICIATION

6.6.1. 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 India, for the period 1999 to 2005, based on 4-digit Harmonised Codes, with exports more than R5 million, ranked from the highest current value.

Table 6.6-1: Exports of Tools and Implements, Products of Base Metals, and Machinery and Capital Equipment, From South Africa, to the World and to India Respectively [R million]

EXPORTS TO				World							India			
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	0	18	40	39	25	22	53
H8302: Base metal fittings nes for furniture, doors, cars/etc	29	23	36	87	80	78	167	0	0	0	0	0	16	48
H8419: Machinery, non-domestic, involving heating or cooling	162	184	190	386	233	249	222	1	0	0	0	2	14	26
H8409: Parts for internal combustion spark ignition engines	234	373	515	772	819	879	1 003	1	0	2	11	43	38	21
H8471: Automatic data processing machines (computers)	167	221	283	307	366	310	423	0	0	1	0	4	6	7

EXPORTS TO				World							India			
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8474: Machinery to sort, screen, wash, etc mineral products	492	603	739	939	816	930	1 117	0	1	2	6	3	7	5
H8479: Machines nes having individual functions	207	330	393	342	625	439	408	0	0	1	7	148	1	4
H8445: Machines for processing textile fibres	9	7	11	10	6	15	13	1	1	0	0	1	6	3
H8448: Auxiliary machinery and parts for textile machinery	6	12	17	14	8	15	18	0	0	0	0	0	5	3
H8425: Pulley tackle, hoists, winches, capstans and jacks	44	64	94	86	70	58	39	0	0	6	0	0	0	0
H8407: Spark-ignition internal combustion engines	67	85	104	690	604	727	807	9	47	34	50	11	0	0
OTHER HS82 + HS83 + HS84 < R5 million	3 824	4 797	5 398	6 802	5 878	6 260	7 945	11	20	21	31	19	24	34
H82: TOOLS, IMPLEMENTS ETC.	425	1 171	597	846	767	583	651	4	6	4	2	3	0	3
H83: ARTICLES OF BASE METAL	150	178	177	301	273	311	405	1	1	1	1	1	17	49
H84: MACHINERY AND CAPITAL EQUIPMENT	7 608	10 295	16 314	19 073	16 980	17 899	21 468	19	80	101	141	249	122	152
TOTAL: HS82 + HS83 + HS84	8 183	11 644	17 088	20 220	18 019	18 793	22 523	24	87	106	144	254	140	204

Exports of beneficiated metals products, as well as machinery and capital equipment to the world increased by 175% from 1999, to a level of R22 253 million in 2005, at a growth rate of 18% pa. The export mix is predominantly comprises HS 84 (machinery and equipment) at 95% of the total. Exports to India increase by 749%, from a very low base in 1999, to R204 million in 2005, at a growth rate of 43% pa. India's share of total exports increased from 0,3% to 0,9% over the six-year period. Exports to India are therefore still in the early development stages.

6.6.2. Imports

The Customs and Excise statistics for South African imports of aluminium and aluminium from the World, and from India, respectively, for the period 1999 to 2005 R million, are listed in the table below, ranked from the highest current value for values exceeding R5 million.

Table 6.6-2: Imports of Tools and Implements, Products of Base Metals, and Machinery and Capital Equipment, to South Africa, from the World and from India Respectively [R million]

IMPORTS FROM				World							India			
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8414: Air, vacuum pumps, compressors, ventilating fans, etc	873	927	1 101	1 540	1 374	1 425	1 822	5	4	7	8	11	17	41
H8302: Base metal fittings nes for furniture, doors, cars/etc	156	184	230	310	288	340	442	7	9	11	16	15	22	38
H8419: Machinery, non-domestic, involving heating or cooling	281	365	706	820	1 945	940	1 437	1	1	3	2	31	19	32
H8207: Interchangeable tools and dies for hand or power tools	334	352	492	746	473	735	550	6	5	5	6	10	12	26
H8477: Machinery for rubber, plastics industry	416	530	523	830	767	932	1 111	1	5	8	5	21	17	23
H8409: Parts for internal combustion spark ignition engines	563	676	754	1 117	1 062	1 028	1 122	7	16	16	25	19	21	22
H8479: Machines nes having individual functions	809	842	1 252	1 245	1 059	1 453	1 349	2	3	30	7	8	16	21
H8481: Taps, cocks, valves for pipes, tanks, boilers, etc	750	822	1 042	1 401	1 280	1 241	1 377	9	20	23	32	28	16	20
H8482: Ball or roller bearings	627	794	843	1 115	990	954	1 039	1	6	8	10	10	12	19
H8413: Pumps for liquids	641	753	973	1 230	1 068	1 187	1 326	4	5	7	11	14	17	18
H8422: Machinery for dish washing, bottle washing, filling	556	581	558	710	693	825	1 264	1	5	4	5	2	4	13

IMPORTS FROM				World							India			
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	8	9	7	7	8	12	12
H8483: Shafts, cranks, gears, clutches, flywheel, pulleys etc	870	903	1 086	1 490	1 356	1 339	1 389	3	4	5	9	14	10	12
H8408: Compression-ignition engines (diesel etc)	254	318	413	603	659	805	993	0	1	1	4	3	8	10
H8431: Parts for use with lifting, moving machinery	755	785	983	1 330	1 162	1 147	1 391	0	2	2	3	6	7	10
H8417: Industrial, laboratory furnaces, ovens, incinerators	87	179	318	239	223	156	151	0	0	0	1	0	1	10
H8204: Hand-operated spanners, wrenches and sockets	38	48	54	61	55	71	77	4	6	6	7	6	10	9
H8205: Hand tools nes, anvils, clamps, vices, blow lamps etc	134	142	168	205	189	215	233	3	4	6	6	5	8	9
H8438: Industrial food and drink preparation machinery nes	216	346	256	273	272	401	519	2	1	1	3	2	2	8
H8443: Printing and ancillary machinery	1 845	1 597	1 940	2 476	1 550	1 423	1 497	0	1	3	1	4	3	7
H8484: Gaskets and similar joints of metal sheet	197	221	259	341	300	310	322	2	2	3	7	6	3	6
H8480: Moulds for metals (except ingot), plastic, rubber, etc	216	225	255	396	271	456	334	1	0	1	1	2	3	6
H8212: Razors and razor blades (including blanks in strips)	124	87	126	152	123	111	103	3	2	4	4	4	4	5
H8202: Hand saws and blades for saws of all kinds	85	95	115	137	126	126	146	0	0	1	1	0	4	5
H8215: Spoons, forks, kitchen & table ware nes except knives	34	38	35	37	38	67	85	2	3	2	2	2	3	5
H8421: Liquid, gas centrifuges, filtering, purifying machines	602	632	908	1 160	1 124	1 164	1 278	1	1	1	2	3	3	5
H8203: Files, pliers, pincers, metalwork shears, etc	41	55	57	64	52	63	75	3	3	5	5	3	3	5

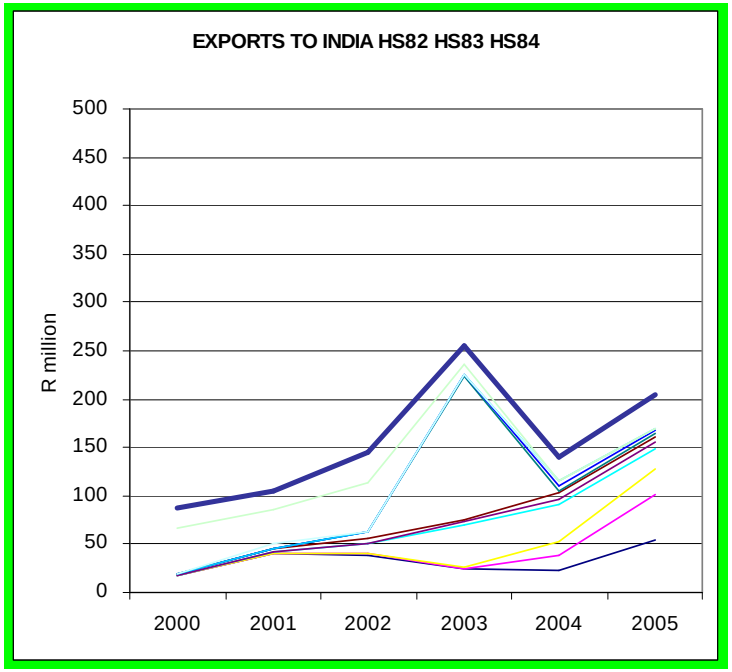
IMPORTS FROM				World							India			
AMOUNTS IN R million	1999	2000	2001	2002	2003	2004	2005	1999	2000	2001	2002	2003	2004	2005
H8439: Machinery for making pulp, paper, paperboard	339	137	257	301	403	946	269	0	5	1	1	1	2	3
H8455: Metal-rolling mills and rolls thereof	287	201	156	242	251	484	275	2	11	3	2	3	2	3
OTHER HS82 + HS83 + HS84 < R5 million	15 727	18 071	21 143	27 408	28 275	32 113	36 041	27	24	36	40	46	57	63
H82: TOOLS, IMPLEMENTS ETC.	1 045	1 095	1 399	1 864	1 458	1 831	1 776	22	27	35	37	36	52	73
H83: ARTICLES OF BASE METAL	487	537	689	841	764	881	1 082	19	23	24	30	30	44	63
H84: MACHINERY AND CAPITAL EQUIPMENT	26 355	29 303	34 944	45 306	45 240	49 783	55 199	67	110	151	165	220	221	329
TOTAL: HS82 + HS83 + HS84	27 887	30 935	37 033	48 011	47 462	52 496	58 057	107	160	210	232	286	317	465

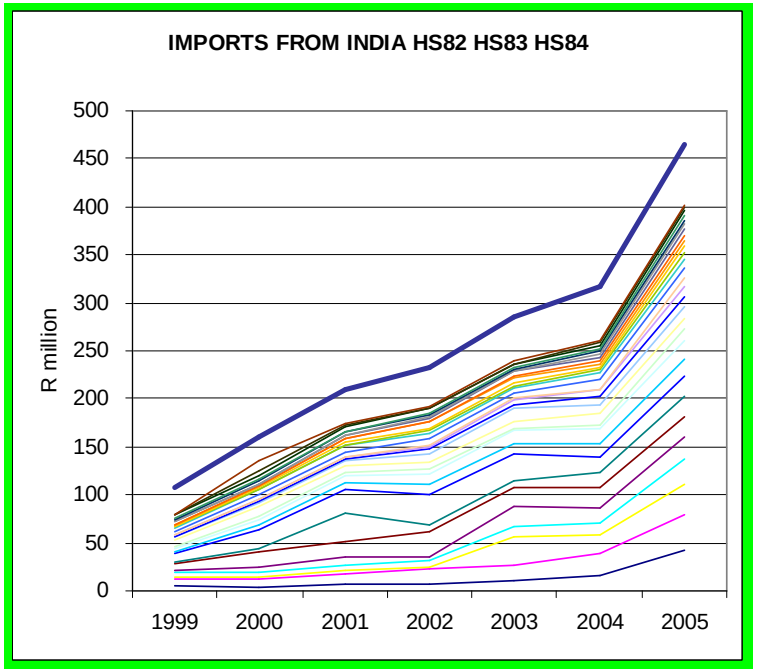
Imports from the world of beneficiated metals products, as well machinery and equipment, are wide-ranging and reached a level of R58 057 million in 2005, an increase of 108% over 1999, which is a growth rate of 13% pa. Imports from India increased at a faster rate of 28% pa, to a level of R465 million by 2005, which is an increase of 334% over 1999. Imports from India were varied and included products from HS 8414 (pumps, compressors and fans), 8302 (metal fittings for furniture and doors), 8419 (non-domestic machinery) and 8207 (tools and dies for power tools). India's share of imports to South Africa for chapters HS 82, 83 and 84 increase from 0,4% to 0,8% over the six year period. Imports from India are concentrated in HS 82, with 4,1% of total imports, and HS 83, with 5,8% of total imports to South Africa.

Imports and exports to the world in products of chapters HS 82, 83 and 84 were statistically symmetrical in 2005, with export-to-import ratios for HS 82 of 37%, for HS 83 of 38% and for HS 84 of 39%.

6.6.3. Summary of Trade Patterns

The graphs below reflect the increasing trends in trade patterns with India.





6.7. SUMMARY OVERVIEW OF TRADE PATTERNS

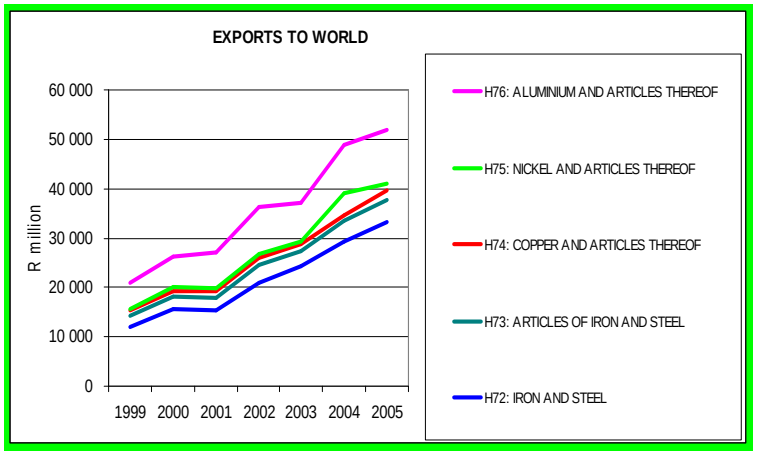
The summary totals of South African trade statistics for this metals industry study and additional information of beneficiations are as follows:

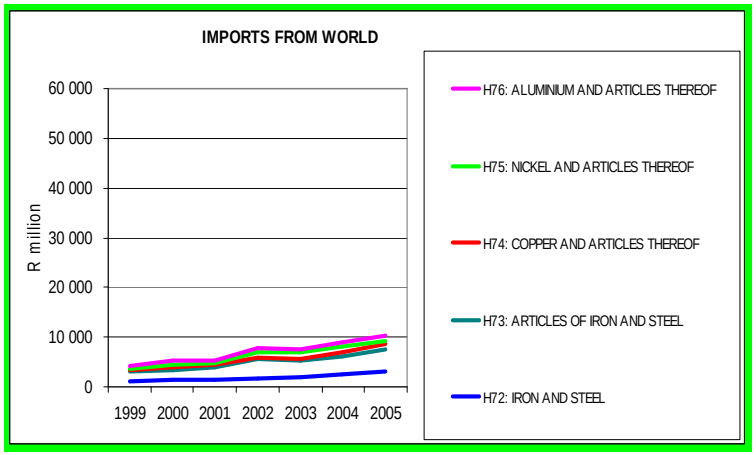
Table 6.7-1: Summary of South African Trade in Metals Industry and Beneficiated Products

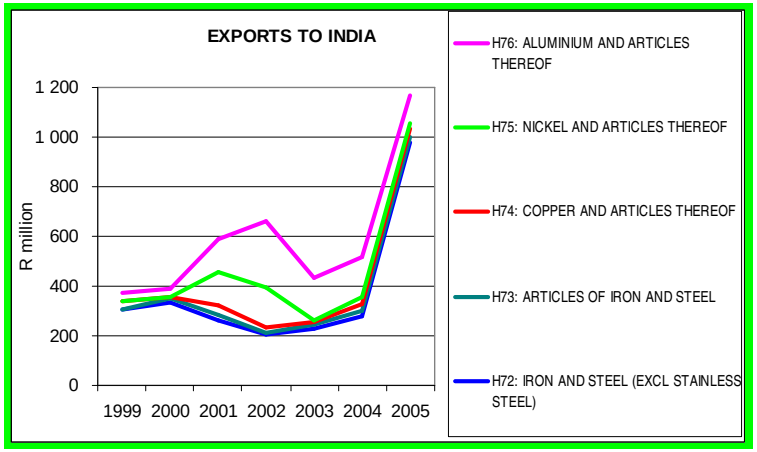
AMOUNTS [R million]	WORLD		INDIA	
HS CODE	EXPORTS TO	IMPORTS FROM	EXPORTS TO	IMPORTS FROM
H72: IRON AND STEEL (EXCL STAINLESS STEEL)	33 114	3 182	977	247
H73: ARTICLES OF IRON AND STEEL	4 527	4 394	20	131
H74: COPPER AND ARTICLES THEREOF	1 866	947	33	14
H75: NICKEL AND ARTICLES THEREOF	1 600	801	27	1
H76: ALUMINIUM AND ARTICLES THEREOF	10 819	1 040	108	41
SUB-TOTAL: H72 - H76: METALS INDUSTRIES	51 927	10 364	1 166	433
H82: TOOLS, IMPLEMENTS ETC.	651	1 776	3	73
H83: ARTICLES OF BASE METAL	405	1 082	49	63
H84: MACHINERY AND CAPITAL EQUIPMENT	21 468	55 199	152	329
SUB-TOTAL: H82 - H84: BENEFICIATED AND MACHINERY	22 523	58 057	204	465
TOTAL: METALS INDUSTRIES AND BENEFICIATION	74 451	68 421	1 370	897

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.

Table 6.7-2: Export and Import Patterns, for South Africa's Trade with the World and with India, Respectively -- HS72, 73, 74, 75 and 76







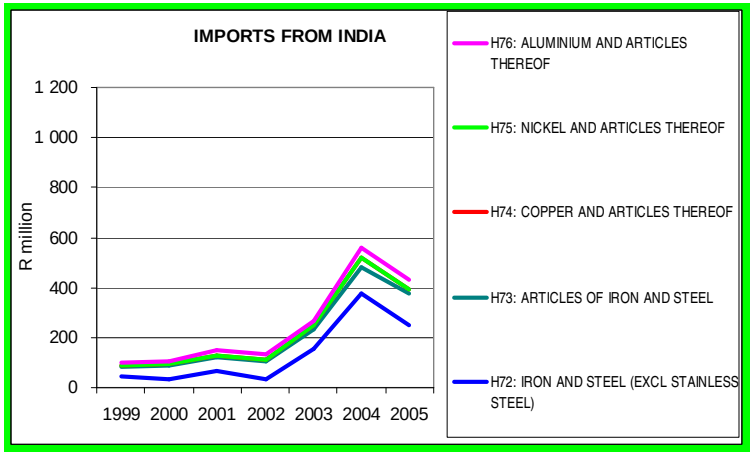
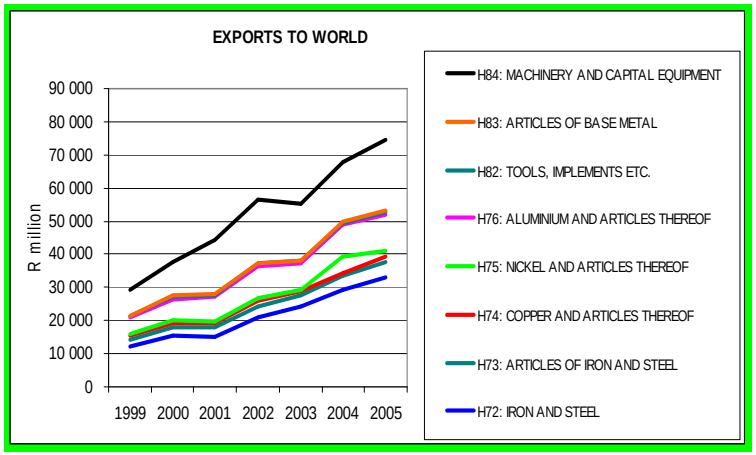
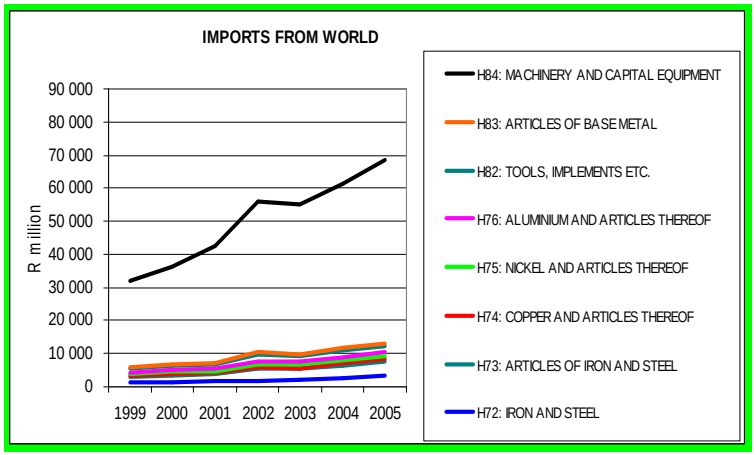
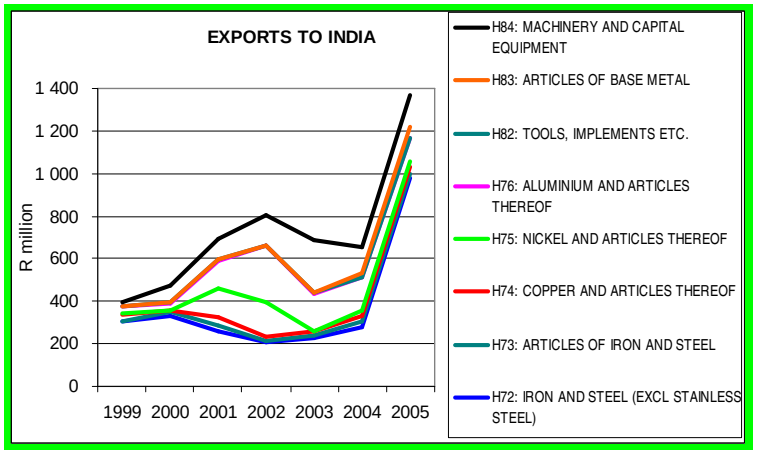


Table 6.7-3: : Export and Import Patterns, for South Africa's Trade with the World and with India, Respectively – HS82, 83 and 84 & HS72 – 76







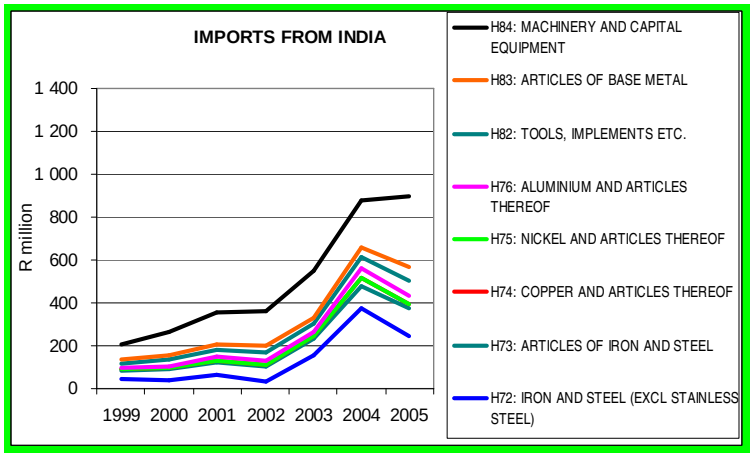
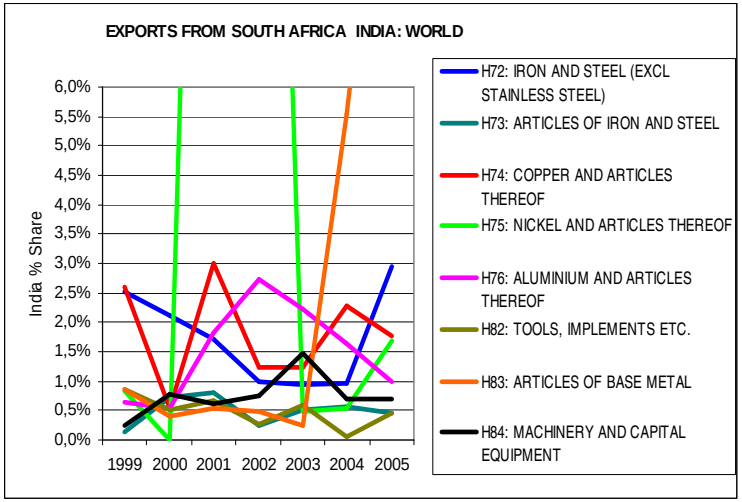
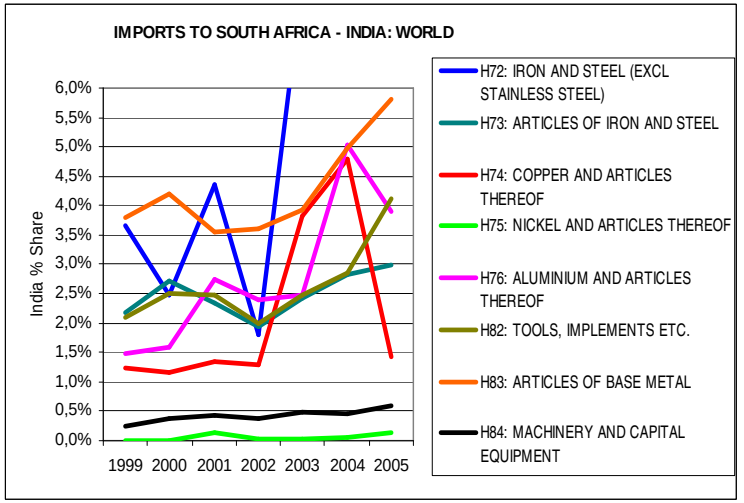


Table 6.7-4: India's Share of South Africa's Exports To and Imports From the World



HS 74: 2001 = 25%; 2002 = 24%

HS 83: 2004 = 6%; 2005 = 12%



HS 72: 2004 = 15%; 2005 = 8%

India's share of South Africa's trade with the world typically varies in the 0,5% to 2,5% range for exports and in the 1,5% to 4,5% range for imports.

6.8. CONSIDERATIONS

1. The focus of South Africa's metal exports is in primary metals. India'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 India's imports in primary products: mainly iron and steel alloys, copper and copper articles, as well as aluminium and iron & steel primary materials.

2. Exports of upstream iron and steel products to India is lagging its exports to the world. Exports to the world more than doubled between 2000 and 2005. In 2004 exports to India were 14% less than in 2000. However, in 2005 exports were 3.5 times higher than in 2004.raising upstream iron and steel exports to India to almost R1 billion. It is to be seen if the higher level of exports to India is to be sustained. Large increases in exports in 2005 happened in the exports of HS codes 7202, 7204, 7207, 7208, 7210 and 7216. Upstream iron and steel exports to India was 3% of the total in 2005.

3. A very small amount of R20 million out of South Africa's total export of R4 527 million in downstream products listed in HS chapter 73 went to India in 2005, comprising a share of only 0,4% of exports. Nothing exciting is happening on the 4 digit HS level.

4. South African imports of upstream iron and steel products more than doubled between 2000 and 2005. Upstream imports from India are concentrated in HS 7210. India supplied 27.6% of South Africa's imports under this heading in 2005.

5. India supplied 3% of South African imports of downstream iron and steel products in 2005, a marginally higher percentage than in 2000. .Import penetration by India is prominent in HS 7323 (14.5%); 7325 (12.3%). In 2005, imports from India broadened to include the majority of 4-digit headings. .

6 Exports of copper to India are products of HS 7404 (2.3% of the total) and 7403 (1.5%) and imports products of heading HS 7415 (26% of the total).

7. Trade in nickel and products with India is sporadic at best.

8. Aluminium exports to India are mainly unwrought aluminium and aluminium waste and scrap .In 2005, exports of unwrought aluminium declined to R72 million from significantly higher levels before. About 1% of South African aluminium is exported to India. South Africa's total aluminium imports amounted to R1 040 million in 2005, of which 3.9% was from India, mainly comprising aluminium foil as well as aluminium casks, drums etc.

9. Exports to India of HS 82, 83 and 84 are in the early development stages, comprising only 0.9% of total exports and found mostly in HS 84 (machinery). Imports from the world and from India are wide-ranging. Imports from India is 0.8% of the total with the focus on HS 82 4.1% of imports and HS 83 5.8% of imports under these headings.

7. SYNTHESIS AND RECOMMENDATIONS.

7.1. GENERAL

Policy

1. South African economic development policies appear to be trapped in the problem statement stage. India follows the practice of successive five year plans. Among others that ensures continuity and policy stability and transparency.

2. The Indian steel industry is promoted according to the National Steel Policy 2005. South Africa's new metal sector policy is under wraps now for a while.

3. India needs to adapt to WTO requirements that should lead to the eventual elimination of subsidies and incentives in favour of exports. This could result in the convergence of the support that India and South Africa extend to their respective industries.

Economic Development

4. Sustained rapid growth, high investment, a large population, and a willingness to support development with incentives, promise to propel the Indian economy to one of the largest mass markets of the world. The Indian economy is already the 10th largest in the world. Indian firms can thus expect to benefit from economies of scale and a large home base. Competition from Indian producers will in all probability be a threat to their South African counterparts. However, opportunities for South African business are bound to arise.

5. India is a large country with vast human and natural resources. Its development are now starting to bear results, after it changed the growth patterns to higher levels of 8% to 10% pa over recent years. The minerals industries in India are specifically targeted for increased private sector participation and investment in order to improve the supply of raw materials to the growing needs of the metals sectors. The characteristics of sector development policies are detailed analysis of the situation, quantification of challenges and a bottom-up forecast of growth areas.

Metals

6. India's National Steel Policy of 2005 provides specific guidelines for the growth paths of this industry sector. India has vast reserves of iron ore, but a shortage of good quality coal for the production of coking coal. Public ownership is still high, but in line with the general policies of India, private sector participation is encouraged through increasing deregulation. Historically, steel exports were relatively stagnant at modest levels, but

have entered a growth phase. The potential drivers for growth in the Indian steel industry are the automotive and capital equipment sectors, exploiting cost advantages for competitiveness in the target markets.

7. India also has vast resources of bauxite ore for its aluminium industry. Primary aluminium is, however, produced with energy-intensive processes. The supply-and-demand problems in the petroleum industry are already partly attributed to India's growing energy needs. The expansion prospects for the aluminium industry therefore have to be assessed against the background of high energy costs and India's lagging infrastructure capacity.

8. India has a scarcity of copper reserves, but its copper industry is expected to grow in line with increasing economic activity and wealth.

9. India has the potential to double the contribution of the steel and aluminium metals sectors to its economy, and to expand iron ore and bauxite production by three to five times in the next decade, if it is able to manage the potential properly. India could become one of the top five producers and markets for steel and aluminium products by 2015.

Indian Steel Industry -- Present and Future

CONSIDERATION	Presently: 2004/05 [Mtpa]	Growth Rate [% pa]	Future: 2020 [Mtpa]
PRODUCTION	38	7,3%	110
+ IMPORTS	2	7,1%	6
- EXPORTS	4	13,3%	26
= CONSUMPTION	36	6,9%	90

Costs

10. 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

11 The average selling price steel ex-factory in India is 11% higher than that of South Africa. Raw material cost for Indian producers is 60% of that of South Africa. However,

South Africa has a cost advantage in most of the other operating cost items especially energy. South African operating cots are thus 95% of that of India. India's interest charges are 74% of that of South Africa. In the end India's total cost is 3% higher than South Africa's, with higher Indian earnings before tax that remain to explain why selling prices of Indian producers are significantly higher than that of South African plants. Although South Africa's hourly employment cost is 2.45 times that of India, tonnes shipped per worker is 3 times higher.

12. South African steel manufacturers require: US$1,73 of new steel plant compared to US$1.53 for India. Together with India's lower interest charges South Africa is at a disadvantage iro capital related costs.

Trade

13. South Africa (US$ 6.8 billion) and India (US$ 6.6 billion) are about of similar size in the export of metals and products to the world. South Africa's exports to India equalled 1.8% of India's imports while India' exports to South Africa equalled 7% of South Africa's imports. While South Africa had a positive trade balance with India in 2000 a negative balance was recorded in 2004.

14. The focus of South Africa's metal exports is in primary metals. India'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 India's imports in primary products: mainly iron and steel alloys, copper and copper articles, as well as aluminium and iron & steel primary materials.

15. It's exports of upstream iron and steel products to India is lagging South Africa's exports to the world. Exports to the world more than doubled between 2000 and 2005. In 2004 exports to India were 14% less than in 2000. However, in 2005 exports were 3.5 times higher than in 2004.raising upstream iron and steel exports to India to almost R1 billion. It is to be seen if the higher level of exports to India is to be sustained. Large increases in exports in 2005 happened in the exports of HS codes 7202, 7204, 7207, 7208, 7210 and 7216. Upstream iron and steel exports to India was 3% of the total in 2005.

16. A very small amount of R20 million out of South Africa's total export of R4 527 million in downstream products listed in HS chapter 73 went to India in 2005, comprising a share of only 0,4% of exports. Nothing exciting is happening on the 4 digit HS level.

17. South African imports of upstream iron and steel products more than doubled between 2000 and 2005. Upstream imports from India are concentrated in HS 7210. India supplied 27.6% of South Africa's imports under this heading in 2005.

18. India supplied 3% of South African imports of downstream iron and steel products in 2005, a marginally higher percentage than in 2000. .Import penetration by India is prominent in HS 7323 (14.5%); 7325 (12.3%). In 2005, imports from India broadened to include the majority of 4-digit headings. .

19 Exports of copper to India are products of HS 7404 (2.3% of the total) and 7403 (1.5%) and imports products of heading HS 7415 (26% of the total)

20. Aluminium exports to India are mainly unwrought aluminium and aluminium waste and scrap .In 2005, exports of unwrought aluminium declined to R72 million from significantly higher levels before. About 1% of South African aluminium is exported to India. South Africa's total aluminium imports amounted to R1 040 million in 2005, of which 3.9% was from India, mainly comprising aluminium foil as well as aluminium casks, drums etc.

21. Exports to India of HS 82, 83 and 84 are in the early development stages, comprising only 0.9% of total exports and found mostly in HS 84 (machinery). Imports from the world and from India are wide-ranging. Imports from India is 0.8% of the total with the focus on HS 82 (4.1% of imports and HS 83 (5.8%) of imports under these headings.

7.2 DEFENSIVE POSITION

22. The metal sector is prominent among the South African manufacturing sectors because of 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 manufacturing. In 2005 the metal sectors employed 12.4% of manufacturing labour.

23. 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.

24. 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.

25. India's export performance to date was moderate, but it is expected to become a focus area in future, building on the strong performance of India' domestic economy and its ongoing investment in world-class production technology. Mild import penetration of Indian products 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. India is stronger in metal products manufacture compared with South Africa.

26. The Indian applied tariffs are already 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 India. 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 defensive position.

The cross cutting perspective

Because

27. The Indian economy is 4 times South Africa's and the population 23 times. India's economy is the 10th largest in the world with high growth potential. South Africa is more open to international trade (66% of GDP) than India (31%). Indian exports to South Africa are expanding and because of the difference in size and trade intensity, the impact of concessions can be much more extensive on the South African market than the other way round.
28. Uncertainties on future tariff levels are introduced by NAMA that may render bi-lateral concessions premature.

Negotiators should be careful in the formulation of trade concessions for metals to India.

The sector specific perspective

General

29. By considering that India's metal sectors are:
    - expanding at a rate equal to high growth in gdp.
    - supported by a clear development strategy as developed in the Steel Plan 2005 to become internationally competitive and penetrate export markets,

- backed by government development incentives and support to exports;

should cause negotiators to be careful in granting concessions on metal products to India.

Upstream

30 Because both the Indian steel and aluminium industries are set for rapid expansion excesses in capacity may pose a threat to local industry if concessions are granted to India.

Downstream

31 India is more competitive in down stream products than in the upstream ones in its trade with South Africa. South Africa's tariffs on downstream products are comparatively high and India may benefit significantly should concessions be granted on them.

32. The threat to downstream products that were excluded from this study (HS 82 and 83) could be more severe than for those covered in this report and is recommended for further investigation for economic and social reasons.

33. Indian exports of downstream products may be competitive with or without a PTA.

Because of these reasons negotiators should be extremely careful in granting concessions on metal products to India

34. Negotiations may be complicated by:

- the Doha Round. 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 bilateral concessions premature; and
- WTO unfriendly subsidies and incentives that may be enjoyed by Indian firms when competing in the local market..

7.2. OFFENSIVE POSITION

36. The Indian economy is advancing at a rapid pace and in dire need of expansion of its infrastructure. Investment in infrastructure consumes metals and South Africa may benefit from that.

37. India's bound tariff rates for industrial products are quite high, mostly at 40%. Many sensitive products are not bound against tariff increases. Copper (Chapter 74) and aluminium (Chapter 76) are not bound at all implying that rates can be raised if deemed necessary. All South Africa's tariff lines in the relevant sectors are bound.

38. India has substantially reduced its applied customs tariffs over the last number of years. The basic duties are very uniform, mostly at 15% (as from 1 March 2005). However the tariff structure is not transparent with the contents of a large number of notifications and general exemption notices not incorporated in Schedule 1 (basic duty schedule). There are a large number of partial exemptions, mostly reductions/exemptions for specified uses, projects etc. The actual basic duties on certain products may be lower than those indicated in Schedule 1, such as in the case of steel (actually applied duty of 5% compared to 20% shown in Schedule 1).

39. NTBs remain a major problem for exporters to India although the situation has improved over the past few years. The NTBs with the most affect on exports to India are policy unpredictability and uncertainty; customs procedures and delays; customs valuation; port and other transport infrastructural problems; general burdensome red tape; and labelling requirements.

40. India applies additional taxes on imports and the structure is not transparent. The most important of these is an additional duty of generally 16% (lower for certain products including some textiles), also called a CVD, which is actually a central excise or value added duty. A further additional duty of 4/8% applicable earlier has been removed in respect of almost all products. The situation in respect of additional taxes/duties has been simplified and these are lower than those previously applicable.

41. In the light of the foregoing, tariff concessions granted by India may in certain cases be of no real value. During negotiations on tariff concessions, SACU should make sure that the preferences offered by India will result in actual reductions in the currently applied rates. Applied rates on primary products and semi-manufactures are low. The result is that tariff concessions by India will be mild on the products where South Africa has a comparative advantage. The reverse may be true for India since South Africa has

in place substantial tariff rates on downstream products where India benefits from comparative advantages.

42. India has become the country that uses anti-dumping duties most of all countries. The sectors most subject to anti-dumping measures imposed by India are base metals and products thereof (33.1%), chemicals (20%), plastics (11.9%) and textiles (7.3%). India also has more safeguard measures in place than any other country.

43. Of countries against which anti-dumping investigations have been initiated, India is fifth on the list in regard to the number of initiations. India is subject to more countervailing measures than any other country.

44. There is little doubt that the South African metal industries are to benefit from a booming Indian 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 an offensive position

From a cross cutting perspective

45. By considering that

- India is the second fastest growing economy of the world;
- Already is the 10th largest and destined to become even more important with sustained high growth caused by increases in prosperity to be generated by exports, India's IT services sector and its growing segment of middle class 3939consumers;

suggest that opportunities for concessions on South African exports of metal products be pursued.

From a sector specific perspective

Upstream

46.Fast growth in demand implies that gaps will arise and that they will to be filled by imports for the benefit of upstream products..

Downstream

47. South Africa is not known for comparative advantages in the export of metal products. However, because of fast growth in the Indian market sporadic opportunities may arise from which the metal products sector may benefit.

The above could make it worth while for South Africa to request tariff concessions from India.

48. Negotiations can be complicated by South Africa's very narrow range of downstream metal products on offer that limit its ability to benefit from PTA's. This could become an issue where India may request concessions over a range of down stream products where South Africa is at a competitive disadvantage. Indian NTB' s, furthermore, are a major deterrent to imports. Negotiators need to ensure that tariff concessions are real and not eroded by non-tariff barriers; Uncertainty on future tariff levels because of NAMA may render bi-lateral concessions as premature.

49. Prospective exporters should enter the Indian market preferably in partnership with an Indian counterpart in view of the NTB's and other issues in doing business in India. .

8. ADDENDUM A

8.1. INDIA: GENERAL INCENTIVE SCHEMES.

8.1.1. **Duty Exemption and Remission Schemes**

Duty Exemption and Remission Schemes	4.1	Duty exemption schemes enable duty free import of inputs required for export production. An Advance Licence is issued as a duty exemption scheme. A Duty Remission Scheme enables post export replenishment/ remission of duty on inputs used in the export product. Duty remission schemes consist of (a) DFRC (Duty Free Replenishment Certificate) and (b) DEPB (Duty Entitlement Passbook Scheme). DFRC permits duty free replenishment of inputs used in the export product. DEPB allows drawback of import charges on inputs used in the export product.
Advance Licence for Annual Requirement	4.1.10	Advance Licence can also be issued on the basis of annual requirement for physical exports, intermediate supplies and / or deemed exports. The entitlement in terms of CIF value of imports under this scheme shall be up to 300% of the FOB value of physical export and / or FOR value of deemed export in the preceding licensing year or Rs 1 crore, whichever is higher. Such licence shall have value addition as specified in paragraph 4.1.6 of the Foreign Trade Policy.

8.1.2. **Export Promotion Capital Goods Scheme**

EPCG Scheme	51	The scheme allows import of capital goods for pre production, production and post production (including CKD/SKD thereof as well as computer software systems) at 5% Customs duty subject to an export obligation equivalent to 8 times of duty saved on capital goods imported under EPCG scheme to be fulfilled over a period of 8 years reckoned from the date of issuance of licence.

8.1.3.: Export Oriented Units ("EOUs"), Electronics Hardware Technology Parks ("EHTPs"), Software Technology Parks ("STPs") And Bio-Technology Parks ("BTPs")

Eligibility	6.1	Units undertaking to export their entire production of goods and services (except permissible sales in the DTA), may be set up under the Export Oriented Unit (EOU) Scheme, Electronic Hardware Technology Park (EHTP) Scheme, Software Technology Park (STP) Scheme or Bio-Technology Park (BTP) scheme for manufacture of goods, including repair, re-making, reconditioning, re-engineering and rendering of services. Trading units, however, are not covered under these schemes.	
		(b)	An EOU/EHTP/STP/BTP unit may import and/or procure from DTA or bonded warehouses in DTA / international exhibition held in India without payment of duty all types of goods, including capital goods, required for its activities, provided they are not prohibited items of import in the ITC (HS). Any permission required for import under any other law shall be applicable. The units shall also be permitted to import goods including capital goods required for the approved activity, free of cost or on loan/lease from clients. The import of capital goods will be on a self certification basis.
Other Entitlements	6.12	Other entitlements of EOU/EHTP/STP/BTP units are as under:	
		(a)	Exemption from payment of Income Tax as per the provisions of Section 10A and 10B of Income Tax Act.
		(b)	Exemption from industrial licensing for manufacture of items reserved for SSI sector.
		(c)	Deleted
		(d)	Will be allowed to retain 100% of its export earning in the EEFC account.
			The Units will not be required to furnish bank guarantee at the time of import or going for job work in DTA, where the unit has (i) a turnover of Rupees 5 crores or above, (ii) the unit is in existence for at least three years and (iii) unit having an unblemished track record.

			100% FDI investment permitted through Automatic Route similar to SEZ units.

8.1.4. Special Economic Zones ("SEZs")

Eligibility	7.1	(a)	Special Economic Zone (SEZ) is a specifically delineated duty free enclave and shall be deemed to be foreign territory for the purposes of trade operations and duties and tariffs.	
		(b)	SEZ units shall be entitled for:-	
			(i)	Exemption from Central Sales Tax.
			(ii)	Exemption from payment of Central Excise Duty on all goods eligible for procurement by the unit.
			(iii)	Deleted.
			(iv)	Reimbursement of Duty paid on fuels or any other goods procured from DTA as per the rate of drawback notified by the Directorate General of Foreign Trade from the date of such notification.
Other Entitlements		Other entitlements of SEZ units are indicated in the Chapter 7 of the Handbook (Vol-1).		
Entitlement for SEZ Developer	7.23	For development, operation and maintenance of infrastructure facilities in SEZs, the developer shall be eligible for the following entitlements		
		(a)	Income tax exemption as per 80 IA of the Income Tax Act.	
		(b)	Import/ procure goods without payment of Customs/Excise duty.	
		(c)	Exemption from Service tax.	
		(d)	Exemption from CST.	

8.1.5. Free Trade and Warehousing Zones

Objective	7A.1	The objective is to create trade-related infrastructure to facilitate the import and export of goods and services with freedom to carry out trade transactions in free currency. The scheme envisages creation of world-class infrastructure for warehousing of various products, state-of-the-art equipment, transportation and handling facilities, commercial office-space, water, power, communications and connectivity, with one-stop clearance of import and export formality, to support the integrated Zones as 'international trading hubs'. These Zones would be established in areas proximate to seaports, airports or dry ports so as to offer easy access by rail and road.	
Status	7A.2	The Free Trade & Warehousing Zones (FTWZ) shall be a special category of Special Economic Zones with a focus on trading and warehousing.	
Entitlement of units	7A.6	(i)	Income Tax exemption as per 80 IA of the Income Tax Act.
		(ii)	Exemption from Service Tax.
		(iii)	Free foreign exchange currency transactions would be permitted.

8.1.6. Deemed Exports

Deemed Exports	8.1	"Deemed Exports" refers to those transactions in which the goods supplied do not leave the country and the payment for such supplies is received either in Indian rupees or in free foreign exchange.	
Benefits to the Supplier	8.4.1	(i)	In respect of supplies made against Advance Licence in terms of paragraphs 8.2(a) of the Policy, the supplier shall be entitled to Advance Licence for intermediate supplies.

8.1.7. Promotional Measures

Assistance to States for Infrastructure Development of Exports (ASIDE)	3.1	The State Governments shall be encouraged to participate in promoting exports from their respective States. For this purpose, Department of Commerce has formulated a scheme called ASIDE. Suitable provision has been made in the Annual Plan of the Department of Commerce for allocation of funds to the States on the twin criteria of gross exports and the rate of growth of exports. The States shall utilise this amount for developing infrastructure such as roads connecting production centres with the ports, setting up of Inland Container Depots and Container Freight Stations, creation of new State level export promotion industrial parks/zones, augmenting common facilities in the existing zones, equity participation in infrastructure projects, development of minor ports and jetties, assistance in setting up of common effluent treatment facilities, stabilizing power supply and any other activity as may be notified by Department of Commerce from time to time.

8.2. DEVELOPMENT ZONES IN INDIA

EPZs are special, spatial enclave areas, separated by fiscal barriers from domestic tariff areas, intended to provide an internationally competitive duty free environment (for imported materials and components) for export promotion at low cost, where possible supported by: -

- Modern and efficient infrastructure
- Fiscal and non-fiscal concessions and incentives to participating firms
- Better business governance as a result of single window facilities, with bureaucratic and corruption-free environment

EPZs are designed to boost export performance, especially in developing countries, by compensation for infrastructure deficiencies and procedural complexities, thereby improving the investment climate for participating businesses, promoting competitiveness and supporting an export-orientation. A country-wide infrastructural development and policy reform process would be expensive and tine consuming, therefore an EPZ can be regarded as a test case for the liberalisation of trade, tax, labour and other policies before applied to the economy as a whole. It serves as a vehicle to introduce policy and institutional reforms,

streamlining customs procedures, reducing bureaucratic overhead, and even reducing corruption levels, if problematic otherwise. There is a strong empirical linkage between policy and the success of EPZs.

The stated policy objectives for EPZs (and SEZs) evolved over time and differences in emphasis from time to time, but the following aspects are applicable: -

- Development of export oriented industries
- Foreign exchange earnings
- Stimulation of investment
- Employment opportunities
- Creating an internationally-competitive environment
- With low cost production
- For promotion of international trade in goods and services

The cost of export is higher than supplying an own domestic market, due to additional marketing transport, logistics, distribution costs, as well as financial, legal and business risks. To export successfully, a business has to possess a competitive advantage in order to overcome the above-mentioned additional cost burden and to rival incumbent suppliers to the target market. The EPZ has to offer benefits substantially adequate to overcome the above-mentioned additional costs and to rival incumbent suppliers in its target market. The EPZ has to enhance the competitive advantage of participating export-oriented firm firms within realisable economies of scale and exceed A SEZ is a self-contained area (typically a minimum of 100ha) with high quality infrastructure for industrial and residential use.

8.3. INCENTIVES – SOUTH AFRICA

8.3.1. 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:

8.3.2. 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

8.3.3. 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)

8.3.4. 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.

8.3.5. 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)

8.3.6. 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.

8.3.7. 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

8.3.8. 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)

8.3.9. 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

8.3.10. 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.

8.3.11. 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).

9. ADDENDUM B – 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.

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.

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 C – COMPETITIVENESS ANALYSIS

10.1 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: -

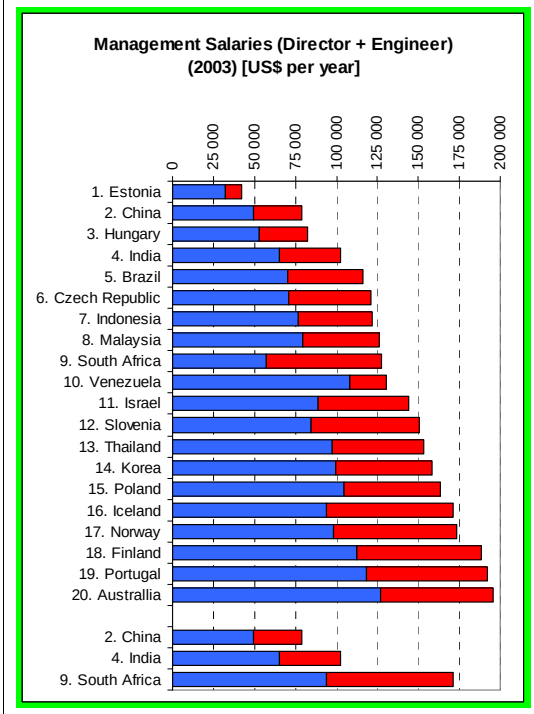
Table 0-1: Competitiveness Parameters and Rankings of the Study Countries

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

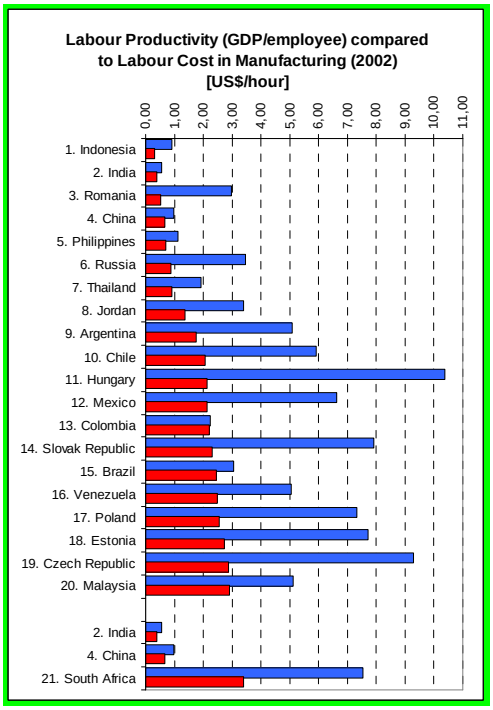
CONSIDERATION	VALUE			RANKING			COMPARISON RELATIVE TO SOUTH AFRICA ("SA")	
	CHINA	INDIA	SOUTH AFRICA	CHINA	INDIA	SOUTH AFRICA	CHINA: SA [TIMES]	INDIA: SA [TIMES]
Total Exports [US$ billion]	477	54	34	4	30	38	14,0	1,6
Trade : GDP Ratio [%]	28%	16%	32%	40	49	32	0,88	0,50
Direct Investment Stock Inwards [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 0-1: Country Rankings on Personnel Costs and Labour Costs Relative to Productivity



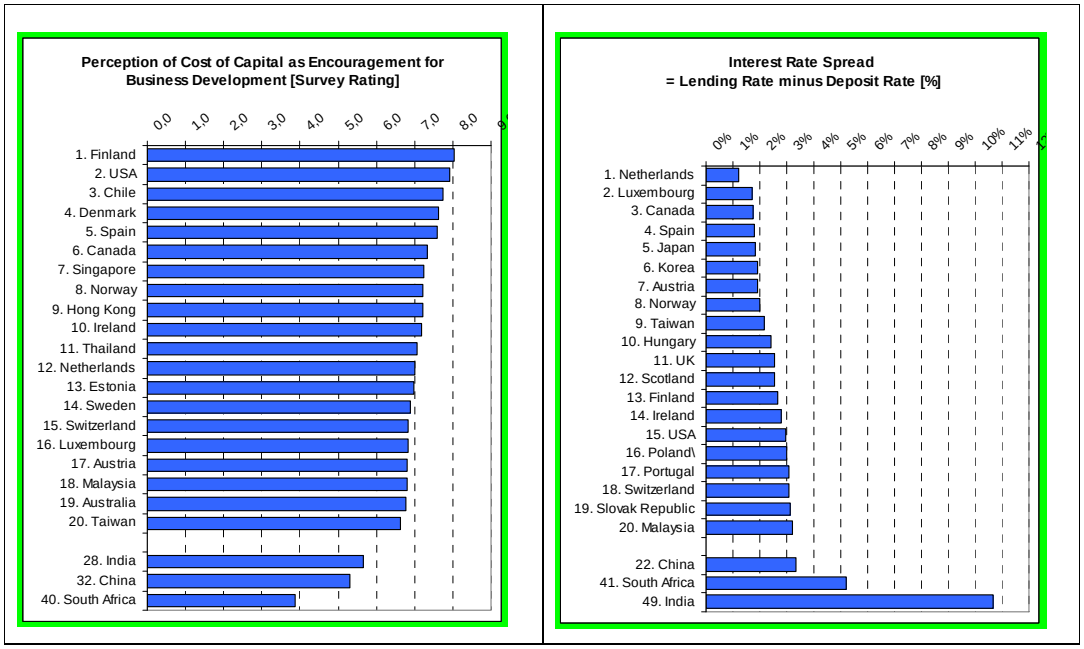
Legend: Left-hand bar/blue: director
Right-hand bar/red: engineer



Legend: Top bar/blue: GDP/employee
Bottom bar/red: labour cost/employee

India is a vast country, 2.6 -times the size of South Africa, with 23 times as many people. Its GDP per capita on a purchase price parity ("PPP") basis is 29% of that of South Africa's, but it is experiencing high growth rates and an increasing middle-class from it large population base. Its investment relative to GDP of 26% is equal to the ratio expected for a successful developing country compared to South Africa's lowly 16%, underpinning its growth and development efforts. India is targeting exports. Its trade propensity, measured as trade relative to GDP, is half that of South Africa.

Figure 0-2: Cost of Capital and Interest Rate Spread



Comparisons on labour costs and labour productivity, cost of capital and interest rate spreads, show significant competitive factors in favour of companies operating in India.India.

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 0-3 Energy Cost to Industry and Intensity of Energy Use for Production Purposes

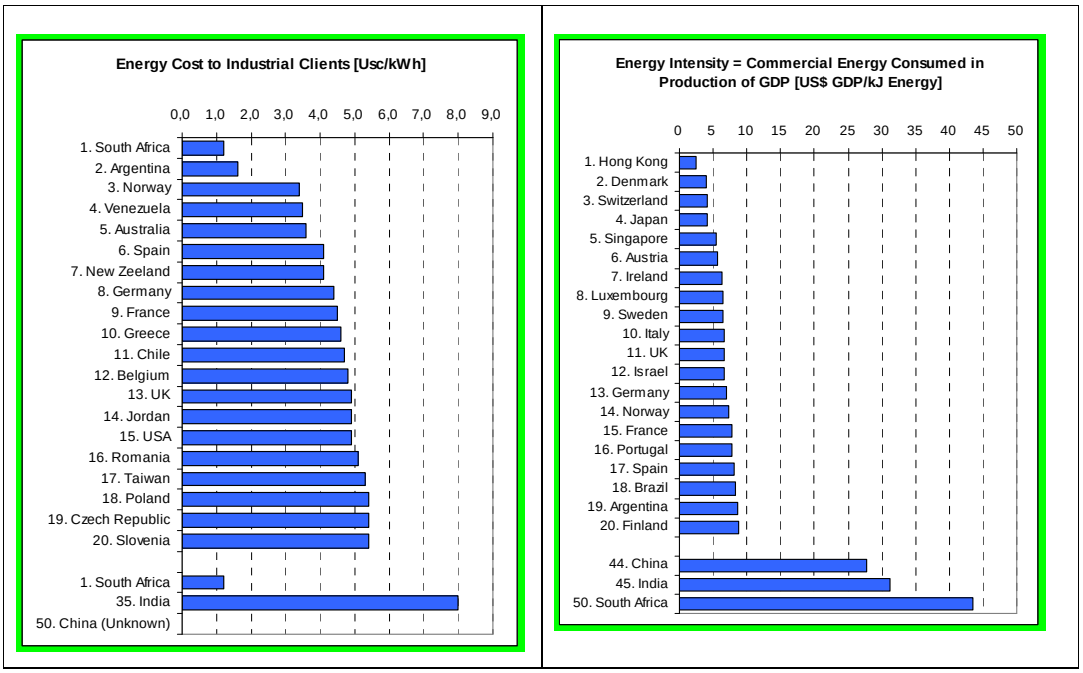
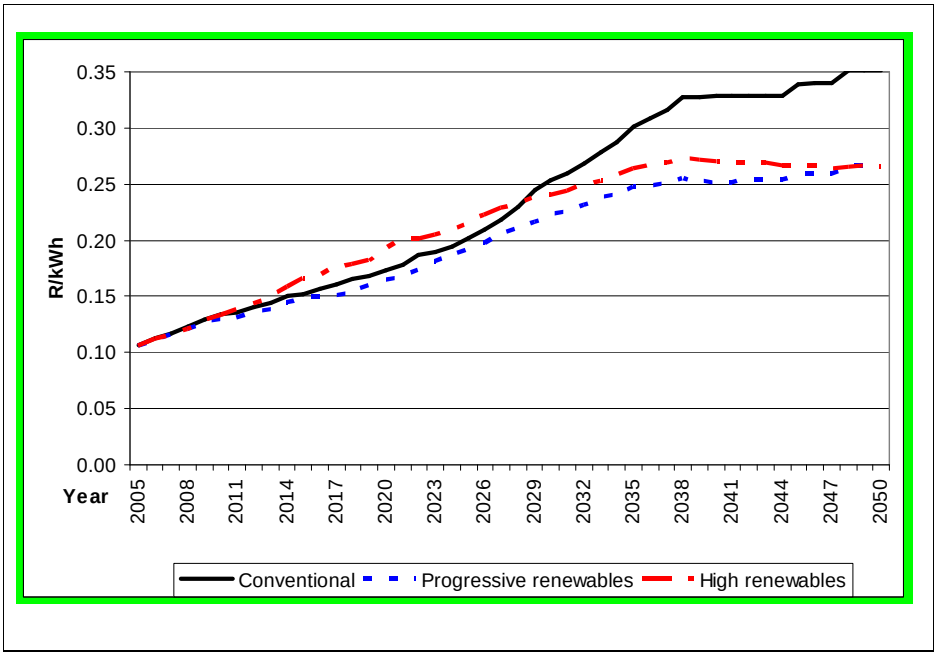


Figure 0-4: Long-term Cost Curve for Energy Cost in South Africa



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.

10.2 INDUSTRY COMPETITIVENESS FACTORS

10.2.1 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.

10.2.2 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 0-1: Major Hot-Rolled Coil Steel Producers - According to World Production Cost Curve (Lower 25%), and Chinese and South African Listings

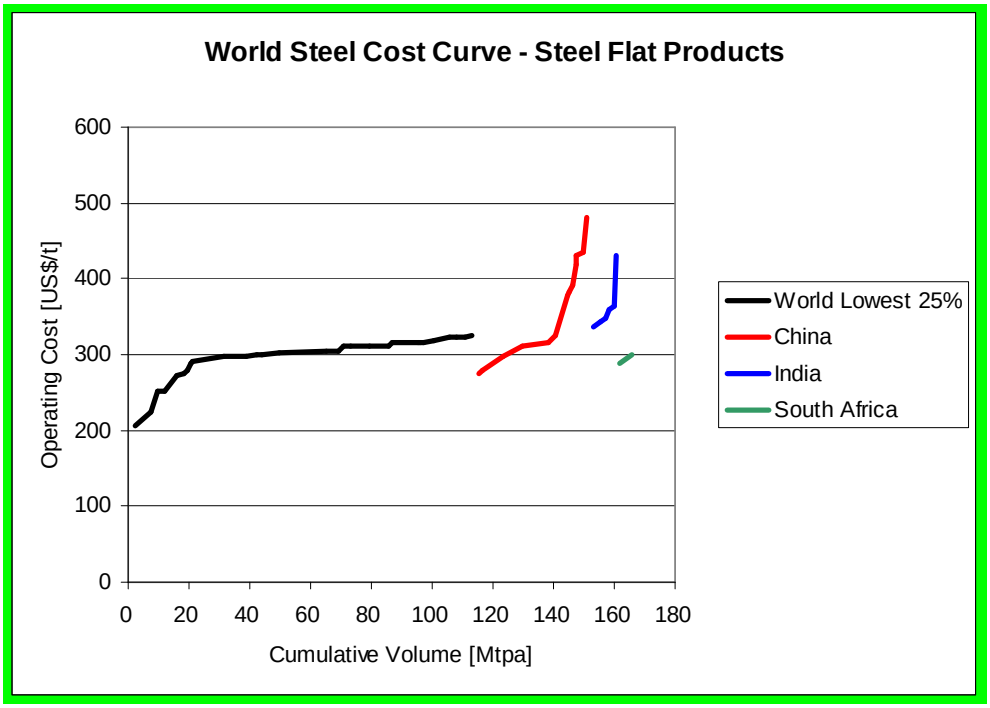
Rank	Company	Country	Capacity	Operating Cost	Total Production Cost	Cost Percentile
BOTTOM QUARTILE OF COST CURVE						
1	Sidor	Venezuela	2,50	205	228	0,5%
2	CSN	Brazil	5,00	225	267	1,8%
3	CST	Brazil	2,30	252	316	2,2%
4	AHMSA	Mexico	2,32	252	307	2,7%
5	BlueScope	Australia	3,94	273	330	3,6%
6	**Boatou**	**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 0-1: 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.

10.2.3 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 0-2: 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 0-3: 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 0-4: 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 0-5: 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 0-6: 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 0-7: 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 0-8: Chinese Steel Plants (Summary 4/4)

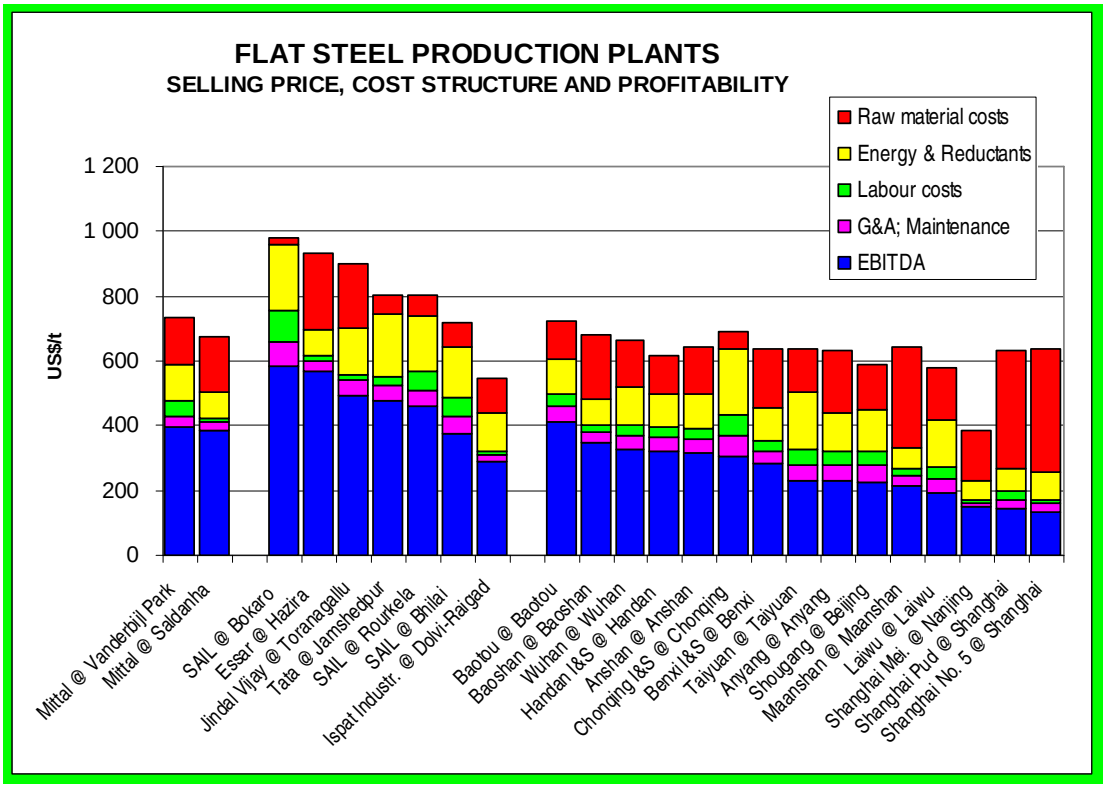
STEEL PLANT	Shanghai Mei.	Shanghai Pud	Shanghai No. 5	China
LOCALITY	Nanjing	Shanghai	Shanghai	Average
Sales price of goods shipped [US$/t]	383,27	629,66	637,05	600,46
Raw material costs [US$/t]	152,85	363,94	379,79	188,29
Energy & Reductants [US$/t]	57,86	67,88	83,61	103,58
Overheads [US$/t]	23,36	55,72	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 graph 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 0-2: 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 0-3: Operating Cost Structure for Steel Plants in the Competitiveness Study

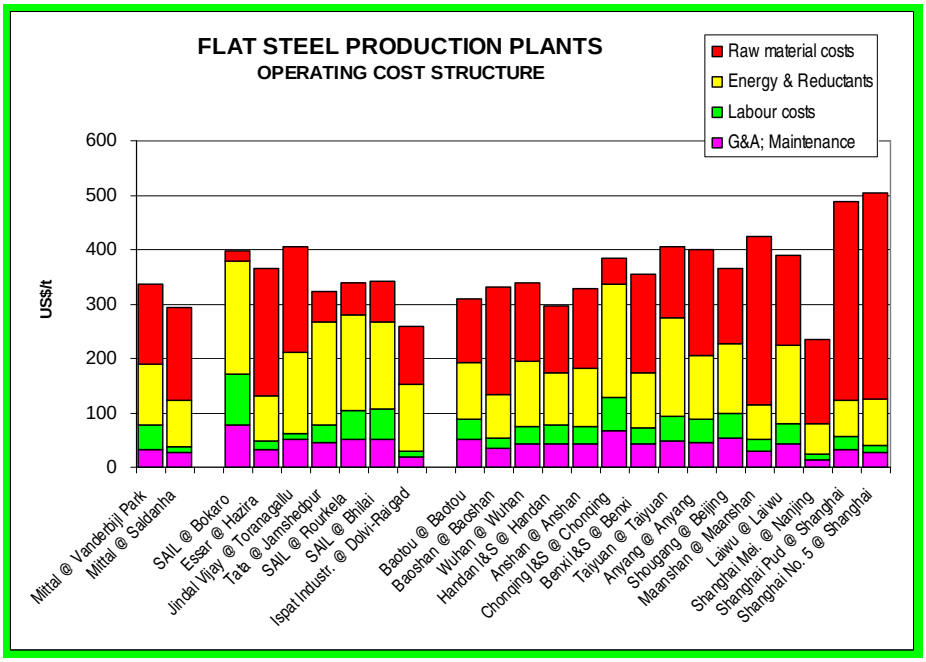
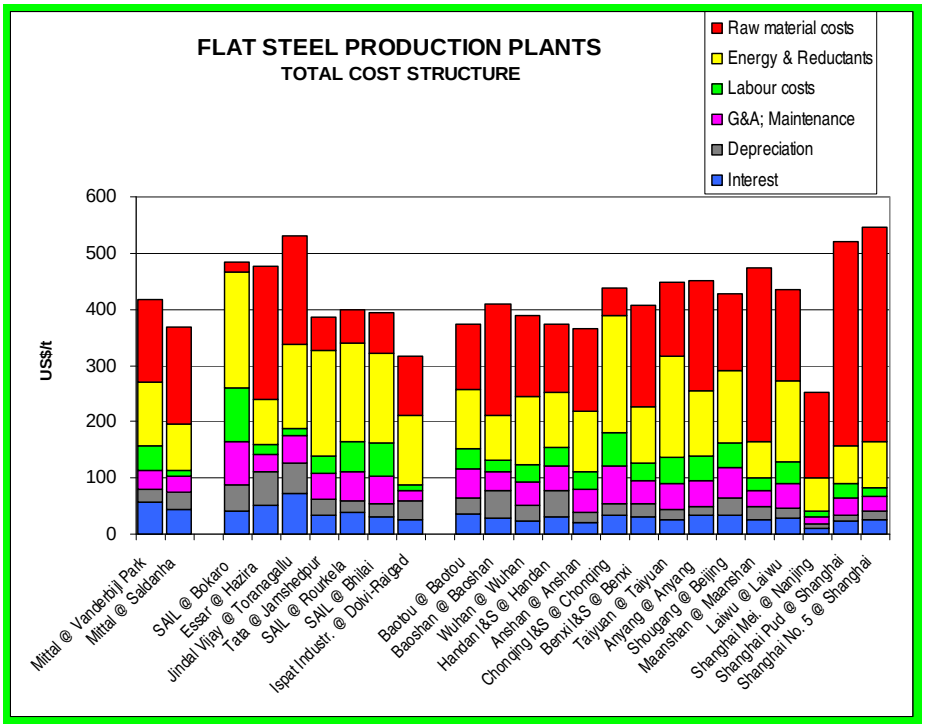


Figure 0-4: Total Cost Structure of steel Plants in the Study



The comparisons of summary totals and averages of the study countries provide significant insights into their steel industries.

Table 0-9: 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 11% lower average selling price than India, with 5% lower operating costs, Profitability of the Indian steel industry is substantially higher, at an EBITDA of US$459/t compared to US$395/t for South Africa.

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 0-10: 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

COUNTRY	South Africa	India	China
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
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, Indian steel manufacturers require: US$1,53 of new steel plant, with 32¢ of raw materials and energy; for a total operating cost of 43¢

Furthermore, the steel industry figures in China and India relative to South Africa can be compared as follows: -

Table 0-11: 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%

COUNTRY		India	China
KEY FIGURES			
Finished product volumes	[%]	86%	146%
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 India, compared to South Africa, have: -

- A production capacity of 86% and an employment absorption of 2 and a half more;
- An employment cost per worker of only 41% but worker-hours per tonne of steel produced of 3 times;
- Higher headline earnings profitability (as EBITDA) of 16%, due to 11% higher selling prices and 5% higher operating costs;
- Energy and reductants are 48% more expensive in terms of unit costs,
- The capital cost per plant (as fixed assets per tonne of steel produced, in US$/t) is 2% lower, but depreciation is 35% higher and interest charges again 27% less. Asset productivity (revenue turnover earned relative to fixed capital cost) is a marginal 2% higher.

8.4. SOURCES OF COMPETITIVENESS – FURTHER CONSIDERATIONS

8.4.1. 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.

8.4.2. 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?

8.4.3. 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.

8.4.4. 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)

8.4.5. 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