

**SECTORAL STUDY – BASIC METALS****5 INTRODUCTION**

South Africa's basic metals sector plays an important part in the country's economic development. It is a major contributor to the country's GDP as well as employment and a major earner of foreign exchange. In addition, both of the sub-sectors (iron and steel and non-ferrous metals) are vital raw material inputs to downstream sectors.

Basic iron and steel constitutes 8.6% and basic non-ferrous products constitute 4.7% of the total GDP of manufacturing (ABSA, 2000-2005). This sector has also shown significant growth recently. According to Stats South Africa figures; manufacturing production increased by 5.4% in 2002, representing a seven-year high. Manufacturing sales grew by 22.2% to R613.94 billion. The largest increases were recorded for iron and steel products, boosted by a 36.5% growth in sales last year, representing an increase of R12.9 billion. ("Production boom lifts South Africa growth prospects", Business Day, 12/02/2003). The basic metals sector is principally concerned with the transformation of mining products (extracted and refined ore and concentrate). This transformation includes further refining, alloying, casting, treating, shaping, drawing, sheet and foil rolling, extruding and pressing of raw materials into intermediate products for further fabrication by downstream metal forgers and engineering companies. The transformation of mineral ore and concentrate usually takes place in massive, capital-intensive mills, smelters, blast furnaces and foundries using heat-treating and/or cold finishing processes.

**5.1 Profile of the sector**

The basic metal sector is divided here into two main sub-sectors, namely, the non-ferrous and the basic iron and steel sub-sectors. The basic iron and steel sub-sector can be broken down into three kinds of steel, namely, ferrochrome, carbon and stainless steel. The non-ferrous sub-sector covers aluminium, brass, copper, lead, manganese, tin and zinc.

The production of iron and steel forms a key input into many products and forms the bulk of basic metal forming in South Africa. Domestic steel producers are, however, vulnerable to the cyclical nature of the industry, in terms of domestic and international demand as well as price fluctuations. The situation is aggravated by the fact that approximately 40% of the country's products are traded in an un-beneficiated form on international markets. Adding to this vulnerability is the protective stance many governments adopt in protecting their domestic producers and the current global excess capacity in the sector. The non-ferrous metal sector is dominated by aluminium ingot manufacture at the primary level and the production of alloys

from scrap at the secondary level. South Africa is well endowed with large reserves of non-ferrous metals and minerals except for aluminium, for which there are no commercially exploitable reserves. South Africa is ranked 8<sup>th</sup> in world production of aluminium. South Africa produces approximately 677 000 tons of primary aluminium per year of which 512 000 is exported.

### **5.1.1 Industry Classification**

Using the Standard Industrial Classification for economic activities the basic metal sector is captured by the following SIC codes:

- Major group 351 covers manufacture of basic iron and steel
- Major group 352 covers manufacture of basic precious<sup>13</sup> and non-ferrous metals
- Major group 353 covers casting of metals.
- Sub group 3531 covers casting of iron and steel
- Sub group 3532 covers casting of non-ferrous metals
- Sub group 35202 covers the manufacture of primary non-ferrous metal products, excluding precious metals

Essentially, the basic metal sector involves the conversion or transformation of mining products, fine refining, alloying, casting sheets and foil rolling.

### **5.1.2 Major products**

#### **Iron and steel**

Primary steel products and semi-finished products include billets, blooms, slabs, forgings, light, medium and heavy sections and bars, reinforcing bars, railway track material, grinding media, wire rods, seamless tubes, plates, hot and cold rolled coils and sheets, electrolytic galvanised coils and sheet, electrolytic galvanised coils and sheets tinsplate and pre-painted coils and sheets<sup>14</sup>.

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<sup>13</sup> The manufacture of precious metals was not included in this sector.

<sup>14</sup> "The Metals sectors/industry; Overview of the SA metals industry in a global context", dti

### **Non-ferrous metals**

South Africa's non-ferrous metal sub-sectors comprise aluminium and other metals (including copper, brass, lead, zinc and tin). Aluminium is by far the largest sector. The primary alloy sector products include; remould ingots, slabs, billets and rim alloys. The secondary alloy sector products include; commercial alloys, high grade alloys, piston alloys, primary alloys, powders, de-oxidants, billets and ingots. Other more beneficiated products include rolled products, extruded products and redraw products. Examples, of rolled products include; can end stock, tabstock closure sheet, lithographic sheet, treadplate and bright treadplate, domestic foil, converter foil, to name but a few.

#### **5.1.3 Major companies**

Iscor dominates the sector with only Highveld Steel competing with it in the flat steel products market (Iscor produces 92% of all flat steel in South Africa). Highveld, Dav Metals, Scaw Metals and Cisco compete with Iscor in the long products (profile products) markets, where Iscor produces 52% of the steel (*Engineering News*, 16 November 2001). In many ways, then, trends at Iscor stand as a proxy for trends in the sector. Iscor consumes approximately 86% of all iron ore available for beneficiation.

Major companies in the non-ferrous metals sector include, BHP Billiton, Hulett Aluminium Rolled Products, Hulett Hydro Extrusions, Wispeco, Profal and Zimalco. Just as Iscor dominates the iron and steel sector, BHP Billiton dominates the non-ferrous sector with its Bayside, Mozal and Hillside smelters.

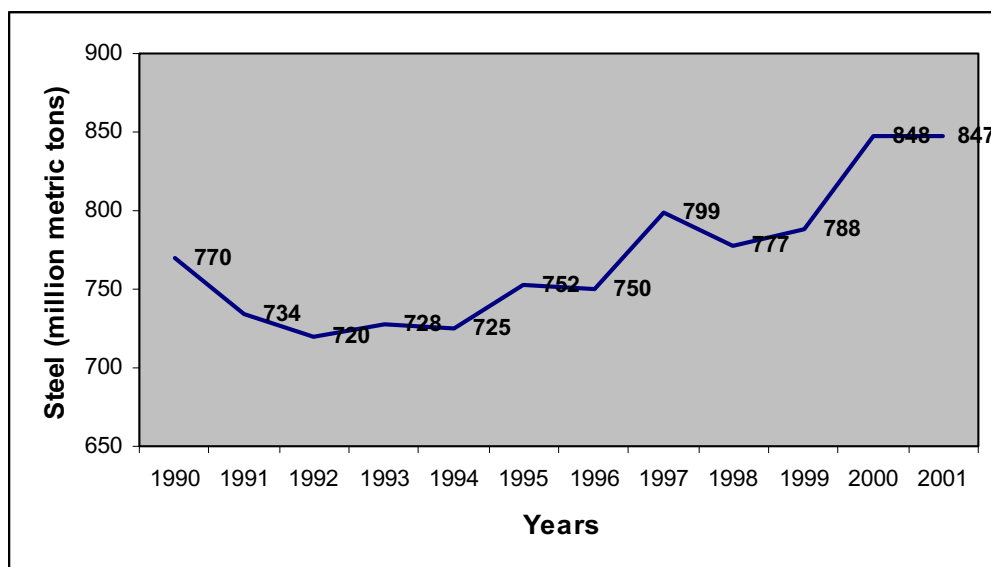
## 6 PERFORMANCE OVERVIEW

### 6.1 Performance in a global context

#### Iron and steel

The basic metals sector forms the upstream component of the metals and engineering industry and has a marked influence on the state of the midstream and downstream industries. The global steel industry is a mature commodity industry, characterised by intense global competition, continual pressure to cut costs and extensive government intervention with respect to anti-dumping measures (Ahlberg, 1999). Global steel production, illustrated by Figure 14, has shown a gradual increase in the amount of production within the industry.

Figure 14. World steel production, 1990-2001



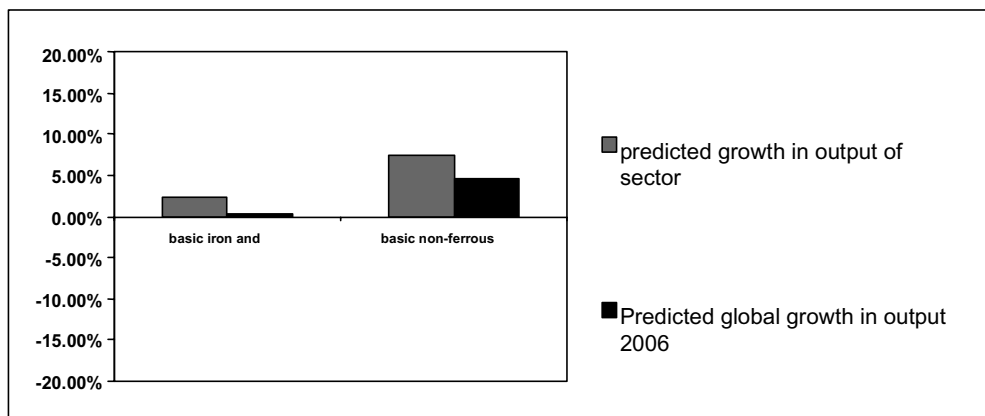
Source: International Iron and Steel Institute, 2002

The sector is characterised by over capacity. Average growth rates in world crude steel production averaged 1.6% for the period 1970 to 1975, increased to 2.2% for the period 1975 to 1980 and remained at 2.4% for the period 1995 to 2000. Only for the period 1990 to 1995, did global production decline by 0.5% (International Iron and Steel Institute). It is estimated that global over capacity stood at 275 million tons in 1998, against production of 776 million tons, representing an over capacity of approximately 20%. Consequently, growth for the iron and steel sector is likely to be largely static over the course of the next 3 years.

### Non-ferrous metals

It is estimated that current volumes of aluminium are in excess of 20 million tons per year. Aluminium is the world's largest metal commodity market with an annual turnover exceeding R1 000 billion. Southern African producers, namely Bayside, Hillside and Mozal account for approximately 5% of global production. Like basic iron and steel production, there is a glut of global production capacity, which has had implications for the domestic sector.

Figure 15: Predicted growth in domestic and global output, 2001-2006 (ABSA 2002)



Source: ABSA 2002

Figure 15 demonstrates that non-ferrous metals are likely to experience stronger growth than the basic iron and steel sub-sector both domestically and internationally over the next 3 years.

## 6.2 Domestic performance

Due to the perceived strategic importance of both the iron and steel and non-ferrous metal sub-sectors, production facilities have historically been protected and nurtured by government interventions world-wide. South Africa developed a basic metals industry, in particular the steel industry, as part of its strategy to be self-sufficient in key sectors. This development represented a critical move towards beneficiating and fabricating South Africa's raw materials. The state; through its direct ownership of Iscor; provision of cheap capital through IDC finance and a number of protectionist trade and industrial policies has underpinned the development of the steel industry in South Africa.

During the 1960s and 1970s the sector developed under a policy of import-substitution, characterised by high tariffs and extensive import controls. In response to the limited opportunities for import substitutions, attempts were made to change the anti-export bias of the system. In the early stages, the focus was on export promotion measures rather than on

liberalisation of the import regime. However attempts to change the anti-export bias of the system were very limited. By the end of the 1980s, the sector had many import tariff lines. However, the 1990s saw a dramatic move away from this high level of protection. The primary aim of this move was to encourage exports and simultaneously improve competitiveness in the sector. Government implemented a policy of tariff phase-down, 'tariffication' on non-tariff barriers and supply-side measures were put in place to replace the demand-side measures. The underlying principle of this approach was that by focusing on supply-side measures; productivity of all factors of production would increase. Furthermore the move towards supply side measures also ensured that the industry adhered to World Trade Organisation (WTO) rules.

The development of the primary aluminium sub-sector in South Africa is relatively new, compared to that of steel. The Alusaf Bayside Smelter was founded in 1967 as an initiative to provide aluminium to meet South Africa's fast-growing needs. Production capacity at the Bayside smelter has increased from 52 000 tons per annum (tpa) in the early 1970s to 170 000 tpa in the 1980s. Together, Gencor and the IDC - major shareholders at the time - supported the concept of expanding Alusaf's production capacity by building the R5 billion, 466 000 tpa green-field Hillside Aluminium smelter in 1992/93 and launching a R267 million upgrade of the Bayside smelter (BHP Billiton).

Although the Hillside smelter was designed to produce 466 000 tpa, through good process control it has managed to increase production output to 500 000 tpa without any additional equipment or incurring any significant costs. An additional third potline, which should be operation by mid 2004, will add an additional 25% to Hillside's physical operating capacity and increase its total output to 640 000 tpa. The cost of this expansion is estimated at US\$ 442 million.

Thus South Africa has developed a basic metals manufacturing capacity in the iron and steel and non-ferrous metals. We now turn to examining the performance of this sector over the last decade.

### **6.2.1 Employment**

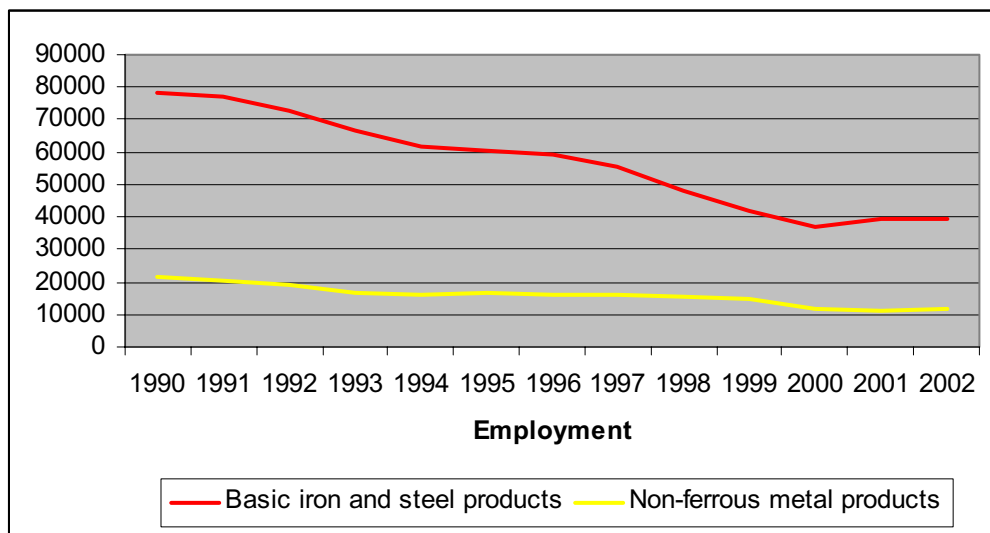
Despite the iron and steel sector showing healthy vital signs in terms of sales and production levels this has not been matched by employment trends. Job losses have largely been the result of several restructuring initiatives (particularly in Iscor), the consolidation of the steel sub-sector during the latter half of the 1990s which saw some replacement of large integrated plants with small and efficient mini mills, privatisation, continuous improvement and 'de-bottlenecking' of plants as well as a number of technological advances, leading to increased automation, rationalisation of grades and the closure of uneconomic plants. Among

secondary manufacturers, access to scrap and pricing of raw materials has been a driver of job losses.

### 6.2.2 Labour Market Trends

The effect of the restructuring exercises is clearly reflected in the figure below, which shows the precipitous drop in employment as recorded by official statistics across the sector. Both the iron and steel and non-ferrous metals sub-sectors shed in excess of 50% of their 1990 employment levels over the course of the decade. Likewise, both sub-sectors exhibited a decline in the shedding of jobs around 1999.

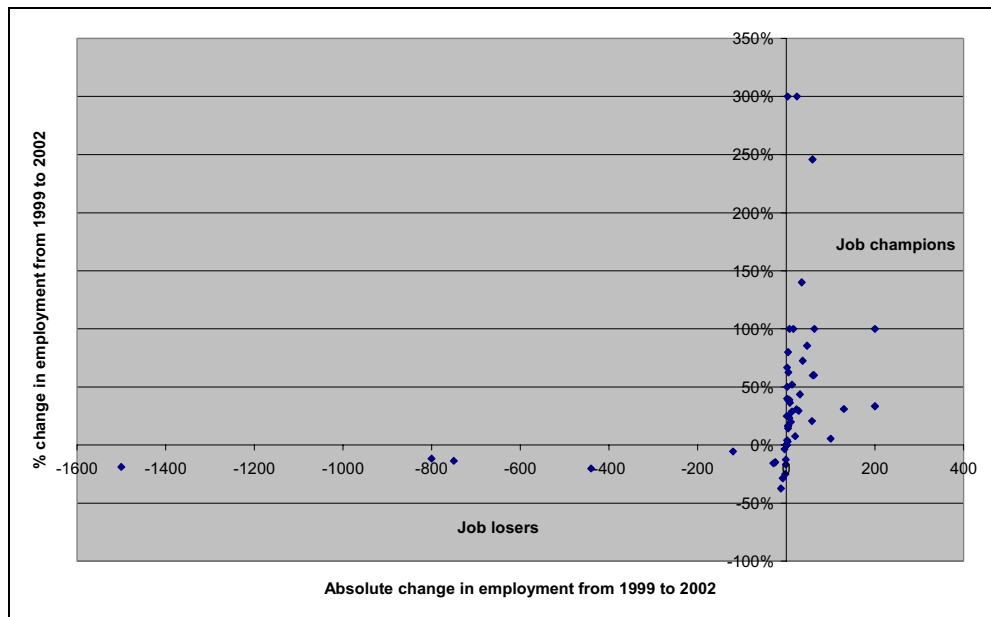
Figure 16: Official employment trends from 1990–2002



Source: IDC 2002

Figure 17 below shows survey trend data enabling us to have a more detailed understanding of employment trends within the sector between 1999 and 2002. As can be seen, a number of big companies continued to shed large amounts of employment, while the majority of companies experienced no or marginal employment growth. In contrast, a handful of companies have created a significant numbers of jobs over the last period. This latter trend is reflected a slight increase in jobs in the official statistics, however it does little to offset the major job losses experienced across the previous decade.

Figure 17: Employment trends from 1999 – 2002 within the basic metals sector



### 6.2.3 Structure of employment

#### Outsourcing

The structure of employment in the sector has, as in all the other metals and engineering sectors, seen an increase in the level of outsourcing. However the increase has been less pronounced in this sector. In all likelihood there has been less need for outsourcing, given both the dramatic levels of employment loss and productivity gains in the sector, as well as the more capital-intensive continuous nature of production. These factors combine to effectively reduce the need for sub-contracted labour to meet production peaks, in focussing on core activities and, in smaller companies, to achieve flexibility to match production fluctuations. It should also be noted that the increases are occurring off a small base. The survey also reflects the negative trend in overall employment, of approximately 2.6% per annum, suggesting that official statistics showing growth in the sector may be optimistic and that the picture is more likely to be one of a levelling-out of job loss, with permanent employment remaining still declining.

Table 5. Employment trends within the basic metals sector in 1999 and 2002, by category<sup>15</sup>

	2002	1999	CAGR
Permanent full time and part time	26 872	30 499	-4.1%
Casual employees	428	255	18.8%
Temporary employees	213	115	22.8%
Subcontracted labour	1138	164	90.7%
Total employment	28 651	31 033	-2.6%

A substantial number of companies in the sector have undertaken some form of outsourcing. The prevalence of outsourcing was found to be 35.9%. The table below shows the sample segmented by company size, and highlights the tendency among larger companies to outsource relatively more.

Table 6. Prevalence of outsourcing among the basic metals sub sector

Company size	Number of companies	Frequency of outsourcing	% of companies outsourcing
Small	33	7	21.2%
Medium	18	5	27.8%
Large	13	11	84.6%
Total sample	64	23	35.9%

There was a clear trend for small companies to outsource technical functions, while as company size increased, management tended to outsource more generic functions. This trend is in keeping with the qualitative findings. The services most commonly outsourced are reflected in Figure 18. The most commonly outsourced activities in small companies were casting, machinery, heat treatment and painting. Within medium companies, security and engineering were the most commonly outsourced functions, while single occurrences of machinery; draughting, gardening, cleaning and canteen were observed. Large companies

<sup>15</sup> See definitions of employment categories in Glossary

tended to outsource security and cleaning, while the second most common functions to be outsourced were IT and the canteen.

The tendency of small employers to outsource technical services resonates with the rest of the metals and engineering industry, however there is a lower propensity to outsource core functions within basic metals than is generally the case for the overall sector. The trend reflects the fact that there are certain functions that are used infrequently within small and medium companies and therefore no internal capacity is developed.

Interviews with employers indicate the increasing use of non-standard employment, mostly in the form of outsourcing to contractors, use of labour brokers as well as fixed-term contract employees. Reasons given by employers for this shift include a combination of operational and cost/process, in particular the perceived “difficulty to hire and fire” due to the Labour Relations Act (LRA) and the uncertainty of export demands.

Employers stated that where possible they employed fixed-term temporary contract labour to meet export orders - a typical practice amongst smaller firms. Export orders in smaller firms are more volatile than larger firms and may be concluded within a short period of time. By comparison, larger firms tend to have more regular export orders, or are part of international alliances which ensures a more steady demand, or export orders may comprise a larger proportion of their core business. The use of temporary contracts allows for the flexible termination of contracts upon completion of a specific export order.

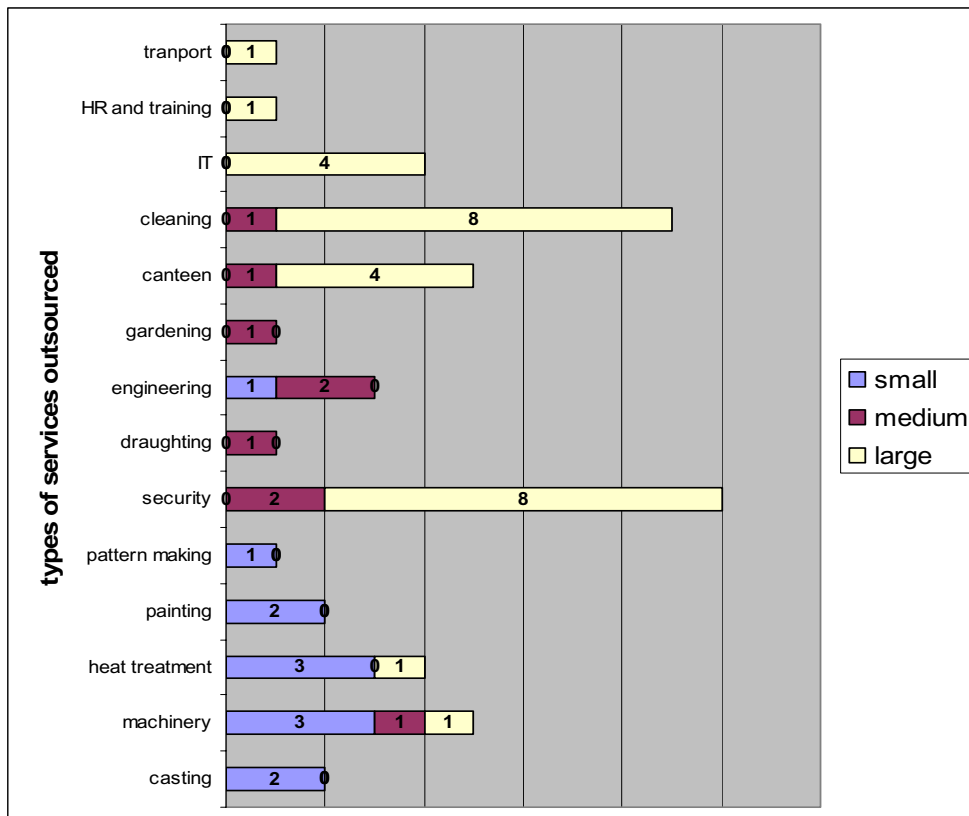
There are, however, more important global drivers encouraging greater use of non-standard forms of employment than simply the LRA or the volatility in export orders. In essence the new flexible working practices represent a further attempt to cut costs in response to unstable market conditions. Firms are redefining their structure by moving towards increasingly flexible staffing. In these firms, persons who formerly were hired directly are being replaced by the purchase of services. This practice is occurring to such an extent that some employment was historically counted in the manufacturing industry, is now being counted in the services industry. This distorts time series employment trends, complicates analysis regarding industry employment trends and leads to an erosion of working conditions, benefits and an increase in workplace accidents.

Shop stewards argued that outsourced workers typically earn in the region of 50% what full-time permanent employees earn and are excluded from benefits such as provident funds and medical aids. One example stated by shop stewards was in the case of conveyer belt cleaners. When these workers were directly employed by the company, the entry-level wage was approximately R10.00 per hour, three years ago. Currently the entry level wage being paid by the contractor is R6.50 per hour.

An additional problem relating to the use of subcontractors is the increase in accidents and fatalities at plants. Furthermore, shop stewards state that there is a significant increase in non-reported accidents. Labourers employed through contractors are less likely to report workplace accidents for fear of losing their jobs. Any reported workplace accident is naturally a bad reflection on that contractor, undermining its ability to win future contracts. Workers supplied by contractors, also tend to receive less health and safety training and are even in some instances expected to supply their own health and safety equipment. These workers may then approach full-time employees to buy their equipment.

Employers' experiences of the use of non-standard labour are mixed. On the positive they argue that it allows them greater flexibility over the number of employees, they also say that they use it as a mechanism to protect existing permanent jobs. Negative experiences, are that these workers are not always flexible, and can undermine moves towards multi-skilling and multi-tasking. There can also be a loss of loyalty to the company; as these workers do not associate themselves with the company. In one case, security which had been outsourced for at least 15 years was brought back into the company, as the company felt that these workers played a critical role within the company.

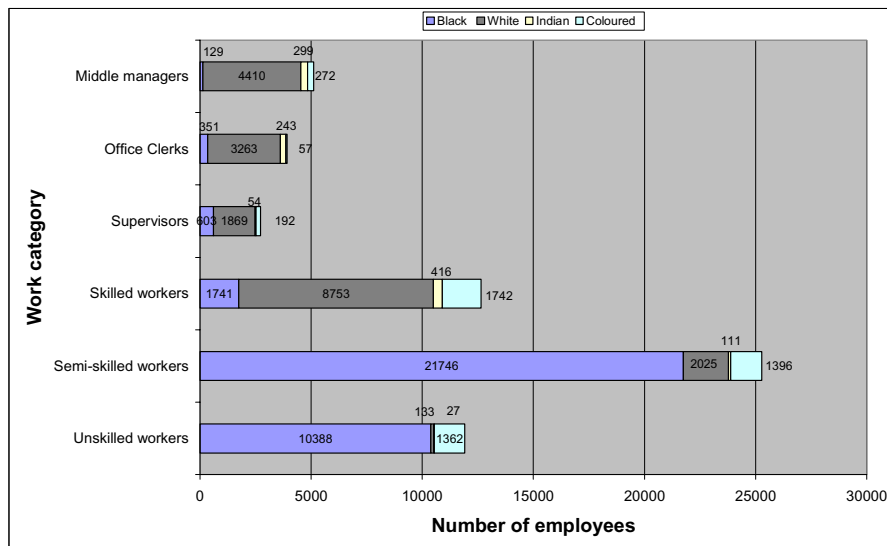
Figure 18. Type of services outsourced among small, medium and large companies



**Racial profile**

The sector continues to experience the effects of apartheid. The overwhelming majority of unskilled and semi-skilled positions are filled by black workers, while managerial and skilled positions are dominated by white employees. Indeed the results of this survey indicate that the sector is the most ‘untransformed’ among the metals and engineering sector. Although most companies seem to be implementing the requirements of the Employment Equity Act at face value, lack of efficacy in implementation and the effects of retrenchments which have affected largely black semi and unskilled workforce erode real progress on this front. The results of the survey can serve as a benchmark by which progress in rectifying the apartheid workplace regime can be measured in future studies.

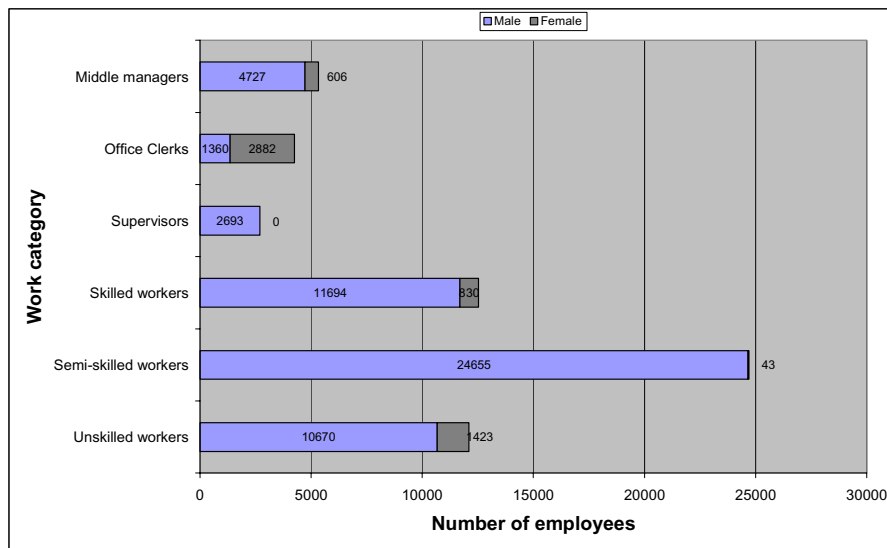
Figure 19: Number of employees by work category



**Gender profile**

Similarly, our survey shows that men overwhelmingly dominate employment in the sector. Women are only significantly represented in the traditional domains of office work.

Figure 20: Number of employees by gender



**Employment intensity, company size, export focus and employment**

The survey revealed some interesting employment trends in companies, based on various criteria. Firstly, it was discovered that companies that are labour-intensive were more likely to have created jobs within the sector. Further analysis of the data revealed that these companies are mostly small and medium-sized and are domestically focused. It is assumed that the smaller foundries are offering products that are not subject to international competition due to their specialised nature and/or small order quantities. Large companies that are competing against relatively undifferentiated products on the international market have, notwithstanding the highly capital-intensive nature of their plants, focused on restructuring, which has resulted in drastic reductions in their workforce. This paints an interesting picture of a sector that is divided in two (refer to Table 7), with one group being made up of large companies focusing on exports that due to new technology and the need to achieve economies of scale are capital intensive. The other group consists of foundries and processing companies that are characterised by smaller production volumes, lower turnovers and lower absolute levels of employment. These companies have managed to grow business and employment over the last three years by focusing on the domestic market. As the large companies have rationalised product lines and focused more on the export market, these smaller plants have seen their access to the domestic market improve and have grown accordingly.

Table 7. Employment growth and decline and labour/technology intensity in the basic metals sub sector

	Employment CAGR (1999-2002)	Absolute change in employment 1999-2002	Number of companies	% share of employment
Labour Intensive/Moderate use of technology	9.0%	295	27	4.6%
Technology intensive	-1.9%	-459	22	27.9%
Highly technology intensive	-3.7%	-2253	11	67.4%

Although our sample sizes start to decline as we further dissect this information, trends mentioned in qualitative interviews were confirmed by the survey. This establishes a dichotomy, suggesting that the sector is not based on basic iron and steel and non-ferrous products, but rather; large, export-oriented and capital-intensive plants which shed jobs and domestic-focused, small and medium, more labour-intensive plants that managed to grow employment during the three year survey period. This can be seen in Table 8 and Table 9.

Table 8 Employment growth, company size and technology intensity in the basic metals sector

	small companies				medium companies				large companies			
	CAGR 1999-2002	Absolute change in employment	No of co.	% share of sample employment	CAGR 1999-2002	Absolute change in employment	No of co.	% share of sample employment	CAGR 1999-2002	Absolute change in employment	No of co.	% share of sample employment
Labour Intensive/Moderate use of technology	2.7%	20	18	0.9%	15.0%	255	8	2.7%	2.5%	20	1	1.0%
Technology intensive	8.1%	68	14	1.2%	1.4%	15	4	1.4%	-2.4%	-542	4	25.4%
Highly technology intensive	0.0%	0	0	0.0%	12.8%	127	4	1.5%	-4.0%	-2380	7	65.9%

Table 9 Export/domestic focus, employment trends and capital intensity in the basic metals sector

	Non-exporters				Exporters			
	CAGR 1999-2002	Absolute change in employment 1999-2002	No. of co.s 2002	% share of sample employment	CAGR 1999-2002	Absolute change in employment 1999-2002	No. of co.s 2002	% share of sample employment
Labour Intensive/Moderate use of technology	8.0%	228	25	4.0%	16.4%	67	2	0.7%
Technology intensive	11.4%	269	14	3.5%	-3.5%	-756	7	24.0%
Highly technology intensive	9.9%	161	2	2.3%	-4.1%	-2414	9	65.1%

#### 6.2.4 Turnover

Basic iron and steel is the second largest Metals and engineering industry in terms of value, with sales totalling R48.6 billion for 2002. Non-ferrous metal products are the fifth largest in terms of Rand sales, with sales of R21.7 billion in 2002.

In 1990, basic iron and steel products contributed 18.4% to the value of sales for the metals and engineering industry, while non-ferrous metal products contributed 6.1%. By 2002, the contribution of basic iron and steel products had increased to 19.1% and that for non-ferrous metals to an 8.5% share of sales in the metals and engineering industry (inclusive of plastic products).

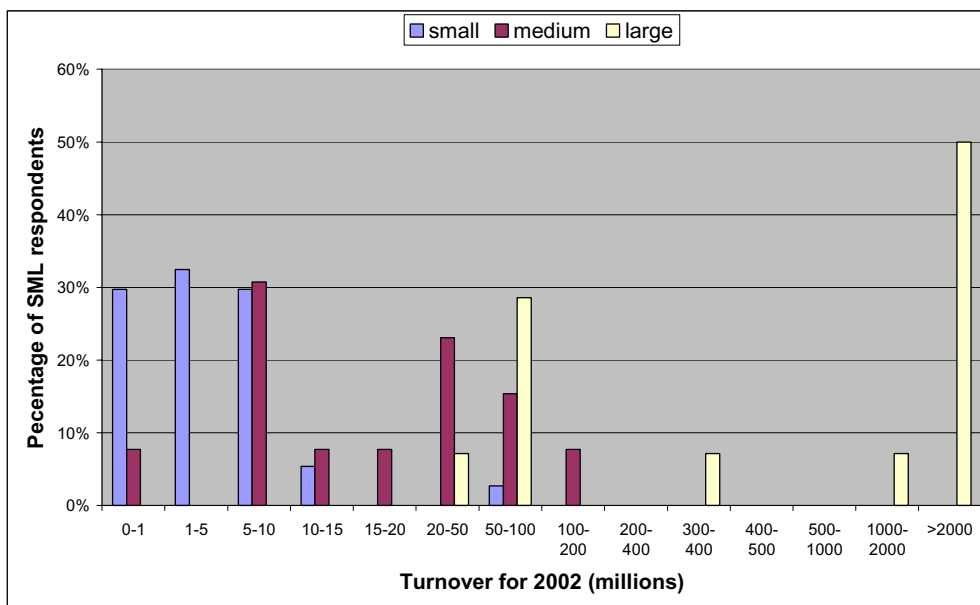
The contribution by iron and steel to total manufacturing has remained fairly constant, contributing between 6.5% and 7% of total manufacturing sales. In contrast, the non-ferrous metals sector has shown an increasing contribution since 1996, which is largely due to the Hillside Aluminium smelter coming on-line. In 2000, the total sales value of primary non-ferrous metals and minerals amounted to R6.17 billion, representing 6.3% of the country's total primary mineral sales (Department of Minerals and Energy, 2000). The total sales value of processed non-ferrous metals and minerals amounted to R8.8 billion in 2001, which represents over one third of South Africa's processed mineral sales. This is largely due to aluminium, whose sales revenue increased by 20.3%, while aluminium exports increased by 18.7%. This increase in revenue is due to price increases, as total tonnage of exports in fact decreased.

The value of sales has been rising consistently over the decade, further pointing to the fact that the employment loss of the mid and late 1990s was been driven by internal company

strategies far more than the demise of significant numbers of companies in the case of increased import competition – as has been the case in many of the other Metal and Engineering sub-sectors. That said, it is important to recognise that analysing the non-ferrous metals sector on an aggregate level, creates a distortion as while the aluminium sector has performed well, the rest of the non-ferrous sector - specifically the secondary non-ferrous sector - has performed poorly. According to the Non-Ferrous Metals Association, the sector is approximately half of the size it was pre-1994. Currently an estimated 30% of its existing capacity is under-utilised. Prospects for future growth of the sector are largely dependent on exports, as the local domestic market is too small to maintain a sufficient through-put rate and, more importantly, to the access of processors to scrap inputs, which currently are mostly exported.

The figure below indicates how these sales are distributed among the employers in the sector. It is striking to note that there are very few small companies in the sector, with most of the turnover being concentrated in medium and large companies.

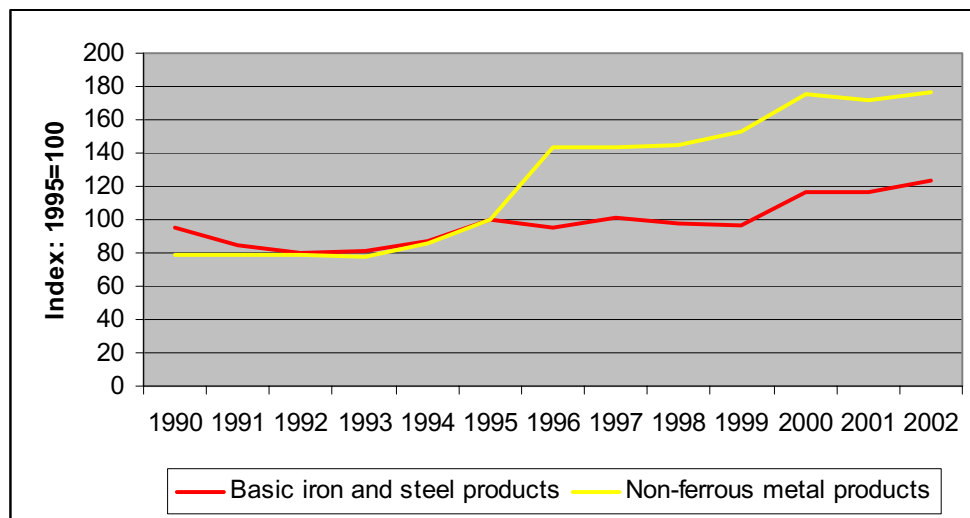
Figure 21: Turnover during 2002 by organisation size – basic metals



### 6.2.5 Production volumes

Figure 22 illustrates that the relative physical volume of production of non-ferrous metal products has grown significantly in comparison to basic iron and steel products and reflects the increase in capacity as a result of the opening of new facilities.

Figure 22: Index of production volumes



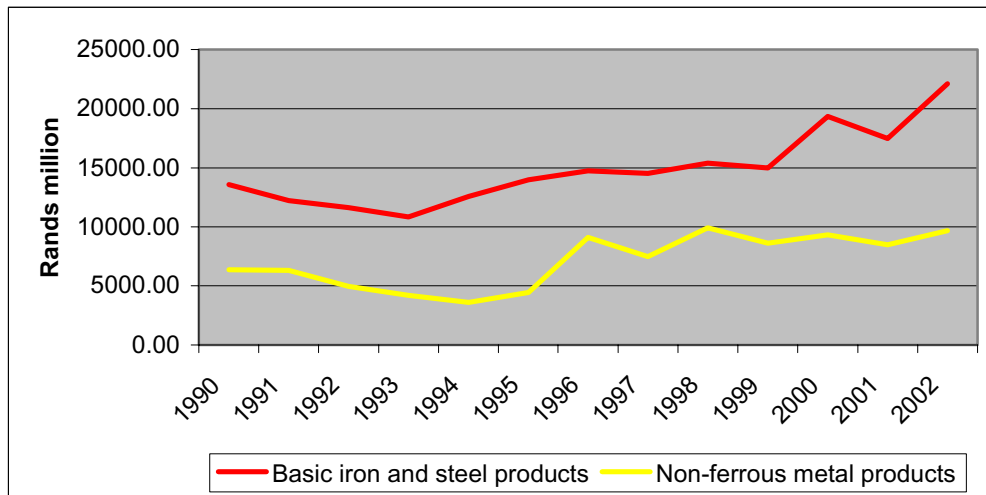
Source: IDC 2002

Production volumes in the basic iron and steel sector have been constrained by Iscor's rationalisation, which saw the closure of their Pretoria and Dunswart steel works and production cuts at Newcastle and Vanderbijlpark operations. This contributed to a total drop in capacity of 25% or 2.5 million tons, from 1991 to 2000 (Engineering News, 25 January 2002). Production levels are growing mainly on the back of increased exports.

### 6.2.6 Trade

The South African iron and steel sector is a major exporter and is currently ranked as the 12<sup>th</sup> largest exporter in the world. Saldanha Steel – Iscor's primary steel export facility – focuses mainly on exporting cut-to-length plates; hot-rolled sheet and strip; hot rolled and light, shaped bars; reinforced bars; cold-finished bars; cold rolled sheet and strip; corrosion resistant and coated sheet and strip; and, heavy structural products. During 2000, primary steel exports accounted for 10% of South Africa's total manufacturing exports. During 1999, the stainless sector exported over R4 billion worth of stainless steel (R2.2 billion of this was from primary stainless steel products with the remaining R1.8 billion consisting of beneficiated goods). Between 1996 and 1999, stainless steel exports increased by 20% in volume (tons) while domestic consumption remained static during the same time period (increasing by only 1%) (Engineering News, 1 September 2002). During 2000 and 2001, export production actually exceeded production for the domestic market for the first time (Engineering News, 14 October 2001). As can be seen from the figure below, the basic metal sub-sectors have experienced some export growth over the last decade.

Figure 23: Sector exports 1990-2002



Source: IDC 2002

It is startling to note that over 50% of basic metal is exported without further beneficiation by the domestic manufacturing industry. Indeed by international standards, South Africa has a high export orientation as the international norm for steel exports is around 20%. This reflects the relatively weak state of the downstream metals and engineering industries (Makhaya, T. et al, 2002). In addition, Iscor representatives at a focus group meeting held for this study signalled their intention to increase their domestic focus (they currently have an almost equal divide between their export and domestic markets).

Figure 24. Exporting and non-export employers' views on the need for change in various factors to facilitate growth

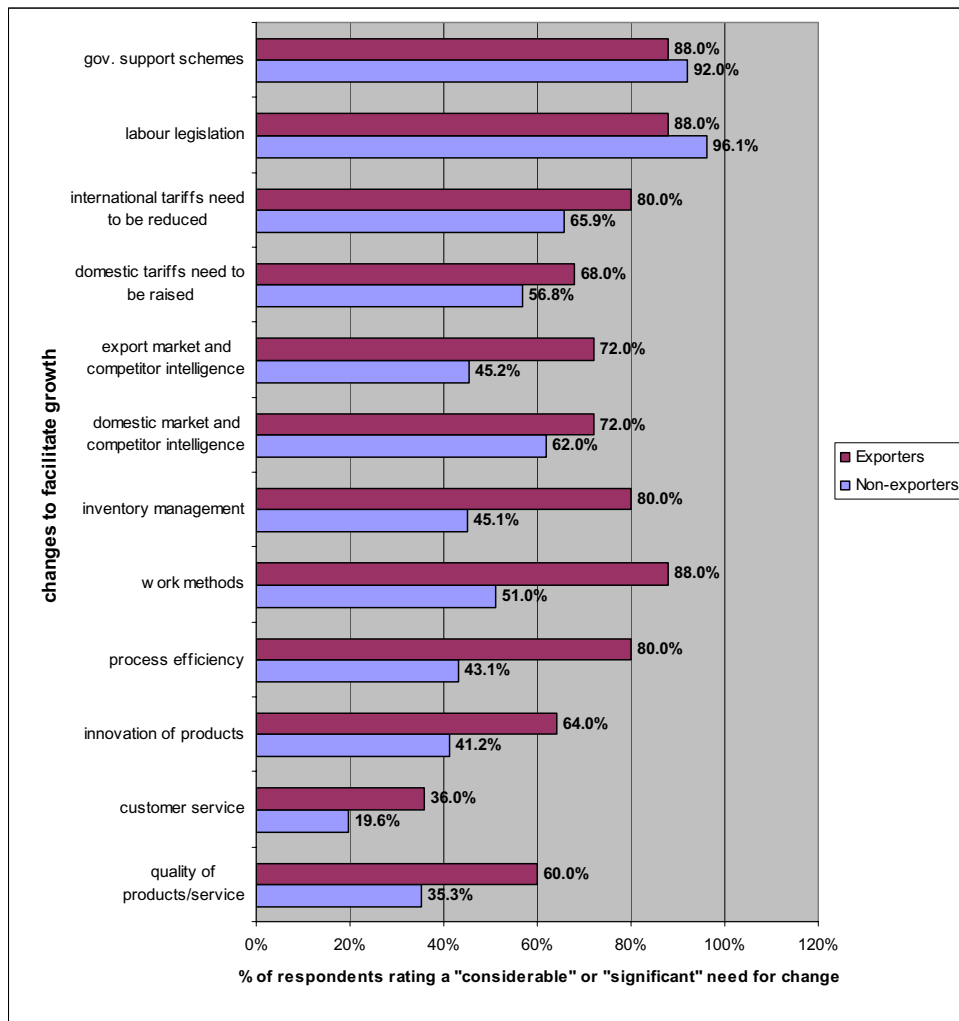
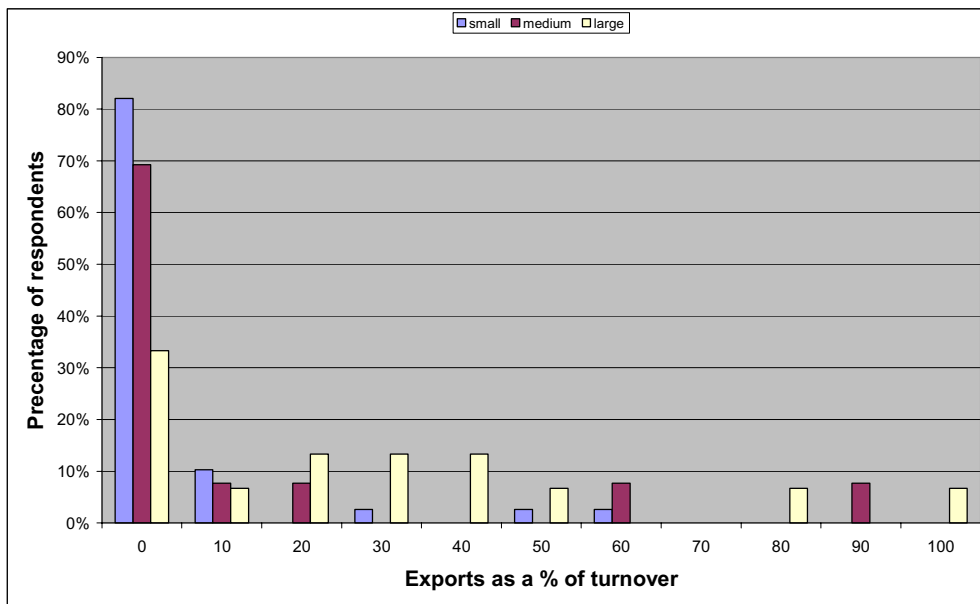


Figure 24 reflects the survey results and shows that in general, exporters are more likely to see “considerable” or “significant” need for change in a variety of factors. This paints a picture of a more stable domestically-focused industry and a more cost-driven export-focused segment of industry. Discussion around the various issues as raised in this figure is contained elsewhere in this report.

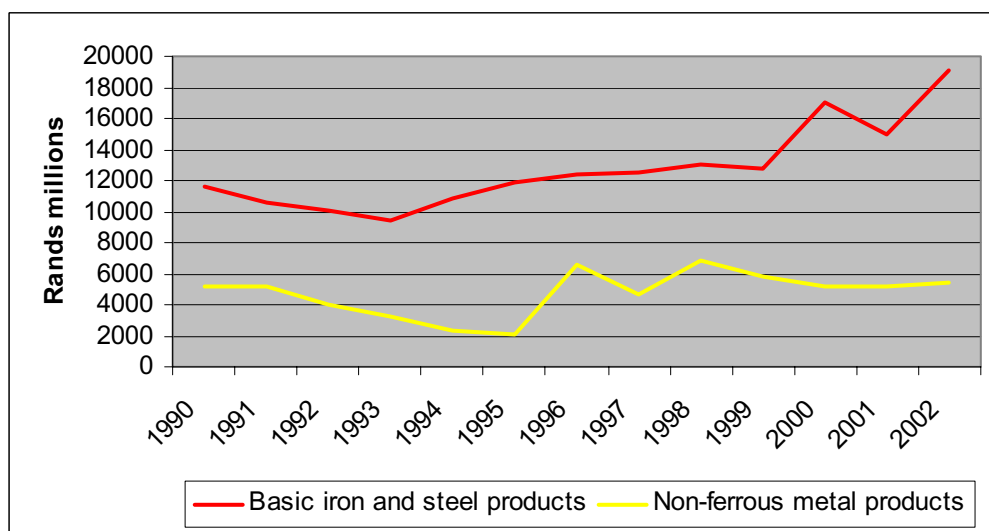
A sizeable percentage of the sector does not export at all, pointing to the dominance of a few companies in the export market. As shown earlier, it is larger companies that are typically focused on the export market, with some operations having a purely export focus. Smaller companies have a local, small run focus.

Figure 25: Exports' contribution to turnover



Import penetration remains low, oscillating between 13% and 16%. The declining value of the Rand during 2002 and the strength of the domestic upstream producers act as 'natural' entry barriers for products in this sector. Import penetration that is not in competition with local manufacturers may increase as the rationalisation of product lines by primary producers increases.

Figure 26: Balance of trade, 1990-2002



Source: IDC 2002

An interesting trend emerges on closer examination of the destination of exports from the sector. Figure 27 shows that the majority of exports from small firms (44%) are destined for the SADC region, while Asia also appears to be an important export destination for these organisations, accounting for 24% of exports.

Figure 27: Export destinations for small organisations in 2002

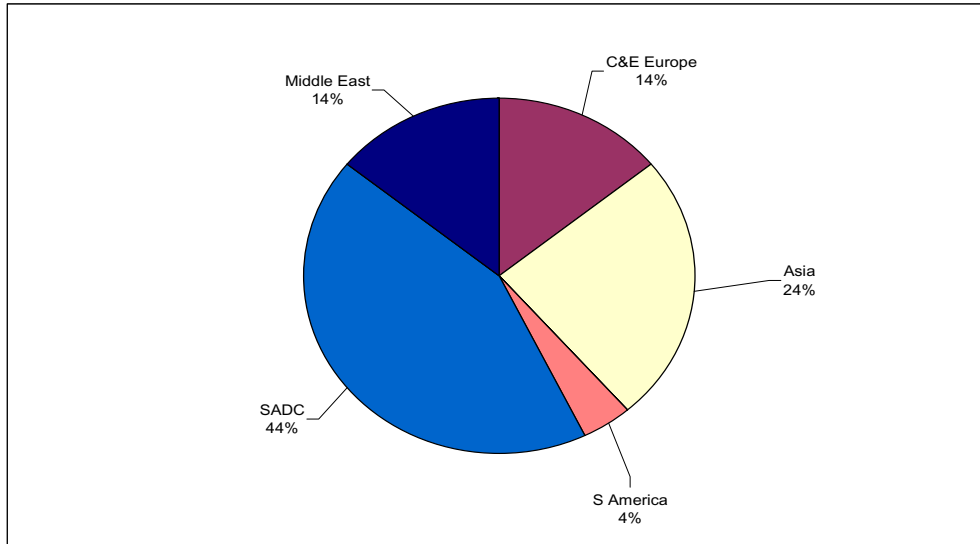


Figure 28 illustrates the export destinations for medium-sized firms. In contrast to the small firms, only 20% of exports from medium-sized firms are destined for Africa, with a relatively greater percentage of exports being destined for Europe and North and South America.

Figure 28. Export destinations for medium sized organisations in 2002

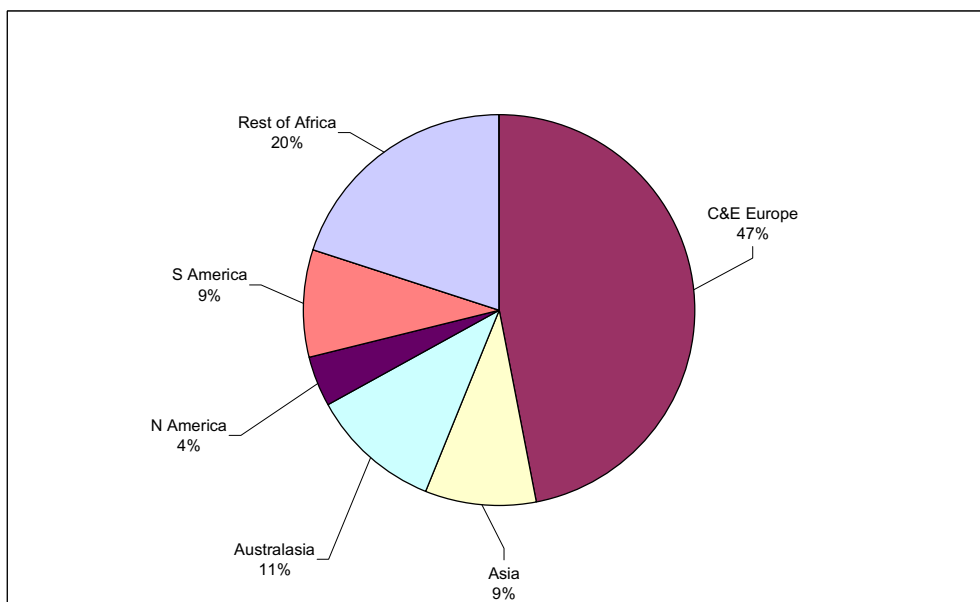
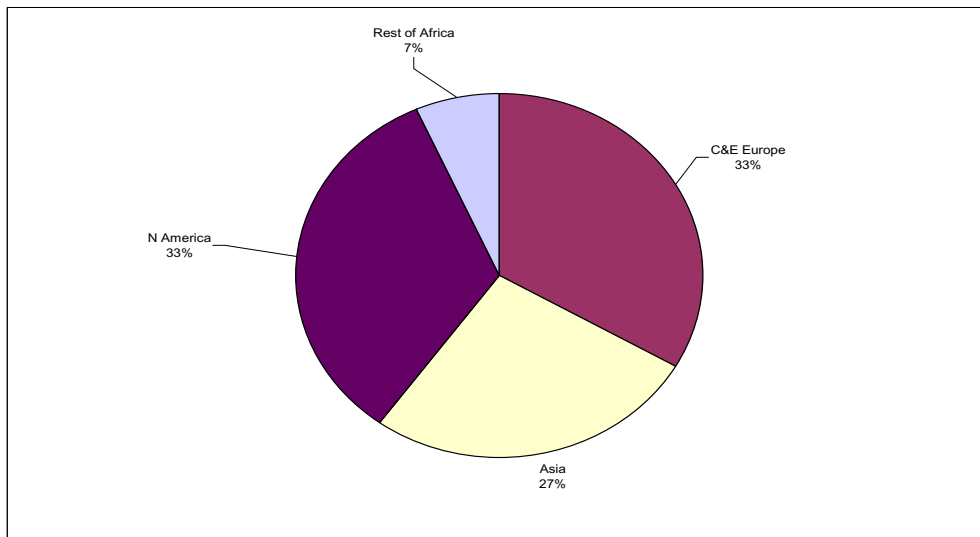


Figure 29 shows that large firms export only 7% of their output to Africa, while Central Europe, America and Asia are the predominant export destinations.

Figure 29. Export destinations for large organisations in 2002



There appears to be a trend for medium and large companies to export relatively more to the developed regions such as Europe and North America. This could be due to the fact that volumes are important in achieving economies of scale in this sector and only firms of this size can produce products in sufficiently high volumes for these markets, but could also be affected by international alliances that only medium and large companies are able to forge.

The fact that most of small firm's exports are destined for the SADC region perhaps links to their ability to manufacture small runs of product for differentiated products.

### 6.2.7 Investment

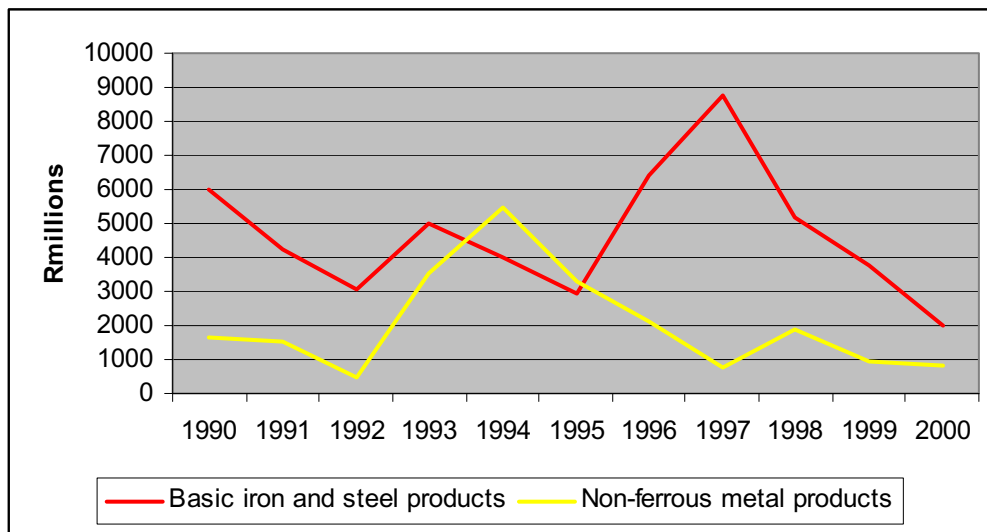
Fixed capital stock has increased significantly in both sub-sectors since the early 1990s:

- Capital stock in basic iron and steel products increased by 49% over the period 1990-2000; and
- Capital stock in non-ferrous metal products increased by 222% in the same period.

In both cases the increase reflects an increasing automation and the development of new manufacturing facilities. This form of capital investment has been a key driver in the above trends concerning increasing sales concomitant with declining employment.

Figure 30 shows investment trends in the basic metals sector (as shown by real Gross Fixed Capital Formation). The cyclical trends in investment are clearly demonstrated in this graph, with both basic iron and steel and non-ferrous metal products showing a trend in declining investment from the end of the 1990s.

Figure 30: Investment within the basic metals sector (GFCF: 1990 – 2000)



Source: IDC 2002

### 6.3 Conclusion

There is little doubt that the basic metals sector continues to be a strong performer in the broader South African economy as both a source of foreign exchange as well as being one of the few sectors that has not lost considerable domestic market share due to import penetration. However, from an employment perspective the sector has performed poorly over the past 10 years and it is to an understanding of the drivers of these trends that we now turn.

## 7 DRIVERS OF EMPLOYMENT TRENDS

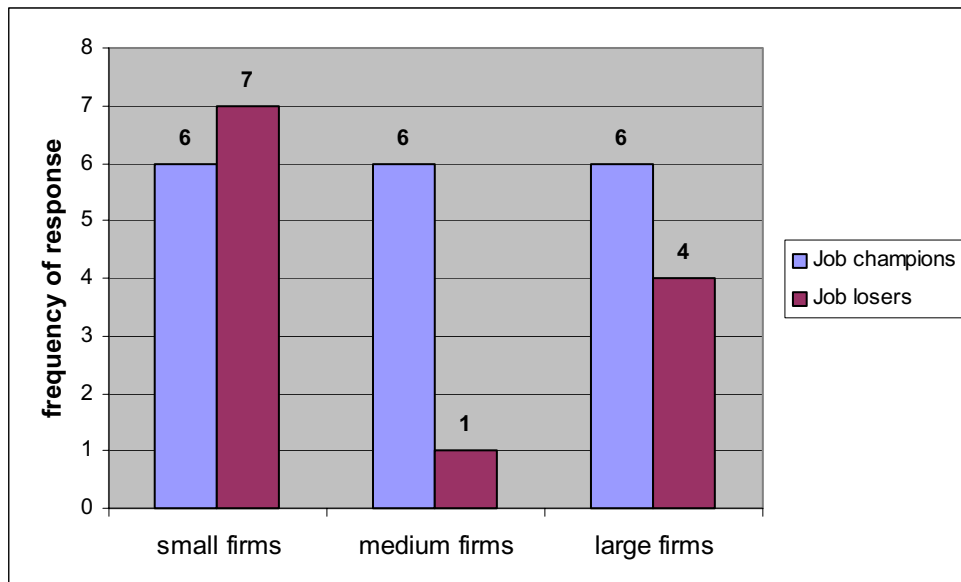
### 7.1 Introduction

The sector has gone through major restructuring that has seen the shedding of tens of thousands of jobs. Over the last decade, both the basic iron and steel and non-ferrous sub-sectors have shed 50% of their jobs. The last three years has seen this trend slow in the non-ferrous sub-sector and be reversed in basic iron and steel.

### 7.2 Employment profile

The overall sample picture shows that large companies lost the greatest proportion of jobs from 1999 to 2002. At the same time, medium companies have proven to create the most jobs. This factor was borne out by an analysis that considered absolute and proportionate changes in employment over the same time period to determine 'job champions' and 'job losers'. This reconfirmed that whereas the job champions and job losers are more or less evenly split amongst small and medium companies, it is the medium companies in the sector that are more likely to be increasing employment, with only one job loser and 6 job champions in the medium category (see Figure 31).

Figure 31: Job champions and losers by organisation size



Further analysis of job champions and job losers found that twelve out of eighteen job champions were focused on the domestic market, with less than 10% of their product destined for exports.

## **7.3 Drivers of employment growth**

### **7.3.1 Industrial strategy**

#### **Tariff liberalisation**

Although import penetration has increased over the last decade, the overall balance of trade has not shifted dramatically. It would appear that much of the import penetration has resulted from the discontinuation of certain product lines by major South African producers, thereby compelling downstream manufacturers to import these products.

However, the players constituting the majority of the sector's output and employment have not been affected by tariff liberalisation in the same way as other sub sectors in the metals and engineering industry. While other sectors have seen large numbers of companies closing in the face of import competition, this sector has instead seen a considerable restructuring, driven in large part by an extensive recapitalisation programme by those companies operating in markets that could be vulnerable to imports. In so doing, these companies have adapted to and indeed increased sales under a programme of tariff liberalisation, however this same restructuring has undoubtedly come at a cost to the level of employment in the sector.

Likewise the general programme has had a less significant impact on the export propensity of the sector. This is unsurprising given the relatively high levels of export that existed even before South Africa became a signatory to the Uruguay Round.

As described in Section 2 above, very few small companies are exporters in this sector, with exports dominated by a few large players. Large companies, on the other hand, are increasingly focusing their efforts on the export market. This export drive is a result of a number of factors including the devaluation of the Rand and the increasingly international nature of ownership in the sector. The revaluation of the Rand is expected to erode this growth, although companies should be able to maintain levels of current levels of exports.

#### **Government support schemes**

The General Export Incentive Scheme (GEIS) played an important supportive role to the basic metal sub-sector as well as downstream industries. Between 1992 and 1995, more than R4.4 billion was disbursed to exporters through this scheme. In 1997, the GEIS was

terminated. The Department of Trade and Industry replaced this programme with a number of supply side measures, such as a Small Business Development Programme, Export marketing Assistance, Pre-Shipment Export Guarantee Scheme MIDP etc.

Table 10. Level of awareness, use of, growth and employment results of various government support schemes (in %)

	Awareness	Made use of	Resulted in growth	Resulted in employment creation
Competitiveness fund	2.1%	0.7%	2.1%	0.7%
Sector partnership fund	2.8%	0.0%	0.0%	0.0%
Small, Medium Enterprise Development programme (SMEDP)	12.8%	1.4%	0.7%	0.7%
Venture capital scheme	1.4%	0.0%	0.0%	0.0%
Technology and Human Resources for Industry Programme (THRIPP)	1.4%	0.0%	0.0%	0.0%
Innovation fund	1.4%	0.0%	0.0%	0.0%
Support Programme for Industrial Innovation (SPII)	2.1%	0.0%	0.0%	0.0%
Standard leased factor building schemes	0.7%	0.0%	0.0%	0.0%
Export finance guarantee scheme	2.1%	0.0%	0.0%	0.0%
Export marketing and investment scheme	2.8%	0.0%	0.0%	0.0%

Table 10 highlights the relatively low level of awareness among the basic metals sector regarding the various government support schemes that are presently available. As with the other sub sectors within the metals and engineering industry, the Small, Medium Enterprise Development programme (SMEDP) recorded the highest level of awareness of 12.8%. However, it still had a very low level of usage, namely 1.4%, which resulted in the low incidences of growth and employment creation.

Other initiatives include a fund administered by South African Iron and Steel Institute (SAISI), which aims to promote the development of the secondary steel processing sub-sector. The fund provides financial assistance to exporters of fabricated steel products who export outside the Southern African Custom Union, with the prerequisite that the article must be produced

from South African steel and that a minimum of 25% of Rand value is added. Currently an amount of R110 per ton used is paid out upon proof of export. Assistance paid out for the financial year-end 1996 was in excess of R82 million and over the previous seven years, assistance paid out amounted to R456 million. South African primary producers also provide financial assistance to exporters of secondary steel products, provided downstream producers add 25% of value. According to Iscor, rebates given are approximately R200 million per year, or just more than 1% of turnover. The problem with these rebates is that smaller companies do not benefit from these incentives, as they do not meet the criteria. Furthermore, according to interviews, rebates are also linked to an agreement by purchasers that they will not import competing product for a three year period.

In conclusion, the survey results show a relatively low awareness and usage of the supply side measures that have replaced GEIS, which further underpins the sector's sense of having had substantial amounts of government support withdrawn.

### **Beneficiation**

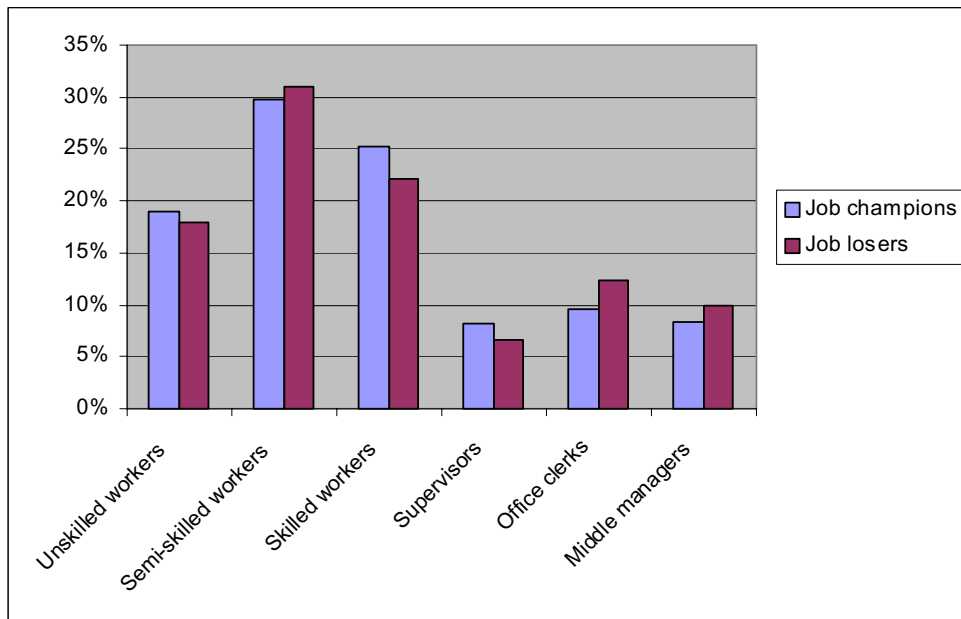
The development of South Africa's basic metals sector is tied fundamentally to the development of the country's mining and quarrying activities. In many cases, the transformation of mineral ore and concentrate – or at least the further refining of these mining products – are integrated with operations involving the formation of basic metals.

During 1999, only 7.3 million tons of the 29.5 million tons of iron ore mined in South Africa were converted into crude steel. Most of the un-beneficiated iron ore was exported. Massive increase in demand from China is driving the export of iron ore (*Business Day*, 11 January 2002) and exacerbating the trend of lack of beneficiation.

### **Labour market conditions**

Job champions and job losers exhibit similar skills profiles. This implies no correlation between companies' employment performance and their skills profiles.

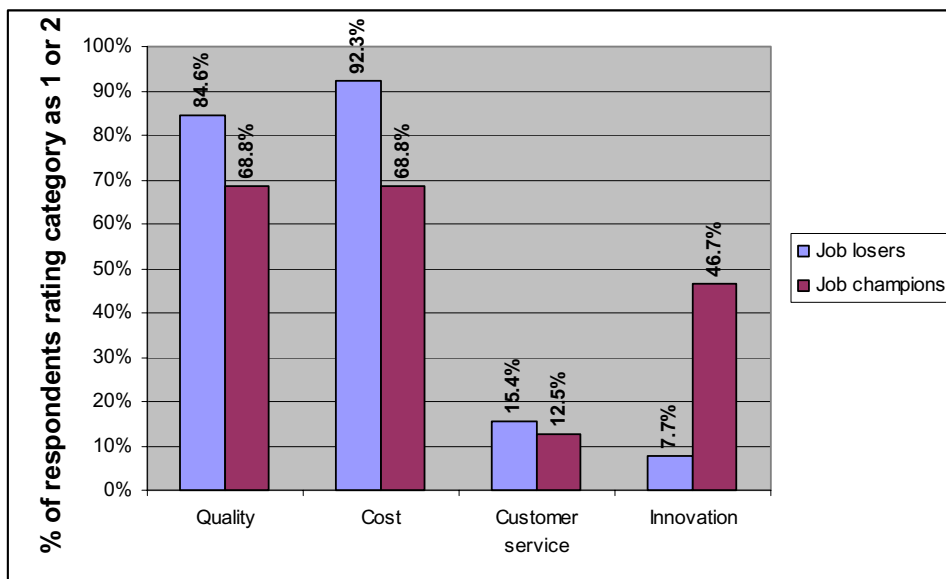
Figure 32: Breakdown of workforce profile among job champions and losers



### 7.3.2 Company strategies

Unsurprisingly, job losers have predominantly emphasised cost competitiveness as their primary strategy for competing which undoubtedly impacted on their search for more efficient and cheaper ways to undertake production – including reducing employment. Offering innovative products as a strategy to capture market share registers higher amongst job champions.

Figure 33: Perceived importance of various drivers of growth among job champions and losers



### **International alliances**

As previously mentioned, the steel industry has been characterised by a considerable amount of consolidation both locally and internationally. This has tended to take the form of mergers, which are aimed at reducing excess capacity while enhancing competitiveness (Makhaya T., et al, 2002). Examples of these moves towards consolidation include the merger between Acerinox and Columbus Joint Venture. Acerinox currently has a 64% stake in Columbus Joint Venture. Approval for this merger was given on the basis that it would not lessen competition while improving the company's competitiveness in international markets. Other important acquisitions include the recent case of Iscor, in which foreign partner LNM Holdings, a member of the world's second largest steel producer the LNM Group, increased its stake in Iscor from its current 21% to 47%.

Most of the benefits of mergers take the form of technological transfers or efficiency gains, procurement benefits, access to capital, improved usage or productive capacity, research and development and improved access to global markets.

By definition, international alliances are relevant to companies with an export focus. Such companies identified these alliances as an important driver for growth. However, alliances do not lead to the creation of employment. Only in one instance, Highveld Steel and Vanadium Corp Ltd did the employer mention that an international alliance was likely to lead to job creation, although on a tiny scale, representing approximately 1.5% of its workforce. In most instances international alliances resulted in job losses, given the introduction of technology, but more importantly the introduction of best practice work methods and the benchmarking of operations to other operations overseas, which were often less capital intensive.

The rise of FDI into the sector has facilitated both technology transfer and a strengthening of managerial skills. Much of this has underpinned the ability of both sub-sectors to substantially increase efficiencies while reducing costs.

As mentioned above, benefits from international alliances centre largely on work practices, technical skills related to production processes and new technology. In the case of the partnership between Columbus Joint Venture and Acerinox (the third largest stainless steel producer in the world), the major benefit has been the continuous increase in capital expenditure. Columbus Joint Venture also states that their link with Acerinox has improved their credibility in international markets as they are no longer seen as a "third world producer". An important advantage of this international alliance is gaining access to global markets through Acerinox's markets. If for example, there is a shortage of a particular grade of stainless steel in Acerinox's American plant; Columbus Joint Venture is able to supply that particular grade of steel to the USA. The size of Acerinox also means that Columbus Joint

Venture is able to sell at a discount on the international market, as they are able to secure a discount on their inputs and do not have to pay for the transport differential.

### **Niche markets**

As in all the other metal and engineering sub-sectors, some companies within the basic metals sector are able to compete on the basis of flexibility that they derive from doing smaller production runs or being more labour intensive than bigger manufacturers. This is the case for a metal works company based in Durban, who stated that they enjoy a competitive advantage due to the versatility that they have compared to bigger non-ferrous foundries. Their furnaces are able to cope economically with half a ton, thereby enabling them to produce smaller short production runs. This advantage stems from the fact that they are using 1990s and not 2000 machines.

### **Rand depreciation**

An important driver of the sector has been the depreciation of the Rand, as previously discussed sales for iron and steel products, boosted by a 36.5% growth in sales last year, representing an increase of R12.9 billion (Seria N, 2003).

However, the benefit of the depreciation of the Rand only went to those companies whose inputs are Rand denominated. Companies in the secondary aluminium sub-sector which are reliant on scrap aluminium were negatively affected as the price of scrap aluminium is determined on the London Metal Exchange and is thus dollar denominated.

A major concern for companies was not so much the actual exchange rate, but rather the volatility of the exchange rate, which complicates planning and costing.

### **7.3.3 Domestic market prospects**

Steel consumption in South Africa rose by 16% to an estimated 4.7 million tones for the year 2002, the highest level since 1989 (Engineering News, 13/02/03).

Despite these record increases in sales both domestically and overseas, many of the companies interviewed predicted greater increases in their domestic sales (albeit off a small base in some cases, such as stainless steel) as opposed to export growth. Steel is an important input into capital goods. In particular steel manufacturers were optimistic about the upgrading, expansion and opening of new mining operations, particularly that of platinum in South Africa and the growth of the pipe industry (including large projects such as the Temane natural gas pipeline and a new water pipeline).

The Department of Trade and Industry is currently promoting a number of new projects, namely, new smelters, auto parts, the building sector, beverage cans, rolling mill expansion

and an auto wheel plant. If these projects get the go-ahead, they will create significant domestic demand.

## **7.4 Conclusion**

The sector has achieved levels of stability that are quite promising. Whether this stability is converted into job growth remains to be seen but it seems likely that the sector promises job stability in the short to medium term. However, it is its role as a major producer of intermediaries for downstream sectors, where the sector's job-creating potential needs to be measured. The issue of import parity pricing and low levels of beneficiation remain a problem if the broader job-creating potential of this sector is to be realised. These issues are discussed in the next section which considers impediments to employment creation.

## 8 IMPEDIMENTS TO EMPLOYMENT GROWTH

### 8.1 Import penetration

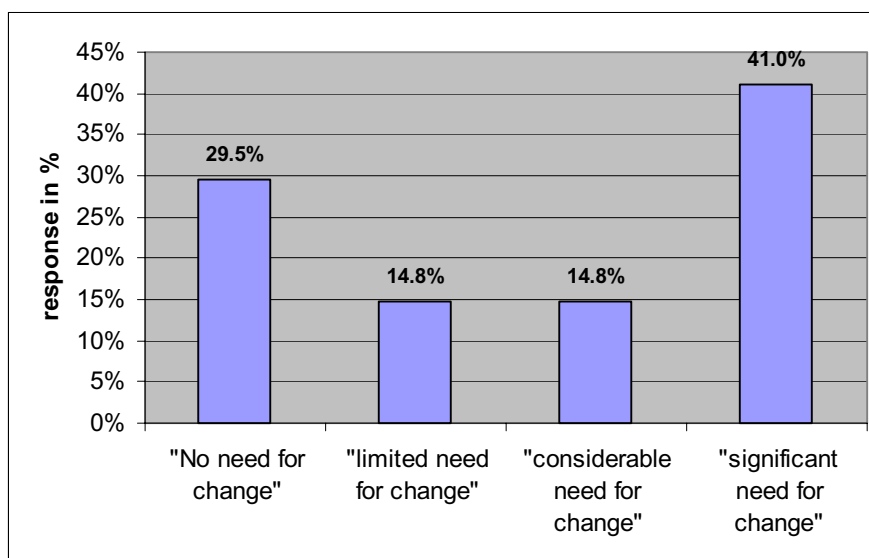
At an aggregate level it is difficult to point to import penetration as an impediment to job loss as most job losses have come from major producers that have undertaken restructuring exercises in order to increase their competitiveness in export markets. However our research has indicated that smaller companies in the sector are experiencing some pressure from imports and thus may be under threat.

### 8.2 Export markets

The sector has a high export orientation. Up to June 2001, South African steel had been subject to six anti-dumping or countervailing actions instituted by the US, while it accounted for approximately 2.5% of total USA imports of steel by volume (Makhaya T. et al, 2002).

Access to export markets is a major concern for the sector. Employers in the iron and steel sub-sector were particularly concerned by the shift towards increasing protectionism of domestic steel markets around the world. South Africa being one of the lowest cost producers in the world and indeed the lowest cost producer for certain steel products; makes it particularly vulnerable with respect to anti-dumping actions. For this reason it is unsurprising that the majority of companies in the sector prioritised the need for export intelligence.

Figure 34. Perceived need for change with respect to export market and competitor intelligence in the basic metals sub sector



### **8.3 Logistics**

The performance, or lack thereof with regard to railway transport as well as its high costs, were one of the biggest complaints from companies interviewed. Not only is there no guarantee regarding delivery but sometimes products are damaged or disappear. Furthermore, while rail transport should be significantly cheaper than road, it is not. Time delays in delivery of inputs, means that companies are required to carry greater stockpiles of raw material inputs resulting in a higher cost of production. Unreliable railway transport also has a negative impact on meeting export orders, so much so that producers often prefer to use road transport, as the costs of not meeting an export order are incalculable, as that order may be lost forever.

The issue of transport costs is a serious impediment to beneficiation and export growth, one employer claimed that transport costs represent as much as 15% of his total costs.

### **8.4 Scrap metal**

Scrap metal is regarded as a resource by the basic metals sector. The availability and price of scrap metal is an important production cost determinant. Columbus Joint Venture is reliant on scrap metal for their production process. In recent months they have experienced an increase in the price of scrap steel. Similar difficulties have been experienced by SCAW metals, although they are less reliant on scrap metal. The amount of scrap metal used is dependent on the product being produced, with some production processes allowing for greater usage of scrap. Smaller foundries are also experiencing difficulties in obtaining scrap, and those at the coast are charged an additional inland transport charge irrespective of the origin of the scrap, although most does originate inland. Nevertheless, large proportions of scrap make their way to Durban for export.

The major difficulties in relation to scrap are being experienced in the secondary non-ferrous basic metals sector. This is due to the higher value to weight ratio of non-ferrous scrap compared with iron and steel scrap, making it more desirable for export.

The issue of the availability and price of scrap is the single biggest problem for the secondary non-ferrous metals sector. Unlike iron and steel scrap, non-ferrous scrap's price is determined on the London Metal Exchange. It is also a dollar denominated price, making it volatile to the Rand dollar exchange rate. It should be noted that the secondary non-ferrous metals sub-sector was placed under severe pressure when the South African Rand lost almost 40% of its value during 2002.

The unregulated export of scrap metal resource has on a macroeconomic basis, increased the cost of the raw material input and had a negative impact on the competitiveness of downstream products, thereby making incremental exports nonviable.

In essence the domestic market must compete with inflated export parity and foreign currency kick-backs, a situation which is aggravated during times of currency depreciation.

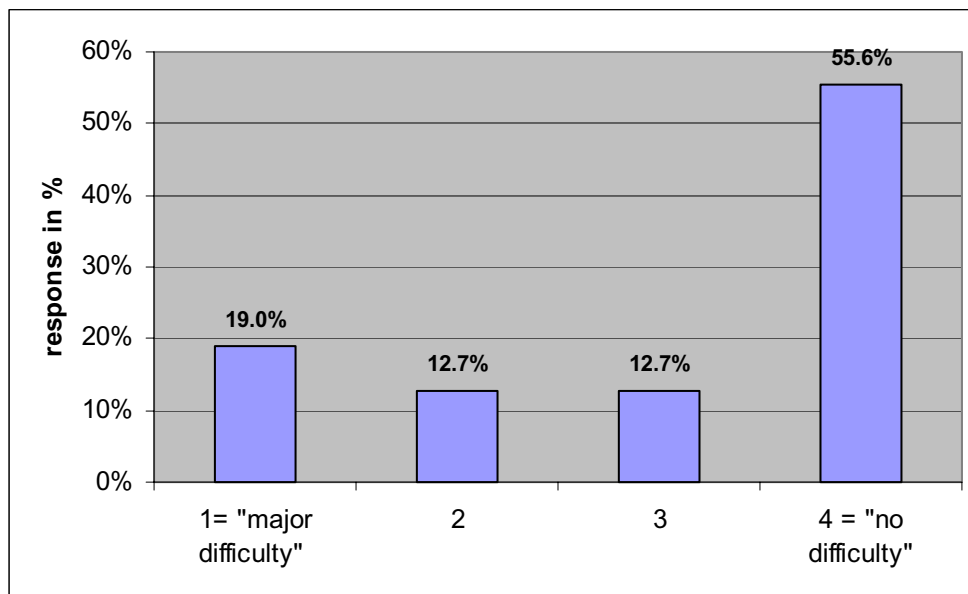
### 8.5 Labour legislation

In qualitative interviews, employers at less technology intensive plants or those who relied on less skilled workers, referred to the retrenchment requirements of labour legislation as an impediment to hiring people in response to what may be temporary increases in output. Accordingly, they have chosen to draw on the flexibility that exists within labour law to follow an outsourcing or subcontracting route when required to increase production, rather than expand their permanent workforce.

### 8.6 Skills

Interviews with employers suggest an acute shortage of certain skills, e.g. pattern makers, millwrights, engineers and metallurgists. However as figure 14 below indicates, for the most part the sector has not experienced any difficulty in accessing skills.

Figure 35. Difficulty experienced when accessing appropriate skills (expressed as a % of the total sample)



The companies and relevant associations interviewed expressed commitment to the new skills development system and had all established skills development committees within their plants. However, while companies were committed to the new skills development approach,