

CHAPTER EIGHT

COMPETITIVENESS AND SECTORAL PRODUCTION

8.1 Introduction

As pointed out in chapter one, the basic justification for South Africa's tariff liberalisation policy during the 1990s was to increase competitiveness. Chapter seven showed that tariff liberalisation in the 1990s:

- reduced imported input costs, and
- reduced import prices at the border but had no significant effect on the price of import substitutes.

Ascertaining the net impact of these results on competitiveness is not straightforward. In the former case, reduced imported input costs positively impacted on competitiveness while, in the latter case, since reduced import prices had no significant price reducing impact on import substitutes, it did not have the desired impact on competitiveness. In addition, it should be borne in mind that reduced price is only one indicator of improved competitiveness.

As pointed out in chapter three, import liberalisation is expected to result in a shift in relative prices, which in turn are expected to result in efficiency gains in production. Hence, probably the most important manifestation of improved competitiveness is on production itself. In this chapter, an analysis of whether tariff liberalisation led to improvements in production efficiency is considered, since the latter is an important determinant of competitiveness. The analysis is undertaken on the basis of the indicators highlighted in chapter three.

The next section briefly considers some of the theoretical issues relating to the analysis in the chapter. The indicators identified in chapter three are also presented in this section. Section 8.3 provides an empirical analysis of the impact of tariff liberalisation on the economic efficiency of manufacturing during the 1990s. The last section concludes.

8.2 Some theoretical issues

Under the assumption of perfect competition, trade liberalisation leads to lower prices of imported goods. This promotes gains for industries and consumers using the imported goods. Increased competition from imported goods force domestic producers of import-competing goods to become more efficient in order to remain competitive. As mentioned in chapter three, under conditions of perfect competition, tariff liberalisation promotes "static" and "dynamic" efficiency. The expected effects (as identified in chapter 3) include the following:¹

- *Output growth:* Liberalising sectors should grow faster than non-liberalising sectors. However, it should be noted that liberalisation is expected to shift resources away from unproductive liberalising sectors, and hence, this could result in lower growth rates for these sectors. In this case, it is to be expected that these resources would move to other sectors within the manufacturing sector, and hence, one should expect an increase in output for the manufacturing sector as a whole post liberalisation.
- *Increases in technology intensity:* Since liberalisation promotes technology transfers, this should manifest itself in higher value-added output.
- *Export growth:* Liberalisation is expected to shift production away from import-competing to exporting sectors. As was mentioned previously, even if liberalisation leads to the closure of non-efficient liberalising sectors, one should see a significant rise in manufacturing exports with liberalisation. In addition, as previously argued, liberalisation should promote higher valued (more technology intensive) exports.
- *Productivity gains:* Here one distinguishes between labour productivity and total factor productivity gains. With technology transfers, even if production moves in line with factor endowments and becomes more labour intensive (as is to be expected for South Africa), there should be an increase in labour productivity with liberalisation. As far as total factor productivity is concerned, liberalising sectors should be

¹ For a review of some of the indicators used in the analysis see UNIDO (2003).

characterised by higher total factor productivity gains relative to non-liberalising sectors.

The above indicators are used to analyse whether tariff liberalisation did promote efficiency (and hence, competitiveness) in the manufacturing sector during the 1990s.

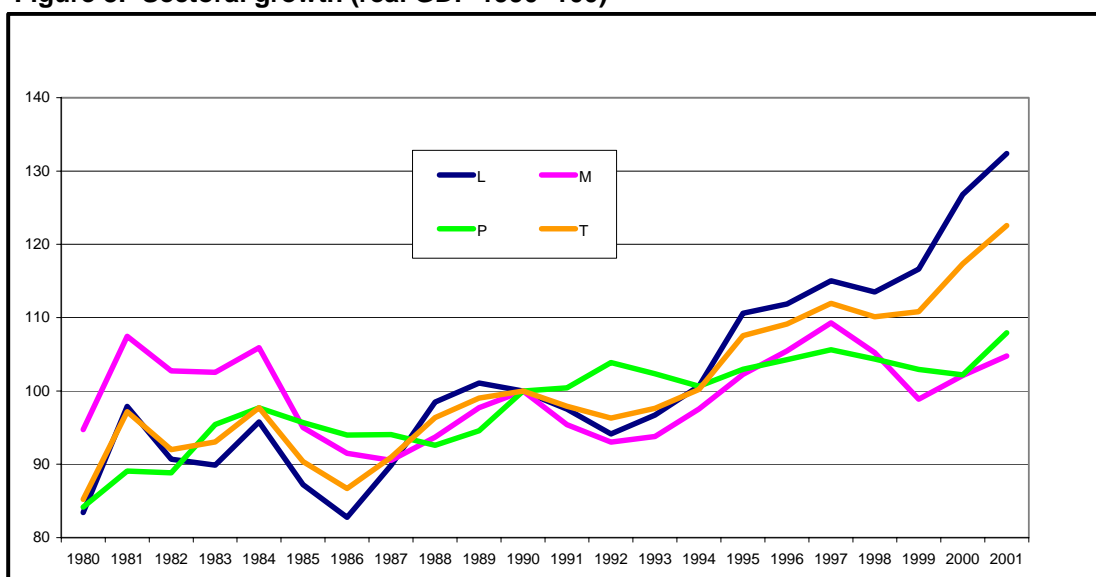
8.3 Tariff liberalisation and manufacturing sector production during the 1990s

The analysis is based on the sectoral classification identified in chapter 4 where the tariff accorded to each sector was used to classify the 28 manufacturing sectors as liberalized (L), moderately protected (M) or increasingly protected (P) during the 1990s.²

8.3.1 Tariff liberalisation and manufacturing sector growth

Figure 8 plots the real GDP values (1990=100) for the liberalized, moderately protected and the protected groups of manufacturing sectors for the period 1980 to 2001.

Figure 8: Sectoral growth (real GDP 1990=100)



Source: Own calculations with data from TIPS.

² See Table 6 (column 10) in chapter four.

There is an improvement in the performance of all the groups during the 1990s. Economic growth of the more liberalized sectors (L) has exceeded those of the moderately protected (M) and protected (P) sectors, especially after 1994. In addition, from the graph it is evident that the growth of the manufacturing sector is strongly positively correlated with the trade liberalising sectors. This suggests that trade liberalisation may have provided the main stimulant for growth.

However, as pointed out in chapter three, there are a number of factors exerting an influence on growth. Attributing the growth stimulus solely to trade liberalisation requires more justification. There are two aspects worth noting. Firstly, the liberalized sectors and the manufacturing sector as a whole were on an accelerating growth path since the mid 1980s.³ Secondly, even during the 1990s, the acceleration started in 1992, three to four years before the intense tariff liberalisation was implemented under the WTO offer. It could have been the forces of globalisation following South Africa's formal entry into the world economy (with the end of sanctions) rather than tariff liberalisation *per se* that had a greater impact on the growth performance of the manufacturing sector. However, leaving these concerns aside, one can't but be impressed with the performance of the liberalizing sectors since the early 1990s. Some indication of the impact of tariff liberalisation on the growth trajectory of the liberalizing sectors could be obtained by analyzing some of the other indicators identified above.

8.3.2 Technology intensity and liberalisation

Due to data constraints, manufacturing production was proxied by value of manufacturing sales.⁴ A link provided by the DTI is used in the classification of high, medium and low technology products (column 3 in table 21).⁵

³ Albeit there was a deceleration during 1989-1992.

⁴ This refers to manufacturing sales in the domestic and export market.

⁵ The classification of production into technology-intensive categories is bound to be contentious. While, the results in the table should be viewed with the usual caution, it does provide an indication of the change in the nature of production.

Table 21: Manufacturing production, technology intensity and protection

SECTOR DESCRIPTION	SIC	Technology ¹	Protection ²
Slaughtering, processing and preserving of meat	3011	low	P
Processing & preserving of fish & fish products	3012	low	P
Processing & preserving of fruit & vegetables	3013	low	P
Vegetable & animal oils & fats	3014	low	P
Dairy products	3020	low	P
Grain mill products	3031	low	P
Prepared animal feeds	3033	low	P
Bakery products	3041	low	P
Sugar refining	3042	low	P
Cocoa, chocolate & sugar confectionary	3043	low	P
Other food products nec.	3049	low	P
Distilling industries	3051	low	P
Beer, malt liquers & malt	3052	medium	P
Soft drinks & mineral waters	3053	medium	P
Spinning & weaving of textiles	3111	low	P
Made-up textile articles; excl. apparel	3121	medium	P
Carpets, rugs and matting	3122	medium	P
Other textiles nec.	3129	medium	P
Knitted & crocheted fabrics & articles	3130	medium	L
Wearing apparel; excl. fur apparel	3140	medium	L
Tanning and dressing of leather	3160	medium	M
Footwear manufacturing	3170	medium	L
Sawmilling and planing of wood	3210	low	L
Wood and wood products	3220	medium	L
Pulp, paper and paperboard	3231	low	L
Corrugated paper & paperboard	3232	low	L
Other articles of paper & paperboard	3239	low	L
Publishing	3240	medium	M
Printing and related services	3250	medium	M
Coke oven products	3310	low	L
Petroleum refineries & synthesisers	3320	medium	L
Basic chemicals	3341	low	L
Fertilisers and nitrogen compounds	3342	medium	L
Plastics in primary form	3343	low	L
Pesticides and other agro-chemical products	3351	medium	L
Paints, varnishes, printing ink and mastics	3352	medium	L
Pharmaceuticals, medicinal chemicals, etc.	3353	high	L
Soap, detergents, cleaning & polishing, perfumes, etc.	3354	medium	L
Other chemical products, nec.	3359	medium	L
Tyres & tubes of rubber	3371	medium	M
Other rubber products	3379	medium	M
Plastic products	3380	medium	L
Glass and glass products	3411	medium	L
Ceramics ; Non-structural non-refractory	3421	medium	M
Ceramic products (refractory)	3422	medium	M
Cement, lime and plaster	3424	low	M
Concrete, cement or plaster articles	3425	Low	M
Basic iron and steel	3510	medium	L
Basic precious and non-ferrous metals	3520	low	L
Structural metal products, tanks, reservoirs	3541	low	M
Forging, pressing, stamping, etc. of metal	3551	medium	M
Cutlery, hand tools & general hardware	3553	medium	M
Other fabricated metal products	3559	medium	M
General purpose machinery; office, accounting	3560	medium	L

Table 21: Manufacturing production, technology intensity and protection (continued)

Special purpose machinery	3570	medium	L
Household appliances, nec.	3580	medium	L
Electric motors, generators & transformers	3610	high	L
Electricity distribution & controlling apparatus	3620	high	L
Insulated wire & cable manufacturing	3630	high	L
Accumulators, primary cells & primary batteries	3640	medium	L
Electric lamps & lighting equipment	3650	medium	L
Other electrical equipment, nec.	3660	high	L
Radio, television and communication apparatus	3700	high	L
Medical equipment, instruments and appl	3740	high	L
Motor vehicles	3810	medium	L
Bodies for motor vehicles, trailers & semi-trailers	3820	medium	L
Motor vehicle parts and accessories	3830	medium	L
Other transport equipment, nec.	3840	medium	L
Furniture manufacturing	3910	medium	L
Jewellery and related articles	3921	medium	L
Other manufacturing industries (incl tob products)	3929	medium	L

Notes: 1. Sectors classified according to technology content as high, medium or low

2. Sectors classified as liberalised (L), moderately protected (M) or protected (P) on basis of criteria identified in table 6 (column 10).

Source: Table 6 and own calculations with data from the IDC and DTI.

Table 22: Technology intensity of production

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<i>Liberalised sectors</i>											
% of low value tech prods	18	18	18	17	17	18	19	19	19	20	19
% of medium tech prod	73	74	73	75	74	74	73	73	72	72	73
% of high tech prods	9	9	9	9	9	9	8	9	9	8	8
<i>Moderately protected sectors</i>											
% of low value tech prods	31	32	30	28	29	30	31	31	31	29	28
% of medium tech prod	69	68	70	72	71	70	69	69	69	71	72
% of high tech prods		0	0	0	0	0	0	0	0	0	0
<i>Protected sectors</i>											
% of low value tech prods	80	80	79	80	80	80	81	81	80	79	79
% of medium tech prod	20	20	21	20	20	20	19	19	20	21	21
% of high tech prods	0	0	0	0	0	0	0	0	0	0	0

Source: Table 21, sales data from IDC, own calculations

Table 22 provides an indication of the nature of manufacturing production during the 1990s. In terms of the classification depicted in table 21, it is only the liberalised sectors that produce high technology products. However, their share of production has been fairly constant (around 9 percent) during the 1990s. The same is also true for their production of low and medium technology products.

For the moderately protected sectors, medium technology products dominate production. It increased from around 69 percent in 1990 to around 72 percent in 1993 before falling during the mid 1990s and then increasing again to around 72 percent in 2000. For the protected group, the production shares have been fairly constant (around 80 percent for low technology products and 20 percent for high technology products) for most of the decade. The basic point to emerge from table 22 is that, while there was an increase in the volumes produced (as is evident from figure 8) trade liberalisation has not increased the orientation towards the production of more technology-intensive products during the 1990s. This suggests that technology transfers may not have been facilitated to the extent that one would have expected with the tariff liberalisation of the 1990s.

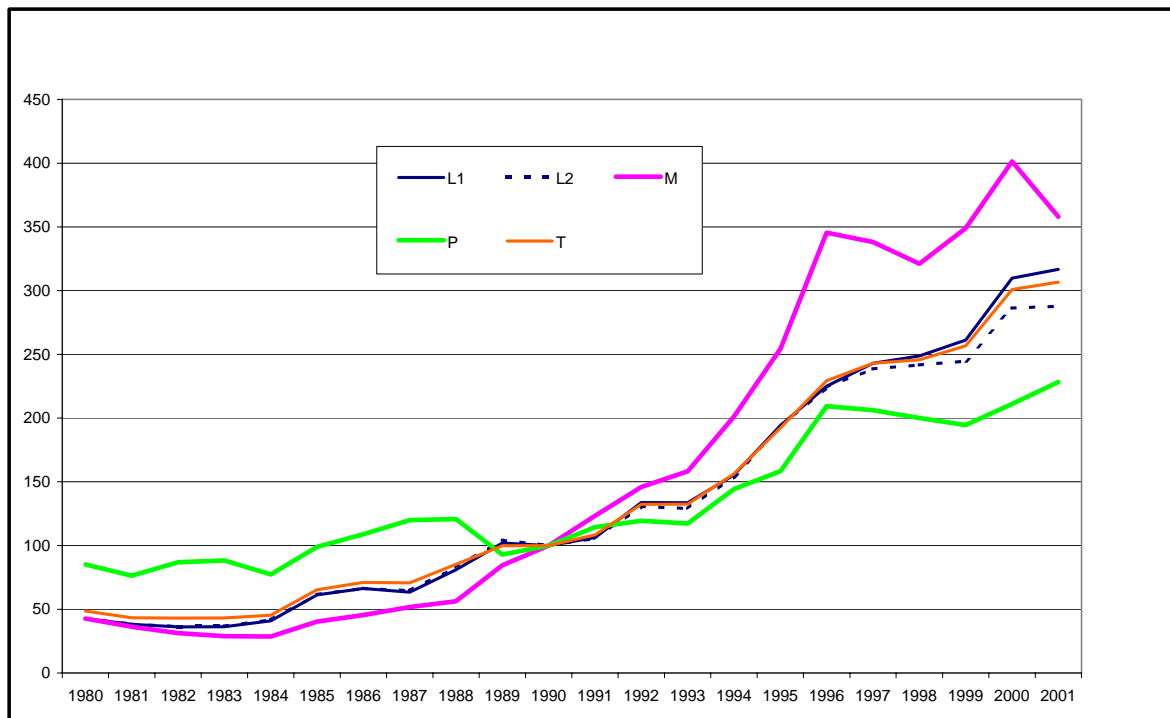
8.3.3 Tariff liberalisation and manufacturing exports

The preceding 2 sections (8.3.1 and 8.3.2) provide an indication of the impact of tariff liberalisation on internal competitiveness. An indicator of external competitiveness is export performance. As mentioned in chapter three, one of the prime motivations for trade liberalisation is to encourage exports. However, increased external competitiveness could be manifested in increased export volumes and/or an increase in value-added exports. The latter aspect is important in the sense that even though export volumes may not be increasing, a move towards more technology-intensive (higher value added) products in the export basket would indicate increased competitiveness.

Figure 9 shows how export volumes have evolved since 1990. The first point that emerges from figure 10 is that exports have increased across all groups during the 1990s. However, it is important to bear in mind that manufacturing exports have been increasing since the mid-1980s. While export production accelerated during the 1990s, the increase started in 1993 (i.e. before the implementation of the WTO offer). Secondly, while the liberalized sectors (L1) have experienced a rapid increase in exports during the 1990s, it was surpassed by the performance of the moderately protected sectors. If one excludes the exports of motor vehicles, the export performance of the

liberalized sectors (L2) becomes less attractive.⁶ Since the late 1980s there has been a significant increase in export volumes of the moderately protected sectors. *Ceteris paribus*, figure 10 provides a strong case for moderate protection as a means of increasing exports.

Figure 9: Real exports (1990=100)



Source: Own calculations with data from TIPS.

As far as the increase in export volumes are concerned, the results presented here confirm those obtained in earlier studies (Tsikata, 1999, Golub, 2000, Fedderke, 2001: 27); however, unlike these studies, there is no clear indication that trade liberalisation was the main stimulant to export production.⁷ In addition, while trade liberalisation has not been de-industrialising, export production has specialized in products that are stagnating in world markets (Tsikata, 1999) which raises further concerns

⁶ A strong argument could be made for the case that the Motor Industries Development Programme (MIDP) is a classic example of targeted protection and is heavily dependent on tariff rebates. It is highly debatable whether the impressive export performance of the motor vehicle industry is sustainable, particularly if the tariff rebates currently available under the MIDP are withdrawn (the EU-SA FTA requires that the MIDP and particularly the tariff rebates be reviewed). An analysis of this aspect is beyond the scope of this chapter.

⁷ See Roberts (2000) for some further evidence in this regard.

about export production during the 1990s. The impact of tariff liberalisation on export production is thus still very much an open question.

Did tariff liberalisation exert any influence on the nature of export production during the 1990s? In order to answer this question one can consider how the composition of exports of the three categories has changed during the 1990s. This information is reflected in table 23.

Table 23: Manufacturing exports

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Liberalised sectors											
% of low value tech prods	37	37	34	32	31	33	32	31	32	29	27
% of medium tech prod	60	60	61	62	60	58	59	61	59	62	66
% of high tech prods	3	3	5	9	9	9	9	9	9	9	7
Moderately protected sectors											
% of low value tech prods	27	30	40	40	39	40	32	41	39	45	40
% of medium tech prod	73	70	60	60	61	60	68	59	61	55	60
% of high tech prods	0	0	0	0	0	0	0	0	0	0	0
Protected sectors											
% of low value tech prods	95	92	89	90	89	90	89	88	90	88	88
% of medium tech prod	5	8	11	10	11	10	11	12	10	12	12
% of high tech prods	0	0	0	0	0	0	0	0	0	0	0

Source: Own calculations with data from IDC and DTI.

While the liberalised sectors have increased their exports of high technology products, the ratio has been fairly constant at around 9 percent since 1993 - some two years before the implementation of the WTO offer.⁸ The exports of medium technology products, on the other hand, have increased to around 66 percent of total production in 2000.⁹ For the moderately protected sectors there has been an increase in the export of low technology exports over the period. The protected sectors have, on the other hand, more than doubled their share of low technology exports from around 5 percent to 12 percent during the period. Viewing export performance within the context of the trade liberalisation programme presents mixed results. However, the results considered here do not reveal any strong correlation between liberalisation and improved export performance. These aspects warrant more specific research at a disaggregate product level.¹⁰

⁸ The ratio decreased to 7 percent in 2000. It remains to be seen whether this is a temporary occurrence following the Asian financial crisis in 1998-99.

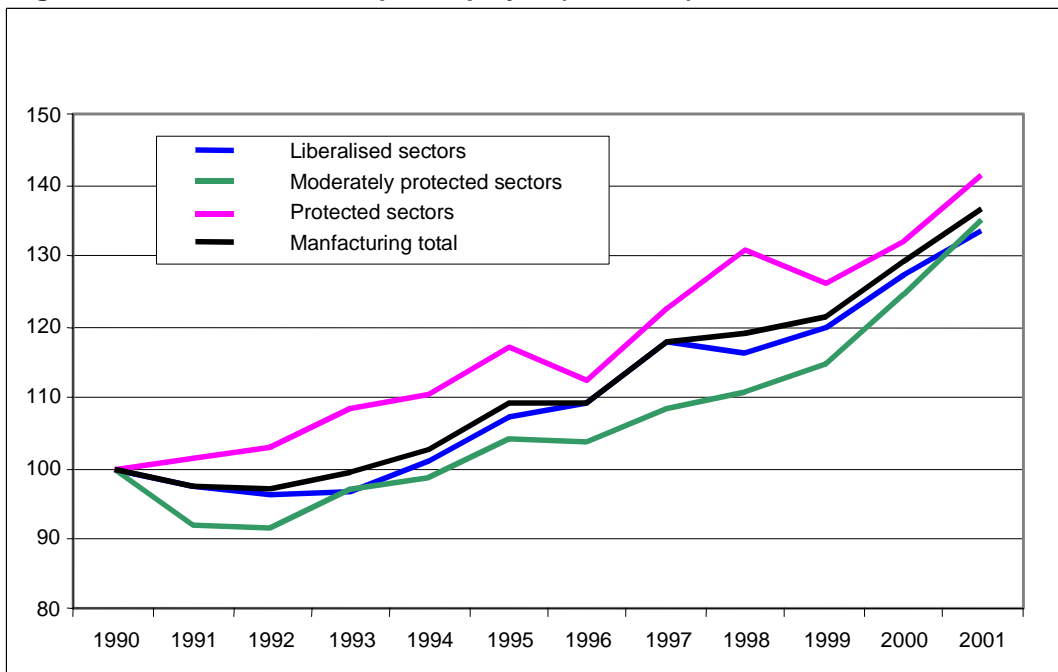
⁹ However, the increase occurred in 2000 with the average for the period being around 61 percent. It is still to be ascertained if the increase is sustainable.

¹⁰ The classification employed here categorised the 4-digit SIC sectors into high, medium and low technology sectors. This makes the assumption that all products produced within this 4

8.3.4 The impact of liberalisation on productivity

As mentioned above, one could have expected tariff liberalisation to have influenced both labour and total factor productivity trends during the 1990s. Figure 10 depicts the trends in labour productivity of the three groups over the 1990s.

Figure 10: Real value added per employee (1990=100)



Source: Own calculations with data from TIPS.

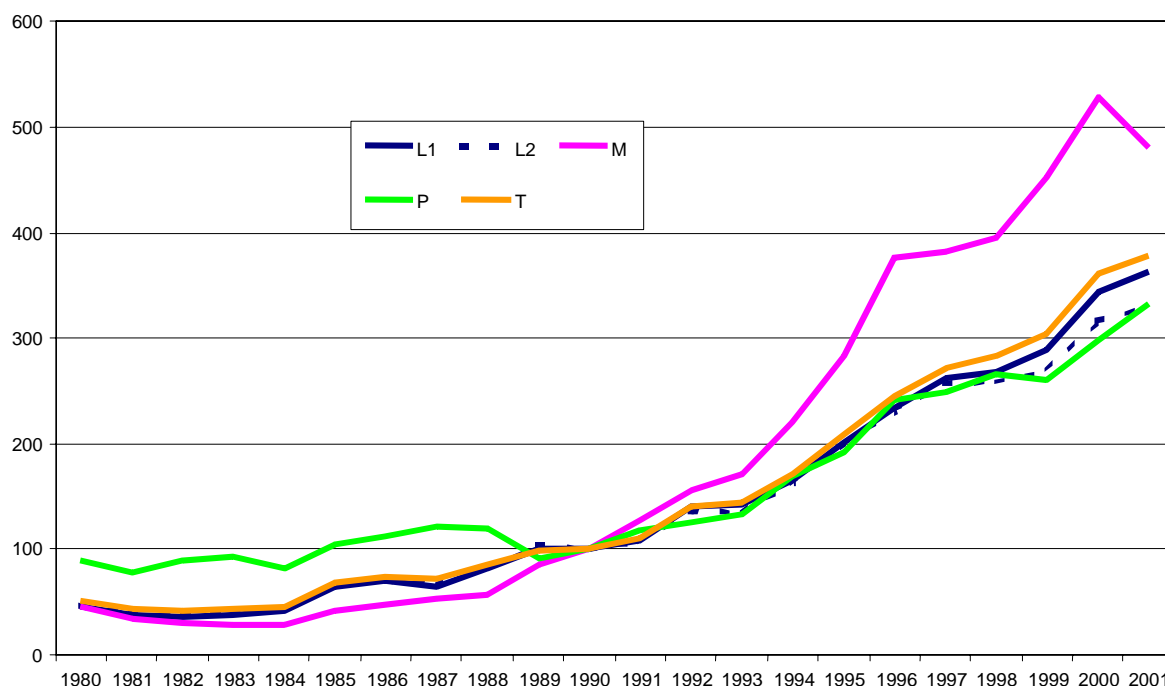
Real value added per employee for the protected sectors has accelerated at a faster pace than those of the other groups for the entire decade. On the other hand, real value added per employee of the liberalised sector has kept pace with the average for the manufacturing sector. The growth in real value added for the moderately protected sectors lagged behind that of the liberalised and protected groups for the entire decade. Using real value added per capita as an indicator of the labour productivity, the trends during the 1990s do not provide any conclusive evidence that trade liberalisation was associated with productivity improvements during the 1990s. If anything, it would seem that on

digit SIC industry classification uses the same (similar) technology. This is obviously unrealistic; the ideal would be to categorise the individual products produced by the sectors. However, data constraints precluded this calculation.

the basis of real value added per capita, protection is necessary for improved industrial competitiveness.

A similar result emerges when one considers export production.

Figure 11: Real exports per employee (1990=100)



Source: Own calculations with data from TIPS.

Figure 11 indicates that labour productivity has been on the increase since the mid-1980s. Once again the moderately protected sectors produced a higher volume of exports per employee compared to the other groups. Interestingly, labour productivity in the liberalised (L1, L2) and protected (P) groups tracked each other very closely. These results suggest that tariff liberalisation may have played a role - albeit a limited one - in stimulating labour productivity during the 1990s. However, labour productivity ratios should be viewed with some caution they are sensitive to changes in the capital-labour ratio and thus may provide misleading indications of the changes in efficiency and competitiveness. For this reason, total factor productivity measures are more reliable indicators of efficiency since it captures the efficiency of *all* factor inputs.

Table 24 shows the average annual contribution of total factor productivity to the economic growth of manufacturing sub-sectors for the 1980s and 1990s.¹¹

Table 24: Total factor productivity for manufacturing sub-sectors

	Sector	1980s	1990s
1	Basic chemicals	-4.1	2.7
2	Basic iron & steel	0.2	3.0
3	Basic non-ferrous metals	1.4	-1.9
4	Coke & refined petroleum products	12.0	-4.2
5	Electrical equipment	-3.6	0.1
6	Footwear	-1.1	-0.4
7	Furniture	3.1	-3.9
8	Glass & glass products	2.9	-2.9
9	Machinery & equipment	-4.8	2.6
10	Motor vehicles, parts & accessories	3.6	-5.0
11	Other chemicals & man-made fibres	-0.2	0.1
12	Other industries	14.6	-0.8
13	Other transport equipment	-3.5	-4.2
14	Paper & paper products	-1.1	-1.4
15	Plastic products	3.7	-2.4
16	Professional & scientific equip	7.7	0.5
17	TV, radio & communication equip	10.0	-6.5
18	Wearing apparel	1.7	1.7
19	Wood & wood products	-0.7	0.9
20	Leather & leather products	2.8	0.6
21	Metal products excluding machinery	-0.6	-0.1
22	Non-metallic minerals	-1.5	0.4
23	Printing, publish & recorded media	2.9	-4.0
24	Rubber products	2.5	-2.8
25	Beverages	1.8	-5.1
26	Food	-2.0	0.1
27	Textiles	-1.1	-0.2
28	Tobacco	1.7	0.0

Source: Fedderke, J.W. 2002. The structure of growth in the South African economy: Factor accumulation and total factor productivity growth, 1970-97. *SAJE*.

It is widely accepted that total factor productivity (TFP) is an important determinant of growth but its measurement has been the subject of much controversy in the academic literature (Hulten, 2000).¹² Hence, some caution should be exercised in interpreting the TFP measures provided in table 24.¹³

¹¹ The average for the 1990s covers the period 1990-97.

¹² For a discussion of some of the difficulties within the South African context, see Fine (1992) for an application to the coal mining industry and Fedderke (2002) for a more general application to the manufacturing industry.

¹³ For example, as Fedderke (2002: 621) notes, apart from the usual criticisms associated with the determination of TFP based on the Solow residual, the use of net output tends to bias the sectoral TFP estimates upwards.

Given these limitations the purpose here is to obtain some broad indications of whether tariff liberalising sectors have experienced TFP gains.

In table 24, column 3 (column 4) depicts the annual average contribution of TFP to output growth for different manufacturing sub-sectors for the 1980s (1990s). This indicates that TFP played a limited role in the growth performance of the manufacturing sector during the 1990s. However, six sub-sectors (basic chemicals; basic iron and steel; electrical equipment; machinery and equipment; other chemical and man made fibres; wood and wood products) of the liberalising group (rows 1-19) have experienced higher contributions from TFP to economic growth. On the other hand, the moderately protected sub-sectors (rows 20-24) and protected sub-sectors (rows 25-28), four sectors (metal products excluding machinery; non-metallic minerals; food, textiles) experienced improvements, while the remaining five sub-sectors (leather and leather products; printing, publishing and recorded media; rubber products; beverages and tobacco) experienced declines in total productivity levels in the 1990s as compared to the 1980s.¹⁴ While the results in table 24 provide some evidence, it is not conclusively in favour of tariff liberalisation having promoted TFP gains in the manufacturing sector during the 1990s. Empirical evidence reveals that the growth of the manufacturing sector has become more reliant on capital accumulation.¹⁵

The basic conclusion is that there is no distinct positive difference in productivity trends in liberalising sectors as compared to the other sectors. This once again raises some concerns about the impact of tariff liberalisation on the competitiveness of the manufacturing sector during the 1990s.

8.4 Tariff liberalisation and imports

The analysis presented thus far, implies that tariff liberalisation exerted a limited impact on the production of the manufacturing sector. This suggests

¹⁴ It should be noted that the improvements in some cases involve a smaller decline in productivity levels during the 1990s as compared to the 1980s.

¹⁵ see Fedderke (2002).

that the tariff liberalisation of the 1990s did not succeed in increasing competition in the domestic economy. An indication of whether this was the case can be ascertained by considering the import penetration ratios of the different sectors. The import penetration ratio, calculated as imports as a ratio of domestic demand, for the 28 manufacturing sectors is reflected in table 25.

Table 25: Import Penetration ratios

Sectors	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Average (1990-94)	Average (1995-01)
1 Wearing apparel [313-315]	5	7	7	8	8	6	9	10	12	12	16	18	7	12
2 Footwear [317]	4	8	12	16	16	19	26	26	28	31	38	46	11	31
3 Wood and wood products [321-322]	9	9	9	12	11	11	12	11	11	11	13	13	10	12
4 Paper and paper products [323]	11	10	10	11	13	15	15	13	14	14	13	13	11	14
5 Coke and refined petroleum products [331-333]	8	7	7	6	6	7	14	11	15	12	11	16	7	12
6 Basic chemicals [334]	33	35	39	42	46	50	50	47	47	44	48	48	39	48
7 Other chemicals and man-made fibers [335-336]	17	17	18	19	21	22	25	25	28	29	32	34	18	28
8 Plastic products [338]	7	7	7	9	9	9	10	11	12	13	14	15	8	12
9 Glass and glass products [341]	13	14	16	18	17	18	22	23	27	26	27	24	15	24
10 Basic iron and steel [351]	9	8	10	9	11	12	14	12	15	14	13	13	9	13
11 Basic non-ferrous metals [352]	22	20	19	20	20	28	31	28	45	31	49	24	20	34
12 Machinery and equipment [356-359]	45	44	47	50	58	62	66	66	71	72	78	89	49	72
13 Electrical machinery and apparatus [361-366]	23	23	23	26	31	33	30	29	34	33	34	39	25	33
14 Television, radio and communication equipment [371-373]	33	39	41	47	58	65	74	77	82	81	86	85	44	79
15 Professional and scientific equipment [374-376]	77	75	73	76	76	79	84	87	94	92	94	95	76	89
16 Motor vehicles, parts and accessories [381-383]	26	23	24	27	29	29	31	29	32	34	37	39	26	33
17 Other transport equipment [384-387]	28	51	58	61	54	65	54	95	85	90	92	93	51	82
18 Furniture [391]	2	2	3	3	4	5	9	8	10	13	15	20	3	11
19 Other manufacturing [392-393]	39	41	44	44	51	49	53	51	57	55	58	61	44	55
20 Leather and leather products [316]	17	20	22	25	31	28	32	32	31	28	33	32	23	31
21 Metal products excluding machinery [353-355]	9	9	9	10	10	11	12	12	14	15	15	16	9	13
22 Non-metallic minerals [342]	8	7	8	9	10	11	13	13	15	18	19	20	8	16
23 Printing, publishing and recorded media [324-326]	15	16	14	16	18	18	23	18	20	19	20	21	16	20
24 Rubber products [337]	14	16	17	18	20	23	26	28	32	34	34	34	17	30
25 Beverages [305]	4	3	3	3	3	3	5	5	5	5	4	4	3	5
26 Food [301-304]	5	4	5	5	8	9	10	10	10	9	10	10	5	9
27 Textiles [311-312]	18	21	20	20	22	23	24	24	26	26	27	28	20	26
28 Tobacco [306]	2	3	3	2	2	2	2	1	2	2	1	1	2	2

Notes: Liberalising sectors (1-19), moderately protected sectors (20-24), protected sectors (25-28)

Source: Own calculations with data from TIPS.

With the exception of the tobacco sector this ratio has increased for all of the 27 other manufacturing sectors. Rising imports were not only confined to those sectors undergoing extensive or even moderate tariff liberalisation. It is therefore not surprising that there are very limited differences (as pointed out in the preceding sections) in those sectors subjected to extensive tariff liberalisation relative to those sectors subjected to moderate or no protection. Thus, it may have been the ending of sanctions and the globalisation of the South African economy rather than the effects of tariff liberalisation *per se* that exerted the most significant impact on manufacturing production in the 1990s.

8.5 Conclusion

Theory dictates that improved competitiveness has a direct impact on production. Higher growth rates and the production and export of more value-added (technology-intensive) products depict improved competitiveness. If tariff liberalisation did promote competitiveness in the manufacturing sector during the 1990s, then these effects would have explicitly characterised those sectors undergoing extensive tariff liberalisation. The results in this chapter do not bear this out. This warrants further investigation particularly at the disaggregated sectorial level. Some policy conclusions and recommendations are made in the next chapter.