SOUTH AFRICA'S TARIFF LIBERALISATION POLICY: AN APPRAISAL OF DEVELOPMENTS DURING THE 1990S

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ABSTRACT

Trade liberalization in South Africa has been a characteristic of trade policy since the early 1970s, with the reduction of quantitative restrictions being the main policy instrument as far as imports were concerned. By the early 1990s there was strong support for South Africa's industrial strategy being spearheaded by comprehensive tariff reductions agreed to under the General Agreement on Tariffs and Trade (GATT) in 1994, and implemented from 1995 onwards under the auspices of the World Trade Organisation (WTO). South Africa's trade policy reform was premised on the assumption that tariff liberalization would increase the competitiveness of domestic manufacturing industries. This paper attempts to ascertain if this did in fact materialise by critically appraises the impact of trade policy reform on the production of the South African manufacturing sector. The results obtained in this paper indicate that tariff liberalisation has not been successful in securing improved competitiveness. The article argues that improved competitiveness goes beyond trade policy reform – government policies should also be directed at issues relating to efficiency in production, distortions in factor markets and institutional development. The desired or appropriate level of openness does not necessarily entail completely free markets for trade and investment. In view of market and institutional failures the role of government in securing the appropriate industrial outcomes should not be underestimated.

* The views expressed in this paper do not neccessarily represent the views of the repective institutions at which the authors are based.

INTRODUCTION

During the 1990s, South Africa's trade policy was drastically reformed. This mainly entailed rapid tariff liberalisation agreed to under the General Agreement on Tariffs and Trade (GATT) in 1994, and implemented from 1995 onwards under the auspices of the World Trade Organisation (WTO). For some products, South Africa liberalised even faster than her WTO commitments. South Africa's trade policy reform was premised on the assumption that tariff liberalization would increase the competitiveness of domestic manufacturing industries. This paper attempts to ascertain if this did materialize.

The paper is structured as follows. The next section provides a brief review of the empirical evidence on the link between trade liberalization and economic growth. Section 3 reviews South African trade policy during the 1990s. The impact of trade policy reform on the production of the manufacturing sector is reviewed in section 4. Some policy recommendations are drawn in the penultimate section while the last section concludes.

ECONOMIC EFFECTS OF TRADE LIBERALIZATION: THE EMPIRICAL EVIDENCE.

One of the issues that have dominated the international economics literature has centred on the relationship between trade policy and economic growth. More specifically, empirical analysis has focussed on identifying a link between trade policies and long-run economic performance – measured in either per capita or productivity growth. Over time, the availability of more reliable data and more sophisticated econometric techniques have resulted in numerous studies analysing the impact of government policy on economic growth. However, based on the evidence to date, it is fair to say that there is still much disagreement on the empirical relationship between trade policies and economic growth (Baldwin: 2003: 1).

The early 1900s was characterised by the extensive use of protectionist policies (especially tariffs) to foster inward-oriented industrialisation. Germany, France, United States and Japan made extensive use of protectionist policies to foster their industrialisation process (O'Rouke, 2000; Clemens and Williamson, 2001). The success of the Soviet Union in the 1920s and 1930s, and China after 1949, gave credence to the use of protectionist policies as the basis for industrial policy. The experience of these countries served to inspire similar policy in countries that gained independence from their colonial powers after World War II (Baldwin: 2003: 4). It was these developments that gave prominence to the infant industry argument.[1] According to Baldwin (2003), the extension of the infant industry argument to the entire manufacturing sector adversely influenced macroeconomic variables such as exchange rates, aggregate exports and imports and fiscal and monetary policy. By the late 1960s, a critical appraisal of import-substituting industrialisation began to emerge and a policy shift towards export-oriented industrialisation began to gain in popularity. Little *et al* (1970) and Balassa (1971) showed that protection had highly distortionist effects on manufacturing value added in developing countries. The empirical work then increasingly shifted towards testing the relationship between trade and growth. The policy prescription emanating from

influential studies of the time advocated outward-oriented industrialisation (Krueger, 1978; Bhagwati, 1978), which in essence entailed trade liberalisation (Balassa, 1971).

Developments in endogenous growth theory during the 1980's (Romer, 1990; Lucas, 1988; Grossman and Helpman, 1991) and availability of more reliable data and developments in statistical techniques gave renewed impetus to the investigation of the relationship between trade policy and growth during the 1990s. Much of the empirical work during the 1990s focussed on the relationship between exports and growth rather than on trade policy and growth. In a review of the empirical literature Edwards (1993: 1389) asserts that:

> *The theoretical frameworks used have been increasingly simplistic, failing to address important questions such as the exact mechanism through which export expansion affects GDP growth, and ignoring potential determinants of growth such as educational attainment…All of this has resulted, in many cases, in unconvincing results whose fragility has been exposed in subsequent work.*

However, despite these reservations multilateral institutions have been vociferous in arguing that:

> *…more open and outward-oriented economies outperform countries with restrictive trade and investment regimes" (OECD, 1998: 36)*

This view has been premised on the belief that:

> *Policies toward foreign trade are among the more important factors promoting economic growth and convergence in developing countries" (IMF: 1997: 84).*

One of the recent studies to emphatically question the alleged positive relationship between openness and economic growth is Levine and Renelt (1992). They use different measures of trade policies; yet find no positive relationship between openness to trade and economic growth in the long run. However, their work does find a positive correlation between investment and trade shares, thus leading them to the conclusion that the benefits of trade reform may be enhanced resource accumulation rather than a more efficient allocation of resources.

Dollar (1992) analyses the relationship between outward orientation and economic growth for 95 countries. His argument is that outward orientation is conducive to economic growth. Much of the criticism of the empirical work on trade policy has centred on the narrow definition of the trade restriction measure. Ben-David (1993, 1996) has found that trade liberalisation promotes economic convergence among integrating countries. Sachs and Warner (1995) construct an openness measure for 79 countries by considering five factors; namely, tariff barriers, non-tariff barriers, the economic system of the country, whether there is state monopoly control over exports and the parallel market premium on the exchange rate.[2] The Sachs and Warner (1995) study finds a positive relationship between the growth rate of per capita GDP and the openness measure. Edwards (1998)

considers nine measures of openness and finds that six of these measures are significant determinants of total factor productivity growth. However, all of these studies have been meticulously criticised by Rodriguez and Rodik (1999, 2001). They prove that these studies have methodological, conceptual and statistical deficiencies, which lead to doubts about their main result, namely, the existence of a strong positive relationship between trade openness and growth.[3] More specifically they assert that;

> *Our bottom line is that the nature of the relationship between trade policy and economic growth remains very much an open question. The issue is far from having been settled on empirical grounds. We are in fact sceptical that there is a general, unambiguous relationship between trade openness and growth waiting to be discovered. We suspect that the relationship is a contingent one, dependent on a host of country and external characteristics"* (Rodriguez and Rodik, 1999: 4).

In addition, Slaughter (1997) has shown that convergence in income can occur because of a convergence of capital-labour ratios rather than factor prices.[4] In addition, there is no firm evidence to show that trade liberalisation leads to faster convergence among countries that liberalised trade as compared to those that did not liberalise their trade (Slaughter, 2001).

Frankel and Romer (1999) attempt to avoid the controversy in choosing an appropriate openness measure by considering geographic factors and the use of instrumental variable techniques to analyse the relationship between trade and income. Their results confirm some of the earlier results, namely, that trade does influence income growth. However, Rodriquez and Rodrik (1999) have argued that the geographical measures used by Frankel and Dollar as instrumental variables may not be valid (cited by Baldwin, 2003: 25).

The basic point to emerge from the empirical analyses undertaken during the 1990s is that the debate on whether trade openness promotes growth is far from settled. Given the interplay between trade policy and other macroeconomic policies (e.g. monetary and fiscal policy), it is probably fair to argue that it is extremely difficult to construct models that give rise to robust relationships. It is therefore not surprising that the *"…links between the empirical and theoretical work have never been too strong"* (Rodrik, 1995:1480). Probably, policy appraisal has relied too heavily on empirically testing the complex macroeconomic relationships between trade policy and economic growth.

The literature to date has emphasized that while there is a theoretical justification for a strong (or even a robust) relationship between open trade policy and economic growth, the empirical verifications have been unconvincing. In addition, since measures of economic growth (e.g. per capita GNP) usually (especially in developing countries) do not accurately reflect distributional and consumption effects, even if restrictive trade policies reduced economic growth, it does not follow that they necessarily reduce the level of welfare (Rodriguez and Rodrik, 1999: 4).

Tariffs and economic growth: A brief review of the empirical evidence[5]

Recently, there has much empirical work explicitly exploring the link between tariffs and economic growth (Irwin, 1998, 2000a, 2000b, 2001, 2003; Clemens and Williamson, 2001, 2002; Williamson, 2003; O'Rouke, 2000). This work follows on earlier work (Bairoch, 1972; Capie 1983; Eckes, 1995) which all found that tariffs were associated with higher growth rates before World War I the so-called tariff-growth paradox.[6] The same result was found for the period between the first and second world wars (Vamvakidis, 1997 cited in Clemens and Williamson, 2001).

Clemens and Williamson (2001) use a larger sample of countries and confirm the tariff-growth paradox for the period preceding 1950, but find that tariffs were associated with slow growth after 1950. In an attempt to explain the reversal of the tariff-growth correlation after 1950, Clemens and Williamson (2002) find that after accounting for the significant reduction in tariff barriers in all countries since World War II, there is no incompatibility between the results pre-1950 and post 1950. They argue that high tariffs need not necessarily impede growth and the benefits of openness are neither inherent nor irreversible but rather depend upon the state of the world (Clemens and Williamson, 2002: 25).

Irwin (2001) has analysed the tariff-growth correlation of Argentina and Canada during the 19th century and argues that it was factor endowments (abundant land) coupled with sound institutions and policies that fostered growth – the tariff was used as a means of raising government revenues to fund institutional and infrastructure development conducive to economic growth. Chang (2002) argues that both Britain and the United States have relied extensively on protective tariffs to stimulate industrial development and having reached their objective, these countries are eager to kick away the "ladder" (protective tariffs) that helped them to industrialise in the first place. Irwin (2001), while conceding that there is a high correlation between tariffs and growth in late 19th century America, contests the hypothesis that high tariffs led to economic growth – non tradable sectors (namely utilities and services) were the main drivers of economic growth during this period. However, as mentioned earlier on, Rodriguez and Rodrik (1999, 2001) have shown that, when a variety of economic variables are taken into account, the results are sensitive to the methodology and statistical measures used in empirical analysis.

This brief review of the empirical results shows that while a robust empirical relationship between open trade policy and economic growth has not been established, it is important to note that the converse is also true; namely, that there is no strong evidence to suggest that protection leads to economic growth.[7] Under conditions of perfect competition, efficient resource allocation requires a "levelling of the playing field", however, economic reality (imperfect competition, economies of scale, etc) may mean that liberalisation has beneficial results only if it is done in a discriminating manner (Stewart, 1991, Lall, 1990). Subjecting producers to international competition can promote competitiveness, but it can also lead to the destruction of potentially competitive industries (Wade, 1990: 15-22; Adhikari *et al*, 1992: 7-8). In effect, this means that the impact of trade liberalisation is an empirical issue.

SOUTH AFRICAN TRADE POLICY DURING THE 1990S

Since the early 1970s there has been an emphasis on export-oriented industrialisation in South Africa. The policy during the 1970s and 1980s was to promote export production mainly through the granting of export incentives. The Reynders Commission, for example, while recommending a diversification of the export base away from gold exports did not view import liberalisation as a necessary condition for non-gold export production (Bell, 1996: 71). In 1972, a tax allowance for export marketing expenses was one of the first direct export incentives introduced by the government. This was followed by a new system of export incentives introduced in September 1980.

By the beginning of the 1990s, the official policy stance was one of export-oriented industrialisation. The General Export Incentive Scheme (GEIS) was introduced on 1 April 1990 with the objective of encouraging the production of value added exports. However, while export subsidies were used to reduce the anti export bias in the economy, the view that the path to export production should entail trade (and more specifically tariff) liberalisation began to gain ground. This is evident in the recommendations made by an official investigation into South Africa's tariff protection policy.

> *The reduction of import tariffs is therefore an integral part of a process of progress towards export orientation" (IDC, 1990: i–ii).*[8]

With the transition to democracy in South Africa, the policy of an export oriented trade strategy underpinned by tariff liberalisation was firmly entrenched. This is clearly borne out in the Growth, Employment and Redistribution (GEAR) strategy, which asserts that

> *…sustained growth on a higher plane requires a transformation towards a competitive outward-oriented economy" (RSA, 1996: 3).*

South Africa's growth prospects depended on:

> *…strengthening the competitive capacity of the economy in the long term" (RSA, 1996: 7).*

In this regard trade policy was important. More specifically, trade policy was to be characterised by:

> *…a reduction in tariffs to contain input prices" (RSA, 1996: 4).*[9]

The stated intention of government's trade policy during the 1990s is elegantly summarised in a recent policy document in which it is asserted that:

> *…significant trade reforms took place in order to open the economy and create opportunities for growth and improved competitiveness…In general, the tendency was towards a lowering and simplification of tariffs. This process took place from 1995 and was largely completed in 2002 (DTI, 2002: 11-12).*

From the above analysis, it is apparent that the justification for South Africa's liberalisation policy was based on the notion that protection (e.g. tariffs) resulted in price distorting

effects, which adversely impacted on industrial competitiveness. Viewed in this way, tariff liberalisation was meant to increase the competitiveness of domestic industries.

Brief review of the empirical work on the effects of tariff liberalisation during the 1990s

Historically, the development of the South African manufacturing sector was based on a policy of import-substitution for infant industry (Holden, 1992, 1995). Empirical evidence reveals that there has not always been a robust positive relationship between foreign trade and economic growth in South Africa (Strydom, 1995a).[10] This is especially the case for the period 1981-91 (Strydom and Fiser, 1995) when South Africa's international competitiveness deteriorated quite significantly relative to earlier periods (Holden, 1993).

Trade liberalisation has been a characteristic of trade policy since the early 1970s with the reduction of quantitative restrictions being the main policy instrument as far as imports were concerned (Bell, 1997). By the early 1990s there was strong support for South Africa's industrial strategy being spearheaded by comprehensive tariff reductions (IDC, 1990; Levy, 1992). Bell (1993) contends that this support was motivated by political economy considerations given that it was a foregone conclusion that there was going to be a change in the political regime.[11] However, the extent to which political economy considerations influenced the tariff liberalisation process is difficult to determine given the strong presence of the African National Congress (ANC) within the National Economic Forum (NEF) which was tasked with determining the offer to the General Agreement on Tariff and Trade (GATT).

South Africa's tariff liberalisation began in earnest with the offer to the GATT in 1994 and implementation in 1995. In terms of this offer there was a concerted effort to rationalise the tariff schedule (IMF, 1998,) from one that was amongst the most complex in the world (Belli *et al*, 1993) to one that *"…substantially liberalized the economy through import tariff reform"* (Tsikata, 1999: 1). There was a firm belief that the GATT offer promoting import liberalisation through tariff reductions was conducive to the promotion of the manufacturing sector and the economy as whole (Joffe *et al* 1995; DTI, 1995).

It has been argued that despite a large increase in import penetration with trade liberalisation there is no evidence of de-industrialisation (Fedderke and Vaze, 2001; Tsikata, 1999). Trade liberalisation is also credited with having promoted efficiency in the manufacturing sector production (IMF, 1998: 48). However the IMF study acknowledges that while there exists a strong positive correlation between trade openness and productivity growth in South Africa, total factor productivity of the manufacturing sector has lagged behind that for the economy as a whole, mainly due to the high levels of effective protection in the manufacturing sector (IMF, 1998: 50). Tsikata (1999: 19) asserts that trade liberalisation caused a shift in relative prices and incentives with a result that "…exports of manufactures have expanded rapidly and become more diversified".[12]

It has been found that export oriented sectors have achieved higher levels of output and productivity gains than import-competing sectors, thus suggesting that tariff liberalisation was beneficial (ILO, 1998). This study also claims that since employment was in

decline before 1995, employment losses cannot be mainly attributed to trade liberalisation. Using firm level data on applications made to the Board on Tariffs and Trade (BTT), Holden and Casale (2000) find that the BTT, in granting protection during the period 1990-98, was sensitive to the adverse effects of the tariff liberalisation process, particularly with regard to employment considerations.

However, the benefits of tariff liberalisation have been contested. Roberts (2000) argues that tariff liberalisation failed to promote economic growth, improve trade performance and create employment. Although export-oriented companies have increased their investment rates, the contribution of rising exports to the growth trajectory during the 1990s, particularly in terms of output and employment, has been disappointing (Holden, 2001b). The government (DTI, 2002: 24) has also confirmed that the industrial policies have not had the desired impact on the growth rate and employment creation. From 1990 to 2000, manufacturing value added (MVA) increased at an average rate of 1,5 percent, significantly lower than the overall economy (2.2 percent) and the services sector (2,8 percent) (TIPS, 2002). MVA remained fairly constant for this period, while there was a steady increase for the services sector since 1995. In addition, contrary to expectations, exports were not unskilled labour intensive (Tsikata, 1999; Lewis, 2001). This is taken to mean that *"South Africa is not taking full advantage of its comparatively abundant labour supply"* (Tsikata, 1999: v). However, if a distinction is drawn between South African trade flows to developed and developing/emerging countries, then this contradiction does not exist. Exports are unskilled labour intensive to developing countries, but skill intensive to developing/emerging countries (IMF, 2000). In addition, the limited employment creation that has resulted during the 1990s has been biased towards skilled workers, suggesting that the full potential from expanding trade has not been realized (Lewis, 2001).[13] Fedderke (2001) and Edwards (2001) argue that trade has had a positive impact on employment creation, but technological factors have offset some of the gains from trade.

To date the empirical work on South African trade policy has produced mixed results. Hence *"…the impact of trade policy reform on the South African economy remains a contentious issue"* (TIPS, 2002: 55). Against this background, empirical work on the effects of trade policy reform will be of particular relevance for policy makers and academics in the foreseeable future.

TRADE LIBERALIZATION AND SOUTH AFRICAN MANUFACTURING PRODUCTION DURING THE 1990S

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. The expected effects of trade liberalisation include the following:[14]

- *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:* A distinction between labour productivity and total factor productivity gains is required. 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 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.

Tariff liberalisation and manufacturing sector production during the 1990s

The effective rate of protection (ERP) indicates the net protection accorded to an industry.[15] The ERP measure is derived by considering the tariffs levied on the final output and inputs. The extent of tariff liberalisation can be determined by considering the percentage change in the ERP measure between two time periods. Table 1 reflects the extent of tariff liberalisation for the different manufacturing sectors of the South African economy during the 1990s. Sectors that were subjected to a reduction of greater than 10 percent in their effective rate of protection are classified as liberalised (L); those that had an increase in their effective rate of protection of 10 percent or more were classified as protected (P) and all other sectors were classified as moderately protected (M). In terms of this classification 19 sectors were classified as liberalised (L), five as moderately (M) protected and further five as protected.

Table 1: Extent of trade liberalisation in South Africa

	Sector [1]	Average ERP for 1988-93 [2]	Average ERP for 1994-98 [3]	% change in EPR2 [4]	Liberalisation (% change in EPR) [5]
1	Paper and Paper products	1,145	0,616	–46	L
2	Glass and glass products	0,987	0,564	–43	L
3	TV radio and equipment	0,115	0,046	–60	L
4	Plastic products	0,187	0,118	–37	L
5	Footwear	0,300	0,244	–19	L
6	Furniture	0,092	0,038	–59	L
7	Basic Iron and Steel	0,210	0,164	–22	L
8	Motor vehicles Parts	0,063	0,032	–49	L
9	Wearing apparel	0,115	0,084	–27	L
10	Other manufactures	0,045	0,014	–69	L
11	Basic Chemicals	0,058	0,028	–52	L
12	Basic non ferrous metals	0,063	0,044	–31	L
13	Professional and scientific equipment	0,098	0,084	–15	L
14	Electrical machinery	0,042	0,030	–28	L
15	Other transport	0,008	0,002	–76	L
16	Rubber	0,170	0,164	–4	M
17	Chemicals & Man made fibres	0,040	0,034	–15	L
18	Wood and wood production	0,018	0,014	–24	L
19	Non metallic minerals	0,008	0,008	–4	M
20	Metal prod excluding machinery	0,010	0,010	0	M
21	Coke and refinery petrol	–0,013	–0,012	–10	L
22	Machinery & Equipment	–0,002	0,000	–100	L
23	Beverages	0,008	0,012	44	P
24	Printing, publishing and recording media	0,130	0,134	3	M
25	Leather	0,207	0,218	5	M
26	Food	0,027	0,064	140	P
27	Textiles	0,093	0,136	46	P
28	Tobacco	0,035	0,124	254	P

1. Change in the average ERP for the period 1988-93 and 1994-98.

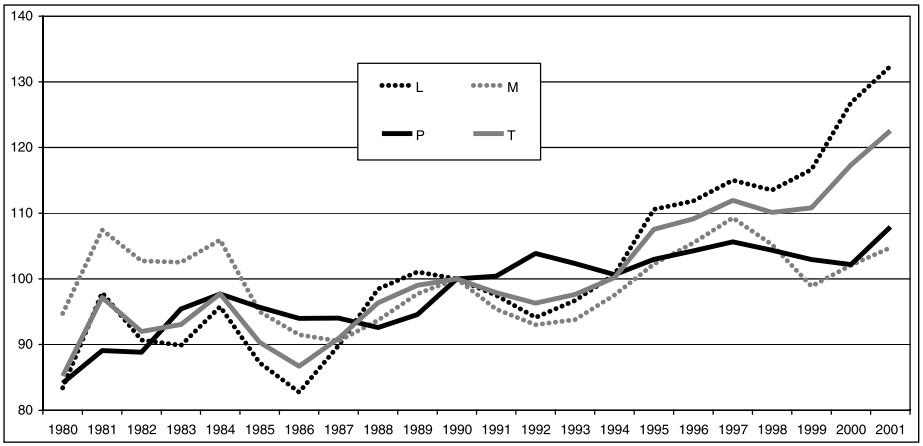
2. Percentage change in the average EPR between the period 1988-93 and 1994-98

Source: Own calculations with data from Fedderke and Vaze (2001); Trade and Industrial Policy Strategies Database.

Tariff liberalisation and manufacturing sector growth

Figure 1 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. [16]

Figure 1: Sectoral growth (real GDP 1990=100)



Source: Own calculations with data from TIPS.

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 earlier, 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 liberalised sectors and the manufacturing sector as a whole were on an accelerating growth path since the mid 1980s.[17] 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 cannot 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 liberalising sectors could be obtained by analysing some of the other indicators identified above.

Technology intensity and liberalisation

Due to data constraints, value of manufacturing sales was used as as proxy for manufacturing.[18] A link provided by the Department of Trade and Industry (DTI) was used in the classification of high, medium and low technology products.[19]

Table 2: Technology intensity of production

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Liberalised sectors											
% 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
Moderately protected sectors											
% 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
Protected sectors											
% 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: Own calculations with data from TIPS.

Table 2 provides an indication of the nature of manufacturing production during the 1990s. In terms of the classification depicted in table 2, 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 about 72 percent in 1993 before falling during the mid 1990s and then increasing again to about 72 percent in 2000. For the protected group, the production shares have been fairly constant (about 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 2 is that, while there was an increase in the volumes produced (as is evident from figure 1) 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 than would have been expected with the tariff liberalisation of the 1990s.

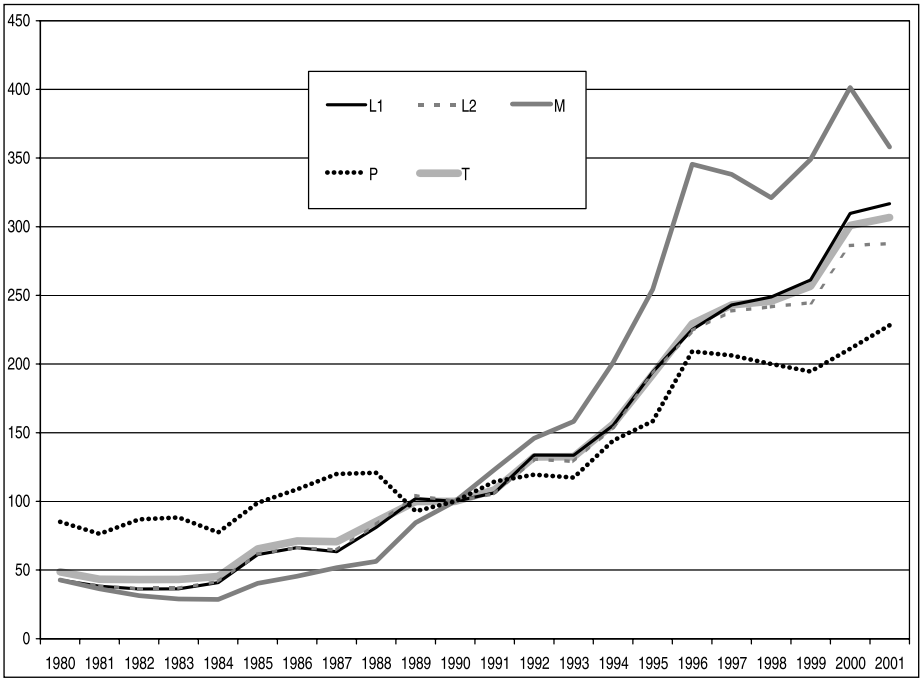
Tariff liberalisation and manufacturing exports

The preceding 2 sections provide an indication of the impact of tariff liberalisation on internal competitiveness. An indicator of external competitiveness is export performance. 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 2 shows how export volumes have evolved since 1990. The first point that emerges from figure 2 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 liberalised 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 liberalised sectors (L2) becomes less attractive.[20] 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 2: Real exports (1990=100)



Source: Own calculations with data from TIPS.

However, unlike these studies, there is no clear indication that trade liberalisation was the main stimulant to export production.[21] In addition, while trade liberalisation has not been de-industrialising, export production has specialised in products that are stagnating

in world markets (Tsikata, 1999), which raises further concerns about export production during the 1990s. The impact of tariff liberalisation on export production is thus still very much an open question.

Table 3: Manufacturing exports: 1990-2000 (% contributions)

	90	91	92	93	94	95	96	97	98	99	2000
Liberalised sectors											
low value tech products	37	37	34	32	31	33	32	31	32	29	27
medium tech products	60	60	61	62	60	58	59	61	59	62	66
high tech products	3	3	5	9	9	9	9	9	9	9	7
Moderately protected sectors											
low value tech products	27	30	40	40	39	40	32	41	39	45	40
medium tech products	73	70	60	60	61	60	68	59	61	55	60
high tech products	0	0	0	0	0	0	0	0	0	0	0
Protected											
low value tech products	95	92	89	90	89	90	89	88	90	88	88
medium tech products	5	8	11	10	11	10	11	12	10	12	12
high tech products	0	0	0	0	0	0	0	0	0	0	0

Source: Own calculations and data from IDC and TIPS

While the liberalised sectors have increased their exports of high technology products, the ratio has been fairly constant at about nine percent since 1993 – some two years before the implementation of the WTO offer.[22] The exports of medium technology products, have increased to aboutround 66 percent of total production in 2000.[23] For the moderately protected sectors there have been an increase in the export of low technology exports over the period. The protected sectors have, more than doubled their share of low technology exports from about five 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.[24]

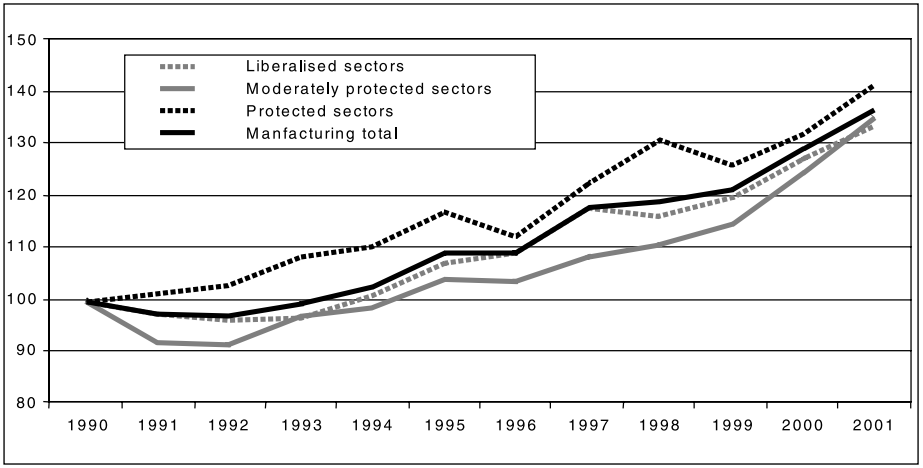
The impact of liberalisation on productivity

As mentioned above, one could have expected tariff liberalisation to influence both labour and total factor productivity trends during the 1990s. Figure 3 depicts the trends in labour productivity of the three groups over the 1990s.

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

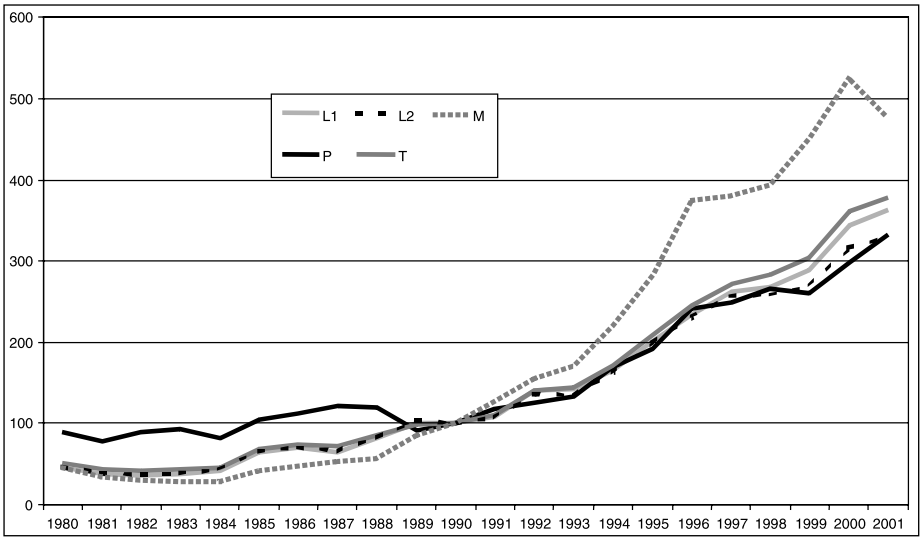
Figure 3: Real value added per employee (1990=100)



Source: Own calculations with data from TIPS.

A similar result emerges when one considers export production.

Figure 4: Real exports per employee (1990=100)



Source: Own calculations with data from TIPS.

Figure 4 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 4 shows the average annual contribution of total factor productivity to the economic growth of manufacturing sub-sectors for the 1980s and 1990s.[25]

Table 4: 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).[26] Hence, some caution should be exercised in interpreting the TFP measures provided in table 24.[27] Given these limitations the purpose here is to obtain some broad indications of whether tariff liberalising sectors have experienced TFP gains.

In table 4, column 3 and 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 human made fibres; wood and wood products) of the liberalising group (rows 1-19) have experienced higher contributions from TFP to economic growth. 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.[28] While the results in table 4 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.[29]

The basic conclusion is that there is no distinct positive influence 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.

Table 5: Import Penetration ratios

	Sectors	1990	1991
1	Wearing apparel [313-315]	5	7
2	Footwear [317]	4	8
3	Wood and wood products [321-322]	9	9
4	Paper and paper products [323]	11	10
5	Coke and refined petroleum products [331-333]	8	7
6	Basic chemicals [334]	33	35
7	Other chemicals and man-made fibers [335-336]	17	17
8	Plastic products [338]	7	7
9	Glass and glass products [341]	13	14
10	Basic iron and steel [351]	9	8
11	Basic non-ferrous metals [352]	22	20
12	Machinery and equipment [356-359]	45	44
13	lectrical machinery and apparatus [361-366]	23	23
14	Television, radio and communication equipment [371-373]	33	39
15	Professional and scientific equipment [374-376]	77	75
16	Motor vehicles, parts and accessories [381-383]	26	23
17	Other transport equipment [384-387]	28	51
18	Furniture [391]	2	2
19	Other manufacturing [392-393]	39	41
20	Leather and leather products [316]	17	20
21	Metal products excluding machinery [353-355]	9	9
22	Non-metallic minerals [342]	8	7
23	Printing, publishing and recorded media [324-326]	15	16
24	Rubber products [337]	14	16
25	Beverages [305]	4	3
26	Food [301-304]	5	4
27	Textiles [311-312]	18	21
28	Tobacco [306]	2	3

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

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 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 5.

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Average (1990-94)	Average (1995-01)
	7	8	8	6	9	10	12	12	16	18	7	12
	12	16	16	19	26	26	28	31	38	46	11	31
	9	12	11	11	12	11	11	11	13	13	10	12
	10	11	13	15	15	13	14	14	13	13	11	14
	7	6	6	7	14	11	15	12	11	16	7	12
	39	42	46	50	50	47	47	44	48	48	39	48
	18	19	21	22	25	25	28	29	32	34	18	28
	7	9	9	9	10	11	12	13	14	15	8	12
	16	18	17	18	22	23	27	26	27	24	15	24
	10	9	11	12	14	12	15	14	13	13	9	13
	19	20	20	28	31	28	45	31	49	24	20	34
	47	50	58	62	66	66	71	72	78	89	49	72
	23	26	31	33	30	29	34	33	34	39	25	33
	41	47	58	65	74	77	82	81	86	85	44	79
	73	76	76	79	84	87	94	92	94	95	76	89
	24	27	29	29	31	29	32	34	37	39	26	33
	58	61	54	65	54	95	85	90	92	93	51	82
	3	3	4	5	9	8	10	13	15	20	3	11
	44	44	51	49	53	51	57	55	58	61	44	55
	22	25	31	28	32	32	31	28	33	32	23	31
	9	10	10	11	12	12	14	15	15	16	9	13
	8	9	10	11	13	13	15	18	19	20	8	16
	14	16	18	18	23	18	20	19	20	21	16	20
	17	18	20	23	26	28	32	34	34	34	17	30
	3	3	3	3	5	5	5	5	4	4	3	5
	5	5	8	9	9	10	10	9	10	10	5	9
	20	20	22	23	24	24	26	26	27	28	20	26
	3	2	2	2	2	1	2	2	1	1	2	2

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 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.

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 article do not bear this out. This is probably due to tariff liberalisation not succeeding in increasing the rate of import penetration in liberalising sectors relative to non-liberalising sectors. Thus, in this sense tariff liberalisation did not necessarily increase the level of foreign competition in liberalising sectors relative to the other manufacturing sectors. It is thus not surprising that the liberalising sectors do not depict improved competitiveness relative to non-liberalising or lower liberalising sectors during the 1990s.

POLICY IMPLICATIONS

The government's commitment to its liberalisation programme cannot be doubted as is evident by the pace of tariff liberalisation which, in some cases, went beyond the requirements specified in South Africa's WTO offer (Bell, 1997). Thus, the limited impact of tariff liberalisation on the competitiveness of the manufacturing sector cannot be blamed on the extent of the liberalisation programme. Recently, government released a policy document entitled *Accelerating growth and development: The contribution of an integrated manufacturing strategy* (hereafter referred to as IDS) (DTI, 2002). The policy document outlines government initiatives pertaining to the development of the manufacturing sector. The recommendations mentioned hereafter are done with reference to the IDS policy document.

It should be categorically pointed out that while this study has shown that tariff liberalisation did not have the expected impact on the competitiveness of the manufacturing sector, it does not mean that increased protection would secure better results. In fact, there are strong theoretical justifications for tariff reductions on economic efficiency grounds. The benefits from tariff liberalisation are dependent on prevailing market conditions. Under conditions of perfect competition it is not unreasonable to assume that tariff liberalisation would promote competitiveness while, under conditions of imperfect competition, the results are ambiguous. Results in various studies have shown that while tariff liberalisation had an impact on the price of imports at the border, it did not have any significant influence on the domestic price of import substitutes. (Fedderke and Schaling, 2000; Fedderke, 2001: 28) These studies further show that pricing power has adversely affected competitive pressures in output markets. This suggests that there is room for improving the role of competition policy in creating the environment conducive for improved competitiveness.

There are indications that concentration in South African manufacturing is not only high but also on the increase (Fourie, 1996).[30] The fundamental objective should be to ensure that where market dominance may be necessary (e.g. to ensure economies of scale in production) it should not result in abuse of economic power. In order to improve competitiveness, competition policy and trade policy should be better co-ordinated.

According to Fourie and Smith (1993: 131) *"…there are sufficient empirical grounds for suspecting a significant interaction between concentration and import protection in the determination of industrial profitability".* The results suggest that this aspect warrants further research, particularly at the disaggregate sector level.[31]

Given that increased entry does not necessarily lead to better performance (Nickell, 1996; World Bank, 2002; Aw, *et al*, 2002) it is imperative that competition policy goes beyond just the mere facilitation of increased entry. While competition policy should address the overall developmental concerns of the country (Singh, 2002), it should also be sufficiently flexible to cater for the specific needs of individual sectors. The proposed measures specified in the IDS pertaining to the regulatory business environment for the manufacturing sector is an important first step in improving competitiveness trends in the future.[32] It should be noted that industrial competitiveness depends not only on improved efficiency but also on improved capabilities (Lall, 1990). The former requires increased competition while the latter may require some protection. Competition policy should be sensitive to prevailing conditions confronted by the different industries.[33] The East Asian experience, for example, has shown that successful industrial policy depends on the exploitation of economies of scale in production and linkages between sectors. Competition policy should be of such a nature that it facilitates this process.

The recent IDS recognises the importance of linkages between sectors. It emphasizes the importance of "integrated value matrices" for the establishment of competitive manufacturing capabilities (DTI, 2002). Viewing production as a value chain process implies that the end producer, together with all the other producers involved with the inputs used in the final product, also contribute to the competitiveness of the product. Viewed in this way, the issue of governance over the chain becomes one of the key issues affecting competitiveness since governance determines, *"…the division of rents from the operation of the chain as a whole, as well as, the dynamic evolution of the chain through new product development"* (Roberts, 2002: 15). The role of government is to facilitate an appropriate economic environment that promotes industrial competitiveness. In practice this entails ensuring that the incentives, factor markets and institutions all work together to promote competitiveness (UNIDO, 2003: 93).

It is widely accepted that institutions play an important role in economic development (North, 1990; Acemoglu, *et al*, 2001). Their influence stem primarily from their ability to *"…create incentives for desirable economic behaviour"* (Rodrik and Subramanian, 2003: 31). In the case of South Africa, there are a variety of institutions having an influence on industrial performance. They include, *inter alia,* the Industrial Development Corporation, National Empowerment Fund, Khula Enterprise Finance, Competition Commission, Competition Tribunal, South African Bureau of Standards, South African National Accreditation System, Ntsika Enterprise Promotion Agency, Council for Scientific and Industrial Research, National Co-ordinating Office for Manufacturing Advisory Centres and Sector Co-ordinating and Training authorities (SETAs). Industrial success depends on the co-ordination of the priorities and activities of these institutions. While sector or industrial policies may be in line with the country's overall objectives, industrial success depends on the accessibility and effect that policy has on individual firms.[34] The manufacturing

advisory centres (MACs), for example, have been established *"…to contribute significantly to the economic transformation of South Africa by supplying high-quality information and advisory services to SMMEs so as to ensure a quantum improvement in their growth and competitiveness"* (DTI, 2003: 3). However, the results to date indicate that while the programme has laudable intentions, its success has been somewhat limited, since other factors (e.g. access to finance, technological know-how, etc.) that have a direct impact on industrial competitiveness, have not been adequately addressed. There is an urgent need to co-ordinate the initiatives of all the above-mentioned institutions if programmes like the MACs are to produce the desired results.

In terms of the new institutional arrangements specified in the IDS, South African trade policy is to be co-ordinated by the Commission for International Trade Administration (CITA). CITA would be responsible for the administration of trade policy for the South African Customs Union (SACU). This in effect, requires that the national interests of South Africa would have to be balanced with those of the SACU countries. While agreement has been reached on the sharing of the tariff revenue, CITA once formally established, will have to ensure, that the customs procedures and institutional arrangements in the different countries are streamlined and synchronised so that industrial policy is not compromised across the SACU countries.

Industrial competitiveness is a multi-faceted construct, which goes beyond merely ensuring that production is efficient. Other factors like non-tariff barriers (e.g. labelling requirements, customs procedures and documents, etc.) to trade have a direct impact on a country's international trade performance. This issue is of particular relevance in the 21st century, which is being characterised by increasing levels of globalisation. South Africa has, in some respects, embraced globalisation with a view to benefiting from increased economic relations. Broadly speaking, the South African approach started off being multilateral (as in the GATT offer in 1994) and has since become more bilateral in nature. The bilateral agreements have taken the form of free trade agreements (FTAs) – some of which have already been concluded (e.g. with the SADC and the EU) and others that are considered (e.g. with the US, the Mercosur countries in Latin America, India and China). The FTA is a useful means of improving the competitiveness of South African products by securing privileged access to foreign markets, as well as, access to foreign investment and technology transfer initiatives that may not be easily available within a multilateral context; for example, in the case of the EU-SA FTA, a specific science and technology agreement was also signed to allow for co-operation on technological issues). While the FTA approach, as a means of stimulating exports should be welcome, it is imperative that government ensures that the perceived benefits from the FTAs actually do materialize. The experience to date shows that government resources have been mainly directed at the negotiations of these agreements, while not much attention is given to ensuring that the perceived benefits are realized after the agreement has been signed.[35]

As far as factor markets are concerned, competitiveness is highly dependent on improved industrial capabilities. According to Lall (1990), industrial capabilities include physical investment, the provision of human capital and technological effort. The importance of all these factors has been recognized in the recent IDS policy document (See

DTI, 2002: 27-29). However, concrete programmes still have to be developed to explicitly address these issues.

Finally, government has stated its intentions to, "…*accelerate the current trajectory of our economy…There are constraints in the domestic economy, our relationship to global production systems, and the changing basis of competitiveness that have to be removed. Old ways of thinking and working are no longer appropriate. A concerted effort is therefore required by government and all other economic actors to address these constraints and place the economy on a path that can achieve high growth, employment and equity"* (*op cit:* 1-2).

CONCLUSION

The results obtained in this article indicate that tariff liberalisation on its own has not, and cannot be relied upon in the future to secure improved competitiveness. A competitive environment characterizes the globalised world of the 21st century. The WTO is increasingly placing limitations on the use of conventional policy instruments to support industrialization. This, in effect, means that developing countries need to adopt a wider interpretation of industrial policy and the instruments to be used in supporting industrial development (Singh, 1996). In general, government policies should be directed at issues relating to efficiency in production, distortions in factor markets and institutional development.[36] It should be remembered that both theory and empirical evidence suggest that where deficient markets give distorted signals, intervention may be necessary to restore efficiency. The desired or appropriate level of openness may not entail completely free markets for trade and investment. In the light of market and institutional failures facing the acquisition of new technologies (UNIDO, 2003: 142), the role of government in promoting the appropriate trade and industrial policy should not be underestimated.[37]

NOTES

1 Baldwin (2003) argues that the foreign exchange shortage resulting from increased pressures to import capital goods (and also consumer goods) for reconstruction purposes after the war in some respects forced countries into adopting import-substituting policies.

2 The openness measure is a dummy variable and assumes a value of zero (closed economy) if any of the five factors fall below the benchmark criteria.

3 Harrison and Hanson (1999) also review the work of Sachs and Warner (1995). They show that the Sachs and Warner index (which attempts to capture the influence of trade, exchange rate and institutional aspects) is significantly flawed as a measure of openness. As a result of this flaw, the Sachs and Warner index does not establish a robust link between more open trade policies and long run growth.

4 On the issue of the convergence of product prices between trading countries, Knetter and Slaughter (1999) find little evidence of convergence toward common prices between Europe, US and UK. For Developing countries the evidence is mixed.

5 Since South Africa's trade policy reform during the 1990s consisted mainly of tariff liberalisation, we provide a brief survey of the international empirical evidence on the relationship between tariff liberalisation and economic growth.

6 This paradox was also confirmed by O'Rouke (2000).

7 Although, Chang (2002) argues that it is ironical that developed countries are presently vociferously propagating free trade policies when they themselves all used protection to industrialise.

8 The minister of trade, industry and tourism commissioned the Industrial Development Corporation, in collaboration with the Board of Trade and Industry, to *"…investigate the efficacy of the existing tariff protection policy" (IDC, 1990: ii).*

9 It is interesting to note that the objective of striving for international competitiveness is not meant to be isolated from social objectives. In fact one of the stated intentions of economic policy is *"to support a competitive and more labour-intensive growth path"* (RSA, 1996: 7).

10 For a review of South Africa's earlier trade policy stance see *inter-alia* Scheepers (1982); Holden (1992); Bell (1993, 1997) and Belli *et al* (1993).

11 Bell (1993) cites Michaely *et al* (1991) who found that a trade liberalisation programme is usually implemented with a change in political regime in developing countries.

12 Tsikata (1999: iv) cites that the food, textiles, clothing and footwear were the exceptions. These sectors experienced declines in exports.

13 Bhorat (2000) has found similar results for the period 1970-1995.

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

15 Inter alia see Corden (1966, 1971a, 1971b) and Milner and Greenaway (2002) for a useful overview of the ERP measure.

16 The Laspeyres price index formula was used to obtain the aggregate totals for the different groups.

17 Albeit there was a deceleration during 1989-1992.

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

19 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.

20 A strong argument could be made out 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.

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

22 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.

23 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.

24 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 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.

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

26 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.

27 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.

28 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.

29 See Fedderke (2002).

30 Although he argues that the concentration ratios are not increasing at an "*alarmist"* rate.

31 A disaggregate analysis would allow for the development of appropriate policies that could address the needs or problems at the industry or sub-industry level.

32 The IDS proposes a reform of the regulatory environment which would entail *"… corporate law reform, formulation of modern consumer protection legislation, improved international trade administration, promotion of good corporate governance, establishment of standards-quality assurance-and-trade metrology institutional framework*

and the development and implementation of appropriate policies for regulated industries and related public interest issues" (DTI, 2002: 46).

33 See Stewart *et al*, 1992 for a discussion of the relevant issues within a developing country context.

34 With the transition to democracy in South Africa, the issue of equity has rightly become the cornerstone of economic policy.

35 The results from the EU-SA FTA indicate that policymakers did not give sufficient attention to marketing the benefits of the agreement, as well as, setting up the necessary institutional arrangements (e.g. customs procedures and institutions to deal with rules of origin requirements) to ensure the realisation of the benefits (Rangasamy, 2001).

36 See Bora, *et. al* (1999) for a discussion on the impact of WTO rules on industrial policy within a developing country context.

37 The optimal level of trade openness and trade liberalisation remains a matter of debate (see Rodrik, 2001; Lall, 2001b).

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