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The State of Trade Policy in South Africa

Rashad Cassim, Donald Onyango
and Dirk Ernst van Seventer

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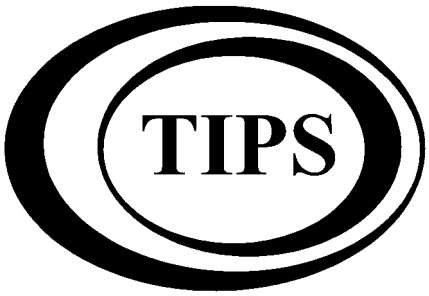

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LIST OF ACRONYMS

BTI	Board of Trade and Industry
BTT	Board on Tariffs and Trade (previously BTI)
CPI	Consumer Price Index
DTI	Department of Trade and Industry (South Africa)
EOI	Export-Oriented Industrialisation
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GDFI	Gross Domestic Fixed Investment
GDP	Gross Domestic Product
GEIS	General Export Incentive Scheme
HS	Harmonised System
IDC	Industrial Development Corporation (South Africa)
IMF	International Monetary Fund
ISI	Import-Substituting Industrialisation
MFN	Most-Favoured Nation
MIDP	Motor Industry Development Programme
QR	Quantitative Restriction
RCA	Revealed Comparative Advantage
RoW	Rest of the World
REER	Real Effective Exchange Rate
SA	South Africa
SACU	Southern African Customs Union
SADC	Southern African Development Community
SARB	South African Reserve Bank
SIC	(South Africa) Standard Industrial Classification
SITC	Standard Industrial Trade Classification
TFP	Total Factor Productivity
TIPS	Trade and Industrial Policy Strategies
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organisation

1. INTRODUCTION

The South African (SA) government, and the Department of Trade and Industry (DTI) in particular, have embarked on a policy framework in to ensure that the SA economy becomes competitive. In an increasingly traded global economy, it is recognised that national economic welfare will be enhanced by both greater efficiency, brought about by liberalisation, and SA's exports in the world economy.

The State of Trade Policy in South Africa aims to develop a rigorous approach to the analysis of trade reform and the impact it has had on aspects of SA's economy, - the overall macro-economy, export behaviour, labour markets, resource allocation and growth. The report consists of a synthesis of existing research in SA, as well as specifically commissioned research, and is intended to be a reference point for government, academia, the private sector and others.

1.1 WHY TRADE REFORM?

The SA economy has undergone a gradual process of trade reform in the last two decades. At the most basic level, trade reform is seen as the key to efficient resource allocation. Indeed, a growing body of literature shows that trade reform is more important in terms of its distributional effects than it is directly on growth, since resources are re-allocated from one sector to another as the economy is opened up to international competition.

A useful starting point would be to place the parameters of SA's trade regime in perspective to determine the current level and configuration of protection in the economy. More important is the development of a rigorous approach to the analysis of the impact of trade policy reform so far on the following aspects of South Africa's economy: the overall macro-economy, labour markets, export behaviour and economic growth.

The basic logic behind trade liberalisation is as follows: reduction of import protection reduces the anti-export bias and enables resources to flow from poorly competitive sectors to sectors with a comparative advantage. Is this happening in the SA economy? To what extent is this efficiency and allocative effect dependent on other factors such as transport logistics, the mobility of labour market and other factors? Moreover, the impact of trade liberalisation on the economy remains a contentious issue. Although there is no easily identifiable impact, what is clear is that the rationale for liberalisation is based on the fact that major inefficiencies exist in the economy and that trade reform, along with a series of accompanying measures, can play a critical role in spurring growth, albeit indirectly. A particularly complex problem that researchers face is how best to disentangle the impact of tariff liberalisation specifically from a range of other factors such as exchange rate movements, growth rates in importer and exporter countries, and other factors.

1.2 STRUCTURE OF THE REPORT

This report begins with a mapping of key indicators of the SA economy, focusing specifically on export, and to a lesser extent, import behaviour. This is followed by a review of trade policy in SA, and a brief history of trade liberalisation. The first section sets the tone for the rest of the report by asking: "How much progress has been made in liberalising the SA economy?"

The report then moves to a detailed and current review of nominal protection, effective protection rates and some anti-export bias measures. What is striking is that SA's tariff structure still remains very complex, with a combination of both ad valorem and specific taxes, together with non-tariff barriers. Over 75% of the approximately 7,865 tariff lines (at HS8 level) were bound at a maximum of 30%. Considerable costs in the form of forgone consumer surplus are incurred by maintaining tariff levels within the country. This is more pronounced given the value of the commodity and the level of the tariff. The import price elasticity of the commodity also plays a significant part.

This report identifies some of the impacts current trade policy has on the SA economy. It looks at the costs to the economy of tariff protection, as well as the impact of trade liberalisation on employment in the economy. Another major objective of the report is to put together the key elements of SA's export behaviour. To ascertain exactly how promising the country's export performance has been in the past few years. It looks at the overall trends in volume, composition of the export basket, destination of exports and any major obstacles encountered. This is done through the use of competitiveness measures, such as the real effective exchange rate, wage-productivity relationships and revealed comparative advantage.

1.3 LIMITATIONS OF THE REPORT

It is important to emphasise at the very outset that this report is not intended to cover every facet of trade policy in SA. The rapidly changing trade policy landscape since the conclusion of the Uruguay Round has seen the ambit of trade policy expand beyond tariffs and tariff liberalisation to encompass what are known as second-generation issues- today germane to trade policy. These include, but are not limited to, trade in services, competition policy, and trade and the environment. (A future *State of Trade Policy in South Africa* review will be entirely devoted to these issues.)

Another important aspect of SA's trade policy is the conclusion of at least two trade agreements with the EU and,The Southern African Development Community (SADC), as well as a reformulation of the Southern African Customs Union (SACU) agreement. While regionalism plays an important role in accelerating deeper economic integration with strategic partners to the benefit of the SA economy, the impact of these agreements may be premature, as they have been concluded in the last year or two.

This report has deliberately had a narrow focus on trade policy issues and has not paid much attention to industrial policy, specifically, the range of incentives that exists in the economy and how they have impacted on the economy.

The final aim of this report is to understand what role trade reform has played in SA and to grasp some key issues such as: changes in the trade regime, the state of the SA economy, particularly exports; and the state of tariffs. This kind of examination is an important prelude to more in-depth analyses of the trade regime.

1.4 SOME TRENDS IN THE SOUTH AFRICAN ECONOMY

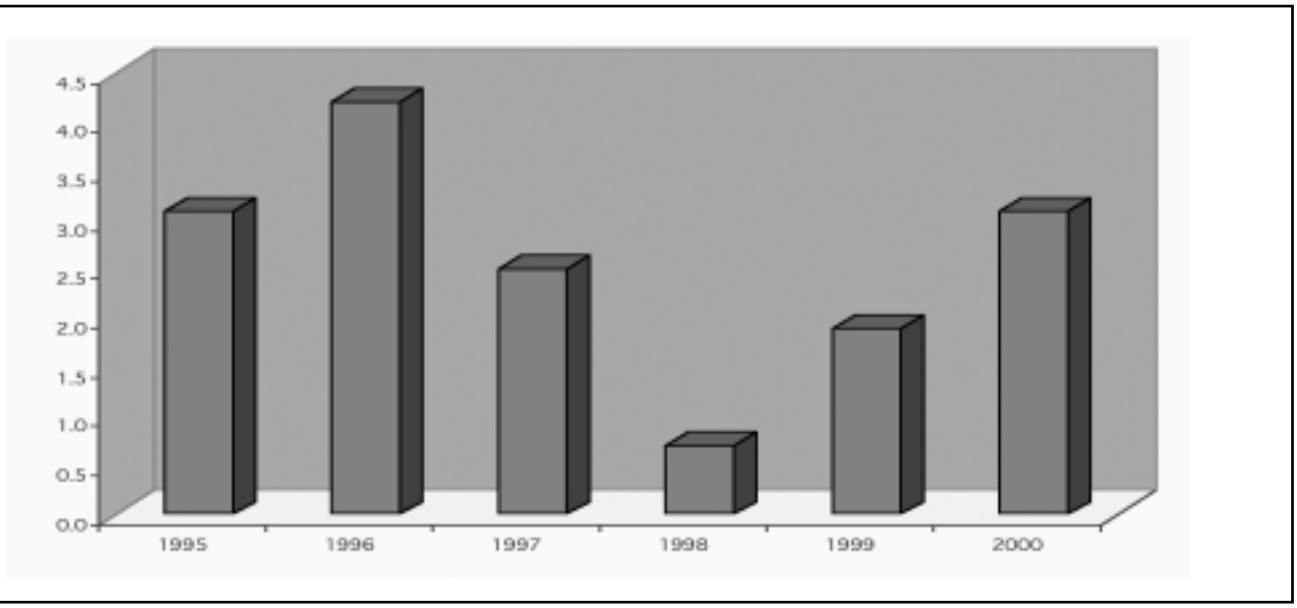
SA is classified as an upper middle-income developing country, and gross domestic product (GDP) at market prices at the end of 2000 was R874-billion, in current prices. Real GDP has grown annually by about 2.6% between 1995 and 2000 (Table 1.1).

Table 1.1: Trends in GDP growth

	1995	1996	1997	1998	1999	2000
GDP at market prices (current prices Rm)	548,100	618,417	683,744	735,086	795,575	873,637
Percentage growth in real GDP at market prices	3.1	4.2	2.5	0.7	1.9	3.1

Source: SARB - Quarterly Bulletin March 2001

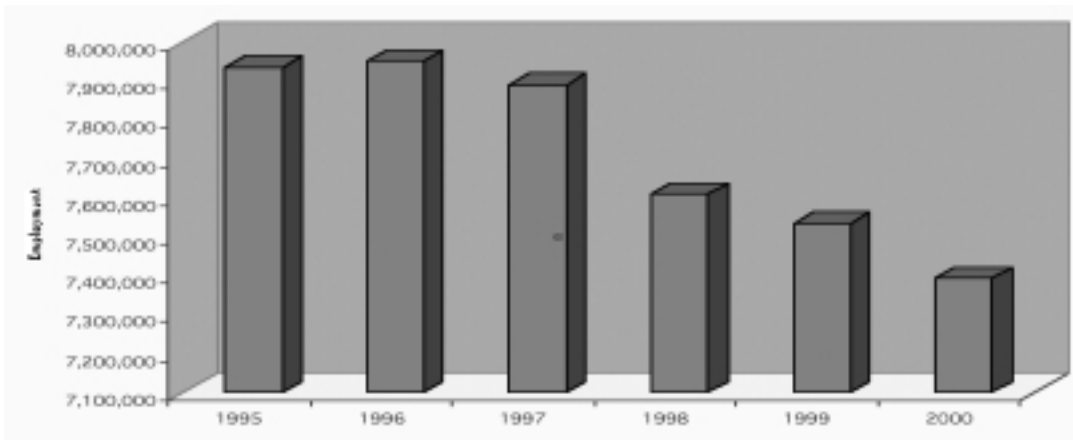
Figure 1.1: Percentage growth in real GDP at market prices, 1995-2000



Source: SARB - Quarterly Bulletin March 2001

According to Figure 1.1, SA is still recovering from the 1998 slowdown in the global economy, with a GDP growth rate of 3.1% in 2000. As the world economy continued to expand all through 2000, SA has enjoyed further signs of recovery. Despite economic recovery, high unemployment persists while the labour market is shrinking (Figure 1.2). Momentum gathered during the last two years of expansion therefore remains fragile, while social cohesion remains a highly sensitive issue 10 years after *apartheid* ended.

Figure 1.2: Employment



Source: TIPS SA Standardised Industrial Database

1.4.1 Components of Expenditure

The components of macroeconomic expenditure are shown in Table 1.2. During 2000, exports were the most important contributor to GDP growth, followed by domestic consumption. Gross domestic fixed investment (GDFI) has only a limited contribution, while the public sector has contracted out of the economy.

Table 1.2: Expenditure components of GDP and growth rate in 2000

	Share in GDP in 1999	Growth rate in 2000	Growth contributions
Government consumption	17.9	-2.5	-0.4
Private consumption	63.2	3.2	2.0
Gross fixed capital formation	16.3	1.3	0.2
Trade in goods and services balance	3.4		
Exports of goods and services	25.0	8.2	2.1
Imports of goods and services	-21.6	7.4	-1.6

Source: SARB - Quarterly Bulletin March 2001

1.4.2 Economic Structure

SA's economy is reasonably diversified, with manufacturing and services contributing a sizeable share of total GDP. The growth in real domestic product reported in 2000 can be explained by steady increases in the output of the three sectors (Table 1.3). Agriculture contributed to this result, owing to fortuitous seasonal climate behaviour. However, the shrinking of mining output by 3% in 2000 did not offset this good performance in agriculture. Gold production declined the most, counter-balancing increases in other sectors of the mining industry, such as platinum.

Table 1.3: Real GDP components and growth rates for 2000

	Share in GDP, 1999	Growth rate (%)	Growth contribution
Primary sector	**10.5**	**0.5**	**0.05**
Agriculture	4.2	3.8	0.2
Mining	6.3	-1.8	-0.1
Secondary	**26.3**	**3.2**	**0.9**
Manufacturing	19.7	3.6	0.7
Tertiary	**63.2**	**3.6**	**2.2**
Wholesale and retail trade	13.6	5.1	0.7
Transport, and communication	10.7	6.5	0.7
Financial intermediation	18.7	4.8	0.9
General government services	14.9	-1.2	-0.2

Source: SARB - Quarterly Bulletin March 2001

At the same time, output growth in the secondary sectors firmed in 2000, owing to net improvement in demand conditions (both at the domestic level and in terms of export demand). The tertiary sectors continued to expand significantly all through 2000. The buoyant commercial sector, aided by the boost in household disposable income, made a solid contribution to such growth. This trend was further enhanced by the dynamism in tourist activities and the expansion of cellular telephone and Internet networks. A slightly longer term perspective is presented in Table 1.4.

Table 1.4: Structure of output (value-added as a percentage of GDP)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Primary sector (%)	26.7	21.1	18.8	17.9	17.4	19.3	19.5	17.4	17.0
Agriculture	6.1	6.3	5.6	4.3	4.6	5.0	4.8	5.5	5.8
Mining	20.6	14.8	13.2	13.7	12.7	14.3	14.7	11.9	11.2
Secondary (%)	27.8	31.0	31.1	31.2	30.6	29.6	29.5	29.9	30.4
Manufacturing	21.6	24.1	23.8	23.6	23.1	22.0	22.0	22.5	23.0
Tertiary (%)	45.6	47.9	50.1	50.8	52.0	51.1	51.1	52.7	52.6
Wholesale and retail trade	12.0	13.1	13.3	12.9	11.7	11.2	11.2		
Transport, and communications	8.5	8.5	8.4	8.4	9.0	8.5	9.0		
Financial intermediation	10.7	11.0	11.9	12.5	13.0	13.3	12.4		
General government services	14.4	15.3	16.6	17.0	18.3	18.2	18.5		

Source: World Bank World Development Indicators (WDI), 1999
Note: Services incorporates unallocated items

A striking feature of Table 1.4 is the relative decline of agriculture and mining, and the considerable increase in the contribution of services to overall GDP. This would be indicative of decreasing reliance on hitherto traditional activities in the primary and secondary sectors.

2. SA's TRADE POLICY AND THE WORLD TRADE ORGANISATION (WTO)

2.1 INTRODUCTION

Trade liberalisation in SA was initiated about 20 years before the country bound its reform programme to the WTO in 1994. One of the first signs of trade liberalisation in SA was the introduction of export subsidies in the 1970s, as an attempt to counter the anti-export bias of import protection. On the import side, trade liberalisation focused primarily on the replacement of quantitative restrictions (QRs) with equivalent tariffs and other duties. The 1980s was, however, characterised less by import liberalisation than it was by simply attempting to improve conditions for exporters. These were in the form of custom duty drawbacks and duty exemptions. In other words, some trade liberalisation occurred in the midst of high levels of anti-export bias.

The move toward trade liberalisation continued in the 1990s with the General Export Incentive Scheme (GEIS), promulgated in April 1990 to replace the export incentives of the 1980s. The GEIS was designed as an economy-wide package, based on value-added and local content, and provided considerable incentive to export. When SA signed the Genereal Agreement on Tariffs and Trade (GATT) in 1994, it was agreed that the GEIS would be phased out, and a three-year phase-out period began in April 1995. In some ways the introduction of GEIS was not fundamentally different from schemes in the 1980s insofar as it encouraged exports by addressing the anti-export bias on the export incentive side of the equation rather than through import liberalisation. It certainly was more far-reaching than anything introduced in the 1980s.

By the end of the 1980s, it was clear that SA exports had not changed fundamentally, with primary products, particularly minerals, still dominating the export basket. One major problem was that for most firms, the anti-export bias remained strong, which meant that there was still no real incentive to export. Manufactured exports increased to some extent in the early 1990s with the introduction of the GEIS, but this was at great cost to the fiscus.

Not unlike many other middle-income developing countries, SA alternately travelled the paths of import-substituting industrialisation (ISI) and export-oriented industrialisation (EOI), as documented in various studies. Notable among these are Holden (1990), Bell (1993), Belli *et a*l. (1993), Strydom (1995), and Jenkins and Siwisa (1997), which chronologically identify the stages of the country's industrialisation. From 1925 onwards, SA elected to adopt ISI, not only as a vehicle for industrialisation but also to reduce its reliance on exports of agricultural produce and gold, together with dependence on the UK.

However, with the easy stage of ISI exhausted, SA opted not to switch to EOI but rather to deepen ISI in capital-intensive upstream heavy industrial and chemical ventures such as Sasol, Atlantis Diesel Engines and Mossgas. This was done behind a wall of tariffs, which, while moderate in comparison to other countries, was further complicated by a complex system of customs duties and import surcharges, with exemptions being granted on a firm-by-firm basis. Belli et al. (1993) observe that these implied importer-specific rather than product-specific tariffs.

According to Belli et al. (1993), a World Bank study into the trade regimes of 32 developing countries corroborates this complex system of protection, placing SA just above the median out of the sample of countries studied, the distinguishing features of the country's protective regime being complexity and a high level of dispersion. With 35 *ad valorem* tariff rates, 2,685 items with specific/formula/other types of rates and four levels of import surcharge rates, SA, they noted, displayed an exceptionally high ranking with regard to the coefficient of dispersion of tariff rates. This scenario was further compounded by the fact that the manufacturing sector was often able to lobby the Board of Trade and Industry (BTI), which traditionally adopted a sympathetic stance to such applications (Roberts, 1998).

Hence there was increased protection from international competitors. In return for protection, these industries were expected to supply at least 60% of the domestic market, while criteria such as contribution to employment creation, economic growth and technological development were also taken into account. This was in an attempt to identify areas of potential comparative advantage (McCarthy, 1998).

As Belli *et al*. (1993) observe, in the decades after 1925, ISI under "moderate and selective" protection was the driving force behind the country's industrialisation, together with a wide-ranging system of QRs. The explanation for this inward-looking approach to industrialisation is couched in the strategic industry argument. McCarthy (1998) argues that this involved the SA government of the time selecting industries for fast-track development through the provision of special assistance, and the establishment of a domestic motor industry. From the 1970s, when SA's status as a pariah state became more pronounced, the high and sustained growth realised in the immediate post-World War II era began to slacken, accompanied by a weakening and stagnation of the domestic economy.

2.2 THE FIRST LIBERALISATION EPISODE (1972-1977)

The first liberalisation episode was heralded by the 1972 report of the Reynders Commission of Inquiry into SA's export trade. Mandated with the identification and removal of obstacles hindering free trade, and suggesting ways of bolstering SA's export competitiveness, the Reynders Report recommended the introduction of an "export development assistance scheme" to spur exports, involving a tax allowance for marketing expenses. The report further advocated the replacement of QRs with tariffs lower than those implicit in the QRs, together with a real devaluation of the Rand.

The Reynders Report recommended the promotion of exports in the manufacturing sector as a long-term solution to meeting future foreign exchange needs, and suggested the introduction of export incentives to countervail the effects of distance from markets and the influx of subsidised exports from other countries (Jenkins and Siwisa, 1997). These incentives included direct cash grants, tax concessions on export turnover and export profits, rail freight concessions, tax concessions on the use of tariff-laden inputs, and rebates on import duties paid on imported inputs. The Reynders Report also emphasised the need to reduce reliance on gold as a source of foreign exchange, and more specifically to diversify into the export of non-gold items.

Bell (1993) notes that this first liberalisation episode was relatively mild, its effects being largely eroded by a substantial real appreciation of the Rand owing to a gold-led export boom, which culminated in the reduced competitiveness of SA's manufactures, and increased calls for protection. This, together with the prevailing world recession in the early 1980s, lent credence to the notion that exchange rate management and the level of demand were more important determinants of export levels than the export incentives offered in the early 1970s. This conclusion contrasts with a study by Holden and Gouws (1997), which found that not all manufacturing exports were influenced by the exchange rate, since some industrial sectors enjoyed greater productivity as the proportion of output exported grew.

2.3 THE SECOND LIBERALISATION EPISODE (1983-1990)

Bell (1993) identifies 1983 as the beginning of a more intensified period of trade liberalisation. This period was characterised by a decline in the pace of economic expansion, which can be ascribed to the collapse of the gold price, a sharp decline of exports in general, burgeoning foreign debt and heightened political instability. In the period between the onset of the second episode and the end of the first, however, notable developments included the establishment of the Van Huyssteen Committee, which was charged with the task of revising the country's system of export incentives.

Revision culminated in the introduction of a more powerful system of export incentives designed to ease the pressure on exporters of the comparatively higher cost of local production and delivery to overseas markets. Customs duty drawbacks and duty exemptions were granted to exporters. Bell (1993) dismisses this system as unwieldy as it was not used to acquire free access to more competitive inputs. The incentive system was further negated by the massive real appreciation of the Rand, accompanied by a worldwide recession, which, as discussed in the previous section, led to the beginning of a sharp decline in SA's exports.

In the second episode of liberalisation, the abolition of the dual exchange rate in 1983 (which was to be reimposed two years later) was accompanied by the implementation of export subsidies to reduce the anti-export bias inherent in the economy. The latter flowed from the findings of the Committee on Industrial Development Strategy (the 1983 Kleu Report), which also advocated moderate protection and periodic tariff reviews in an attempt to temper the cost-raising effect of tariff protection (McCarthy, 1998). The reduction in QRs and their replacement with tariffs lower than those implicit in the QRs would be construed as an aspect of trade liberalisation.

The Kleu Report was critical of existing export incentives, which neither favoured domestic intervention nor created incentives for technical innovation, querying the merits of uniform versus selective export assistance, as uniform assistance would benefit even those exporters who needed it least.

The process of trade liberalisation was further enhanced in 1985, when the government changed the publication of a positive list (which specified items needing no approval for importation) to a negative list of items that needed approval prior to importation. Bell (1993) identifies this action as a major step in the process of trade liberalisation. In the same year, however, a debt crisis arose, which can be attributed to a dramatic reduction in foreign direct investment (FDI) and short-term capital inflows, culminating in a large and sustained balance of payments deficit.

This resulted in some policy reversals, with the reimposition of the dual exchange rate system coupled with a significant real depreciation of the Rand and the introduction of a 10% import surcharge. The latter contributed to an increase in the weighted average of the effective protection rate from 30% to 70% (in 1987 estimates). Effective protection rates ranged from a low of 1.0% (for non-electrical machinery) to a high of 348% for synthetic resins, compared to a range of 1.0% to 143% for the same commodities in the preceding period (Jenkins and Siwisa, 1997).

Toward the end of the 1980s, SA's commitment to trade liberalisation became more evident, especially with the Board on Tariffs and Trade (BTT) - which had succeeded the BTI - hardening its stance towards private sector requests for protection. In 1989, only 20% of such requests were supported, as opposed to 38% in 1988 and 65% in 1987. Export promotion was further enhanced by the introduction in 1989 of sectoral "structural adjustment programmes". These sectoral programmes had been at the heart of the BTI's 1988 policy document A Policy and Strategy for the Development of Structural Adjustment of Industry.

According to Black (1993), these programmes were aimed at enhancing the competitiveness of local industry via selection and targeting, on the grounds that comparative advantage was not a static concept and could be created by governments. Emphasis was also laid on the role of the state regarding technology transfer policy, with foreign exchange applications being evaluated on criteria such as the amount of royalty payments, restrictive clauses (on exports) and the existence of alternative local sources of technology. As Black (1993) notes, these programmes generated considerable conflict between the DTI and the BTI, with the former criticising the complicated and unmanageable programmes that were clearly unaffordable on the grounds of insufficient staff for implementation and openness to fraud on the part of exporters.

2.4 TRADE LIBERALISATION AFTER 1990

The beginning of the 1990s was marked by the introduction of the GEIS, which was mainly designed to help exporters offset the price disadvantage they faced in international markets, and implemented through a selective system of liberal tax-free grants. These grants increased through four phases of higher value-added and domestic content, with industries characterised by both high value-added and high local content qualifying for a nominal subsidy of 19.5% of export turnover, while those firms with low value-added and low domestic turnover qualified for only 2%. The GEIS also took into account fluctuations in the Rand value compared to a basket of major international currencies. Imported materials benefiting from the duty drawback system were, however, ineligible for any compensation under the GEIS scheme.

The introduction of the GEIS was closely followed in June 1990 by the publication of a study by the Industrial Development Corporation (IDC) entitled *The Modification of the Application of Protection Policy (IDC, 1990)*. This report was a major turning point as far as liberalisation was concerned, and argued that the scope for further ISI was limited, necessitating a shift to EOI. In contrast to the BTT's structural adjustment programmes, the IDC report advocated a much more uniform and lower tariff structure, arguing that the prevailing system was defective owing to the cost-raising implications of a relatively high protective structure, as well as the resource misallocation arising from sectoral variations in protection levels (Black, 1993). The IDC report identified, inter alia, the absence of regular tariff reviews, limited further opportunities for ISI, a lack of highly skilled personnel to administer selectivity in an effective manner, and the excessive use of cost-raising formula duties as warranting a process of structural adjustment towards EOI. Another highlight of the IDC report included the lowering of protection, to be achieved by the replacement of formula duties with more specific anti-dumping measures, and supplemented by the gradual downward adjustment of tariffs to pre-determined levels within a four- to five-year timeframe. The only exceptions to this would be with regard to industries that still qualified for protection at similar levels to those prevailing in more established industries.s

Various other measures were also proposed with the aim of expanding exports. These included lower corporate taxes, encouragement of higher domestic savings, realistic exchange rate policies and an improvement in the supply of skilled labour.

2.5 SA AND THE WTO

Notwithstanding some trade liberalisation in the 1980s, it is really in the 1990s that a more significant and sustained process of liberalisation began. The WTO in particular has been symbolically important in terms of binding SA's tariff phase-down schedule.

SA's offer to the WTO consisted of a five-year tariff reduction and rationalisation programme, which entailed reducing to six the number of tariff categories, which had previously numbered over 100. These were to be at the rates of 0%, 5%, 10%, 15%, 20% and 30%, with any discretionary changes to the system disallowed. The only exceptions to the five-year tariff liberalisation process were the clothing and textiles and the automotive sectors, which were granted eight years to attain the levels made in the WTO offer.

Average weighted import duties were also to be reduced from 34% to 17% for consumption goods, 8% to 4% for intermediate goods, and 11% to 5% for capital goods. With the GATT/WTO bindings for these categories being 26%, 4% and 15% respectively, SA's commitment to the opening up of these sectors to foreign competition was implicit.

The tariff phase-down schedule under the WTO is shown in Table 2.1, and it can be seen that SA's average tariff declined from 11.7% to 5.3% in 2000.

Table 2.1: Tariff phase-down under the WTO

New ISIC	Description	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
3	Textiles	30.1	33.8	31.8	24.9	23.4	21.9	20.3	18.7	17.3	17.3	17.3
4	Clothing, excl. footwear	73.7	73.6	68.2	54.6	50.5	46.4	42.4	37.7	33.2	33.2	33.2
5	Leather and leather products	14.9	14.8	14.1	16.5	15.7	14.8	14.8	14.8	14.8	14.8	14.8
6	Footwear	37.5	41.6	39.1	36.8	34.2	29.1	29.1	29.1	29.1	29.1	29.1
7	Wood and wood products	13.9	3.6	3.4	3.5	3.3	3.1	3.1	3.1	3.1	3.1	3.1
8	Paper and paper products	9.6	9.3	9.1	8.8	8.7	8.5	7.9	7.3	6.8	6.2	5.6
9	Printing and publishing	8.1	1.3	1.2	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0
10	Petroleum and petroleum products	1.6	-	-	-	-	-	-	-	-	-	-
11	Industrial chemicals	9.3	7.5	7.5	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
12	Other chemical products	9	3.8	3.7	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5
13	Rubber products	30.5	14.5	14.1	15.8	15.4	14.9	14.6	14.4	14	14	14
14	Plastic products	19.8	14.7	13.7	13.2	12.6	12	12	12	12	12	12
15	Glass and glass products	11.8	9.5	9	8.3	7.9	7.6	7.6	7.6	7.6	7.6	7.6
16	Non-metallic mineral products	10.6	8.7	8.1	8.4	8	7.7	7.7	7.7	7.7	7.7	7.7
17	Basic iron and steel products	7.6	4.4	4.2	4.2	4.1	3.9	3.9	3.9	3.9	3.9	3.9
18	Non-ferrous metal products	2.3	2.3	2.3	2.3	2.2	2.0	2.0	2	1.9	1.7	1.7
19	Metal products, excl. machinery	13.1	8.2	7.8	7.8	7.6	7.4	7.4	7.4	7.4	7.4	7.4
20	Non-electrical machinery	6.5	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3
21	Electrical machinery	11	6.1	6	5.8	5.8	5.7	5.7	5.7	5.7	5.7	5.7
22	Radio, television and communication apparatus	12.1	5.1	3.7	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
23	Professional equipment etc.	7.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
24	Motor vehicles, parts and accessories	55.4	33.5	31.7	29.3	27.9	26.1	24.8	23.2	22.1	22.1	22.1
25	Other transport equipment	1.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
26	Furniture	28.1	21.4	20.8	20.2	19.6	18.9	18.9	18.9	18.9	18.9	18.9
27	Other manufacturing	2.9	1	1	5.2	5.1	5	4.9	4.9	4.9	4.9	4.9
28	Mining	2.7	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Total	11.7	7.2	6.8	6.1	5.8	5.5	5.3	5.1	4.9	4.9	4.9

Source: IDC

Other aspects of the WTO offer included:

- Increasing the proportion of bound tariffs from less than 20% to just over 50%;
- Increasing the percentage of bound zero-rated tariff lines to just over 25%; and
- Reducing the simple average tariff for industrial tariffs by one-third in a phased reduction programme (GATT, 1995).

For the agricultural sector, liberalisation first took the form of tariffication of QRs, followed by the reduction in diversity of *ad valorem* tariffs. While the absolute number of tariff lines was well below the 2004 target by the end of 1996, the range of tariffs is still comprehensive. In 1996, for instance, these ranged from 0% to 131.5%, while the WTO-bound rates ranged from 0% to 597%. It must be noted, however, that the requirements of the Marrakesh Agreement specify maximum levels of duty for agricultural products, which are in general much higher than those for industrial products. Moreover, SA also binds the rate of customs duties on agricultural products at a level that is necessary to increase the price of imported products to the imported price level of the SACU.

Industrial products, on the other hand, had tariffs in 69 categories, resulting in a large divergence from the 2004 target of 17 categories. For industrial products, it is envisaged that all tariffs below 3% will be zero-rated, while tariffs on inputs will be lowered and peaks in absolute tariff levels reduced. Further, where protection is not warranted, tariffs will be reduced to 0%. The ultimate aim will be to reduce the plethora of current tariff lines to six tariff categories. For instance, in 1996 there were 1,710 tariff lines (representing 31% of all tariff lines) above the 30% maximum. With the most urgent simplification of tariffs being in this category, it is envisaged that by 2004 there will be only 17 categories; all tariffs will be below 30%; and only 446 (or 7%) of all tariff lines will be in excess of 30% (it seems inconsistent to argue that on the one hand all tariffs will be below 30% and only 446 of all tariff lines will be in excess of 30%).

Besides tariff liberalisation and the abolition of QRs, SA has also made significant moves towards strengthening bilateral ties with its main trading partners. This has mainly taken the form of free trade areas, the most important of which are discussed below.

The EU-SA Free Trade Agreement (FTA), which came into force in January 2000, was the culmination of five years of protracted negotiations. This asymmetric agreement entails the liberalisation of tariffs on 95% of EU imports from SA, mostly between 2000 and 2003. Furthermore, by 2010, almost all of the EU's imports from SA will be liberalised, the only exceptions being agricultural exports and wines and spirits. The latter is subject to a separate accord.

SA is required to free 86% of tariffs on imports (effectively 73% of all industrial sector tariff lines) from the EU, spread over a 12-year period. The only exception is in the case of tariff lines in sectors like clothing and textiles, footwear and automotive products, where tariffs will be scaled down but not eliminated altogether.

The SADC Trade Protocol was concluded in August 1996, although it has taken some time for the majority of member states to ratify the treaty (by 2000, seven of the 12 member countries had done so, one country short of the number needed for the Protocol to come into force). In addition, there were other contentious issues outstanding, such as rules of origin for clothing and textiles and cane sugar, dispute settlement mechanisms, and customs and trade facilitation. Trade statistics from the DTI show that 99% of tariff lines, consisting of 97% of imports from SADC, will qualify for duty-free access to SA by 2005, with tariffs on 69% of SADC imports being zero-rated upon implementation of the Protocol. It is estimated that 85% of the Protocol will be in effect by 2008, with full-scale liberalisation scheduled for 2012. Once again, this is an asymmetric arrangement, with SA liberalising most of its sectors to imports from SADC countries faster than they would for imports from SA. However, it should be pointed out that there is considerable backloading in the proposed phase-down, and it remains to be seen whether there is sufficient political will to stick to the proposed schedules (Flatters, 2001).

2.6 HOW MUCH PROGRESS HAS BEEN MADE TO DATE?

Given above are details of the nature and form of trade reform that the SA government presented to the WTO in the early 1990s. How credible have the commitments been? Have they been far reaching enough in terms of the WTO offer?

Table 2.2: Tariff changes at a glance, 1990-1999

	All rates, 1990	All rates, 1996	All rates, 1999	Positive rates, 1999
Number of tariff lines	12 500	8 250	7 743	2 463
Number of different rates (bands)	200	49	47	45
Minimum rate (%)	0	0	0	1
Maximum rate (%)	1 389	61	55	55
Unweighted mean rate (%)	27.5	9.5	7.1	16.5
Standard deviation (%)	-	-	10	8.6
Coefficient of variation (%)	159.8	134	140.3	52.2

Source: Lewis (2001)
Note: Positive rates include only non-zero tariff lines; all rates include positive rates, zero and not available entries.

From Table 2.2 it is evident that the pace of tariff liberalisation has considerably slowed since 1996, with only a small reduction in tariff bands, a modest decline in the maximum tariff and a small increase in the tariff code dispersion (as measured by the coefficient of variation (Lewis, 2001)). What is striking is the persistent high dispersion in tariff rates.

Nevertheless, Table 2.3 indicates that some progress has been made with regard to trade reform. The applied rates in 2000 are less than those of 1996, with the reduction in agriculture being more dramatic.

Table 2.3: 1996 and 2000 average import-weighted tariffs

Category	1996 Applied rates (%)	2000 Applied rates (%)
Agricultural products	9.23	1.4
Industrial products	11.4	8.6
Average	11.3	7.3

Source: IDC; Van Seventer, 2001

Less progress has been made on creating greater uniformity in the range and number of tariffs that exist in SA. One of the objectives of SA's WTO commitment was to reduce the overall tariff bands to six categories. However, there are currently still close to 50 bands. One of the key priorities is to consider simplifying the tariff structure. There are many positive reasons why a simple tariff structure is superior to the current regime. One of the most important is that from an administrative point of view it is easy for customs to regulate products that fall into one of only six tariff bands.

A highly dispersed and cumbersome tariff structure may mean that protection remains uneven, and gains from openness may be limited. Moreover, with considerable tariff peaks, trade reform may not be completely successful in encouraging exports, especially for those sectors that rely on internationally competitive inputs. Without resorting to wholesale liberalisation, the streamlining of tariffs will ensure that tariffs peaks do not hinder efficiency.

2.7 INSTITUTIONS AND TRADE POLICY FORMULATION IN SOUTH AFRICA

The main thrust of tariff liberalisation under the WTO has been the reduction in tariff lines as well as tariff levels. Despite the liberalisation of the SA economy and the decline in average economy-wide applied tariffs, some key challenges remain. The tariff system is still cumbersome, with over 7,000 lines. And tariff peaks still exist for a number of broad categories such as processed foods, motor vehicles and components thereof, tobacco products, rubber products, and clothing and textiles.

While SA has in the past used tariffs selectively to encourage industry, the principal government department mandated with the formulation of trade and industrial policies – the DTI – has adopted a new approach aimed at ensuring predictability in policy. For trade reform to be successful, it has to be transparent and credible. Credibility means that there should be no policy reversals (increasing tariffs in response to an appeal from a lobby group). Policy uncertainty is an important deterrent to investment (by contrast, policy certainty is the hallmark of successful and growing economies). Research shows that private investors need to be guaranteed that governments do not renege on their commitment to reform. In view of this, government has embraced the view that SA should have a clear and transparent phase-out of tariffs that allows for certainty in investment decisions.

The reform of tariff policy in SA has also seen the role of the BTT change. The main role of the BTT under ISI was to promote industrial growth by investigating, at the request of the private sector, the imposition of additional protection to aid the development of the economy. From 1996 onwards, the BTT has investigated cases of dumping and disruptive competition, and advised the Minister of Trade and Industry accordingly. The BTT has also considered applications for protection on the basis of the relevant sector's contribution to the economy, export potential, local content, value-added and growth in the industry.

In view of the changing policy landscape and the need to modernise institutions accordingly, the DTI has proposed the establishment of a new Trade Administration, whose activities will be central to the success of trade policy reform. Its task is to adhere effectively to a clear policy framework, and implement reforms accordingly. Similarly, the Administration should ensure that SA exporters are not treated unfairly on the international market through the abuse of anti-dumping measures or other barriers. Ultimately, the BTT and its successor, the new Trade Administration, should encourage the use of more supply-side measures to boost industrial output.

In view of SA's conformity to WTO commitments and the high costs of reversing applied tariffs, it is envisaged that a major role for the new Administration will be in the area of contingency protection that is brought about by unfair imports. Although the Administration will welcome advice from firms, it is important that it acts in the interest of the national economy. In line with the policy framework, there is not much scope for the selective increase of tariffs. On the contrary, the Administration should examine how current tariffs rates still encourage inefficiency and act as deterrents to growth. Moreover, an important role would be to administer contingency protection, but under very specific circumstances.

A detailed analysis of the tariff schedule for 2000-2001 follows in Section 3.

3. THE LEVEL AND VARIATION OF TARIFF RATES: AN ANALYSIS OF NOMINAL AND EFFECTIVE TARIFF RATES IN SA FOR 2000 AND 2001

3.1 INTRODUCTION

This section presents a first attempt at analysing the tariff schedule that is applicable to SA imports – or imported inputs used to produce exports – with the aim of showing various ways in which these can be analysed on an ongoing basis. The analysis in Section 2 suggests that tariffs have declined over the period 1997-2001, most notably for manufacturing. However, further tariff liberalisation has been slow in the last couple of years. About 25% of the HS8 commodity lines are faced with non-*ad valorem* tariffs, although the value of imports involved is not more than 4% of total imports in 2000. While tariffs alone do not provide a comprehensive picture of the nature of protection, they do provide an initial indication of the price wedge between domestic and foreign markets. It is important to study tariffs because their structure and form may have an important bearing on their efficiency. Highly dispersed and cumbersome tariff structures imply both uneven protection and limited gains from openness. In addition, tariff peaks may be indicative of trade reform that is not entirely successful in encouraging exports, especially for those sectors that rely on internationally competitive inputs.

3.2 NOMINAL TARIFFS

Through the use of recent and detailed tariff schedules from the DTI, and applying at the most detailed level the same import data published by Customs and Excise, it is possible to conduct various tariff analyses. A cursory comparison with earlier tariff analysis suggests that tariffs have declined over the period 1997-2000, notably for manufacturing. However, progress has been slow in the last couple of years.

This analysis uses the HS8 most-favoured nation (MFN) tariff schedule for July 2000 and March 2001 and HS8 level import data for 2000, since one of the objectives of adhering to a rigid tariff liberalisation path – such as the one chosen by the SA government – is to provide certainty and stability to importers and investors. It is also assumed that the July 2000 schedule is representative for the full 2000 calendar year. Though contestable, this assumption is probably a good departure point to get an initial tariff analysis off the ground.

This analysis begins with the tariff schedule itself, followed by an application of the tariff schedule to the trade data with the aim to identify tariff peaks, and a brief look at tariff differentiation in the context of several FTAs recently concluded by SA. Although the results present an interesting snapshot of the current tariff schedule and where it may have an impact, it offers only a limited intertemporal view and is essentially a static analysis. What is required is an analysis on a recurrent basis so that such an intertemporal view can be obtained. The analysis therefore concludes with recommendations as to how the DTI should consider maintaining a database and system to undertake tariff analysis on a regular basis.

3.2.1 The Tariff Schedule as at July 2000

This section starts with the July 2000 schedule, followed by a view on the March 2001 schedule, the former being of importance in the absence of matching trade data for the latter. The section ignores tariffs on imports from the EU and SADC, which may or may not be exempt from import duties at the time of writing (but were applicable at the time of analysis), and for reasons of convenience, disregards rebates. Information in this regard would obviously be crucial to any future application along the lines suggested in this section.

The HS8 MFN tariff schedule as of July 2000 identifies 7,824 commodity lines and 211 unique tariffs consisting of *ad valorem*, specific, mixed, compound and other tariffs, as well as combinations thereof. These tariffs are shown in Table 3.1. In row 1, it can be seen that the highest tariff of 55% appears once, while the zero tariff occurs about 3,500 times - for about 45% of the HS8 commodity lines identified. Other frequent *ad valorem* tariffs are 5% (312 lines, see row 33), 10% (513 lines, see row 27), 15% (522 lines, see row 21), 20% (533 lines, see row 15), 25% (116 lines, see row 11) and 30% (153 lines, see row 9). The number of unique *ad valorem* tariffs amount to 35. For 1999, Lewis (2001) still counted 44 tariff bands. Hence, some rationalisation has taken place between 1999 and 2000, although a different source was used in the form of the United Nations Conference on Trade and Development (Unctad) TRAINS database, which may or may not have added or converted some non-*ad valorem* tariffs.

Specific tariffs and the combination of specific and *ad valorem* tariffs in total apply to almost 2,000 HS8 commodity lines, which constitute about 25% of all lines identified. The most frequently used combination of specific and *ad valorem* tariffs is "22% or 30% with a maximum of 1,000c/kg," which occurs about 188 times (see row 175). Another combination tariff that is popular is "22% or 30% with a maximum of 2,020c/kg" which occurs 95 times (see row 117). Having as many as 200 different tariffs may not be an administrative burden if all imports are bar-coded and the system automatically calculates and assigns the appropriate import taxes. Whether this is in fact the case at SA border posts is unclear.

Table 3.1: Tariffs identified by Customs and Excise, July 2000

Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines
	1	2	3		1	2	3		1	2	3
1	55.0%	1	0.0	71	40% or 60%, max 5280c/kg	66	0.8	141	22% or 30%, max 2240c/kg	1	
2	50.0%	1	0.0	72	40% or 60%, max 5090c/kg	3	0.0	142	22% or 30%, max 2160c/kg	20	
3	47.0%	15	0.2	73	40% or 60%, max 5000c/kg	3	0.0	143	22% or 30%, max 2080c/kg	1	
4	45.0%	5	0.1	74	40% or 60%, max 4800c/kg	57	0.7	144	22% or 30%, max 2020c/kg	95	
5	43.0%	2	0.0	75	40% or 60%, max 4225c/kg	20	0.3	145	22% or 30%, max 2000c/kg	1	
6	40.0%	39	0.5	76	40% or 60%, max 3590c/kg	6	0.1	146	22% or 30%, max 1980c/kg	1	
7	36.0%	1	0.0	77	40% or 60%, max 3460c/kg	1	0.0	147	22% or 30%, max 1920c/kg	1	
8	35.0%	14	0.2	78	40% or 60%, max 3380c/kg	13	0.2	148	22% or 30%, max 1830c/kg	60	
9	30.0%	153	2.0	79	40% or 60%, max 270c/pr	4	0.1	149	22% or 30%, max 1790c/kg	4	
10	27.0%	3	0.0	80	40% or 60%, max 20500c/kg	1	0.0	150	22% or 30%, max 1760c/kg	1	
11	25.0%	116	1.5	81	40% or 60%, max 190c/kg	1	0.0	151	22% or 30%, max 1730c/kg	3	
12	23.0%	1	0.0	82	40% or 60%, max 190c each	2	0.0	152	22% or 30%, max 1665c/kg	3	
13	22.0%	26	0.3	83	40% or 60%, max 1630c/kg	1	0.0	153	22% or 30%, max 1660c/kg	14	

Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines
	1	2	3		1	2	3		1	2	3
14	21.0%	2	0.0	84	40% or 60%, max 11520c/kg	2	0.0	154	22% or 30%, max 1650c/kg	2	0.0
15	20.0%	533	6.8	85	40% or 60%, max 10700c/kg	2	0.0	155	22% or 30%, max 1600c/kg	3	0.0
16	19.0%	5	0.1	86	40% or 120c/u 3	3	0.0	156	22% or 30%, max 1555c/kg	15	0.2
17	18.0%	2	0.0	87	4.36c/li 1	1	0.0	157	22% or 30%, max 1550c/kg	1	0.0
18	17.5%	1	0.0	88	4.15c/kg	7	0.1	158	22% or 30%, max 1540c/kg	5	0.1
19	17%	35	0.4	89	3c/kg	2	0.0	159	22% or 30%, max 1500c/kg	1	0.0
20	16.0%	11	0.1	90	35c/no	1	0.0	160	22% or 30%, max 1430c/kg	2	0.0
21	15.0%	522	6.7	91	35% or 500c/2u	4	0.1	161	22% or 30%, max 1410c/kg	51	0.7
22	14.0%	4	0.1	92	325c/kg, max 39%	1	0.0	162	22% or 30%, max 1330c/kg	1	0.0
23	13.0%	11	0.1	93	317c/li of absolute alcohol	2	0.0	163	22% or 30%, max 1320c/kg	8	0.1
24	12.5.0%	9	0.1	94	30% or 7.25c/kg	2	0.0.	164	22% or 30%, max 1300c/kg	15	0.2
25	12.0%	1	0.0	95	30% or 500c/2u	6	0.1	165	22% or 30%, max 1280c/kg	70	0.9
26	11.0%	1	0.0	96	30% or 4.5c/kg	3	0.0	166	22% or 30%, max 1230c/kg	4	0.1
27	10.0%	513	6.6	97	3.6c/kg,	1	0.0	167	22% or 30%, max 1150c/kg	16	0.2
28	9.0%	40	0.5	98	max 25%	1	0.0	168	22% or 30%, max 1145c/kg	4	0.1
29	8.5%	1	0.0	99	26.9c/kg	1	0.0	169	22% or 30%, max 1135c/kg	43	0.5
30	8.0%	2	0.0	100	25.3c/kg	1	0.0	170	22% or 30%, max 1100c/kg	15	0.2
31	7.0%	1	0.0	101	25% plus 1.04c/li	1	0.0	171	22% or 30%, max 1090c/kg	1	0.0
32	6.6%	10	0.1	102	25% or 70c/kg	26	0.3	172	22% or 30%, max 1060c/kg	5	0.1
33	5.0%	312	4.0	103	25% or 200c/kg	11	0.1	173	22% or 30%, max 1040c/kg	62	0.8
34	4.0%	1	0.0	104	25% or 150c/kg	6	0.1	174	22% or 30%, max 1030c/kg	1	0.0
35	3.0%	4	0.1	105	23.1c/kg	1	0.0	175	22% or 30%, max 1000c/kg	188	2.4
36	0.0%	3485	44.5	106	220c/kg	2	0.0	176	21.2c/kg	1	0.0
37	9.2c/kg	1	0.0	107	22.2c/kg	1	0.0	177	20% or 215c/kg less 80%	1	0.0
38	8c/kg	6	0.1	108	22%, max 910c/kg	3	0.0	178	2.75c/kg	8	0.1
39	78c/kg	1	0.0	109	22%, max 700c/kg	69	0.9	179	2.4c/kg net	3	0.0
40	77c/kg	1	0.0	110	22%, max 1700c/kg	1	0.0	180	2.25c/kg	2	0.0

Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines
	1	2	3		1	2	3		1	2	3
41	6c/kg	58	0.7	111	22% or 33%, max 960c/kg	1	0.0	181	17c/kg	1	0.0
42	60% or 2500c/kg	2	0.0	112	22% or 33%, max 2880c/kg	2	0.0	182	160c/kg	1	0.0
43	6.6c/kg , max 25%	1	0.0	113	22% or 33%, max 1830c/kg	1	0.0	183	16.5c/kg, max 25%	1	0.0
44	5c/li	1	0.0	114	22% or 33%, max 1000c/kg	1	0.0	184	154c/li	8	0.1
45	5c/kg	7	0.1	115	22% or 30%, max 960c/kg	50	0.6	185	150c/u	2	0.0
46	57.7c/kg	1	0.0	116	22% or 30%, max 900c/kg	1	0.0	186	15.103c/kg	2	0.0
47	56.7c/kg	1	0.0	117	22% or 30%, max 890c/kg	92	1.2	187	15% plus 50c/u	2	0.0
48	55.5c/kg	1	0.0	118	22% or 30%, max 820c/kg	46	0.6	188	15% plus 200c/u	3	0.0
49	50c/no	1	0.0	119	22% or 30%, max 800c/kg	30	0.4	189	15% or 860c/kg less 85%	2	0.0
50	500c/kg	8	0.1	120	22% or 30%, max 775c/kg	47	0.6	190	136c/li	7	0.1
51	50.3c/kg	1	0.0	121	22% or 30%, max 770c/kg	16	0.2	191	12.5c/kg	1	0.0
52	5.5c/kg	14	0.2	122	22% or 30%, max 690c/kg	21	0.3	192	11c/li	3	0.0
53	4c/kg	4	0.1	123	22% or 30%, max 3840c/kg	14	0.2	193	118.9c/kg	4	0.1
54	450c/kg	8	0.1	124	22% or 30%, max 3425c/kg	4	0.1	194	110c/kg net	1	0.0
55	40c/kg	1	0.0	125	22% or 30%, max 3200c/kg	1	0.0	195	110c/kg less 80%	1	0.0
56	400c/kg	2	0.0	126	22% or 30%, max 3170c/kg	31	0.4	196	10c/kg	1	0.0
57	40%, max 3000c/kg	32	0.4	127	22% or 30%, max 3070c/kg	5	0.1	197	100c/u	1	0.0
58	40% plus 40.3c/kg	1	0.0	128	22% or 30%, max 2960c/kg	15	0.2	198	10% or 55c/kg less 90%	1	0.0
59	40% or 60%, max 9780c/kg	4	0.1	129	22% or 30%, max 2880c/kg	16	0.2	199	1.8c/kg , max 15%	1	0.0
60	40% or 60%, max 9700c/kg	5	0.1	130	22% or 30%, max 2690c/kg	16	0.2	200	1.1c/kg	1	0.0
61	40% or 60%, max 8980c/kg	21	0.3	131	22% or 30%, max 2640c/kg	42	0.5	201	0.99c/kg	1	0.0
62	40% or 60%, max 8975c/kg	1	0.0	132	22% or 30%, max 2570c/kg	55	0.7	202	0.8c/kg	1	0.0
63	40% or 60%, max 8160c/kg	3	0.0	133	22% or 30%, max 2568c/kg	2	0.0	203	0.85c/kg	2	0.0
64	40% or 60%, max 8000c/kg	2	0.0	134	22% or 30%, max 2440c/kg	2	0.0	204	0.65c/kg	3	0.0
65	40% or 60%, max 7500c/kg	3	0.0	135	22% or 30%, max 2425c/kg	1	0.0	205	0.55c/li, max 8%	2	0.0
66	40% or 60%, max 7180c/kg	7	0.1	136	22% or 30%, max 2380c/kg	48	0.6	206	0.45c/kg	1	0.0

Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines	Row	Tariff	# Lines	% of lines
	1	2	3		1	2	3		1	2	3
67	40% or 60%, max 6865c/kg	7	0.1	137	22% or 30%, max 2355c/kg	2	0.0	207	0.44c/kg	2	0.0
68	40% or 60%, max 6105c/kg	2	0.0	138	22% or 30%, max 2350c/kg	14	0.2	208	0.1c/li, max 8%	1	0.0
69	40% or 60%, max 5810c/kg	8	0.1	139	22% or 30%, max 2305c/kg	10	0.1	209	0.183c/li	3	0.0
70	40% or 60%, max 5740c/kg	4	0.1	140	22% or 30%, max 2296c/kg	1	0.0	210	0.091c/li	1	0.0
						Total				7,824	100

Source: DTI

A more recent tariff schedule for 2001 shows that the total number of unique tariff lines has in fact increased from 210 to 226, while the number of HS8 commodity lines has also increased slightly from 7,824 to 7,831 (Table 3.2).

Table 3.2: Tariffs identified by Customs and Excise, March 2001

Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines
	1	2	3		1	2	3		1	2	3
1	55.0%	1	0.0	77	22% or 27% with a max. of 1040 c/kg	1	0.0	152	22% or 27% with a max. of 890c/ kg	1	0.0
2	50.0%	1	0.0	78	22% or 27% with a max. of 1040c/kg	61	0.8	153	22% or 27% with a max. of 890c/kg	91	1.2
3	45.0%	5	0.1	79	22% or 27% with a max. of 1060c/kg	5	0.1	154	22% or 27% with a max. of 900c/kg	1	0.0
4	43.0%	2	0.0	80	22% or 27% with a max. of 1090c/kg	1	0.0	155	22% or 27% with a max. of 960c/kg	51	0.7
5	42.5%	15	0.2	81	22% or 27% with a max. of 1100c/kg	15	0.2	156	22% or 30% with a max. of 1280c/kg	1	0.0
6	40.0%	28	0.4	82	22% or 27% with a max. of 1135c/kg	36	0.5	157	22% or 7% with a max. of 1000c/kg	1	0.0
7	37.0%	12	0.2	83	22% or 27% with a max. of 1145c/kg	4	0.1	158	220c/kg	2	0.0
8	36.0%	1	0.0	84	22% or 27% with a max. of 1150c/kg	16	0.2	159	25% or 150c/kg	6	0.1
9	35.0%	2	0.0	85	22% or 27% with a max. of 1230c/kg	4	0.1	160	25% or 200c/kg	11	0.1
10	32.5%	11	0.1	86	22% or 27% with a max. of 1280c/ kg	1	0.0	161	25% or 70c/kg	26	0.3
11	30.0%	123	1.6	87	22% or 27% with a max. of 1280c/kg	59	0.8	162	25% plus 1.04c/li	1	0.0
12	28.0%	3	0.0	88	22% or 27% with a max. of 1300c/kg	15	0.2	163	3.3c/li	1	0.0
13	27.0%	25	0.3	89	22% or 27% with a max. of 1320c/kg	8	0.1	164	3.6c/kg with a max. of 25%	1	0.0
14	25.0%	111	1.4	90	22% or 27% with a max. of 1330c/kg	1	0.0	165	30% or 4.5c/kg	3	0.0

Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines
	1	2	3		1	2	3		1	2	3
15	22.5%	3	0.0	91	22% or 27% with a max. of 1410 c/kg	1	0.0	166	30% or 500c/2u	10	0.1
16	22.0%	16	0.2	92	22% or 27% with a max. of 1410c/kg	44	0.6	167	30% or 7.25c/kg	2	0.0
17	21.0%	3	0.0	93	22% or 27% with a max. of 1430c/kg	2	0.0	168	317c/li of absolute alcohol	2	0.0
18	20.0%	533	6.8	94	22% or 27% with a max. of 1500c/kg	1	0.0	169	325c/kg with a max. of 39%	1	0.0
19	19.0%	28	0.4	95	22% or 27% with a max. of 1540c/kg	5	0.1	170	35c/no	1	0.0
21	17.5%	1	0.0	97	22% or 27% with a max. of 1555c/kg	15	0.2	172	37% with a max. of 3000c/kg	4	0.1
22	17.0%	5	0.1	98	22% or 27% with a max. of 1600c/kg	3	0.0	173	37% or 120c/each	5	0.1
23	16.0%	11	0.1	99	22% or 27% with a max. of 650c/kg	2	0.0	174	37% with a max. of 3000c/ kg	2	0.0
24	15.0%	527	6.7	100	22% or 27% with a max. of 1660 c/kg	1	0.0	175	37% with a max. of 3000c/kg	24	0.3
25	14.0%	3	0.0	101	22% or 27% with a max. of 1660c/kg	13	0.2	176	3c/kg	2	0.0
26	13.0%	17	0.2	102	22% or 27% with a max. of 1665c/kg	3	0.0	177	4.15c/kg	7	0.1
27	12.5%	9	0.1	103	22% or 27% with a max. of 1730c/kg	3	0.0	178	4.36c/li	1	0.0
28	12.0%	1	0.0	104	22% or 27% with a max. of 1760c/kg	1	0.0	179	40% or 54% with a max. of 1630c/kg	1	0.0
29	11.0%	1	0.0	105	22% or 27% with a max. of 1790c/kg	4	0.1	180	40% or 54% with a max. of 10700c/kg	2	0.0
30	10.0%	534	6.8	106	22% or 27% with a max. of 1830 c/kg	3	0.0	181	40% or 54% with a max. of 11520c/kg	2	0.0
31	9.8%	2	0.0	107	22% or 27% with a max. of 1830c/kg	46	0.6	182	40% or 54% with a max. of 190c/each	3	0.0
32	9.4%	7	0.1	108	22% or 27% with a max. of 1920c/kg	1	0.0	183	40% or 54% with a max. of 20500c/kg	1	0.0
33	8.5%	1	0.0	109	22% or 27% with a max. of 1980c/kg	1	0.0	184	40% or 54% with a max. of 270c/pr	4	0.1
34	8.0%	43	0.5	110	22% or 27% with a max. of 1000c/kg	15	0.2	185	40% or 54% with a max. of 3380c/kg	13	0.2
35	7.4%	3	0.0	111	22% or 27% with a max. of 1040c/kg	1	0.0	186	40% or 54% with a max. of 3460c/kg	1	0.0
36	7.0%	1	0.0	112	22% or 27% with a max. of 1135c/kg	7	0.1	187	40% or 54% with a max. of 3590c/kg	6	0.1
37	6.6%	10	0.1	113	22% or 27% with a max. of 1280c/kg	9	0.1	188	40% or 54% with a max. of 4225c/kg	19	0.2
38	5.0%	311	4.0	114	22% or 27% with a max. of 410c/kg	5	0.1	189	40% or 54% with a max. of 4800c/ kg	3	0.0
39	3.0%	5	0.1	115	22% or 27% with a max. of 1830c/kg	12	0.2	190	40% or 54% with a max. of 4800c/kg	53	0.7
40	0.0%	3484	44.5	116	22% or 27% with a max. of 2000c/kg	1	0.0	191	40% or 54% with a max. of 5000c/kg	3	0.0
41	0.091c/li	2	0.0	117	22% or 27% with a max. of 2020 c/kg	4	0.1	192	40% or 54% with a max. of 5090c/kg	3	0.0

Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines
	1	2	3		1	2	3		1	2	3
42	0.183c/li	4	0.1	118	22% or 27% with a max. of 2020c/kg	84	1.1	193	40% or 54% with a max. of 5280c/ kg	2	0.0
43	0.1c/li with a max. of 8%	1	0.0	119	22% or 27% with a max. of 2080c/kg	1	0.0	194	40% or 54% with a max. of 5280c/kg	65	0.8
44	0.44c/kg	2	0.0	120	22% or 27% with a max. of 2160 c/kg	1	0.0	195	40% or 54% with a max. of 5740c/kg	4	0.1
45	0.45c/kg	1	0.0	121	22% or 27% with a max. of 2160c/kg	19	0.2	196	40% or 54% with a max. of 5810c/kg	8	0.1
46	0.55c/li with a max. of 8%	2	0.0	122	22% or 27% with a max. of 2240c/kg	1	0.0	197	40% or 54% with a max. of 6105c/kg	2	0.0
47	0.65c/kg	2	0.0	123	22% or 27% with a max. of 2296c/kg	1	0.0	198	40% or 54% with a max. of 6865c/kg	7	0.1
48	0.85c/kg	2	0.0	124	22% or 27% with a max. of 2305c/kg	10	0.1	199	40% or 54% with a max. of 7180c/kg	6	0.1
49	0.8c/kg	1	0.0	125	22% or 27% with a max. of 2350c/kg	14	0.2	200	40% or 54% with a max. of 7500c/kg	3	0.0
50	0.99c/kg	1	0.0	126	22% or 27% with a max. of 2355c/kg	2	0.0	201	40% or 54% with a max. of 8000c/kg	2	0.0
51	1.1c/kg	1	0.0	127	22% or 27% with a max. of 2380c/kg	39	0.5	202	40% or 54% with a max. of 8160c/kg	3	0.0
52	1.8c/kg with a max. of 15%	1	0.0	128	22% or 27% with a max. of 2425c/kg	1	0.0	203	40% or 54% with a max. of 8975c/kg	1	0.0
53	10% or 55c/kg less 90%	1	0.0	129	22% or 27% with a max. of 2440c/kg	2	0.0	204	40% or 54% with a max. of 8980c/kg	21	0.3
54	10.1c/kg	1	0.0	130	22% or 27% with a max. of 2570c/kg	48	0.6	205	40% or 54% with a max. of 9700c/kg	5	0.1
55	10c/kg	1	0.0	131	22% or 27% with a max. of 2640c/kg	37	0.5	206	40% or 54% with a max. of 9780c/ kg	1	0.0
56	110c/kg less 80%	1	0.0	132	22% or 27% with a max. of 2690c/kg	16	0.2	207	40% or 54% with a max. of 9780c/kg	3	0.0
57	110c/kg net	1	0.0	133	22% or 27% with a max. of 2880c/kg	6	0.1	208	40% or 60% with a max. of 4225c/kg	1	0.0
58	11c/li	4	0.1	134	22% or 27% with a max. of 2960c/kg	15	0.2	209	40% or 60% with a max. of 4800c/kg	1	0.0
59	136c/li	7	0.1	135	22% or 27% with a max. of 2020c/kg	7	0.1	210	40% or 60% with a max. of 7180c/kg	1	0.0
60	15% or 860c/kg less 85%	2	0.0	136	22% or 27% with a max. of 2380c/kg	9	0.1	211	40.1c/kg	4	0.1
61	154c/li	8	0.1	137	22% or 27% with a max. of 2568c/kg	2	0.0	212	400c/kg	2	0.0
62	16.5c/kg with a max. of 25%	1	0.0	138	22% or 27% with a max. of 2570c/kg	7	0.1	213	450c/kg	8	0.1

Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines	Row	Tariff	# Lines	% of Lines
	1	2	3		1	2	3		1	2	3
63	160c/kg	1	0.0	139	22% or 27% with a max. of 2640c/kg	5	0.1	214	4c/kg	4	0.1
64	19.6c/kg	1	0.0	140	22% or 27% with a max. of 2880c/kg	12	0.2	215	5.5c/kg	14	0.2
65	2.25c/kg	2	0.0	141	22% or 27% with a max. of 3070c/kg	5	0.1	216	500c/kg	8	0.1
66	2.4c/kg net	3	0.0	142	22% or 27% with a max. of 3170c/kg	25	0.3	217	50c/no	1	0.0
67	2.75c/kg	8	0.1	143	22% or 27% with a max. of 3200c/kg	1	0.0	218	5c/kg	7	0.1
68	20% or 215c/kg less 80%	1	0.0	144	22% or 27% with a max. of 3425c/kg	4	0.1	219	5c/li	1	0.0
69	20% or 700c/kg	1	0.0	145	22% or 27% with a max. of 3840c/kg	14	0.2	220	6.6c/kg with a max. of 25%	1	0.0
70	20% plus 29.4c/kg	1	0.0	146	22% or 27% with a max. of 3170c/kg	6	0.1	221	6.7c/kg	2	0.0
71	20% with a max. of 1 700c/kg	1	0.0	147	22% or 27% with a max. of 690c/kg	21	0.3	222	60% or 2500c/kg	2	0.0
72	20% with a max. of 700c/kg	68	0.9	148	22% or 27% with a max. of 770c/kg	16	0.2	223	6c/kg	58	0.7
73	20% with a max. of 910c/kg	3	0.0	149	22% or 27% with a max. of 775c/kg	47	0.6	224	77c/kg	1	0.0
74	22% or 2% with a max. of 1000c/kg	1	0.0	150	22% or 27% with a max. of 800c/kg	30	0.4	225	8c/kg	6	0.1
75	22% or 27% with a max. of 1000c/kg	172	2.2	151	22% or 27% with a max. of 820c/kg	46	0.6	226	9.2c/kg	1	0.0
76	22% or 27% with a max. of 1030c/kg	1	0.0 %						Total	7,831	100

Source: DTI

Table 3.3 compares the two years by consolidating the 2000 and 2001 schedules using a limited number of tariff bands. It is evident that very little has changed. Nevertheless, the number of unique *ad valorem* tariffs over 40% has dropped by 11 (which constitutes a 17.5% decline), and by about 20% for tariffs between 30% and 40%. The number of zero-rated lines has remained more or less constant.

Table 3.3: A comparison of consolidated tariff schedules for July 2000 and March 2001

		# of HS8 lines July 2000	% of # of lines July 2000	# of HS8 lines March 2001	% of # of lines March 2001
		1	2	3	4
1	tariff ≥ 40%	63	0.8	52	0.7
2	30% ≤ tariff < 40%	168	2.1	149	1.9
3	20% ≤ tariff < 30%	681	8.7	694	8.9
4	15% ≤ tariff < 20%	576	7.4	578	7.4
5	10% ≤ tariff < 15%	539	6.9	565	7.2
6	5% ≤ tariff < 10%	366	4.7	378	4.8
7	0% ≤ tariff < 5%	5	0.1	5	0.1
8	0%	3,485	44.5	3484	44.5
9	Other	1,941	24.9	1926	24.6
10	Total lines	7,824	100.0	7,831	100.0

Source: DTI

3.2.2 Tariffs and FTAs

With SA having entered into FTAs with the EU and SADC recently, a salient question would be – whether applied tariffs from these two sources are lower. A consolidated view along the same lines as the previous table is offered in Table 3.4.

Table 3.4: A comparison of consolidated tariff schedules for imports from the EU, SADC and RoW (March 2001)

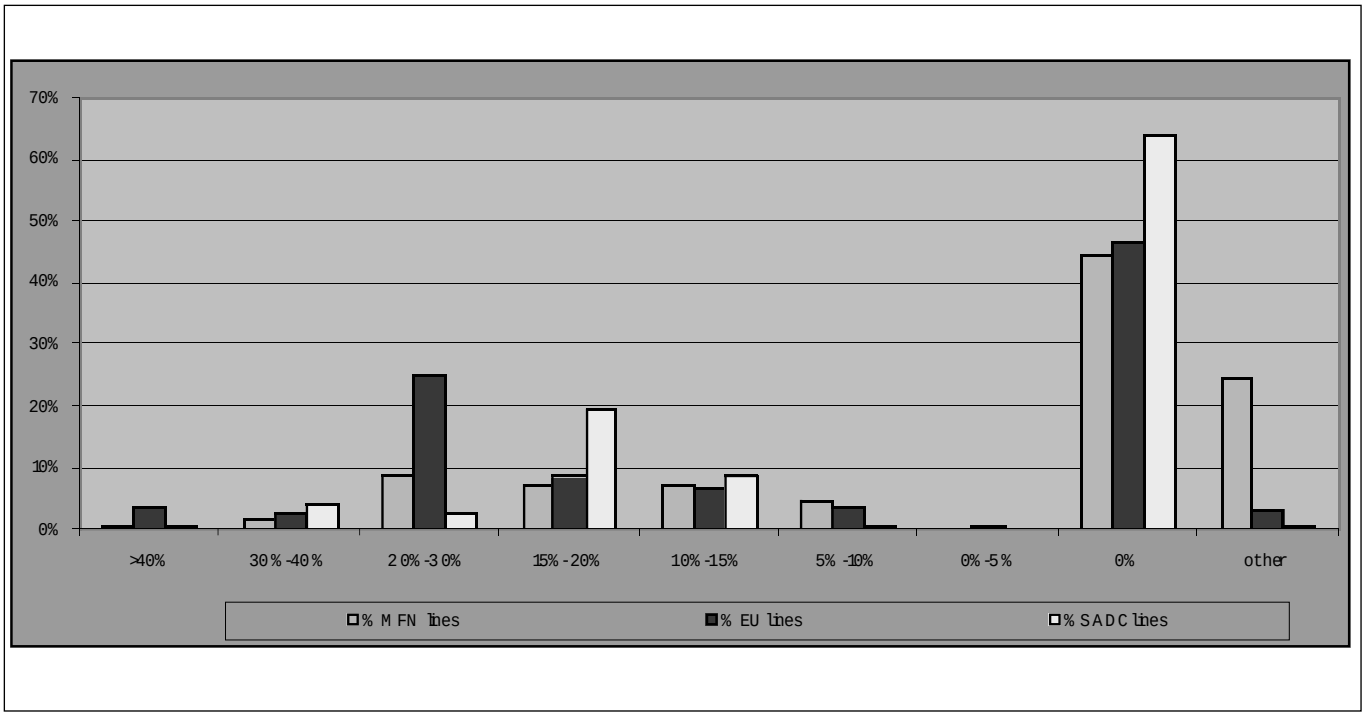
		# of HS8 lines RoW	% of # of lines/RoW	# of HS8 lines EU	% of # of lines\ EU	# of HS8 lines SADC	% of # of lines SADC
		1	2	3	4	5	6
1	tariff ≥ 40%	52	0.7	296	3.8	11	0.1
2	30% ≤ tariff < 40%	149	1.9	195	2.5	310	4.0
3	20% ≤ tariff < 30%	694	8.9	1943	24.8	202	2.6
4	15% ≤ tariff < 20%	578	7.4	664	8.5	1,546	19.7
5	10% ≤ tariff < 15%	565	7.2	528	6.7	659	8.4
6	5% ≤ tariff < 10%	378	4.8	277	3.5	23	0.3
7	0% ≤ tariff < 5%	5	0.1	53	0.7	0	0.0
8	0%	3,484	44.5	3,631	46.4	5,027	64.2
9	Other	1,926	24.6	244	3.1	53	0.7
10	Total lines	7,831	100.0	7,831	100.0	7,831	100.0

Source: DTI

Compared to the rest of the world (ROW), the number of HS8 commodity lines with *ad valorem* tariffs that are equal or higher than 40% is higher on imports that originate in the EU. Similarly, the number of HS8 lines with tariffs between 30% and 40% is considerably higher in the SADC schedule compared to the rest of the world. The reason is that in the EU and

SADC preferential schemes, a number of other-than-*ad valorem* tariffs – captured in row 10 of column 1 of Table 3.4 – are converted to *ad valorem* tariffs. For example, the combined tariff of "40% or 54% with a maximum of 3, 590c/kg" in the general schedule has been converted to a straight *ad valorem* tariff of 40% in the case of imports originating in the EU, and 35% when the goods are imported from SADC. This principle of *ad valorem* equivalence will be further explored in Section 3.6.

Figure 3.1: A comparison of consolidated tariff schedules for imports from the RoW, EU and SADC (percentage of lines, March 2001)



Source: DTI

The results are repeated in Figure 3.1 above. With regard to SADC, the number of non-*ad valorem* tariffs has been greatly reduced and some simplification of the schedule has been achieved, although it should be noted that during 2000, SADC imports represented only 1.3% of total SA imports. Less, but still significant, simplification is brought about with regard to imports from the EU, which constitute about 40% of SA's total imports. For example, the number of zero-rated HS8 import commodity lines from the EU is about 4% (see row 8, columns 1 and 3: [3,631/3,484]-1=4%) higher than the MFN schedule, while it is 44% higher for imports from SADC.

3.2.3 Imports for 2000

Although the previous two sections discussed tariffs for 2001, this is as yet not accompanied by trade data so that it is not possible to present trade-weighted tariffs and check whether tariff peaks apply to lines with low- or high-value imports. For the purposes of this section, the 2000 schedule is used since it is the last year for which import data are available. To assess the relative importance of the tariff lines shown in Table 3.1, data on import values is presented in Table 3.5.

Table 3.5: Tariffs identified by Customs and Excise, July 2000 combined with import values for 2000

Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports
	1	2	3		1	2	3		1	2	3
1	55.0%	272	0.0	71	40% or 60%, max, 5280c/kg	431,839	0.2	141	22% or 30%, max, 2240c/kg	906	0.0
2	50.0%	67	0.0	72	40% or 60%, max, 5090c/kg	1,400	0.0	142	22% or 30%, max, 2160c/kg	18,810	0.0
3	47.0%	5,860,042	3.2	73	40% or 60%, max, 5000c/kg	26,978	0.0	143	22% or 30%, max, 2080c/kg	843	0.0
4	45.0%	19,777	0.0	74	40% or 60%, max, 4800c/kg	387,454	0.2	144	22% or 30%, max, 2020c/kg	157,549	0.1
5	43.0%	179	0.0	75	40% or 60%, max, 4225c/kg	67,089	0.0	145	22% or 30%, max, 2000c/kg	512	0.0
6	40.0%	253,142	0.1	76	40% or 60%, max, 3590c/kg	88,486	0.0	146	22% or 30%, max, 1980c/kg	1,037	0.0
7	36.0%	0	0.0	77	40% or 60%, max, 3460c/kg	537	0.0	147	22% or 30%, max, 1920c/kg	387	0.0
8	35.0%	15,258,745	8.3	78	40% or 60%, max, 3380c/kg	48,117	0.0	148	22% or 30%, max, 1830c/kg	138,794	0.1
9	30.0%	1,902,700	1.0	79	40% or 60%, max, 270c/pr	4,774	0.0	149	22% or 30%, max, 1790c/kg	2,805	0.0
10	27.0%	20,269	0.0	80	40% or 60%, max, 20500c/kg	15,603	0.0	150	22% or 30%, max, 1760c/kg	6,702	0.0
11	25.0%	1,150,378	0.6	81	40% or 60%, max, 190c/kg	15	0.0	151	22% or 30%, max, 1730c/kg	7,035	0.0
12	23.0%	11,201	0.0	82	40% or 60%, max, 190c each	504	0.0	152	22% or 30%, max, 1665c/kg	7,823	0.0
13	22.0%	41,450	0.0	83	40% or 60%, max, 1630c/kg	4,142	0.0	153	22% or 30%, max, 1660c/kg	55,765	0.0
14	21.0%	16,515	0.0	84	40% or 60%, max, 11520c/kg	8,400	0.0	154	22% or 30%, max, 1650c/kg	27,947	0.0
15	20.0%	8,531,431	4.6	85	40% or 60%, max, 10700c/kg	993	0.0	155	22% or 30%, max, 1600c/kg	1,430	0.0
16	19.0%	10,310	0.0	86	40% or 120c/u	291	0.0	156	22% or 30%, max, 1555c/kg	65,424	0.0
17	18.0%	3,117	0.0	87	4.36c/li	105,405	0.1	157	22% or 30%, max, 1550c/kg	777	0.0
18	17.5%	648	0.0	88	4.15c/kg	41,794	0.0	158	22% or 30%, max, 1540c/kg	35,541	0.0
19	17.0%	193,039	0.1	89	3c/kg	1,983	0.0	159	22% or 30%, max, 1500c/kg	18,523	0.0
20	16.0%	130,797	0.1	90	35c/no	0	0.0	160	22% or 30%, max, 1430c/kg	38,843	0.0
21	15.0%	5,533,558	3.0	91	35% or 500c/2u	516,966	0.3	161	22% or 30%, max, 1410c/kg	63,414	0.0

Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports
	1	2	3		1	2	3		1	2	3
22	14.0%	22,453	0.0	92	325c/kg, max, 39%	1,639	0.0	162	22% or 30%, max, 1330c/kg	465	0.0
23	13.0%	287,335	0.2	93	317c/li of absolute alcohol	202	0.0	163	22% or 30%, max, 1320c/kg	41,686	0.0
24	12.5%	505,689	0.3	94	30% or 7.25c/kg	617	0.0	164	22% or 30%, max, 1300c/kg	15,181	0.0
25	12.0%	9,028	0.0	95	30% or 500c/2u	221,600	0.1	165	22% or 30%, max, 1280c/kg	198,401	0.1
26	11.0%	9,847	0.0	96	30% or 4.5c/kg	3,514	0.0	166	22% or 30%, max, 1230c/kg	620	0.0
27	10.0%	5,768,122	3.1	97	3.6c/kg, max, 25%	56	0.0	167	22% or 30%, max, 1150c/kg	8,880	0.0
28	9.0%	1,292,610	0.7	98	3.3c/li	666	0.0	168	22% or 30%, max, 1145c/kg	5,698	0.0
29	8.5%	131	0.0	99	26.9c/kg	563,124	0.3	169	22% or 30%, max, 1135c/kg	20,223	0.0
30	8.0%	26,688	0.0	100	25.3c/kg	32	0.0	170	22% or 30%, max, 1100c/kg	13,576	0.0
31	7.0%	3,752	0.0	101	25% plus 1.04c/li	5,206	0.0	171	22% or 30%, max, 1090c/kg	3	0.0
32	6.6%	540,685	0.3	102	25% or 70c/kg	22,281	0.0	172	22% or 30%, max, 1060c/kg	7,126	0.0
33	5.0%	7,758,330	4.2	103	25% or 200c/kg	6,225	0.0	173	22% or 30%, max, 1040c/kg	91,057	0.0
34	4.0%	34,065	0.0	104	25% or 150c/kg	35	0.0	174	22% or 30%, max, 1030c/kg	55	0.0
35	3.0%	10,405	0.0	105	23.1c/kg	2,216	0.0	175	22% or 30%, max, 1000c/kg	384,911	0.2
36	0.0%	121,357,372	65.9	106	220c/kg	61,702	0.0	176	21.2c/kg	94	0.0
37	9.2c/kg	545	0.0	107	22.2c/kg	0	0.0	177	20% or 215c/kg less 80%	805	0.0
38	8c/kg	17,659	0.0	108	22%, max, 910c/kg	905	0.0	178	2.75c/kg	8	0.0
39	78c/kg	350	0.0	109	22%, max, 700c/kg	148,740	0.1	179	2.4c/kg net	14,263	0.0
40	77c/kg	2,729	0.0	110	22%, max, 1700c/kg	2,584	0.0	180	2.25c/kg	32	0.0
41	6c/kg	227,822	0.1	111	22% or 33%, max, 960c/kg	1,435	0.0	181	17c/kg	437	0.0
42	60% or 2500c/kg	31,072	0.0	112	22% or 33%, max, 2880c/kg	81	0.0	182	160c/kg	215,920	0.1
43	6.6c/kg, max, 25%	113	0.0	113	22% or 33%, max, 1830c/kg	0	0.0	183	16.5c/kg, max, 25%	121	0.0

Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports
	1	2	3		1	2	3		1	2	3
44	5c/li	4,233	0.0	114	22% or 33%, max, 1000c/kg	104	0.0	184	154c/li	397,394	0.2
45	5c/kg	98,483	0.1	115	22% or 30%, max, 960c/kg	22,495	0.0	185	150c/u	0	0.0
46	57.7c/kg	275	0.0	116	22% or 30%, max, 900c/kg	112	0.0	186	15.103c/kg	213,883	0.1
47	56.7c/kg	4	0.0	117	22% or 30%, max, 890c/kg	80,476	0.0	187	15% plus 50c/u	0	0.0
48	55.5c/kg	9,075	0.0	118	22% or 30%, max, 820c/kg	13,867	0.0	188	15% plus 200c/u	0	0.0
49	50c/no	8	0.0	119	22% or 30%, max, 800c/kg	11,478	0.0	189	15% or 860c/kg less 85%	293,122	0.2
50	500c/kg	119,401	0.1	120	22% or 30%, max, 775c/kg	9,923	0.0	190	136c/li	89,864	0.0
51	50.3c/kg	45	0.0	121	22% or 30%, max, 770c/kg	51,490	0.0	191	12.5c/kg	2,239	0.0
52	5.5c/kg	18,751	0.0	122	22% or 30%, max, 690c/kg	9,150	0.0	192	11c/li	42,894	0.0
53	4c/kg	36,752	0.0	123	22% or 30%, max, 3840c/kg	670	0.0	193	118.9c/kg	12,383	0.0
54	450c/kg	174,569	0.1	124	22% or 30%, max, 3425c/kg	7,660	0.0	194	110c/kg net	17,289	0.0
55	40c/kg	261,278	0.1	125	22% or 30%, max, 3200c/kg	7,607	0.0	195	110c/kg less 80%	829	0.0
56	400c/kg	115,814	0.1	126	22% or 30%, max, 3170c/kg	1,698	0.0	196	10c/kg	545	0.0
57	40%, max, 3000c/kg	119,705	0.1	127	22% or 30%, max, 3070c/kg	6,006	0.0	197	100c/u	0	0.0
58	40% plus 40.3c/kg	312	0.0	128	22% or 30%, max, 2960c/kg	5,690	0.0	198	10% or 55c/kg less 90%	14	0.0
59	40% or 60%, max, 9780c/kg	2,460	0.0	129	22% or 30%, max, 2880c/kg	18,718	0.0	199	1.8c/kg, max, 15%	4,963	0.0
60	40% or 60%, max, 9700c/kg	27,475	0.0	130	22% or 30%, max, 2690c/kg	2,624	0.0	200	1.1c/kg	1,312	0.0
61	40% or 60%, max, 8980c/kg	14,007	0.0	131	22% or 30%, max, 2640c/kg	11,441	0.0	201	0.99c/kg	1,277	0.0
62	40% or 60%, max, 8975c/kg	182	0.0	132	22% or 30%, max, 2570c/kg	17,704	0.0	202	0.8c/kg	92	0.0
63	40% or 60%, max, 160c/kg	358	0.0	133	22% or 30%, max, 2568c/kg	11,469	0.0	203	0.85c/kg	7	0.0
64	40% or 60%, max, 8000c/kg	79,816	0.0	134	22% or 30%, max, 2440c/kg	12,963	0.0	204	0.65c/kg	130,941	0.1
65	40% or 60%, max, 500c/kg	3,518	0.0	135	22% or 30%, max, 2425c/kg	160	0.0	205	0.55c/li, max, 8%	6,250	0.0

Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports	Row	Tariff	Imports ('000)	% of Imports
	1	2	3		1	2	3		1	2	3
66	40% or 60%, max, 180c/kg	492	0.0	136	22% or 30%, max, 2380c/kg	22,403	0.0	206	0.45c/kg	735	0.0
67	40% or 60%, max, 865c/kg	40,418	0.0	137	22% or 30%, max, 2355c/kg	579	0.0	207	0.44c/kg	1,694	0.0
68	40% or 60%, max, 105c/kg	200	0.0	138	22% or 30%, max, 2350c/kg	12,136	0.0	208	0.1c/li, max, 8%	72,295	0.0
69	40% or 60%, max, 810c/kg	1,480	0.0	139	22% or 30%, max, 2305c/kg	9,143	0.0	209	0.183c/li	50,573	0.0
70	40% or 60%, max, 740c/kg	1,762	0.0	140	22% or 30%, max, 2296c/kg	549	0.0	210	0.091c/li	554	0.0

Source: DTI and Customs and Excise

In row 36 it can be seen that about 65% of the value of imports or R121bn was imported during 2000 at zero duties, while about 3% came in at a 47% tariff (see row 3), about 8% came in at a 35% tariff (see row 8); 3% came in at a 15% tariff (see row 15); and 3% came in at a 10% tariff (see row 27). The specific or other tariffs on their own carry little weight in terms of value of imports, because many of these tariffs were applied in response to lobbying efforts by certain industries to exclude cheap imports of competitive products. Whether this is because these specific and other tariffs are prohibitively high can only be ascertained if an attempt is made to convert them to *ad valorem* equivalents, as will be shown in Section 3.2.5 below.

A consolidation of the tariffs analysis and the associated imports for the year 2000 is shown in Table 3.6, where row 1 shows that relatively high *ad valorem* tariffs of more than 40% apply to less than 1% of the total number of HS8 tariff lines, with a value of approximately R6bn or 3.3% of total imports over the period of observation. A relatively large number of lines have *ad valorem* tariffs between 20% and 30% (see row 3). Tariffs between 30% and 40% apply to about 170 lines (see row 2), but they constitute about 9% of the import bill. Specific and other tariffs constitute more than R7.5bn or about 4% of the recorded import bill during 2000.

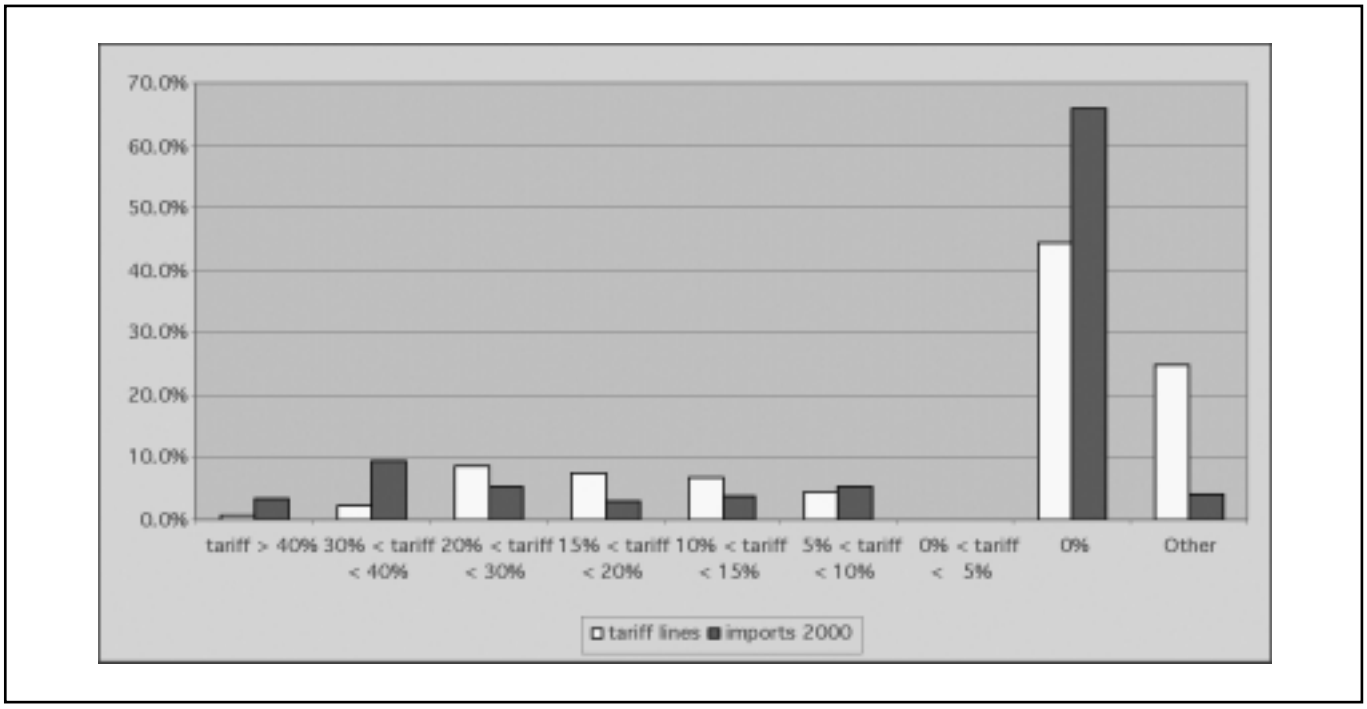
Table 3.6a: Consolidated tariff analysis based on MFN July 2000 tariff schedule and 2000 imports (current R'000 values)

		# of HS8 lines	% of # of lines	Imports 2000	% Imports 2000
		1	2	3	4
1	tariff ≥ 40%	63	0.8	6,133,479	3.3
2	30% ≤ tariff < 40%	168	2.1	17,161,445	9.3
3	20% ≤ tariff < 30%	681	8.7	9,771,243	5.3
4	15% ≤ tariff < 20%	576	7.4	5,871,468	3.2
5	10% ≤ tariff < 15%	539	6.9	6,602,475	3.6
6	5% ≤ tariff < 10%	366	4.7	9,622,196	5.2
7	0% ≤ tariff < 5%	5	0.1	44,470	0.0
8	0%	3,485	44.5	121,357,372	65.9
9	Other	1,941	24.9	7,566,687	4.1
10	Total lines / imports	7824	100.0	184,130,837	
11	Actual total imports			188,076,142	
12	% error due to missing lines			-2.1	

Source: DTI and Customs and Excise

Note that due to the difference in recording tariffs and imports, there is an error of about 2.1% over the period of observation, as can be seen in row 12. The difference suggests that there are imports in HS8 commodity lines that are not covered by the tariff schedule. Figure 3.2 depicts the number of tariff lines and the corresponding import values for 2000.

Figure 3.2: MFN Tariff lines (July 2000) and corresponding import values for 2000



Source: DTI and Customs and Excise, note that each broad tariff band includes the lower boundary i.e., the > sign should read ≥.

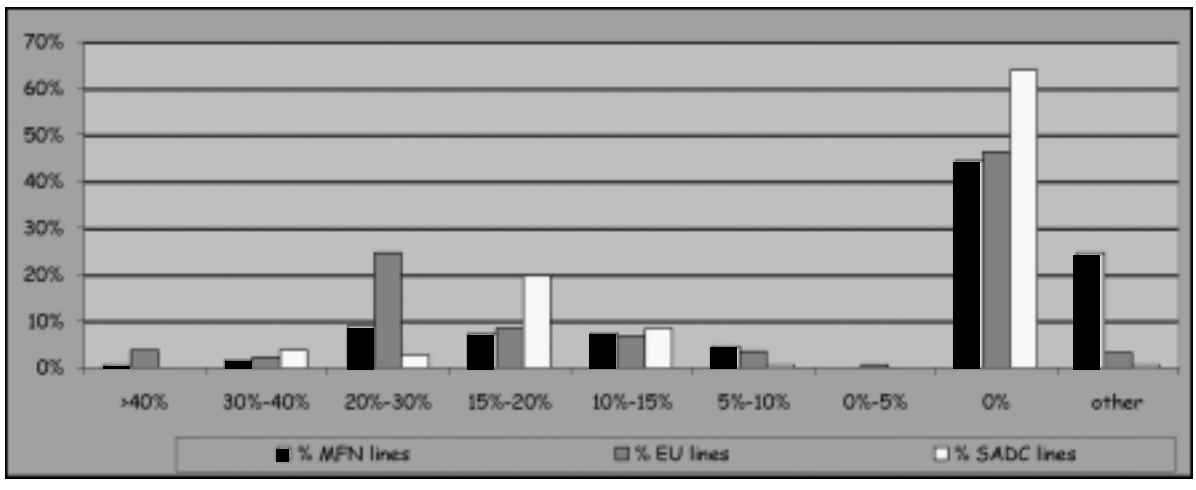
A similar picture can be created for imports from the EU, the results of which are shown in Table 3.6b and Figure 3.3. The most striking observation is the large number of HS8 lines in the 20% to 30% band with relatively low value of imports, while the opposite appears to be the case in the 30% to 40% band. This suggests relatively high price elasticity for those HS8 lines in the 20% to 30% band and a reduction of these tariffs may lead to significant increases in imports. In the higher 30% to 40% band, a limited number of HS8 lines generate a large value of imports, suggesting that the price elasticity is relatively high and reduction in their tariffs may not necessarily generate a higher value of imports.

Table 3.6b: Consolidated tariff analysis based on EU July 2000 tariff schedule and EU 2000 imports (current R'000 values)

		# of HS8 lines	% of # of lines	Imports 2000	% imports 2000
		1	2	3	4
1	tariff ≥ 40%	329	4.5	4,584,492	5.5
2	30% ≤ tariff < 40%	144	2.0	13,160,604	15.7
3	20% ≤ tariff < 30%	1,634	22.4	4,934,759	5.9
4	15% ≤ tariff < 20%	626	8.6	4,107,635	4.9
5	10% ≤ tariff < 15%	493	6.7	3,348,648	4.0
6	5% ≤ tariff < 10%	310	4.2	5,673,423	6.8
7	0% ≤ tariff < 5%	45	0.6	119,179	0.1
8	0%	3,206	43.9	46,461,559	55.5
9	Other	521	7.1	1,383,830	1.7
10	Total lines / imports	7,308	100.0	83,774,127	100.0
11	Actual total imports			85,369,197	
12	% error due to missing lines			1.9	

Source: DTI and Customs and Excise

Figure 3.3: July 2000 MNF tariff lines and corresponding import values for 2000



Source: DTI and Customs and Excise, note that each broad tariff band includes the lower boundary, i.e., the > sign should read ≥.

Table 3.7 shows all the HS8 commodity lines that have an MFN *ad valorem* tariff of more than 40%. It can be seen that the main groups of commodities that are faced with relatively high *ad valorem* tariffs are processed foods (HS 0-2), vehicles and components thereof (HS 87), tobacco products (HS 24), rubber products (HS 40) and clothing and textiles (HS6).

Table 3.7: HS8 lines with *ad valorem* tariffs of more than 40% (Imports in current Rand Values) beased on the July 2000 schedule and 2000 imports

	HS8 code	Description (truncated at 150 characters)	Tariff	Imports (R)
1	20082000	Preparations of vegetables, fruit, nuts or other parts of plants. Fruit, nuts and other edible parts of plants, otherwise prepared or preserved, wheth	55.0%	271,713
2	16022090	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic inverte-brates Other prepared or preserved meat, offal or blood. - of liver	50.0%	67,166
3	87012010	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Tractors (excluding tractors of heading no. 87.09). - road tr	47.0%	40,000
4	87021080	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor vehicles for the transport of ten or more persons, incl	47.0%	5,253,872
5	87029010	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor vehicles for the transport of ten or more persons, incl	47.0%	8,886,388
6	87032190	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	92,405,945
7	87032290	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	375,543,790
8	87032390	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	2,980,357,092
9	87032490	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	1,524,975,233
10	87033190	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	155,336
11	87033290	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	263,231,003
12	87033390	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	404,609,500
13	87039090	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor cars and other motor vehicles principally designed for	47.0%	1,878,619
14	87042180	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor vehicles for the transport of goods. - other, with comp	47.0%	186,399,793
15	87043180	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor vehicles for the transport of goods. - other, with spar	47.0%	16,198,899
16	87049080	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Motor vehicles for the transport of goods. - other - other, o	47.0%	0
17	87060010	Vehicles (excluding railway or tramway rolling-stock) and parts and accessories thereof. Chassis fitted with engines, for the motor vehicles of headin	47.0%	106,715
18	24022000	Tobacco and manf tobacco substitutes. Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes. - cigarettes contain	45.0%	16,093,163
19	24029000	Tobacco and manf tobacco substitutes. Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes. - other	45.0%	133
20	24031010	Tobacco and manf tobacco substitutes. Other manf tobacco and manf tobacco sub-stitutes; “homogenised” or “reconstituted” tobacc	45.0%	1,057,433
21	24031020	Tobacco and manf tobacco substitutes. Other manf tobacco and manf tobacco sub-stitutes; “homogenised” or “reconstituted” tobacc	45.0%	2,401,730
22	24039990	Tobacco and manf tobacco substitutes. Other manf tobacco and manf tobacco sub-stitutes; “homogenised” or “reconstituted” tobacc	45.0%	224,546

	HS8 code	Description (truncated at 150 characters)	Tariff	Imports (R)
23	40121020	Rubber and articles thereof. Retreaded or used pneumatic tyres of rubber; solid or cushion tyres, interchangeable tyre treads and tyre flaps, of rubbe	43.0%	85,322
24	40121090	Rubber and articles thereof. Retreaded or used pneumatic tyres of rubber; solid or cushion tyres, interchangeable tyre treads and tyre flaps, of rubbe	43.0%	93,677
25	02011000	Meat and edible meat offal Meat of bovine animals, fresh or chilled. - carcasses and half-carcasses	40.0%	0
26	02012000	Meat and edible meat offal Meat of bovine animals, fresh or chilled. - other cuts with bone in	40.0%	5,883
27	02013000	Meat and edible meat offal Meat of bovine animals, fresh or chilled. - boneless	40.0%	467,579
28	02021000	Meat and edible meat offal Meat of bovine animals, frozen. - carcasses and half-carcasses	40.0%	0
29	02022000	Meat and edible meat offal Meat of bovine animals, frozen. - other cuts with bone in	40.0%	11,915,012
30	02023000	Meat and edible meat offal Meat of bovine animals, frozen. - boneless	40.0%	65,546,144
31	02041000	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - carcasses and half-carcasses of lamb, fresh or chilled	40.0%	10,465
32	02042100	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - other meat of sheep, fresh or chilled: - carcasses and half-carcasses	40.0%	23,957
33	02042200	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - other meat of sheep, fresh or chilled: - other cuts with bone in	40.0%	236,158
34	02042300	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - other meat of sheep, fresh or chilled: - boneless	40.0%	0
35	02043000	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - carcasses and half-carcasses of lamb, frozen	40.0%	1,786,934
36	02044100	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - other meat of sheep, frozen : - carcasses and half-carcasses	40.0%	3,382,420
37	02044200	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - other meat of sheep, frozen : - other cuts with bone in	40.0%	127,312,782
38	02044300	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - other meat of sheep, frozen : - boneless	40.0%	6,891,336
39	02045000	Meat and edible meat offal Meat of sheep or goats, fresh, chilled or frozen. - meat of goats	40.0%	16,687
40	02101100	Meat and edible meat offal Meat and edible meat offal, salted, in brine dried or smoked; edible flours meals of meat or meat offal. - meat of swine :	40.0%	13,712
41	02101200	Meat and edible meat offal Meat and edible meat offal, salted, in brine dried or smoked; edible flours meals of meat or meat offal. - meat of swine :	40.0%	1,259
42	02101900	Meat and edible meat offal Meat and edible meat offal, salted, in brine dried or smoked; edible flours meals of meat or meat offal. - meat of swine :	40.0%	894,878
43	02102000	Meat and edible meat offal Meat and edible meat offal, salted, in brine dried or smoked; edible flours meals of meat or meat offal. - meat of bovine	40.0%	2,738
44	02109000	Meat and edible meat offal Meat and edible meat offal, salted, in brine dried or smoked; edible flours meals of meat or meat offal. - other, includin	40.0%	83,232
45	16010090	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates Sausages and similar products, of meat, meat offal or blood;	40.0%	651,165
46	16024100	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates Other prepared or preserved meat, offal or blood. - of swine	40.0%	898,442
47	16024200	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates Other prepared or preserved meat, offal or blood. - of swine	40.0%	4,259,486
48	16024990	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates Other prepared or preserved meat, offal or blood. - of swine	40.0%	2,821,577
49	16025090	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates Other prepared or preserved meat, offal or blood. - of bovine	40.0%	503,499
50	16029090	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates Other prepared or preserved meat, offal or blood. - other, in	40.0%	1,088

	HS8 code	Description (truncated at 150 characters)	Tariff	Imports (R)
51	24031030	Tobacco and manf tobacco substitutes. Other manf tobacco and manf tobacco substitutes; “homogenised” or “reconstituted” tobacc	40.0%	250,377
52	24039910	Tobacco and manf tobacco substitutes. Other manf tobacco and manf tobacco substitutes; “homogenised” or “reconstituted” tobacc	40.0%	1,099,468
53	61171000	Articles of apparel and clothing accessories, knitted or crocheted Other made up clothing accessories, knitted or crocheted; knitted or crocheted part	40.0%	943,213
54	62141000	Articles of apparel and clothing accessories, not knitted or crocheted Shawls, scarves, mufflers, mantillas, veils and the like. - of silk or silk wa	40.0%	884,988
55	62142000	Articles of apparel and clothing accessories, not knitted or crocheted Shawls, scarves, mufflers, mantillas, veils and the like. - of wool or fine an	40.0%	676,033
56	62143000	Articles of apparel and clothing accessories, not knitted or crocheted Shawls, scarves, mufflers, mantillas, veils and the like. - of synthetic fibre	40.0%	7,392,552
57	62144000	Articles of apparel and clothing accessories, not knitted or crocheted Shawls, scarves, mufflers, mantillas, veils and the like. - of artificial fibr	40.0%	1,781,224
58	62149000	Articles of apparel and clothing accessories, not knitted or crocheted Shawls, scarves, mufflers, mantillas, veils and the like. - of other textile m	40.0%	4,289,253
59	63011000	Other made up textile articles; sets; worn clothing and worn textile articles; rags Blankets and travelling rugs. - electric blankets	40.0%	5,339
60	63012000	Other made up textile articles; sets; worn clothing and worn textile articles; rags Blankets and travelling rugs. - blankets (excluding electric blan	40.0%	322,751
61	63013000	Other made up textile articles; sets; worn clothing and worn textile articles; rags Blankets and travelling rugs. - blankets (excluding electric blan	40.0%	2,494,627
62	63014000	Other made up textile articles; sets; worn clothing and worn textile articles; rags Blankets and travelling rugs. - blankets (excluding electric blan	40.0%	4,439,106
63	63019000	Other made up textile articles; sets; worn clothing and worn textile articles; rags Blankets and travelling rugs. - other blankets and travelling rug	40.0%	836,994

Source: Tariffs: DTI, Trade: Customs and Excise

3.2.4 Conversion of Specific and Mixed Tariffs to Ad Valorem Tariffs

It was noted in the previous section that although 24% of the HS8 commodity lines in the July 2000 schedule are of a specific or other nature, they only represented about 4% of the value of imports over the year 2000. Nevertheless, from a point of identifying tariff peaks, it makes sense to try and convert these tariffs to *ad valorem* ones.

A consolidated view of the *ad valorem* equivalents of other than *ad valorem* tariffs is shown in Table 3.8. Note that the number of HS8 commodity lines with specific, mixed or compound tariffs amounts to almost 2,000, as can be seen in row 10. Most of the HS8 commodity lines for which *ad valorem* equivalents have been calculated fall in the 20% to 30% category (see row 3), followed by the *ad valorem* equivalent tariff band of 40% or more (see row 1) and the 0% to 5% band with about 6% of the HS8 commodity lines (see row 7).

Table 3.8: Consolidated tariff analysis of *ad valorem*-equivalents of other than *ad valorem* tariffs of the July 2000 tariff schedule and associated imports for 2000 (current Rand values)

		# of HS8 lines	% of # of lines	Imports 2000	% imports 2000
		1	2	3	4
1	tariff ≥ 40%	295	15.2	1,706,893,493	22.6
2	30% ≤ tariff < 40%	10	0.5	711,692,907	9.4
3	20% ≤ tariff < 30%	1,104	56.9	3,139,638,416	41.5
4	15% ≤ tariff < 20%	16	0.8	228,638,743	3.0
5	10% ≤ tariff < 15%	13	0.7	219,918,439	2.9
6	5% ≤ tariff < 10%	15	0.8	575,691,938	7.6
7	0% ≤ tariff < 5%	122	6.3	984,213,102	13.0
8	0%	3	0.2	326	0.0
9	Zero import lines for which no AVE is available	363	18.7	0	0.0
10	Total imports specific, etc	1,941	100.0	7,566,687,364	100.0

Source: DTI and own calculations

In terms of value of imports it can be seen in the second-last entry of the last row that during 2000 about R7.5bn of imports came into SA that face non-*ad valorem* duties. The distribution of the value of imports across the chosen bands of *ad valorem* equivalents mirrors that of the number of HS8 commodity lines, albeit in a more compressed way. The *ad valorem* equivalent tariff band with the highest value of imports remain in the 20% to 30% range, which accounts for almost 40% of the value of non-*ad valorem* imports during 2000, followed by the top band with about 20% and the bottom band with about 13%.

A consolidation of the *ad valorem* and *ad valorem*-equivalent tariffs is shown in the next table. With specific, mixed and compound rates accounting for about 25% of the total number of HS8 commodity lines, the *ad valorem*-equivalent conversion is expected to have a significant impact on the distribution of HS8 commodity lines across the broad bands identified in Tables 3.6 and 3.7. The 20% to 30% band now accounts for more than 22% of the HS8 commodity lines, compared to almost 9% before the integration of the *ad valorem* equivalents. Similarly, the top band now represents about 4.5% compared to 1% before, and the bottom band (0% to 5%) captures 122 lines (or 1.6%), compared to only five HS8 lines previously.

Table 3.9: Consolidated tariff analysis of *ad valorem* and *ad valorem*-equivalent tariff rates of the July 2000 tariff schedule and associated imports for 2000 (current Rand values)

		# of HS8 lines	% of # of lines	Imports 2000	% Imports 2000
		1	2	3	4
1	tariff ≥ 40%	354	4.5	7,840,372,919	4.3
2	30% ≤ tariff < 40%	170	2.2	17,873,137,892	9.7
3	20% ≤ tariff < 30%	1,742	22.3	12,910,881,748	7.0
4	15% ≤ tariff < 20%	547	7.0	6,100,106,953	3.3
5	10% ≤ tariff < 15%	532	6.8	6,822,393,474	3.7
6	5% ≤ tariff < 10%	366	4.7	10,197,888,207	5.5
7	0% ≤ tariff < 5%	125	1.6	1,028,683,515	0.6
8	0%	3,230	41.3	121,357,372,605	65.9
9	Zero import lines for which no AVE is available	758	9.7	0	0.0
10	Total imports specific, etc	7,824	100.0	184,130,837,313	100.0

Source: DTI and own calculations, see Tables 3.6 and 3.8

The *value* of imports for 2000 associated with specific, mixed and compound rates only amounted to about 4% of the total imports over this period. The final distribution, as compared to Table 3.6 is not much different, except for the top band, which now accounts for more than 4% compared to 3.5% before the application of the *ad valorem*-equivalent conversion; the 20% to 30% band with 7.0%, as compared to 5.4%; and the 0% to 5% band, with 0.6% as compared to 0%.

The HS8 commodity lines with the highest *ad valorem*-equivalent tariffs are shown below, and it appears that the highest *ad valorem*-equivalents are recorded for processed foods, in various stages, and textiles.

Table 3.10: HS8 lines with *ad valorem*-equivalent tariffs of more than 40% (imports in current Rand values) based on the July 2000 schedule and 2000 imports (current Rand values)

	HS8 code	HS8 description (truncated at 90 characters)	Original rate	Average	Imports
1	04029100	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Milk and cream, concentrated or conta	450c/kg	127.7%	1,057
2	22071000	Beverages, spirits and vinegar. Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol or higher; ethyl alcohol and other spirits, d	317c/li of absolute alcohol	102.7%	71,414
3	04029900	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Milk and cream, concentrated or conta	450c/kg	97.2%	2,336,919
4	17019100	Sugars and sugar confectionery Cane or beet sugar and chemically pure sucrose, in solid form. - other : - containing added flavouring or colouring mat	118.9c/kg	86.3%	6,407,847
5	02071490	Meat and edible meat offal Meat and edible offal, of the poultry of heading no. 01.05, fresh, chilled or frozen - of fowls of the species gallus domes	220c/kg	77.6%	60,552,750
6	17011100	Sugars and sugar confectionery Cane or beet sugar and chemically pure sucrose, in solid form. - raw sugar not containing added flavouring or colouring	118.9c/kg	77.4%	2,474,582
7	11010000	Products of the milling industry; malt; starches; inulin; wheat gluten Wheat or meslin flour. - wheat or meslin flour.	40% plus 40.3c/kg	73.0%	312,330
8	04041000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Whey, whether or not concentrated or	450c/kg	62.7%	34,688,627
9	63090017	Other made up textile articles; sets; worn clothing and worn textile articles; rags Worn clothing and other worn articles. - other worn clothing	60% or 2500c/kg	60.0%	21,802,777
10	63090013	Other made up textile articles; sets; worn clothing and worn textile articles; rags Worn clothing and other worn articles. - worn overcoats, car-coat	60% or 2500c/kg	60.0%	9,269,262
11	09024000	Coffee, tea, mate and spices Tea, whether or not flavoured - other black tea (fermented) and other partly fermented tea	400c/kg	50.8%	114,951,583
12	04051000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Butter and other fats and oils derive	500c/kg	48.9%	53,655,921
13	04059000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Butter and other fats and oils derive	500c/kg	46.7%	2,226,166
14	17019900	Sugars and sugar confectionery Cane or beet sugar and chemically pure sucrose, in solid form. - other : - other	118.9c/kg	43.9%	3,133,051
15	04039000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Buttermilk, curdled milk and cream, y	450c/kg	42.6%	16,804,488
16	62034200	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace over	40% or 60%, max, 5280c/kg	40.0%	118,382,492
17	62052000	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' shirts. - of cotton	40% or 60%, max, 4800c/kg	40.0%	77,298,465

	HS8 code	HS8 description (truncated at 90 characters)	Original rate	Average	Imports
18	62034300	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace over	40% or 60%, max, 5280c/kg	40.0%	54,171,377
19	61091000	Articles of apparel and clothing accessories, knitted or crocheted T-shirts, singlets and other vests, knitted or crocheted. - of cotton	40% or 60%, max, 8000c/kg	40.0%	46,408,424
20	62053000	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' shirts. of man-made fibres	40% or 60%, max, 4800c/kg	40.0%	42,791,689
21	61113000	Articles of apparel and clothing accessories, knitted or crocheted Babies' garments and clothing accessories, knitted or crocheted. – of synthetic fi	40% or 60%, max, 3590c/kg	40.0%	36,701,236
22	61099000	Articles of apparel and clothing accessories, knitted or crocheted T-shirts, singlets and other vests, knitted or crocheted. - of other textile mater	40% or 60%, max, 8000c/kg	40.0%	33,407,384
23	62059000	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' shirts. - of other textile materials	40% or 60%, max, 4800c/kg	40.0%	29,808,993
24	62046200	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' suits, ensembles, jackets blazers, dresses, skirts, divided s	40% or 60%, max, 5280c/kg	40.0%	29,418,237
25	61112000	Articles of apparel and clothing accessories, knitted or crocheted Babies' garments and clothing accessories, knitted or crocheted. – of cotton	40% or 60%, max, 3590c/kg	40.0%	26,617,426
26	62019300	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski- jac	40% or 60%, max, 4225c/kg	40.0%	26,509,864
27	62069000	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' blouses, shirts and shirt-blouses. - of other textile materi	40% or 60%, max, 4800c/kg	40.0%	25,999,340
28	62046300	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' suits, ensembles, jackets blazers, dresses, skirts, divided s	40% or 60%, max, 5280c/kg	40.0%	23,010,361
29	61121200	Articles of apparel and clothing accessories, knitted or crocheted Track suits, ski suits and swimwear, knitted or crocheted. - track suits : - of syn	40% or 60%, max, 5000c/kg	40.0%	22,461,178
30	61051000	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' shirts, knitted or crocheted. - of cotton	40% or 60%, max, 4800c/kg	40.0%	22,312,073
31	62064000	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' blouses, shirts and shirt-blouses. - of man-made fibres	40% or 60%, max, 4800c/kg	40.0%	22,280,553
32	62063000	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' blouses, shirts and shirt-blouses. - of cotton	40% or 60%, max, 4800c/kg	40.0%	22,098,754
33	61103020	Articles of apparel and clothing accessories, knitted or crocheted Jerseys, pullovers, cardigans, waist- coats and similar articles, knitted or croche	40% or 60%, max, 6865c/kg	40.0%	21,958,101
34	61052000	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' shirts, knitted or crocheted. - of man-made fibres	40% or 60%, max, 4800c/kg	40.0%	20,601,373
35	62034900	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace over	40% or 60%, max, 5280c/kg	40.0%	19,418,436
36	61143000	Articles of apparel and clothing accessories, knitted or crocheted Other garments, knitted or crocheted. - of man-made fibres	40% or 60%, max, 4800c/kg	40.0%	19,364,670

	HS8 code	HS8 description (truncated at 90 characters)	Original rate	Average	Imports
37	61059000	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' shirts, knitted or crocheted. - of other textile materials	40% or 60%, max, 4800c/kg	40.0%	18,201,813
38	63026090	Other made up textile articles; sets; worn clothing and worn textile articles; rags Bed linen, table linen, toilet linen and kitchen linen. - toilet l	40%, max, 3000c/kg	40.0%	16,413,532
39	61082200	Articles of apparel and clothing accessories, knitted or crocheted Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, neglig	40% or 60%, max, 9700c/kg	40.0%	16,181,695
40	62121000	Articles of apparel and clothing accessories, not knitted or crocheted Brassieres, girdles, corsets, braces, suspenders, garters and similar articles	40% or 60%, max, 20500c/kg	40.0%	15,603,091
41	63022100	Other made up textile articles; sets; worn clothing and worn textile articles; rags Bed linen, table linen, toilet linen and kitchen linen. - other be	40%, max, 3000c/kg	40.0%	15,253,335
42	61034300	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls	40% or 60%, max, 5280c/kg	40.0%	15,087,270
43	62029300	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-	40% or 60%, max, 4225c/kg	40.0%	14,273,245
44	62011990	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski- jac	40% or 60%, max, 3380c/kg	40.0%	13,222,881
45	61031900	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls	40% or 60%, max, 5280c/kg	40.0%	13,021,944
46	62093000	Articles of apparel and clothing accessories, not knitted or crocheted Babies' garments and clothing accessories. - of synthetic fibres	40% or 60%, max, 3590c/kg	40.0%	12,441,745
47	63023200	Other made up textile articles; sets; worn clothing and worn textile articles; rags Bed linen, table linen, toilet linen and kitchen linen. - other be	40%, max, 3000c/kg	40.0%	12,078,463
48	62113390	Articles of apparel and clothing accessories, not knitted or crocheted Track suits, ski suits and swimwear; other garments. - other garments, men's or	40% or 60%, max, 4800c/kg	40.0%	11,753,381
49	62044300	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' suits, ensembles, jackets blazers, dresses, skirts, divided s	40% or 60%, max, 5280c/kg	40.0%	11,328,593
50	61142000	Articles of apparel and clothing accessories, knitted or crocheted Other garments,knitted or crocheted. - of cotton	40% or 60%, max, 4800c/kg	40.0%	10,843,561

Source: DTI and own calculations

3.2.5 Tariffs by Sector

To link the trade and tariff analysis to industrial policy issues, it is useful to try to express the tariffs calculated in Section 3.2.3 in terms of sectors. This requires a bridge from the HS nomenclature to the SA Standard Industrial Classification (SIC), which is available in unpublished format from Statistics SA. Table 3.11 shows the tariff structure for the three main sectors of the SA economy for July 2000 and March 2001. This can be compared to the WTO Trade Policy Review (1998:44), which offers a tariff structure in a similar format for 1997.

Table 3.11: Tariff structure for 1997, 2000 and 2001, with imports for 2000

	1	2	3	4	5	6	7	8	9	10	11	12	13
	# of Lines	Imports (current Rm)	Imports %	Weighted average	Unweighted average	Unweighted average	Unweighted average	Standard Deviation	Standard Deviation	Standard Deviation	Coefficient of Variation	Coefficient of Variation	Coefficient of Variation
	2000	2000	2000	2000	1997	2000	2001	1997	2000	2001	1997	2000	2001
Agriculture	295	1,459	0.8	1.4	5.6	4.2	4.0	8.9	7.5	7.2	1.59	1.76	1.81
Mining	107	25,559	14.5	0.0	1.4	1.2	1.4	3.4	3.2	3.7	2.47	2.78	2.63
Manufacturing	5,479	149,539	84.7	8.6	15.6	6.7	6.7	18.0	9.6	9.4	1.15	1.42	1.40
Gas	2	7	0.0	0.0		0.0	0.0		0.0	0.0		na	na
Total	5,883	176,564	100.0	7.3	15.1	6.5	6.5	17.8	9.4	9.3	1.18	1.45	1.44

Source: DTI, Customs and Excise, WTO (1998: 44) and own calculations, note: non-ad valorem tariffs are excluded

The benchmark is found in columns 5 – 7, where the unweighted average tariffs for June 1997, July 2000 and March 2001 are shown. It can be seen that further reduction of tariffs has been achieved across all sectors identified, but most notably in the manufacturing sector where the unweighted average tariff has dropped from 16% to 7%. The total unweighted average tariff has, over the same period, declined from 15% to 6.5%. Although the standard deviations have also declined across all sectors, the coefficient of variation, which normalises the standard deviation with respect to the unweighted average, has increased slightly. This is the result of the continuing decline in the unweighted average tariff, which causes the denominator of the coefficient of variation to become smaller, and this is not matched by an accompanying decline in the standard deviation. In other words, the unweighted average tariff has declined more than its standard deviation, hence the ratio of the latter over the former has increased.

A more interesting way of analysing the tariff structure is according to the degree of processing, as presented by the WTO (1998: 44). However, the WTO does not reveal the bridge to aggregate the HS nomenclature according to the degree of processing and merely refers to "data provided by the SA authorities". This is clearly an area that can be considered for further research.

Table 3.12: Tariff structure for SICv5, July 2000 and June 1997, with imports for 2000

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
1	1	Agriculture, hunting, forestry and fishing	295	5.0%	1,458,983	1.0	4.2%	5.6%	0.0%	35.0%	7.5%	1.6%
2	11	Agriculture, hunting and related activities	249	4.2%	1,312,264	1.0	4.0%	4.5%	0.0%	35.0%	7.1%	1.7%
3	111	Growing of crops; market gardening; horticulture	240	4.1%	1,290,119	0.9	4.2%		0.0%	35.0%	7.1%	
4	115	Hunting, trapping and game propagation including related services	9	0.2%	22,144	0.0	0.0%		0.0%	0.0%	0.0%	
5	12	Forestry, logging and related services	29	0.5%	135,733	0.1	4.1%	2.7%	0.0%	25.0%	7.1%	2.4%
6	121	Forestry and related services	15	0.3%	105,115	0.0	8.0%	3.7%	0.0%	25.0%	8.1%	2.0%
7	122	Logging and related services	14	0.2%	30,618	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	
8	13	Fishing, operation of fish hatcheries and fish farms	17	0.3%	10,987	0.0	7.6%	14.9%	0.0%	30.0%	11.9%	0.8%
9	131	Ocean and coastal fishing	15	0.3%	10,398	0.0	8.7%	15.4%	0.0%	30.0%	12.3%	0.8%
10	132	Fish hatcheries and fish farms	2	0.0%	588	0.0	0.0%	12.9%	0.0%	0.0%	0.0%	1.0%
11	2	Mining and quarrying	107	1.8%	25,559,270	13.2	1.2%	1.4%	0.0%	15.0%	3.2%	2.5%
12	21	Mining of coal and lignite	5	0.1%	373,671	0.4	0.0%	0.0%	0.0%	0.0%	0.0%	
13	22	Extraction of crude petroleum and natural gas; service activities incidenta…	10	0.2%	24,454,918	12.4	3.0%	0.0%	0.0%	15.0%	6.0%	
14	24	Mining of metal ores, except gold and uranium	23	0.4%	180,972	0.1	0.0%	1.7%	0.0%	0.0%	0.0%	1.2%
15	242	Mining of non-ferrous metal ores, except gold and uranium	20	0.3%	180,962	0.1	0.0%	1.5%	0.0%	0.0%	0.0%	1.3%
16	25	Other mining and quarrying	68	1.2%	549,708	0.3	1.4%	1.4%	0.0%	10.0%	3.2%	2.8%
17	253	Other quarrying	37	0.6%	466,082	0.3	2.6%	0.3%	0.0%	10.0%	4.0%	4.2%
18	2531	Mining of chemical and fertilizer minerals	5	0.1%	298,772	0.2	0.0%	0.6%	0.0%	0.0%	0.0%	2.4%
19	2532	Extraction and evaporation of salt	1	0.0%	7,073	0.0	10.0%	18.0%	10.0%	10.0%	0.0%	
20	2539	Other mining and quarrying nec	31	0.5%	160,237	0.1	2.7%	2.4%	0.0%	10.0%	4.0%	2.0%
21	3	Manufacture	5,479	93.1%	149,538,922	85.8	6.7%	15.6%	0.0%	55.0%	9.6%	1.2%
22	30	Manufacture of food products, beverages and tobacco products	451	7.7%	5,211,325	2.8	12.6%	13.8%	0.0%	55.0%	13.1%	1.0%
23	301	Production, processing and preserving of meat, fish, fruit vegetables, oils…	260	4.4%	2,677,778	1.4	13.1%		0.0%	55.0%	13.7%	
24	3011	Production, processing and preserving of meat and meat products	108	1.8%	1,011,618	0.5	13.8%	16.8%	0.0%	50.0%	17.3%	1.1%
25	3012	Processing and preserving of fish and fish products	25	0.4%	47,018	0.0	12.5%	19.2%	0.0%	30.0%	13.1%	0.6%
26	3013	Processing and preserving of fruit and vegetables	85	1.4%	331,925	0.2	15.9%	15.6%	0.0%	55.0%	9.9%	0.7%
27	3014	Manufacture of vegetable and animal oils and fats	42	0.7%	1,287,216	0.7	6.2%	4.9%	0.0%	20.0%	5.3%	1.1%
28	302	Manufacture of dairy products	13	0.2%	90,380	0.0	4.2%	16.8%	0.0%	25.0%	8.3%	0.6%
29	303	Manufacture of grain mill products, starches, starch products and prepared a…	65	1.1%	1,237,975	0.7	7.2%		0.0%	25.0%	9.0%	
30	3031	Manufacture of grain mill products	34	0.6%	991,802	0.5	9.8%	8.2%	0.0%	25.0%	9.8%	1.5%
31	3032	Manufacture of starches and starch products	19	0.3%	47,035	0.0	5.1%		0.0%	20.0%	6.7%	
32	3033	Manufacture of prepared animal feeds	12	0.2%	199,137	0.1	3.3%		0.0%	20.0%	7.5%	
33	304	Manufacture of other food products	77	1.3%	944,145	0.5	13.4%		0.0%	30.0%	10.5%	
34	3041	Manufacture of bakery products, fresh, frozen or dry	7	0.1%	66,593	0.0	23.6%	22.4%	20.0%	25.0%	2.3%	0.3%
35	3042	Manufacture of sugar, including golden syrup and castor sugar	5	0.1%	9,227	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
38	3049	Manufacture of other food products nec	45	0.8%	571,653	0.3	12.2%		0.0%	30.0%	9.8%	
39	305	Manufacture of beverages	27	0.5%	238,539	0.1	14.9%	10.3%	0.0%	25.0%	11.9%	1.2%
40	3051	Distilling, rectifying and blending of spirits; ethyl alcohol production fr…	18	0.3%	61,095	0.0	20.6%	25.0%	0.0%	25.0%	9.3%	0.0%
41	3052	Manufacture of beer and other malt liquors and malt	6	0.1%	170,466	0.1	1.3%	0.6%	0.0%	5.0%	2.0%	2.2%
42	3053	Manufacture of soft drinks; production of mineral waters	3	0.1%	6,978	0.0	8.3%	8.3%	0.0%	25.0%	11.8%	1.7%
43	306	Manufacture of tobacco products	9	0.2%	22,509	0.0	35.6%	35.6%	0.0%	45.0%	15.5%	0.5%
44	31	Manufacture of textiles, clothing and leather goods	507	8.6%	3,463,942	2.0	16.2%	34.9%	0.0%	40.0%	11.6%	0.5%
45	311	Spinning, waving and finishing of textiles	162	2.8%	759,876	0.4	10.4%	32.2%	0.0%	30.0%	9.8%	0.3%
46	3111	Preparation and spinning of textile fibres; weaving of textiles	129	2.2%	705,142	0.4	9.4%		0.0%	30.0%	10.2%	
47	3112	Finishing of textiles	33	0.6%	54,734	0.0	14.1%		0.0%	25.0%	6.8%	
48	312	Manufacture of other textiles	183	3.1%	904,855	0.5	18.2%	29.7%	0.0%	40.0%	10.1%	0.5%
49	3121	Manufacture of made-up textile articles, except apparel	44	0.7%	151,685	0.1	21.4%		0.0%	40.0%	9.6%	
50	3122	Manufacture of carpets, rugs and mats	28	0.5%	153,406	0.1	27.5%	30.0%	0.0%	30.0%	6.3%	0.0%
51	3123	Manufacture of cordage, rope, twine and netting	15	0.3%	38,681	0.0	19.0%	20.1%	5.0%	20.0%	3.7%	0.2%
52	3129	Manufacture of other textiles nec	96	1.6%	561,083	0.3	13.8%	13.4%	0.0%	30.0%	9.5%	0.7%
53	314	Manufacture of wearing apparel, except fur apparel	37	0.6%	133,299	0.1	22.8%	59.0%	0.0%	40.0%	13.3%	0.4%
54	315	Dressing and dyeing of fur; manufacture of articles of fur	9	0.2%	1,461	0.0	18.3%	14.9%	0.0%	30.0%	9.4%	0.8%
55	316	Tanning and dressing of leather; manufacture of luggage, handbags and the l…	38	0.6%	828,360	0.5	13.3%	5.7%	0.0%	30.0%	12.8%	1.1%
56	3161	Tanning and dressing of leather	25	0.4%	546,690	0.3	4.6%	25.6%	0.0%	15.0%	5.3%	0.4%
57	3162	Manufacture of luggage, handbags and the like, saddlery and harness	13	0.2%	281,670	0.1	30.0%		30.0%	30.0%	0.0%	
58	317	Manufacture of footwear	46	0.8%	666,490	0.4	21.0%	24.9%	0.0%	30.0%	11.9%	0.6%
59	32	Manufacture of wood, products of wood, cork, except furniture; manufacture …	247	4.2%	5,999,619	3.3	6.9%	10.0%	0.0%	30.0%	7.3%	1.0%
60	321	Sawmilling and planting of wood	12	0.2%	520,999	0.3	0.0%	7.5%	0.0%	0.0%	0.0%	1.1%
61	322	Manufacture of products of wood, cork, straw and plaiting materials	56	1.0%	649,655	0.4	10.4%	11.7%	0.0%	30.0%	8.7%	1.1%
62	3221	Manufacture of veneer sheets; manufacture of plywood, laminboard, particle …	28	0.5%	263,158	0.2	9.1%		0.0%	15.0%	4.0%	
63	3222	Manufacture of builders' carpentry and joinery	6	0.1%	38,013	0.0	12.5%		0.0%	15.0%	5.6%	
64	3223	Manufacture of wooden containers	6	0.1%	126,172	0.0	16.7%	16.9%	0.0%	30.0%	11.1%	0.4%
65	3229	Manufacture of other products of wood; manufacture ofarticles of cork, str…	16	0.3%	222,312	0.2	9.4%		0.0%	30.0%	12.5%	
66	323	Manufacture of paper and paper products	141	2.4%	2,744,865	1.6	7.1%	7.5%	0.0%	20.0%	6.5%	0.9%
67	3231	Manufacture of pulp, paper and paperboard	103	1.8%	2,335,536	1.3	5.5%	6.5%	0.0%	20.0%	5.4%	0.9%
68	3232	Manufacture of corrugated paper and paperboard	7	0.1%	42,595	0.0	10.6%	10.2%	9.0%	15.0%	1.8%	0.6%
69	3239	Manufacture of other articles of paper and	31	0.5%	366,734	0.2	11.6%	9.3%	0.0%	20.0%	8.0%	0.9%
70	325	Printing	27	0.5%	997,627	0.5	4.3%	7.9%	0.0%	15.0%	6.5%	1.0%

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
73	331	Manufacture of coke oven products	5	0.1%	326,560	0.1	4.0%		0.0%	20.0%	8.0%	
74	332	Petroleum refineries/synthesisers	36	0.6%	624,306	0.3	5.6%	5.4%	0.0%	20.0%	7.4%	1.3%
75	333	Processing of nuclear fuel	5	0.1%	21,369	0.0	0.0%		0.0%	0.0%	0.0%	
76	334	Manufacture of basic chemicals	921	15.7%	14,058,040	8.1	2.3%	4.8%	0.0%	22.0%	5.0%	1.7%
77	3341	Manufacture of basic chemicals, except fertilizers and nitrogen compounds	710	12.1%	9,036,867	5.3	1.3%	2.0%	0.0%	22.0%	3.9%	2.5%
78	3342	Manufacture of fertilisers and nitrogen compounds	28	0.5%	869,768	0.6	0.0%	2.9%	0.0%	0.0%	0.0%	1.8%
79	3343	Manufacture of plastics in primary form and of synthetic rubber	183	3.1%	4,151,405	2.2	6.5%	9.8%	0.0%	18.0%	6.7%	1.0%
80	335	Manufacture of other chemical products	335	5.7%	10,199,106	5.9	4.4%	6.3%	0.0%	20.0%	6.9%	1.4%
81	3351	Manufacture of pesticides and other agro-chemical products	16	0.3%	763,397	0.5	5.6%		0.0%	10.0%	5.0%	
82	3352	Manufacture of paints, varnishes and similar coatings, printing ink and mas…	19	0.3%	573,372	0.3	4.2%	7.3%	0.0%	10.0%	4.9%	1.1%
83	3353	Manufacture of pharmaceuticals, medicinal chemicals and botanical products …	105	1.8%	4,714,087	2.8	0.4%	1.9%	0.0%	20.0%	2.3%	2.5%
84	3354	Manufacture of soap and detergents, cleaning and polishing preparations, pe…	41	0.7%	878,371	0.5	16.5%	18.2%	0.0%	20.0%	5.5%	0.4%
85	3359	Manufacture of other chemical products nec	154	2.6%	3,269,879	1.8	3.8%	6.2%	0.0%	20.0%	5.9%	1.4%
86	336	Manufacture of man-made fibres	16	0.3%	368,938	0.2	3.8%		0.0%	15.0%	6.5%	
87	337	Manufacture of rubber products	94	1.6%	2,011,498	1.2	12.0%	15.7%	0.0%	43.0%	10.7%	0.8%
88	3371	Manufacture of rubber tyres and tubes retreading and rebuilding of rubber t…	32	0.5%	1,182,916	0.7	16.5%	19.2%	0.0%	43.0%	14.2%	0.8%
89	3379	Manufacture of other rubber products	62	1.1%	828,582	0.5	9.8%	14.5%	0.0%	20.0%	7.4%	0.8%
90	338	Manufacture of plastic products	150	2.5%	1,357,909	0.7	9.8%	12.3%	0.0%	25.0%	7.7%	0.8%
91	34	Manufacture of other non-metallic mineral products	221	3.8%	2,906,979	1.7	6.5%	6.8%	0.0%	30.0%	7.3%	1.2%
92	341	Manufacture of glass and glass products	114	1.9%	719,643	0.4	7.6%	8.1%	0.0%	20.0%	5.8%	0.8%
93	342	Manufacture of other non-metallic mineral products nec	107	1.8%	2,187,336	1.2	5.3%	4.5%	0.0%	30.0%	8.5%	1.7%
94	3421	Manufacture of non-structural non-refractory ceramicware	17	0.3%	841,291	0.5	10.0%		0.0%	30.0%	12.4%	
95	3422	Manufacture of refractory ceramic products	8	0.1%	570,239	0.3	0.0%		0.0%	0.0%	0.0%	
96	3423	Manufacture of structural non-refractory clay and ceramic products	26	0.4%	277,698	0.2	6.5%	5.4%	0.0%	20.0%	8.4%	1.9%
97	3424	Manufacture of cement, lime and plaster	9	0.2%	58,560	0.0	0.0%	0.5%	0.0%	0.0%	0.0%	2.8%
98	3425	Manufacture of articles of concrete, cement and plaster	17	0.3%	95,455	0.1	5.3%		0.0%	15.0%	7.2%	
99	3426	Cutting, shaping and finishing of stone	11	0.2%	81,714	0.1	0.0%		0.0%	0.0%	0.0%	
100	3429	Manufacture of other non-metallic mineral products nec	19	0.3%	262,379	0.1	7.1%		0.0%	15.0%	7.5%	
101	35	Manufacture of basic metals, fabricated metal products, machinery and equip…	1,437	24.4%	37,726,444	20.4	4.7%	3.7%	0.0%	40.0%	7.2%	1.3%
102	351	Manufacture of basic iron and steel	246	4.2%	2,299,362	1.3	4.3%	4.3%	0.0%	15.0%	3.8%	0.9%

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
105	354	Manufacture of structural metal products, tanks, reservoirs and steam gener…	25	0.4%	129,737	0.1	3.8%	6.1%	0.0%	15.0%	6.2%	1.7%
106	3541	Manufacture of structural metal products	14	0.2%	66,519	0.0	6.8%	9.0%	0.0%	15.0%	7.0%	1.0%
107	3542	Manufacture of tanks, reservoirs and similar containers of metal	6	0.1%	56,739	0.0	0.0%		0.0%	0.0%	0.0%	
108	3543	Manufacture of steam generators, except central heating hot water boilers	5	0.1%	6,479	0.0	0.0%		0.0%	0.0%	0.0%	
109	355	Manufacture of other fabricated metal products; metalwork service activitie…	327	5.6%	4,132,760	2.2	8.0%	4.0%	0.0%	30.0%	9.0%	1.7%
110	3551	Forging, pressing, stamping and roll-forming of metal powder metallurgy	12	0.2%	105,759	0.0	0.0%		0.0%	0.0%	0.0%	
111	3553	Manufacture of cutlery, hand tools and general hardware	132	2.2%	1,454,735	0.8	10.4%	11.6%	0.0%	30.0%	10.0%	0.9%
112	3559	Manufacture of other fabricated metal products nec	183	3.1%	2,572,266	1.4	6.8%	7.3%	0.0%	30.0%	7.9%	1.1%
113	356	Manufacture of general purpose machinery	165	2.8%	6,801,747	3.7	4.7%	3.7%	0.0%	20.0%	7.0%	2.0%
114	3561	Manufacture of engines and turbines, except aircraft, vehicle and motorcycl…	30	0.5%	1,932,588	1.0	2.7%	3.1%	0.0%	20.0%	6.0%	2.3%
115	3562	Manufacture of pumps, compressors, taps and valves	49	0.8%	2,500,912	1.4	5.9%		0.0%	15.0%	7.1%	
116	3563	Manufacture of bearings, gears, gearing and driving elements	16	0.3%	794,146	0.5	8.8%		0.0%	20.0%	9.9%	
117	3564	Manufacture of ovens, furnaces and furnace burners	4	0.1%	178,695	0.1	0.0%		0.0%	0.0%	0.0%	
118	3565	Manufacture of lifting and handling equipment	48	0.8%	936,568	0.5	3.8%		0.0%	15.0%	5.4%	
119	3569	Manufacture of other general purpose machinery	18	0.3%	458,839	0.2	5.1%		0.0%	17.0%	7.2%	
120	357	Manufacture of special purpose machinery	359	6.1%	11,604,590	6.2	2.1%	6.4%	0.0%	35.0%	5.7%	1.4%
121	3571	Manufacture of agricultural and forestry machinery	31	0.5%	444,004	0.2	1.6%	1.5%	0.0%	20.0%	4.5%	3.1%
122	3572	Manufacture of machine tools	96	1.6%	2,375,265	1.1	1.6%	6.6%	0.0%	20.0%	4.8%	1.4%
123	3573	Manufacture of machinery for metallurgy	9	0.2%	240,181	0.1	0.0%		0.0%	0.0%	0.0%	
124	3574	Manufacture of machinery for mining, quarrying and construction	38	0.6%	2,311,054	1.4	1.7%		0.0%	10.0%	3.7%	
125	3575	Manufacture of machinery for food, beverage and tobacco processing	13	0.2%	400,631	0.2	0.0%		0.0%	0.0%	0.0%	
126	3576	Manufacture of machinery for textile, apparel and leather production	45	0.8%	924,961	0.5	0.0%		0.0%	0.0%	0.0%	
127	3577	Manufacture of weapons and ammunition	24	0.4%	36	0.0	15.6%		0.0%	35.0%	9.7%	
128	3579	Manufacture of other special purpose machinery	103	1.8%	4,908,458	2.6	0.9%		0.0%	19.0%	3.7%	

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
131	36	Manufacture of electrical machinery and apparatus nec	250	4.2%	6,107,366	3.3	7.3%		0.0%	21.0%	7.5%	
132	361	Manufacture of electric motors, generators and transformers	42	0.7%	1,184,804	0.7	7.7%	6.0%	0.0%	20.0%	7.7%	1.2%
133	362	Manufacture of electricity distribution and control apparatus	84	1.4%	2,217,506	1.2	6.5%		0.0%	15.0%	5.7%	
134	363	Manufacture of insulated wire and cable	11	0.2%	495,608	0.3	12.7%		0.0%	15.0%	4.9%	
135	364	Manufacture of accumulators, primary cells and primary batteries	33	0.6%	407,534	0.2	7.4%		0.0%	20.0%	7.4%	
136	365	Manufacture of electric lamps and lighting equipment	43	0.7%	548,271	0.3	11.1%		0.0%	21.0%	9.5%	
137	366	Manufacture of other electrical equipment nec	37	0.6%	1,253,642	0.7	2.4%	9.6%	0.0%	15.0%	5.1%	1.0%
138	37	Manufacture of radio, television and communication equipment and apparatus …	319	5.4%	21,162,307	12.3	1.2%	2.8%	0.0%	25.0%	4.4%	2.7%
139	371	Manufacture of electronic valves and tubes and other electronic components	29	0.5%	2,089,304	1.3	2.4%		0.0%	25.0%	6.5%	
140	372	Manufacture of television and radio transmitters and apparatus for line tel…	37	0.6%	6,625,351	4.0	6.2%		0.0%	25.0%	8.2%	
141	373	Manufacture of television and radio receivers, sound or video recording or …	38	0.6%	6,415,494	3.5	0.7%		0.0%	15.0%	2.8%	
142	374	Manufacture of medical appliances and instruments and ppliances for measu…	98	1.7%	4,715,329	2.7	0.5%		0.0%	20.0%	2.7%	
143	3741	Manufacture of medical and surgical equipment and orthopaedic appliances	60	1.0%	2,507,717	1.4	0.6%		0.0%	20.0%	3.2%	
144	3742	Manufacture of instruments and appliances for measuring, checking, testing,…	34	0.6%	2,164,204	1.2	0.3%		0.0%	10.0%	1.7%	
145	3743	Manufacture of industrial process control equipment	4	0.1%	43,408	0.0	0.0%		0.0%	0.0%	0.0%	
146	375	Manufacture of optical instruments and photographic equipment	62	1.1%	981,609	0.6	0.4%		0.0%	15.0%	2.3%	
147	376	Manufacture of watches and clocks	55	0.9%	335,220	0.2	0.0%		0.0%	0.0%	0.0%	
148	38	Manufacture of transport equipment	239	4.1%	31,445,659	19.2	10.6%	12.3%	0.0%	47.0%	13.8%	1.3%
149	381	Manufacture of motor vehicles	71	1.2%	8,062,338	4.9	17.7%	18.8%	0.0%	47.0%	17.2%	1.0%
150	382	Manufacture of bodies (coachwork) for motor vehicles; manufacture of traile…	9	0.2%	124,799	0.0	17.8%		15.0%	35.0%	6.3%	
151	383	Manufacture of parts and accessories for motor vehicles and their engines	70	1.2%	17,245,615	10.8	14.6%		0.0%	35.0%	11.8%	
152	384	Building and repairing of ships	21	0.4%	207,889	0.1	3.3%	5.2%	0.0%	15.0%	5.4%	1.5%

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
153	385	Manufacture of railway and tramway locomotives and rolling stock	25	0.4%	103,919	0.1	0.0%	0.0%	0.0%	0.0%	0.0%	
154	386	Manufacture of aircraft and spacecraft	19	0.3%	5,164,315	3.1	0.0%	0.0%	0.0%	0.0%	0.0%	
155	387	Manufacture of transport equipment nec	24	0.4%	536,784	0.3	0.6%	10.6%	0.0%	15.0%	3.0%	1.0%
156	3871	Manufacture of motor cycles	12	0.2%	339,436	0.2	0.0%		0.0%	0.0%	0.0%	
157	3872	Manufacture of bicycles and invalid carriages	12	0.2%	197,348	0.1	1.3%		0.0%	15.0%	4.1%	
158	39	Manufacture of furniture; manufacturing nec; recycling	246	4.2%	6,547,556	4.2	7.9%		0.0%	30.0%	9.8%	
159	391	Manufacture of furniture	28	0.5%	781,778	0.5	17.9%		0.0%	20.0%	6.2%	
160	392	Manufacturing nec	218	3.7%	5,765,778	3.7	6.7%		0.0%	30.0%	9.4%	
161	3921	Manufacture of jewellery and related articles	62	1.1%	3,551,474	2.5	5.1%	10.5%	0.0%	20.0%	8.6%	1.0%
162	3922	Manufacture of musical instruments	23	0.4%	57,205	0.0	0.0%		0.0%	0.0%	0.0%	
163	3923	Manufacture of sports goods	27	0.5%	469,960	0.3	3.3%	9.6%	0.0%	20.0%	6.5%	1.7%
164	3924	Manufacture of games and toys	21	0.4%	859,309	0.5	3.8%		0.0%	30.0%	9.5%	
165	3929	Other manufacturing nec	85	1.4%	827,830	0.4	11.4%	8.0%	0.0%	30.0%	9.7%	1.3%
166	4	Electricity, gas, steam and water supply	2	0.0%	6,974	0.0	0.0%		0.0%	0.0%	0.0%	
167	41	Electricity, gas, steam and hot water supply	2	0.0%	6,974	0.0	0.0%		0.0%	0.0%	0.0%	
168	411	Production, collection and distribution of electricity	1	0.0%	6,244	0.0	0.0%		0.0%	0.0%	0.0%	
169	412	Manufacture of gas; distribution of gaseous fuels through mains	1	0.0%	730	0.0	0.0%		0.0%	0.0%	0.0%	
170		Total	5,883	100.0%	176,564,15	100.0	6.5%		0.0%	55.0%	9.4%	

Source: DTI, Customs and Excise, WTO (1998) and own calculations
Note: excluding non-ad valorem tariffs

Comparisons of 1997 and 2000 tariff structures with the WTO (1998) can be undertaken at a more detailed SIC level, although this is not possible for all SIC codes since the WTO (1998) disaggregation is based on SIC version 3, while our analysis is based on the more current SIC version 5. The results are shown in Table 3.12 in which we present the number of lines and the share in the number of lines of the SA schedule as per July 2000 in columns 1 to 2, followed by the value and share of imports in columns 3 to 4 and the weighted average tariff for July 2000 according to our calculations, and for 1997 according to the WTO in columns 5 to 6, respectively. In columns 7 to 8, we show the minimum and maximum tariff for the relevant SIC coding according to the July 2000 schedule, and the final two columns show the standard deviation associated with the July 2000 and 1997 schedule.

Ranking the sectors according to the average *ad valorem* tariff of July 2000 – as presented in Table 3.13 – for the highest 50 average tariffs (calculated using the same table format as in Table 3.12) shows that the most protected sectors are found in the tobacco, textiles, clothing and footwear, food and beverage clusters, followed by the motor vehicle industry.

Table 3.13: Ranked tariff structure for SICv5, July 2000 and June 1997, with imports for 2000

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
1	306	Manufacture of tobacco products	9	0.2	22,509	0.0	35.6%	35.6%	0.0%	45.0%	15.5%	0.5%
2	3162	Manufacture of luggage, handbags and the like, saddlery and harness	13	0.2	281,670	0.2	30.0%		30.0%	30.0%	0.0%	
3	3122	Manufacture of carpets, rugs and mats	28	0.5	153,406	0.1	27.5%	30.0%	0.0%	30.0%	6.3%	0.0%
4	3044	Manufacture of macaroni, noodles, couscous and similar farinaceous products…	6	0.1	40,160	0.0	25.0%		20.0%	30.0%	5.0%	
5	3041	Manufacture of bakery products, fresh, frozen or dry	7	0.1	66,593	0.0	23.6%	22.4%	20.0%	25.0%	2.3%	0.3%
6	314	Manufacture of wearing apparel, except fur apparel	37	0.6	133,299	0.1	22.8%	59.0%	0.0%	40.0%	13.3%	0.4%
7	3121	Manufacture of made-up textile articles, except apparel	44	0.7	151,685	0.1	21.4%		0.0%	40.0%	9.6%	
8	317	Manufacture of footwear	46	0.8	666,490	0.4	21.0%	24.9%	0.0%	30.0%	11.9%	0.6%
9	3051	Distilling, rectifying and blending of spirits; ethyl alcohol production fr…	18	0.3	61,095	0.0	20.6%	25.0%	0.0%	25.0%	9.3%	0.0%
10	3123	Manufacture of cordage, rope, twine and netting	15	0.3	38,681	0.0	19.0%	20.1%	5.0%	20.0%	3.7%	0.2%
11	315	Dressing and dyeing of fur; manufacture of articles of fur	9	0.2	1,461	0.0	18.3%	14.9%	0.0%	30.0%	9.4%	0.8%
12	312	Manufacture of other textiles	183	3.1	904,855	0.5	18.2%	29.7%	0.0%	40.0%	10.1%	0.5%
13	391	Manufacture of furniture	28	0.5	781,778	0.4	17.9%		0.0%	20.0%	6.2%	
14	382	Manufacture of bodies (coachwork) for motor vehicles; manufacture of traile…	9	0.2	124,799	0.1	17.8%		15.0%	35.0%	6.3%	
15	381	Manufacture of motor vehicles	71	1.2	8,062,338	4.6	17.7%	18.8%	0.0%	47.0%	17.2%	1.0%
16	3223	Manufacture of wooden containers	6	0.1	126,172	0.1	16.7%	16.9%	0.0%	30.0%	11.1%	0.4%
17	3354	Manufacture of soap and detergents, cleaning and polishing preparations, pe…	41	0.7	878,371	0.5	16.5%	18.2%	0.0%	20.0%	5.5%	0.4%
18	3371	Manufacture of rubber tyres and tubes retreading and rebuilding of rubber t…	32	0.5	1,182,916	0.7	16.5%	19.2%	0.0%	43.0%	14.2%	0.8%
19	31	Manufacture of textiles, clothing and leather goods	507	8.6	3,463,942	2.0	16.2%	34.9%	0.0%	40.0%	11.6%	0.5%
20	3013	Processing and preserving of fruit and vegetables	85	1.4	331,925	0.2	15.9%	15.6%	0.0%	55.0%	9.9%	0.7%
21	3577	Manufacture of weapons and ammunition	24	0.4	36	0.0	15.6%		0.0%	35.0%	9.7%	
22	305	Manufacture of beverages	27	0.5	238,539	0.1	14.9%	10.3%	0.0%	25.0%	11.9%	1.2%
23	383	Manufacture of parts and accessories for motor vehicles and their engines	70	1.2	17,245,615	9.8	14.6%		0.0%	35.0%	11.8%	
24	3112	Finishing of textiles	33	0.6	54,734	0.0	14.1%		0.0%	25.0%	6.8%	
25	3011	Production, processing and preserving of meat and meat products	108	1.8	1,011,618	0.6	13.8%	16.8%	0.0%	50.0%	17.3%	1.1%
26	3129	Manufacture of other textiles nec	96	1.6	561,083	0.3	13.8%	13.4%	0.0%	30.0%	9.5%	0.7%

			1	2	3	4	5	6	7	8	9	10
			Jul 00	Jul 00	Jun-Aug 00		Jul 00	Jun 97	Jul 00	Jul 00	Jul 00	Jun 97
	SICv5 code	SICv5 description	# lines	% # lines	Import value	% Imp	Av tariff	Ave tariff	Min tariff	Max tariff	St dev	St dev
27	3014	Manufacture of vegetable and animal oils and fats	42	0.7%	1,287,216	0.7	6.2%	4.9%	0.0%	20.0%	5.3%	1.1%
28	302	Manufacture of dairy products	13	0.2%	90,380	0.0	4.2%	16.8%	0.0%	25.0%	8.3%	0.6%
29	301	Production, processing and preserving of meat, fish, fruit vegetables, oils…	260	4.4	2,677,778	1.5	13.1%		0.0%	55.0%	13.7 %	
30	363	Manufacture of insulated wire and cable	11	0.2	495,608	0.3	12.7%		0.0%	15.0%	4.9%	
31	30	Manufacture of food products, beverages and tobacco products	451	7.7	5,211,325	3.0	12.6%	13.8%	0.0%	55.0%	13.1 %	1.0%
32	3012	Processing and preserving of fish and fish products	25	0.4	47,018	0.0	12.5%	19.2%	0.0%	30.0%	13.1 %	0.6%
33	3222	Manufacture of builders' carpentry and joinery	6	0.1	38,013	0.0	12.5%		0.0%	15.0%	5.6%	
34	3049	Manufacture of other food products nec	45	0.8	571,653	0.3	12.2%		0.0%	30.0%	9.8%	
35	337	Manufacture of rubber products	94	1.6	2,011,498	1.1	12.0%	15.7%	0.0%	43.0%	10.7 %	0.8%
36	3043	Manufacture of cocoa, chocolate and sugar confectionery	14	0.2	256,512	0.1	11.7%	16.3%	0.0%	25.0%	10.4 %	0.8%
37	3239	Manufacture of other articles of paper and paperboard	31	0.5	366,734	0.2	11.6%	9.3%	0.0%	20.0%	8.0%	0.9%
38	3929	Other manufacturing nec	85	1.4	827,830	0.5	11.4%	8.0%	0.0%	30.0%	9.7%	1.3%
39	365	Manufacture of electric lamps and lighting equipment	43	0.7	548,271	0.3	11.1%		0.0%	21.0%	9.5%	
40	3232	Manufacture of corrugated paper and paper-board	7	0.1	42,595	0.0	10.6%	10.2%	9.0%	15.0%	1.8%	0.6%
41	38	Manufacture of transport equipment	239	4.1	31,445,659	17.8	10.6%	12.3%	0.0%	47.0%	13.8 %	1.3%
42	311	Spinning, waving and finishing of textiles	162	2.8	759,876	0.4	10.4%	32.2%	0.0%	30.0%	9.8%	0.3%
43	322	Manufacture of products of wood, cork, straw and plaiting materials	56	1.0	649,655	0.4	10.4%	11.7%	0.0%	30.0%	8.7%	1.1%
44	3553	Manufacture of cutlery, hand tools and general hardware	132	2.2	1,454,735	0.8	10.4%	11.6%	0.0%	30.0%	10.0 %	0.9%
45	358	Manufacture of household appliances nec	88	1.5	2,189,446	1.2	10.4%	15.1%	0.0%	40.0%	10.5 %	0.8%
46	2532	Extraction and evaporation of salt	1	0.0	7,073	0.0	10.0%	18.0%	10.0%	10.0%	0.0%	
47	3421	Manufacture of non-structural non-refractory ceramicware	17	0.3	841,291	0.5	10.0%		0.0%	30.0%	12.4 %	
48	3031	Manufacture of grain mill products	34	0.6%	991,802	0.6	9.8%	8.2%	0.0%	25.0%	9.8%	1.5%
49	3379	Manufacture of other rubber products	62	1.1%	828,582	0.5	9.8%	14.5%	0.0%	20.0%	7.4%	0.8%
50	338	Manufacture of plastic products	150	2.5%	1,357,909	0.8	9.8%	12.3%	0.0%	25.0%	7.7%	0.8%

Source: DTI, Customs and Excise, WTO (1998) and own calculations
Note: excluding non-ad valorem tariffs

3.2.6 Collection Rates

There are a number of reasons why the actual duties collected as a proportion of imports may be less than the scheduled tariffs. First, there may be rebates that apply to certain shipments and not to others. Secondly, goods may be imported from a free trade area such as the EU or SADC. There may also be other bilateral agreements that apply to certain countries and certain goods. These arrangements will put a significant burden on the Customs and Excise administration. Some monitoring of the applied rates that are governed by the EU and SADC free trade agreements is currently undertaken by the DTI, but this needs to be expanded and matched with the relevant trade data. The third reason for a deviation between actual and potential duties collected is the intentional and unintentional administrative error. The duty collection efficiency analysis is first presented by broad tariff band, followed by broad Chapter 22 commodity classification. Note that there is no information available to discriminate amongst these three elements and the following analysis is limited to *ad valorem* tariffs.

Table 3.14: Consolidated tariff analysis based on July 2000 tariff schedule and 2000 imports, actual duties collected and potential duties (current Rm)

		# of HS8 lines	% of # of lines	Imports	% Imports	Actual duties collected	Actual duties collection rate	Potential duties to be collected	Potential duty collection rate	Collection efficiency rate
		1	2	3	4	5	6	7	8	9
1	tariff ≥ 40%	63	0.8%	6,133	3.5%	316	5.2%	2,865	46.7%	11.0%
2	30% ≤ tariff < 40%	168	2.1%	17,161	9.7%	514	3.0%	5,911	34.4%	8.7%
3	20% ≤ tariff < 30%	681	8.7%	9,771	5.5%	1,374	14.1%	2,015	20.6%	68.2%
4	15% ≤ tariff < 20%	576	7.4%	5,871	3.3%	641	10.9%	886	15.1%	72.3%
5	10% ≤ tariff < 15%	539	6.9%	6,602	3.7%	477	7.2%	683	10.3%	69.9%
6	5% ≤ tariff < 10%	366	4.7%	9,622	5.4%	458	4.8%	542	5.6%	84.5%
7	0% ≤ tariff < 5%	5	0.1%	44	0.0%	2	3.7%	2	3.8%	99.4%
8	0%	3,485	44.5%	121,357	68.7%	8	0.0%	0	0.0%	Na
9	Total	5,883		176,564	100.0%	3,791	2.1%	12,904	7.3%	29.4%

Source: DTI and Customs and Excise,
Note: analysis only applies to ad valorem tariffs

While the first four columns are repeated from Table 3.6 above, column 5 shows the actual duties collected, as published by Customs and Excise, followed by the collection rate - the actual duties collected divided by the total imports for 2000 shown in column 3, in the next column. Using the tariff schedule of July 2000, the potential duties collected over the same period are shown in column 7, with the potential duty collection rate in column 8. Comparing columns 6 and 8 offers a view of the collection efficiency rate, bearing in mind the various reasons for deviations from unity as discussed above. It can be seen that the collection efficiency increases when moving down the tariff schedule - below 10% import duty rates, the actual duties collected are about 85% of what should have been collected. On the other side of the schedule, the collection rate is evidently much lower, with less than 10% of the potential duties for tariffs over 30% being collected. The overall collection efficiency rate (as defined in our limited way) is about 29%. To get a broad indication of where in the commodity range the collection efficiency is relatively low, the same information for 22 broadly defined commodity groups is presented (Table 3.15).

Table 3.15: Consolidated tariff analysis based on July 2000 tariff schedule and 2000 imports, actual duties collected and potential duties (current Rm) by Chapter 22 category

			# of HS8 lines	% of # of lines	Imports	% Imports	Actual duties collected	Actual duties collection rate	Simple average tariff	Potential duties to be collected	Potential duty collection rate	Collection efficiency rate
	Ch22	Ch22 code	1	2	3	4	5	6	7	8	9	10
1	01	Live animals animal products	128	2%	824	0.5	58	7.0%	11.1%	103	12.5%	56.3%
2	02	Vegetable products	295	5%	2,389	1.4	33	1.4%	7.2%	52	2.2%	62.8%
3	03	Animal or vegetable fats & oils	43	1%	773	0.4	13	1.7%	4.2%	23	2.9%	59.2%
4	04	Prepared foodstuffs, beverages, tobacco	210	4%	2,030	1.1	203	10.0%	15.0%	238	11.7%	85.4%
5	05	Mineral products	166	3%	26,521	15.0	2	0.0%	2.0%	13	0.0%	13.0%
6	06	Products of chemical or allied industries	1,094	19%	20,373	11.5	238	1.2%	2.3%	335	1.6%	71.0%
7	07	Plastics and rubber	424	7%	7,414	4.2	468	6.3%	8.8%	693	9.3%	67.5%
8	08	Raw hides and skins, leather	75	1%	1,091	0.6	109	10.0%	10.9%	137	12.5%	79.9%
9	09	Wood, cork, straw	86	1%	1,208	0.7	31	2.6%	7.7%	37	3.1%	82.9%
10	10	Pulp, paper & paper-board, books	166	3%	3,710	2.1	199	5.4%	6.5%	245	6.6%	81.2%
11	11	Textiles, fabrics, clothing	443	8%	2,428	1.4	209	8.6%	14.6%	302	12.4%	69.2%
12	12	Footwear, headgear, umbrellas	74	1%	829	0.5	150	18.0%	20.8%	226	27.3%	66.2%
13	13	Articles of stone asbestos ceramics glass	203	3%	2,673	1.5	156	5.9%	7.0%	176	6.6%	88.7%
14	14	Precious metals	60	1%	3,551	2.0	25	0.7%	5.3%	33	0.9%	77.4%
15	15	Base metals	742	13%	7,555	4.3	258	3.4%	5.7%	353	4.7%	72.9%
16	16	Machinery, mechanical & electrical	1,035	18%	52,723	29.9	785	1.5%	4.0%	1,060	2.0%	74.1%
17	17	Vehicles, aircraft, ships	211	4%	15,524	8.8	617	4.0%	10.0%	3,337	21.5%	18.5%

			# of HS8 lines	% of # of lines	Imports	% Imports	Actual duties collected	Actual duties collection rate	Simple average tariff	Potential duties to be collected	Potential duty collection rate	Collection efficiency rate
18	18	Optical photograph measuring musical inst	242	4%	6,909	3.9	15	0.2%	0.3%	34	0.5%	45.4%
19	20	Miscellaneous manufactured articles	170	3%	2,812	1.6	171	6.1%	9.7%	255	9.1%	67.1%
20	21	Works of art collectors pieces & antiques	7	0%	220	0.1	0	0.0%	0.0%	0	0.0%	na
21	22	Other unclassified goods	9	0%	15,008	8.5	51	0.3%	35.0%	5,253	35.0%	1.0%
22		Total	5,883	100%	176,564	100.0	3,791	2.1%	6.5%	12,904	7.3%	29.4%

Source: DTI and Customs and Excise
Note: analysis only applies to ad valorem tariffs

What is clear from Table 3.15 is that the overall average is pulled down by the "unclassified" category shown in row 22. This includes the imports of original equipment components for the motor vehicle industry, which faces 35% in the tariff schedule. Moreover, in row 17 it can be seen that the collection efficiency in the broad category of motor vehicles is the second lowest. Both should be seen in the light of the Motor Industry Development Programme (MIDP). Duties collected on mineral products are also significantly less than what should be collected, although the value of the potential duties involved is very low.

3.3 EFFECTIVE RATES OF PROTECTION AND ANTI-EXPORT BIAS

The extent to which the production of import substitutes is stimulated by tariff imposition depends not only on the nominal tariff imposed on a final product, but also on any tariffs levied on imports of intermediate inputs needed in the production of that product. Rather than looking only at the nominal protection that a product enjoys, one should consider the effective protection it obtains, given its nominal protection as well as the protection that its inputs enjoy. In addition, it is important to evaluate the degree to which the price-raising effects of import protection act as a relative disincentive to exports in the form of anti-export bias. We start with the former concept, followed by the latter.

3.3.1 Effective Rates of Protection

The theory of effective protection holds that to determine the protective effect of a tariff, one must not look at the size of the nominal tariff, but at the proportionate change in the value-added of the protected commodity that occurs as a result of the tariffs imposed on the good and its inputs.

The relative difference between nominal and effective rates could often differ. For example, it may be reasonable to assume that SA's nominal tariffs are average by middle-income country standards, but its effective rates of protection are high by similar standards. The general rule as to whether the country's nominal rates are higher or lower than its effective rates are determined by the following:

Effective rates of protection are equal to nominal rates if all tariffs are equal when:

- Tariffs on output (clothing, for example) are higher than tariffs on inputs (textiles), that is, the effective rates are higher than the nominal rates; and
- Tariffs of inputs (textiles, for example) are higher than tariffs on outputs (clothing), that is, the effective rates are lower than the nominal rates.

It is clear that the degree of protection derived by an activity from a tariff on its output needs to be qualified by the degree of taxation due to tariffs on its inputs, to get a sense of the net protection, as opposed to the gross protection. Net, or rather, effective protection has been the subject of several studies in SA.[1] While the traditional ingredient in the calculation of effective rates of protection is the nominal tariff, as scheduled by the authorities, Fedderke and Vaze (2000) use collection rates as a proxy in the face of data constraints. The other ingredient that is necessary for the successful examination of effective protection is information on the inputs of each of the activities identified. Input structures for a large number of activities in the SA economy have recently been updated by Statistics SA (2000), benchmarked on the year 1998 as part of the supply-use tables for that year.[2]

Although this is not a perfect set of ingredients, the nominal tariffs for 2000 and the 1998 supply-use tables are currently the most recent available and will be used in this section to examine various (but not all) angles on effective rates of protection.

The simplest way to think about effective rates of protection is to continue with the net protection concept mentioned above, which suggests that we should be concerned with the impact of nominal tariffs on net production, or value-added. In particular, it would be useful to know the difference between a sector's value-added in world prices and in domestic (distorted or observed) prices, expressed in terms of the latter. This can be written as:

(1) $$ERP_j = \frac{VA_j^* - VA_j}{VA_j}$$

in which ERP_j is the effective rate of protection in activity j, the "*" superscript indicates domestic price so that VAj^* is value-added of activity j at domestic prices and VA_j is value-added of sector j at world prices as observed in the input-output database. Since value-added is the difference between output (X_j) in activity j and intermediate inputs ($Intm_{ij}$) that activity j purchases from activity i, equation (1) can be rewritten as:

(2) $$ERP_j = \frac{\left(X_j^* - \sum_1^i Intm_{ij}^*\right) - \left(X_j - \sum_1^i Intm_{ij}\right)}{\left(X_j - \sum_1^i Intm_{ij}\right)} = \frac{\left(X_r(1+t_j) - \sum_1^i Intm_{ij}(1+t_i)\right) - \left(X_j - \sum_1^i Intm_{ij}\right)}{\left(X_j - \sum_1^i Intm_{ij}\right)}$$

in which t_j and t_i are the tariffs on activity j and i respectively. Some properties worth mentioning here are that the effective protection will be higher if the nominal protection on output (t_j) is raised, but lower if the nominal protection on inputs (t_i) is raised. With higher intermediate demand ($Intm_{ij}$), value-added will be lower and with a given tariff on output, the proportional effect on value-added is greater as there is less to protect.

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[1] See, for example, Holden and Holden (1978), Kuhn and Jansen (1997) and Fedderke and Vaze (2000).

[2] It should be noted, however, that the structural information on an activities input structure, available from the Use component of the Supply- Use Tables, is still based on the 1993 manufacturing census, although a partial updating has been achieved for lower level control totals, using the 1996 manufacturing census.

What follows is a simplification of a number of issues that have been dealt with in the literature, but that are worth mentioning briefly at this stage. First, there is the issue of non-traded inputs such as construction, electricity, domestic trade, transport, financial and community services. Two crude options are available: either non-traded inputs are considered traded inputs with a zero tariff, which has been labelled the Balassa method; or non-traded inputs are considered to be part of value-added. The latter option, in which the index i of equation (2) above only applies to traded activities, was proposed by Corden. Consequently, with an expanded view on value-added there is more to protect, so to speak, and as a result the leverage of the output tariff is smaller and the effective rates of protection of the Corden method are most likely to be lower than those calculated by the Balassa method.

The so-called crude Corden measure can be refined by factoring the direct and indirect traded intermediate inputs out of the value-added by taking the appropriate components of the Leontief inverse. Moreover, it could be argued that prices of non-traded inputs rise with protection due to higher competition for resources and aggregate expenditure effects (Greenaway and Milner, 1993), which would give rise to higher effective protection given the same output tariff. The degree to which prices will in fact increase depends on the substitution between non-traded and traded goods. Staying with the possibility of substitution, Holden and Holden (1978) have investigated the degree to which intermediate inputs and value-added can be exchanged. If there is indeed scope for substitution away from taxed inputs towards primary inputs, "$Intmij$" in equation (2) can be expected to decline and, given the same tariff schedule, the effective rate of protection will be lower compared to a situation without substitution. Although a number of other substitutions are possible according to Holden and Holden (1978), they are ignored for reasons of convenience. In sum, the application below takes a rather static view on protection afforded by the tariff schedule.

Finally, the actually observed resource shifts that may or may not be associated with nominal or effective rates of protection are not investigated. Holden (1999) and Fedderke and Vaze (2000) have tested the degrees to which nominal and effective rates of protection induce resources to shift into the higher protected activities in SA. This analysis is therefore limited to the reporting of effective rates of protection, according to the Balassa and crude Corden methods, and based on the tariff schedule and the observed collection rates. In terms of the distinction between traded and non-traded goods, the former is assumed to include agriculture, mining and manufacturing - SIC 1-3. Non-traded goods therefore include utilities, construction and all services. Comparisons between nominal and effective, Balassa and Corden, and tariff schedule and collection rates respectively are achieved by means of correlation coefficients.

Table 3.16: Nominal and effective rates of protection for 2000 based on the tariff structure

	SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank		SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank
1	Carpets	364.3%	78.6%	1	28.9%	5	49	Petroleum	1.4%	0.9%	46	0.5%	66
2	Handbags	321.2%	70.2%	3	30.0%	3	50	Basic chemicals	1.2%	0.6%	50	1.0%	58
3	Motor vehicles	252.4%	81.0%	2	36.2%	1	51	Pesticides	0.5%	0.3%	51	1.2%	55
4	Motor vehicle parts	145.0%	64.8%	4	32.7%	2	52	Pumps	0.5%	0.3%	52	1.6%	51
5	Bakeries	116.2%	54.1%	5	24.8%	7	53	General machinery	0.3%	0.2%	53	1.4%	52
6	Footwear	99.8%	55.8%	6	28.1%	6	54	Lifting equipment	0.1%	0.1%	54	1.1%	56
7	Wearing apparel	98.8%	50.7%	12	29.2%	4	55	FSIM	0.0%	na	55	0.0%	74
8	Furniture	92.2%	38.7%	11	19.3%	10	56	Electrical equipment	-0.3%	-0.2%	57	2.1%	48
9	Soap	82.2%	35.3%	7	18.9%	12	57	Agriculture	-0.3%	-0.2%	58	1.4%	53
10	Tyres	80.0%	35.1%	8	19.0%	11	58	Real estate	-0.3%	na	84	0.0%	84
11	Knitting mills	79.9%	35.0%	14	21.3%	9	59	Machine-tools	-0.3%	-0.2%	56	0.9%	61
12	Textile articles	76.8%	36.5%	15	21.8%	8	60	Electricity	-0.4%	na	60	0.0%	87
13	Animal feeds	71.4%	34.0%	9	9.0%	26	61	Insurance	-0.5%	na	59	0.0%	80
14	Other paper	62.6%	31.0%	13	15.7%	13	62	Cement	-0.6%	-0.4%	74	0.0%	87
15	Wire and cable	50.0%	33.3%	10	14.2%	14	63	Water	-0.6%	na	76	0.0%	82
16	Other food	40.6%	20.8%	16	13.6%	16	64	Fish	-0.8%	-0.6%	65	0.5%	67
17	Lighting equipment	39.1%	23.3%	17	12.4%	18	65	Publishing	-0.9%	-0.6%	62	1.9%	49
18	Confectionery	37.5%	21.1%	22	13.7%	15	66	Business activities	-0.9%	na	61	0.0%	73
19	Fruit	35.4%	17.8%	21	11.4%	21	67	Other mining	-1.1%	-0.7%	72	0.0%	71
20	Other rubber	35.0%	20.4%	18	11.8%	20	68	Communications	-1.1%	na	71	0.0%	79
21	Textiles	32.9%	17.7%	23	10.9%	22	69	Trade	-1.2%	na	69	0.0%	85
22	Plastic	31.1%	19.3%	25	13.0%	17	70	Health and social work	-1.3%	na	73	0.0%	76
23	Other textiles	28.0%	17.9%	27	11.9%	19	71	General government	-1.3%	na	63	0.0%	78
24	Containers of paper	26.3%	15.7%	24	10.2%	24	72	Fertilizers	-1.3%	-0.8%	81	0.0%	87
25	Paper	22.7%	11.0%	20	7.2%	28	73	Gold	-1.4%	-1.1%	68	0.0%	87
26	Glass	20.1%	11.1%	31	8.9%	27	74	Other transport	-1.5%	-1.1%	66	0.2%	69
27	Beverages & tobacco	19.3%	12.8%	19	9.7%	25	75	Grain mills	-1.6%	-1.0%	78	0.7%	63
28	Other non-metallic	19.3%	10.3%	28	6.0%	33	76	Treated metals	-1.7%	-1.0%	70	0.0%	87

	SU-tables description	Balassa's ERP	Cordens ERP	Rank	NRP	Rank		SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank
29	Household appliances	14.9%	8.7%	36	6.7%	30	77	Activities/services	-1.7%	na	67	0.0%	75
30	Primary plastics	14.9%	8.3%	26	4.8%	38	78	Agricultural machinery	-1.7%	-1.3%	75	0.8%	62
31	Oils	14.5%	6.9%	29	4.9%	36	79	Engines	-1.7%	-1.1%	64	0.5%	65
32	Structural ceramics	14.1%	9.2%	32	6.2%	32	80	Coal	-1.9%	-1.2%	82	0.0%	87
33	Fabricated metal	12.4%	7.6%	33	5.4%	34	81	Dairy	-2.0%	-1.2%	77	1.0%	57
34	Non-structural ceramics	12.3%	6.3%	35	5.0%	35	82	Sugar	-2.1%	-1.3%	83	0.0%	87
35	General hardware	12.1%	7.8%	34	6.3%	31	83	Transport services	-2.1%	na	80	0.0%	83
36	Structural metal	10.0%	5.9%	40	4.9%	37	84	Hotels	-2.4%	na	92	0.0%	86
37	Iron and steel	10.0%	5.0%	37	3.4%	44	85	Special machinery	-2.9%	-2.0%	79	0.3%	68
38	Paints	7.3%	3.6%	41	4.1%	43	86	Pharmaceuticals	-3.1%	-1.7%	88	0.1%	70
39	Electricity apparatus	6.8%	5.1%	39	4.6%	40	87	Other chemicals	-3.3%	-2.0%	85	1.2%	54
40	Wood	5.7%	3.6%	43	3.1%	45	88	Mining machinery	-3.8%	-2.6%	86	0.9%	59
41	Other manufacturing	5.1%	4.4%	30	4.8%	39	89	Office machinery	-4.3%	-2.1%	91	0.0%	87
42	Electric motors	4.7%	3.4%	44	4.5%	41	90	Other construction.	-4.3%	na	90	0.0%	77
43	Non-ferrous metals	4.5%	3.1%	38	2.5%	47	91	Optical instruments	-4.4%	-2.9%	87	0.6%	64
44	Accumulators	3.9%	2.5%	42	4.1%	42	92	Recorded media	-6.6%	-4.5%	94	0.0%	72
45	Radio and television	3.5%	2.2%	48	2.7%	46	93	Food machinery	-7.4%	-5.0%	89	0.0%	87
46	Leather	3.3%	1.5%	45	6.9%	29	94	Buildings	-7.5%	na	93	0.0%	81
47	Jewellery	3.1%	1.9%	47	0.9%	60	95	Meat	-378.3%	221.8%	95	10.5%	23
48	Gears	2.1%	1.2%	49	1.8%	50		Average on traded goods	12.0%	7.6%		7.3%	

Source: DTI and Customs and Excise, and own calculations

Note: analysis only applies to ad valorem tariffs, for SIC codes see Statistics SA (2000)

Several observations can be made. First, row 95 shows that the meat sector's effective rate of protection is the lowest when calculated with the Balassa method, while it is the highest when the Corden method is applied. The reason is that according to Statistics SA's supply-use table, value-added as a proportion of total output in this activity is about 5%, while the economy-wide average is about 50%, which causes any change in intermediate inputs due to tariffs abolition. This produces exaggerated changes in value-added, which may swing from positive to negative.

Second, it can be seen that the effective rate according to the Balassa method is indeed considerably higher than the effective rate according to the Corden method. If the wild swing of the effective rate of protection in the meat sector is ignored (see row 95), the correlation coefficient is 91% on the traded goods, while the rank correlation between the two measures is 99%. The correlation between the Balassa measure and the nominal rates of protection is 68% and the rank correlation is 88%, while the correlation between the Corden measure and the nominal rates of protection is 67% and the rank correlation 95% respectively. The ranking of the nominal rate of protection is a reasonable indicator of the ranking of the effective rate of protection, and where nominal rates of protection are low, they are a reasonable indicator, as would be expected, of negative effective rates of protection.

At the top of the table it can be seen that relatively high effective rates of protection are found in the textiles, leather, footwear, clothing, motor vehicles and parts, food processing and, to some degree, the chemicals and rubber production activities. Negative effective rate territories lie toward the end of the table. Activities that currently receive no protection on their output – the non-traded goods producers and traded activities, such as cement (row 62) and fertiliser (row 72), sugar (row 82) and office equipment (row 89) – are subject to negative real protection. However, activities with a low level of output protection – such as electrical equipment (row 56), agriculture (row 57) and grain milling (row 75), other chemicals (row 87) and optical equipment (row 91) – also have a negative effective rate of protection because the weighted input tariffs on their inputs amount to more than their output tariff.

Table 3.17 depicts the results of the same methodologies, but now applied to the collection rates. In the last row it can be seen that the nominal collection rate is only just over 2% compared to the average schedule's *ad valorem* equivalent of more than 7%. The effective rates of protection on traded goods are therefore also much lower at 7% and 4.5% for the Balassa and Corden methods respectively. By comparing the ratio of effective and nominal rates of protection of the tariff schedule with that of the collection rates, it can be noted that they are higher than for the latter. This suggests that there is relatively more effective protection when considering the collection rates. The correlations between the effective rates and the nominal collection rates are again relatively high at 64% and 89% for the Balassa and Corden methods respectively, while the rank correlations are 92% and 95% respectively. This again suggests that the nominal rate of protection based on collection rates is a reasonable indicator for the effective rate of protection based on collection rates, at least as far as ranking is concerned.

Table 3.17: Nominal and effective rates of protection for 2000 based on the collection rates

	SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank		SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank
1	Meat	386.8%	67.5%	1	5.9%	25	49	Pumps	1.1%	0.8%	49	1.5%	49
2	Handbags	259.3%	64.0%	2	26.3%	1	50	Motor vehicle parts	0.8%	0.5%	52	1.6%	48
3	Carpets	224.7%	63.5%	3	23.6%	3	51	Lifting equipment	0.8%	0.5%	51	1.0%	54
4	Bakeries	105.7%	50.5%	4	23.3%	4	52	Electrical equipment	0.7%	0.5%	50	1.8%	45
5	Wearing apparel	85.2%	45.2%	8	24.6%	2	53	Pesticides	0.4%	0.2%	54	1.0%	56
6	Animal feeds	76.1%	35.7%	5	8.7%	19	54	Basic chemicals	0.3%	0.1%	55	0.5%	62
7	Textile articles	68.7%	33.4%	12	18.6%	5	55	General machinery	0.2%	0.2%	56	1.1%	51
8	Other paper	59.1%	29.6%	6	14.3%	7	56	Petroleum	0.2%	0.1%	53	0.1%	70
9	Soap	53.9%	25.4%	7	14.2%	8	57	FSIM	0.0%	0.0%	57	0.0%	74
10	Footwear	52.3%	32.7%	10	17.7%	6	58	Publishing	-0.2%	-0.2%	58	1.7%	47
11	Knitting mills	43.4%	21.5%	16	13.5%	9	59	Real estate	-0.3%	0.0%	86	0.0%	84
12	Lighting equipment	40.2%	23.8%	11	11.9%	10	60	Electricity	-0.3%	0.0%	62	0.0%	87
13	Tyres	40.1%	20.1%	13	11.4%	12	61	Insurance	-0.4%	0.0%	60	0.0%	80
14	Wire and cable	35.5%	24.5%	9	10.4%	15	62	Fish	-0.4%	-0.3%	61	0.5%	63
15	Other food	33.3%	17.5%	14	11.4%	13	63	General government	-0.5%	0.0%	59	0.0%	78
16	Confectionery	31.3%	18.0%	18	11.8%	11	64	Water	-0.5%	0.0%	80	0.0%	82
17	Furniture	30.0%	15.5%	22	9.2%	17	65	Cement	-0.5%	-0.3%	79	0.0%	87
18	Containers of paper	28.1%	16.7%	19	9.5%	16	66	Grain mills	-0.7%	-0.4%	71	0.6%	61
19	Other rubber	26.3%	15.8%	15	9.0%	18	67	Other mining	-0.7%	-0.4%	68	0.0%	72
20	Plastic	26.2%	16.5%	23	10.7%	14	68	Agriculture	-0.7%	-0.6%	78	0.8%	57
21	Fruit	24.8%	12.9%	20	8.5%	20	69	Business activities	-0.7%	0.0%	63	0.0%	73
22	Textiles	19.4%	11.0%	27	6.9%	23	70	Dairy	-0.7%	-0.5%	66	1.0%	53
23	Other non-metallic	18.2%	9.8%	24	5.6%	27	71	Communications	-0.7%	0.0%	69	0.0%	79
24	Motor vehicles	18.1%	10.6%	26	4.9%	30	72	Machine-tools	-0.7%	-0.5%	64	0.4%	64
25	Other textiles	17.8%	11.7%	30	7.8%	21	73	Transport services	-0.8%	0.0%	74	0.0%	83
26	Paper	16.7%	8.4%	17	5.5%	28	74	Activities/services	-0.9%	0.0%	65	0.0%	75
27	Glass	16.7%	9.3%	28	7.5%	22	75	Health and social work	-0.9%	0.0%	76	0.0%	76
28	Structural ceramics	13.1%	8.5%	32	5.7%	26	76	Trade	-0.9%	0.0%	75	0.0%	85
29	Beverages & tobacco	11.4%	7.8%	21	6.4%	24	77	Agricultural machinery	-1.0%	-0.7%	70	0.7%	58
30	Oils	11.2%	5.4%	29	3.8%	37	78	Fertilizers	-1.0%	-0.6%	84	0.0%	87
31	Non-structural ceramics	11.0%	5.7%	35	4.4%	32	79	Gold	-1.1%	-0.8%	72	0.0%	87
32	Fabricated metal	10.6%	6.5%	33	4.4%	33	80	Coal	-1.1%	-0.7%	81	0.0%	87
33	General hardware	10.1%	6.5%	34	5.2%	29	81	Other transport	-1.2%	-0.9%	67	0.2%	68
34	Household appliances	9.9%	5.9%	37	4.8%	31	82	Treated metals	-1.2%	-0.7%	73	0.0%	87
35	Primary plastics	8.3%	4.7%	31	2.8%	42	83	Sugar	-1.4%	-0.9%	85	0.0%	87
36	Iron and steel	7.1%	3.6%	38	2.5%	44	84	Hotels	-1.6%	0.0%	93	0.0%	86
37	Electricity apparatus	6.7%	5.0%	36	4.0%	35	85	Engines	-1.9%	-1.2%	77	0.3%	65

	SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank		SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank
38	Paints	6.3%	3.1%	39	3.3%	39	86	Other chemicals	-2.0%	-1.2%	83	1.1%	52
39	Structural metal	5.3%	3.2%	40	2.9%	41	87	Special machinery	-2.2%	-1.5%	82	0.2%	67
40	Other manufacturing	5.0%	4.3%	25	4.4%	34	88	Pharmaceuticals	-2.4%	-1.4%	87	0.2%	69
41	Wood	4.9%	3.1%	42	2.6%	43	89	Mining machinery	-3.0%	-2.1%	88	0.7%	60
42	Electric motors	4.2%	3.1%	43	3.5%	38	90	Other construction.	-3.4%	0.0%	91	0.0%	77
43	Jewellery	3.4%	2.1%	45	0.7%	59	91	Office machinery	-3.4%	-1.7%	92	0.0%	87
44	Accumulators	3.3%	2.1%	41	3.2%	40	92	Optical instruments	-3.9%	-2.6%	89	0.3%	66
45	Gears	2.1%	1.2%	46	1.5%	50	93	Recorded media	-5.5%	-3.7%	95	0.0%	71
46	Leather	1.8%	0.8%	47	4.0%	36	94	Food machinery	-5.7%	-3.8%	90	0.0%	87
47	Radio and television	1.7%	1.1%	48	1.8%	46	95	Buildings	-6.1%	0.0%	94	0.0%	81
48	Non-ferrous metals	1.6%	1.1%	44	1.0%	55		Average	7.0%	4.5%		2.1%	

Source: DTI and Customs and Excise
Note: analysis only applies to ad valorem tariff; for SIC codes see Statistics SA (2000)

While the ranking of activities using collection rates is more or less the same as in the case of the effective rates based on the tariff schedule, the notable absentee from the top is motor vehicles, basically because the nominal tariff based on collection rates is, at 10% (see row 24), much lower than the scheduled weighted average tariff of 36%. The correlation coefficients between the effective rates of protection based on the collection rates and the tariff schedule are 87% and 84% for the Balassa and Corden methods, while the rank correlation is 97% and 96% respectively, which suggests that the rates of protection, based on the collection rates, are a good indicator of the effective rates of protection based on the tariff schedule.

The ultimate question, however, is whether the actual collection rates are correlated in any way with the effective rates of protection based on the tariff schedule. The correlation coefficients are, however, much lower at about 54% and 60% for the Balassa and Corden methods respectively, although they reach 74% and 82% respectively if the meat processing industry is ignored as an outlier. This means that if one takes account of outliers, such as the meat processing activity, the actual import duty collection rates – at least at this level of activity aggregation – give a reasonably accurate picture of effective rates of protection based on the tariff schedule.

In conclusion then, relatively high levels of effective rates of protection still occur in the textiles, leather, footwear, clothing, motor vehicles and parts, food processing and, to some degree the chemicals and rubber production activities. However, negative effective rates appear to be applicable to activities that currently receive no protection on their output – the non-traded goods producers and traded activities such as cement and fertiliser, sugar and office equipment. Activities with a low level of output protection, such as electrical equipment, agriculture and grain milling, other chemicals and optical equipment, also have a negative effective rate of protection. This is because the weighted input tariffs on their inputs amount to more than their output tariff.

3.3.2 The Anti-Export Bias

It is important to understand that the price-raising effects of import protection act as a relative disincentive to export. This is known as the anti-export bias, which refers more formally to the degree to which trade policy (the country's incentive structure) tends to make production for the domestic market more profitable than production for the export market. Anti-export bias is a problem in a country like SA that relies heavily on imports of intermediate and capital goods. It is crucial to promote manufacturing exports to generate the foreign exchange necessary to pay for these imports.

While export incentives may reduce the discrimination against exports resulting from protection, SA has had to terminate the GEIS under its WTO obligations. However, despite the elimination of the GEIS, two other schemes are currently available to allow exporters to source inputs used in export manufacture at world prices. First, a rebate of duties (Rebate Item 470.03 in terms of the Customs and Excise Act) enables manufacturers to import inputs for manufactured exports duty-free.[3] Second, by a drawback of duties (Item 521.00) allows a refund of the duty paid on imported inputs once the manufactured goods are exported.

The IDC has estimated that the reduction in export incentives (mainly GEIS) between 1993 and 1996 resulted in an overall *increase* in the anti-export bias in the economy, despite the concurrent import liberalisation that served to reduce it. The IDC predicts that with the lowering of tariffs, accompanied by the phasing-out of the GEIS, no progress will be made in lowering the anti-export bias by 1999, relative to its 1996 level. While industrial rebates may alleviate the problem, they need to be used prudently.

What is perhaps more important for policy makers is the degree to which entrepreneurs are discouraged from producing for the export market rather than the domestic market. This can be examined by means of an Anti-Export Bias measure, which applies the same concept of effective rate of protection on goods produced for the domestic market to goods produced for the world market. The difference is that in the world market there is no protection on output, but there is a tax on the inputs to produce the exports, that is, an effective rate of protection without the output protection. The export tax rate is defined as:

(3) $$XRP_j = \frac{\left(X_j - \sum_1^i Intm_{ij}^*\right) - \left(X_j - \sum_1^i Intm_{ij}\right)}{\left(X_j - \sum_1^i Intm_{ij}\right)} = \frac{-t_i \sum_1^i Intm_{ij}}{\left(X_j - \sum_1^i Intm_{ij}\right)}$$

Following Kuhn and Jansen (1997), the Anti-Export Bias measure can be written as:

(4) $$AEB_j = \frac{(1 + ERP_j)}{(1 + XRP_j)}$$

The above formulation is applied in the Balassa fashion, in which all non-tradables are treated as tradables, to the tariff schedule only.

[3] This would reduce the anti-export bias to the extent that protection raises input costs above world prices.

We do not measure the anti-export bias on the basis of collection rates. Rather, we use the tariff schedule, since it is the potential exporters' perception of the tariff schedule that drives production decisions. The results are shown in the next table. In the last row, an unusual observation is made with regard to the motor vehicle industry. The export tax rate, as defined in equation (3), is -325%, which turns the denominator and therefore the anti-export bias. The correlation coefficient between the anti-export bias and the effective rate of protection is about 70%, but if we exclude the last two industries (meat and motor vehicles), this increases to 92%. The effective rate of protection is therefore a reasonable indicator for anti-export bias.

Relatively high levels of anti-export bias can be found in industries related to textiles and clothing, motor vehicle parts, leather, tyres and some food processing sectors. Low levels of anti-export bias, with values of around unity, are found for industries such as sugar, fertiliser, cement, office machinery, treated metals and some typical tertiary sectors.

Table 3.18: Anti-export bias for 2000 based on the tariff schedule

	SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank		SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank
1	Carpets	20.45	364.3%	1	28.9%	25	49	Publishing	1.05	-0.9%	65	1.9%	49
2	Handbags	17.19	321.2%	2	30.0%	1	50	Gears	1.05	2.1%	48	1.8%	50
3	Motor vehicle parts	3.54	145.0%	4	32.7%	3	51	Other chemicals	1.05	-3.3%	87	1.2%	54
4	Footwear	2.78	99.8%	6	28.1%	4	52	Pumps	1.04	0.5%	52	1.6%	51
5	Wearing apparel	2.69	98.8%	7	29.2%	2	53	General machinery	1.04	0.3%	53	1.4%	52
6	Textile articles	2.41	76.8%	12	21.8%	19	54	Dairy	1.04	-2.0%	81	1.0%	57
7	Soap	2.38	82.2%	9	18.9%	5	55	Lifting equipment	1.04	0.1%	54	1.1%	56
8	Knitting mills	2.37	79.9%	11	21.3%	7	56	Mining machinery	1.03	-3.8%	88	0.9%	59
9	Furniture	2.32	92.2%	8	19.3%	8	57	Grain mills	1.03	-1.6%	75	0.7%	63
10	Bakeries	2.30	116.2%	5	24.8%	6	58	Basic chemicals	1.03	1.2%	50	1.0%	58
11	Other paper	2.19	62.6%	14	15.7%	9	59	Agriculture	1.03	-0.3%	57	1.4%	53
12	Leather	2.17	3.3%	46	6.9%	10	60	Engines	1.03	-1.7%	79	0.5%	65
13	Animal feeds	2.09	71.4%	13	9.0%	12	61	Machine-tools	1.02	-0.3%	59	0.9%	61
14	Tyres	2.01	80.0%	10	19.0%	15	62	Agricultural machinery	1.02	-1.7%	78	0.8%	62
15	Wire and cable	1.79	50.0%	15	14.2%	13	63	Optical instruments	1.02	-4.4%	91	0.6%	64
16	Containers of paper	1.60	26.3%	24	10.2%	11	64	Petroleum	1.02	1.4%	49	0.5%	66
17	Lighting equipment	1.58	39.1%	17	12.4%	17	65	Fish	1.01	-0.8%	64	0.5%	67
18	Textiles	1.58	32.9%	21	10.9%	16	66	Special machinery	1.01	-2.9%	85	0.3%	68
19	Other food	1.55	40.6%	16	13.6%	18	67	Other transport	1.01	-1.5%	74	0.2%	69
20	Fruit	1.53	35.4%	19	11.4%	14	68	Pharmaceuticals	1.00	-3.1%	86	0.1%	70
21	Other textiles	1.48	28.0%	23	11.9%	20	69	Other mining	1.00	-1.1%	67	0.0%	71
22	Confectionery	1.48	37.5%	18	13.7%	23	70	Recorded media	1.00	-6.6%	92	0.0%	72

	SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank		SU-tables description	Balassa's ERP	Corden's ERP	Rank	NRP	Rank
23	Other rubber	1.48	35.0%	20	11.8%	27	71	Buildings	1.00	-7.5%	94	0.0%	81
24	Plastic	1.43	31.1%	22	13.0%	30	72	Other construction.	1.00	-4.3%	90	0.0%	77
25	Household appliances	1.42	14.9%	29	6.7%	21	73	Business activities	1.00	-0.9%	66	0.0%	73
26	Oils	1.33	14.5%	31	4.9%	28	74	Health and social work	1.00	-1.3%	70	0.0%	76
27	Paper	1.31	22.7%	25	7.2%	22	75	Activities/services	1.00	-1.7%	77	0.0%	75
28	Beverages & tobacco	1.31	19.3%	27	9.7%	26	76	Communications	1.00	-1.1%	68	0.0%	79
29	Glass	1.27	20.1%	26	8.9%	24	77	Water	1.00	-0.6%	63	0.0%	82
30	Paints	1.24	7.3%	38	4.1%	37	78	Insurance	1.00	-0.5%	61	0.0%	80
31	Other non-metallic	1.22	19.3%	28	6.0%	32	79	General government	1.00	-1.3%	71	0.0%	78
32	Primary plastics	1.21	14.9%	30	4.8%	33	80	Transport services	1.00	-2.1%	83	0.0%	83
33	Fabricated metal	1.18	12.4%	33	5.4%	29	81	Real estate	1.00	-0.3%	58	0.0%	84
34	Structural metal	1.17	10.0%	36	4.9%	31	82	Trade	1.00	-1.2%	69	0.0%	85
35	Structural ceramics	1.17	14.1%	32	6.2%	42	83	Hotels	1.00	-2.4%	84	0.0%	86
36	Electric motors	1.16	4.7%	42	4.5%	44	84	Cement	1.00	-0.6%	62	0.0%	87
37	General hardware	1.16	12.1%	35	6.3%	35	85	Food machinery	1.00	-7.4%	93	0.0%	87
38	Accumulators	1.14	3.9%	44	4.1%	39	86	Coal	1.00	-1.9%	80	0.0%	87
39	Iron and steel	1.13	10.0%	37	3.4%	41	87	Treated metals	1.00	-1.7%	76	0.0%	87
40	Non-structural ceramics	1.13	12.3%	34	5.0%	34	88	Office machinery	1.00	-4.3%	89	0.0%	87
41	Electricity apparatus	1.13	6.8%	39	4.6%	43	89	Sugar	1.00	-2.1%	82	0.0%	87
42	Radio and television	1.11	3.5%	45	2.7%	38	90	Fertilizers	1.00	-1.3%	72	0.0%	87
43	Wood	1.09	5.7%	40	3.1%	59	91	FSIM	1.00	0.0%	55	0.0%	74
44	Other manufacturing	1.07	5.1%	41	4.8%	40	92	Electricity	1.00	-0.4%	60	0.0%	87
45	Jewellery	1.07	3.1%	47	0.9%	50	93	Gold	1.00	-1.4%	73	0.0%	87
46	Non-ferrous metals	1.07	4.5%	43	2.5%	36	94	Meat	-1.42	-378.3%	95	10.5%	23
47	Electrical equipment	1.07	-0.3%	56	2.1%	46	95	Motor vehicles	-1.55	252.4%	3	36.2%	1
48	Pesticides	1.06	0.5%	51	1.2%	55		Average	1.05	2.2%		7.3%	

Source: DTI and Customs and Excise
Note: analysis only applies to ad valorem tariff, for SIC codes see Statistics SA (2000)

3.4 CONTINGENCY MEASURES

With world trade being increasingly liberalised and tariff levels generally declining, countries have resorted to the use of non-tariff barriers to stem the free flow of trade. One non-tariff barrier to which countries are increasingly resorting is the use of anti-dumping actions.

Dumping is defined as the sale of goods in an export market at less than the normal value in the originating market, in such a manner as to materially injure producers of such goods in the export market. Hence, the purpose of anti-dumping duties would be to insulate producers in the domestic market from the non-injurious position they would be in if there were no dumping.

In the period 1990 to 1999, the number of anti-dumping cases brought before the BTT had at first increased and then marginally declined, while the BTT's annual case load has steadily increased throughout this period. The number of cases rejected was significantly lower than those supported by the BTT. On the international scene, the number of anti-dumping cases launched increased from 815 in 1997 to 1,002 at the end of 1999, with the US and European Commission being the largest instigators.

What are the requirements for imposing anti-dumping duties against another country? Besides there being evidence of dumping - sales below normal value - it must be shown that the domestic industry has suffered material injury as a result of that dumping. Injury is assessed according to the volume of dumped imports and their effects on domestic prices, together with the consequences on, *inter alia*, sales, profits, output, market share and capacity utilisation. It must be proven that the injury is material and is a consequence of the dumped imports. However, any other factors injuring the domestic industry must also be taken into consideration, such as the volume and prices of imports not sold at dumped prices, contraction in demand or changes in patterns of consumption, trade restrictive practices, technological developments and export and productivity performance of the domestic industry.

The measurement of injury raises some methodological problems. For instance, there is no consideration given as to whether volume or price effects are the more significant. In addition, the domestic market is often defined as those producers who support the application or even the petitioner, meaning that the market share of dumped imports is open to exaggeration. Further, dumped imports from different countries are often cumulated without justification, whereas the indicators of injury must be considered individually. The collective consideration of injury indicators could often lead to findings of material injury on the basis of only a few indicators.

What causes methodological problems? These are primarily attributed to insufficient attention being given to non-dumped imports, and the lack of analysis of the conditions of competition between dumped and domestic goods.

With regard to a research agenda, there exists strong prima facie evidence that there is a dumping problem in SA, which requires research to underpin SA's negotiating position on anti-dumping reform. Research is required to determine, among other things, the extent of dumping as a problem within the country, its sectoral patterns, whether it is characterised by large dumping margins and the capturing of domestic market share, and how SA exports are affected by anti-dumping actions.[4]

[4] Research carried out by Holden (2001) suggests that most of the firms that have succeeded in getting anti-dumping duties were also in the main, monopolists.

3.5 CONCLUSION

It is clear from the analysis in this chapter that a rather arbitrary framework for tariff analysis has been chosen. However, the analysis has not dealt with rebates, bindings, free trade agreements and other bilateral trade arrangements between SA and its trading partners.

A cursory comparison with earlier analysis suggests that tariffs have declined over the period 1997 to 2001, notably for manufacturing. However, further tariff liberalisation has been slow in the last couple of years. Tariff peaks still exist for a number of broad categories of commodities such as processed foods (HS 0 - 2), vehicles and components thereof (HS 87), tobacco products (HS 24), rubber products (HS 40) and clothing and textiles (HS 6). About 25% of the HS8 commodity lines are faced with non-*ad valorem* tariffs, although the value of imports involved is not more than 4% of total imports in 2000. An attempt is made to convert non-*ad valorem* tariffs in order to check for tariff peaks. The highest *ad valorem* equivalents are recorded for processed food, in various stages, and textiles. Finally, duty collection rates, which can give an indication of the efficiency of duty collection, are lowest for mineral fuels, motor vehicles and components thereof. Relatively high effective rates of protection are found in the textiles, leather, footwear, clothing, motor vehicles and parts, food processing and, to some degree, the chemicals and rubber production activities.

The tariff schedule changes on a biweekly basis, due to the fact that in addition to anti-dumping duties, applications are also made to the BTT for protection. Combined with the monthly releases of trade data, it makes sense to consider creating a system that takes both data sources and combines them into a single analytical platform from which various analytical reports can be drawn on a regular basis. Such a system should be able to generate at least some, if not all, of the tables presented above and many more - after all they are generated in a mechanical way. Finally, having more than 200 different tariffs may still pose an administrative burden and it makes sense to further simplify the tariff schedule from that point of view.

4. THE EXCHANGE RATE

4.1 INTRODUCTION

Towards the end of 2001, the SA Rand was subjected to a steep and sudden depreciation, which saw it lose over 30% of its value against the US Dollar in a matter of months. This was attributed to a number of factors. This chapter aims not to provide a comprehensive analysis of exchange rate behaviour, but rather to sensitise policy makers to the importance of its behaviour towards exports, and to some extent, imports.

4.2 HOW THE EXCHANGE RATE IMPROVES THE LEVEL OF PROTECTION

Given that the exchange rate is one of the most important policy variables that could override any export promotion initiative, one question that is central to understanding trade behaviour is: how realistic is the exchange rate? This involves taking a view on what the real equilibrium exchange rate ought to be for a viable and sustainable level of exports, and to what degree the exchange rate is indeed undervalued or overvalued.

The real effective exchange rate refers to the actual exchange rate after adjusting for differences in prices and costs of production between a country and its main trading partners, and acts as a yardstick for understanding both import and export behaviour. In SA's case, the real exchange rate is the external one, usually called the purchasing power definition of the real exchange rate. It is calculated as $q = e\ p/p^*$, where the exchange rate, e, is the foreign currency per unit (domestic currency), and p/p^* is the ratio of domestic prices (costs), p, to foreign prices (costs), p^*. Assuming imperfect substitutability between traded goods[5]; if domestic prices, p, rose faster than foreign prices, p^*, the real exchange rate, q, would appreciate (rise), reflecting a decline in the competitiveness of domestically produced goods.

Depending on data availability and the theoretical approach taken, the choice of p will vary between consumer price indices (CPIs), wholesale price indices, GDP deflators, export and import unit values and unit labour costs. Each has its drawbacks (see Kahn 1998, Walters and de Beer 1999, and Golub 2000), although the last is widely accepted as the most appropriate measure of a country's productivity, domestic production costs, real factor incomes and therefore, competitiveness (Kahn 1998).

The real exchange rate above is useful to analyse bilateral competitiveness. To analyse competitiveness of a country vis-à-vis all trading partners, these bilateral real exchange rates are weighted and combined into a composite index, which is labelled the real effective exchange rate (REER). The choice of weights varies widely in the literature, although most use a combination of export and import shares, with some (IMF 1998, Walters and de Beer 1999) including the impact of third-country competition.

The analysis of REER has dominated the literature on international competitiveness in SA. The debate has largely centred on the appropriate choice of both prices and weights used in the calculation of the REER.[6] Less work has dealt explicitly with the relationship between REER movements and international trade flows, with the exception of Fallon and da Silva (1994), Tsikata (1999) and Golub (2000).

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[5] If traded goods were perfect substitutes or purchasing power parity held, then q would not vary over time (Golub 2000).

[6] See for example, IMF (1998), Kahn (1998), Walters and de Beer (1999) and Golub (2000).

There is also an internal real exchange rate, which essentially is the ratio of the domestic price of tradeable to non-tradeable goods within a country (Hinkle and Nsengiyumva 1999). The internal real exchange rate, usually termed the dependent economy definition of the real exchange rate, captures the level of domestic resource allocation incentives within an economy. It is important for the external exchange rate not to be overvalued, as this erodes the competitiveness of domestic producers in the world market. Likewise, an undervalued currency has the potential to fuel inflationary pressures.[7]

4.3 EXCHANGE RATE BEHAVIOUR IN SA

According to the SARB, the weighted average exchange rate8 of the Rand is based on trade in and consumption of manufactured goods between SA and its 14 most important trading partners. The weights of the four major currencies are the Euro (35.70%), the US Dollar (15.15%), the Pound Sterling (14.91%) and the Japanese Yen (10.26%). Edwards and Schoer (2001) point out, however, that these weightings and regions inadequately map trade flows from either the import or export side. As result, the International Monetary Fund (IMF) (1998) argued that the extent of the improvement in competitiveness, particularly in recent years, was overstated. Using a variety of more realistic weights, Kahn (1998), Walters and de Beer (1999) and Golub (2000) re-estimated the REER and in general confirmed the IMF (1998) criticism. Yet, while differences emerge under different weightings, in the end these were largely marginal. From the perspective of changes in the direction of competitiveness, the choice of weights used in the SA debate does not appear critical.

The following nominal exchange rates are derived from the monthly series published by the SARB for the third quarter of each year.

Table 4.1: Nominal effective exchange rates for SA

	Nominal Effective Exchange Rate (1995=100)	Annual percentage change in the Nominal Exchange Rate
1995	100	-7.2
1996	88.8	-11.2
1997	89.18	0.4
1998	78.73	-11.7
1999	72.07	-8.5
2000	68.38	-5.1
2001	58.40	-14.6

Source: SARB Quarterly Bulletin

[7] While various studies have been conducted on the relationship between SA's real exchange rate and exports (see for example, Holden (1985), Holden and Gouws (1997), IDC (1997), Tsikata (1999) and Bell *et al*. (1999), the question of the impact of the volatility of the real exchange rate on exports remains far from settled.

Table 4.1 suggests that the nominal devaluation of the SA currency has not been as dramatic as it is made out to be. The nominal exchange rate does not account for the inflation differentials between SA and its major trading partners. For this, the SARB calculates the real effective exchange rate.

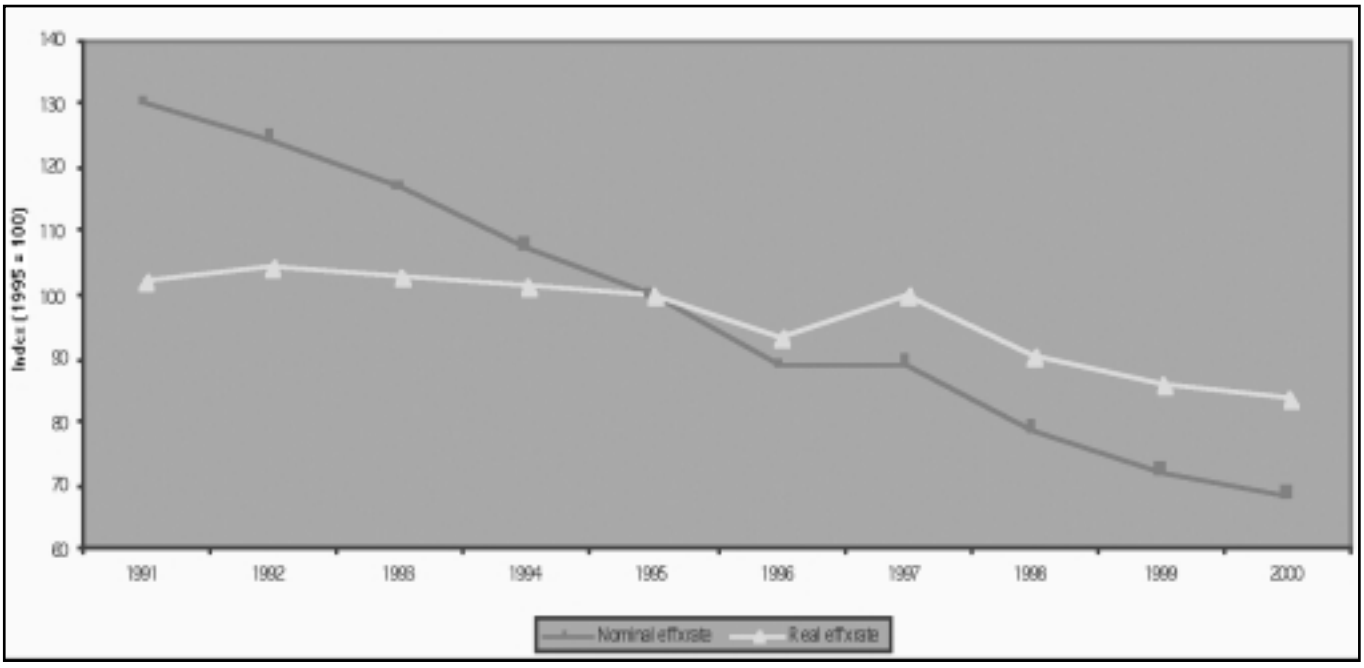
Table 4.2: Real effective exchange rates for SA (1995=100)

	Annual average real effective exchange rate	Annual percentage change in the real effective exchange rate
1995	100	-1.54
1996	93.65	-6.35
1997	99.75	6.51
1998	90.86	-8.91
1999	86.09	-5.25
2000	83.53	-2.97

Source: SARB Quarterly Bulletin

Table 4.2 shows that the real effective exchange rate has only seen a depreciation of 3% during 2000. These trends are summarised in Figure 4.1.

Figure 4.1: Nominal and real effective exchange rates (1995=100)



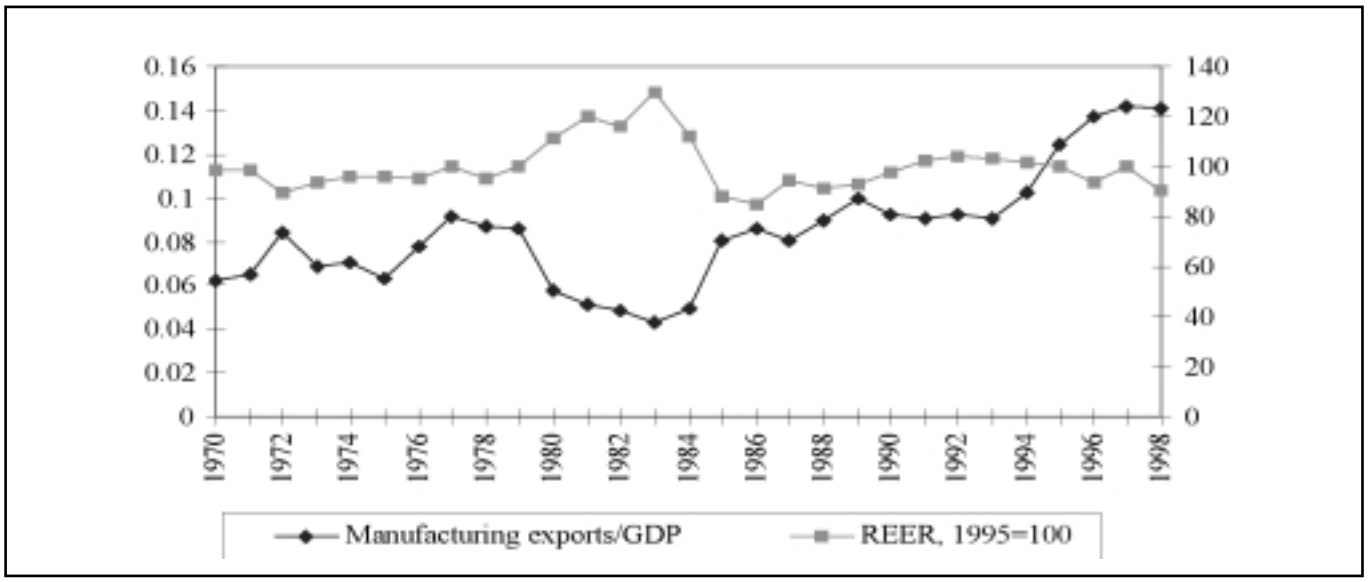
Source: SARB Quarterly Bulletin

4.4 THE EXCHANGE RATE AND SA'S EXPORT BEHAVIOUR

While this section does not intend to discuss trade policy per se but rather the interface between the exchange rate and trade behaviour, it nonetheless takes into cognisance the fact that the relationship between exports and trade policy is not straightforward. Export performance is dependent on a host of variables besides the exchange rate, such as growth rates of trading countries and the price and income elasticities of demands for production, productivity and costs, etc. Gold, which contributes the largest share to SA's total exports by value, is dependent on the international gold price, which has fluctuated significantly in the past decade. SA is the world's largest exporter of coal, although its price is, to a large degree, determined by long-term contracts, on which exchange rate movements only have an impact after a significant lag. To get a better picture of SA's export performance, it is therefore important to account for at least the impact of gold on overall exports. For this reason, the SARB breaks down export earning figures into gold, merchandise and services.

While the relationship between real exchange rate depreciation and the onset of measures aimed at tariff liberalisation has been the subject of debate among economists, it is useful for any discussion to distinguish between the types of commodity being exported. For instance, Ghei and Pritchett (1999), in a study of sub-Saharan countries, observe that devaluing the real exchange rate for agricultural commodities may increase the domestic price received by exporters. However, a combination of low price elasticities of agricultural exports in world markets and the fact that this benefit is not passed on to the ultimate producers, means that export responses are muted.

Figure 4.2: Export performance and real exchange rates



Source: TIPS SA Standardised Industry Database for trade data and SARB Quarterly Bulletin for the REER series
Note: the REER is calculated using CPI indices, and is based on weights used by Walters and de Beer (1999).

Figure 4.2 compares the REER using CPI indices with the manufacturing exports/GDP ratio calculated using current prices, and demonstrates that the REER appreciated during the 1970s with the rise in the gold price, but declined sharply in the mid-1980s, driven largely by the collapse in nominal exchange rates. The REER appreciated subsequently, driven by the relatively higher inflation in SA and large inflows of portfolio capital (Tsikata 1999). From 1992 onwards, the REER has once again declined, although its movements have been highly volatile, particularly in 1996 and 1997.[9]

Although the high volatility of the REER means that it fails to provide a consistent signal to exporters (Tsikata, 1999), exports do appear to have responded to changes in the REER. As shown in Figure 4.2, a negative relationship between REER and manufacturing exports/GDP seems evident. A decline in the REER increased the competitiveness of SA

[9] Much of this volatility has been induced by large portfolio flows moving in and out of the economy.

exporters, resulting in significant increases in the exports of SA products. This relationship is confirmed in econometric analyses done by Fallon and da Silva (1994), Tsikata (1999) and Golub (2000), who estimate REER elasticities of exports between 0.63 and 1.4. A 1% decline in REER (1% improvement in competitiveness) is estimated to raise the value of manufactured exports by between 0.6% and 1.4%.

Although the REER plays an important role in exports, there are a number of methodological issues that need to be addressed. These issues relate to the relationship between the decline in REER and the growth in exports since 1993. While the REER declined between 1993 and 1997, this change appears too small to account for the large increase in exports that took place during this period. Other structural changes such as the ending of sanctions (IMF, 1998) and the reduction of the anti-export bias (see Belli *et al*. 1993, and Tsikata 1999), account for much of this growth.[10] This makes the interpretation of the upward trend difficult, as many of these changes will merely have resulted in a once-off, and not long-term, growth in exports. The slowdown in export growth since 1996 (discussed in subsequent sections) suggests that this may be the case.

A further problem in using REER movements as an indicator of international competitiveness is its failure to capture changes in competitiveness at a sectoral and regional level. This may not be problematic in the standard developed/ developing country model where the structure of trade is largely inter-industry trade. However, in middle-income countries, where the structure and composition of trade differs according to who one trades with, it may become more problematic. For example, SA exports to developed countries are in general more low-tech than their exports to Africa. Although the importance of each trading country is captured in the weights, the aggregate index does not adequately reflect the diversity of competitiveness at the regional level. Because developed regions dominate SA trade, an export-weighted REER may be biased towards the competitiveness of low technology and natural resource-based products. In addition, because of the greater weighting attributed towards developed country trade, an improvement in competitiveness as revealed by a decline in the REER could be consistent with declining competitiveness vis-à-vis developing countries.

Wood (1995) and Bell et al. (1999) also expound on the inherent problems experienced when using an aggregated index to analyse competitiveness at a sectoral level. As Wood (1995) notes: "Modelling at the aggregate level is likely to be misleading unless the trends in all the disaggregate categories are the same." A high proportion of SA manufacturing exports consists of natural resource-based products, which are subject to fluctuations in the commodity price cycle. Thus, during the 1970s, rising world prices of natural resource-intensive products insulated producers of these products from adverse effects arising from the gold price-driven increases in the REER (Bell *et al*., 1999). In contrast, the more downstream, non-commodity manufacturing sectors experienced significant declines in competitiveness.

Since the mid-1980s, the competitiveness of natural resource-intensive products has declined while that of the non-commodity sectors has risen and, according to Bell *et al*. (1999), explains the relative rise in the share of products in total manufacturing exports. Wood (1995) disputes the similar conclusion reached in an earlier paper (Bell, 1993), and in his sectoral regressions explaining the share of exports in world exports finds no support for Bell's view that real or nominal exchange rates have influenced exports of 'non-traditional' exports. His results do support the view that exports of natural resource-intensive products are related to nominal and real exchange rate movements.

[10] In the export demand function estimated by Tsikata (1999) tariff reductions had a positive impact upon export growth.

4.5 THE IMPACT OF THE REAL EXCHANGE RATE ON WAGE-PRODUCTIVITY RELATIONSHIPS

One important measure of competitiveness of an economy is the unit labour costs of firms, relative to productivity. For example, a country in which labour is half as productive vis-à-vis a competitor in the production of a commodity can still compete if its wages are not greater than half the competitor's wages.

Golub (2000) compares SA wages and labour productivity in aggregate manufacturing relative to a number of industrial and developing countries. His results suggest that SA labour costs in the 1990s were competitive vis-à-vis industrial countries. Although SA labour productivity is low, in most cases relative labour wages are even lower (Golub, 2000). The competitiveness of labour costs vis-à-vis industrial countries also improved between 1990 and 1998, which is consistent with the downward trend in REER highlighted earlier.

In contrast, labour costs in SA are not competitive vis-à-vis almost all developing countries that are major exporters of manufactures.[11] While SA labour productivity is generally relatively high, relative wages are even higher. Some improvement is evident between 1990 and 1996, as relative wages declined with the real depreciation of the Rand during 1996. However, the large depreciations in Asia and Latin America since 1997 will have substantially reversed some of these gains.

The poor competitiveness of SA labour costs relative to middle-income countries is supported by anecdotal evidence provided by Schlemmer and Levitz (1998). Although no formal comparison between wages and productivity are made, they note that labour productivity in SA increased at broadly similar rates to some middle income countries (Malaysia), but wage growth in SA was not as restrained. Compared to other middle-income countries, average metropolitan industrial wages in SA were effectively 1.7 times higher.

The analysis of unit labour costs in aggregate manufacturing suffers some of the same criticisms as that of REER, particularly the failure to analyse competitiveness at the sectoral level. Analyses of unit labour costs in SA at the sectoral level are unfortunately not widely available. Using 1990 data, Nordås (1996) compares the ratio of relative wages over relative labour productivity $(W_{US}/W_{SA})/(VA_{US}/VA_{SA})$ with the US for 22 industrial sectors, where W_i and VA_i are the wage bill and value-added for country i respectively.[12] A value greater than 1 signals that SA is competitive relative to the US.

Nordås (1996) finds that the index is greater than 1 only for non-ferrous metals (1.67), with iron and steel (0.76) and printing and paper (0.71) close to 1. The least competitive sectors are chemicals (0.3), food, beverages and tobacco (0.4), and computers and office equipment (0.42). By categorising manufacturing along a number of dimensions, she concludes that SA is relatively (but not absolutely as shown in the competitiveness index) competitive in medium-wage, low-technology and resource-intensive industries. In general, these conform to the pattern of SA trade in the 1990s.

[11] SA unit labour costs were higher than the following countries in 1990 and 1996: Brazil, Chile, India, Indonesia, Korea, Malaysia, Mexico, Mauritius, Poland, Thailand and Zimbabwe.

[12] It is not necessary to use average wage and productivity per labour unit as the labour input cancels out.

The approach and results are interesting, but given changes in the economy since 1990, are difficult to extrapolate to recent years. For example, the depreciation of the real exchange rate in the last few years would have improved cost competitiveness, but not according to the Nordås (1996) measure, as both the wage rate (W_{SA}) and the value-added (VA_{SA}) would have devalued by the same rate and would have cancelled out in the measure. Further, in 1990, SA was in the grip of a recession, which tends to lower the unit labour costs for each sector. As Golub (2000) notes, labour productivity may exhibit short-run counter-cyclical movements as firms "hoard" labour in recessions. The poor competitiveness across all sectors may thus be over-exaggerated.

While the approaches by Nordås (1996) and Golub (2000) provide some insight into the cost competitiveness of SA labour, it is unclear from their analyses whether changes in this variable are linked to changes in SA trade with these regions. We would expect a rise in cost competitiveness vis-à-vis a particular country to result in an improvement in the trade balance with that country. An interesting study would be one that directly tackled the relationship between export performance and unit labour costs both at a sectoral and aggregate level for bilateral trade flows.

It is also not clear what is driving the general improvement in the wage productivity relationship in the 1990s, as shown in Golub (2000). Ideally, as productivity in labour surplus economies improves through greater access to technology (either directly or imbedded in imported capital and intermediate goods), there will be a positive impact on employment growth (the Lewis model). However, in SA's case, the rise in productivity has corresponded with a decline in employment, suggesting that productivity increases have been achieved through raising the marginal productivity of labour by 'artificially' raising the K/L ratio through shedding labour. Whether this is due to trade and technology or labour market forces that are increasing the cost of employment needs further analysis. However, if it were the latter, this would not signal an improvement in international competitiveness, because to remain competitive in the face of higher wages, a firm has been forced to reduce its labour force, and thus potential output. As Golub (2000: 39) notes, "*ex post* correlation of labour costs and productivity does not itself prove that labour costs are not too high".

4.6 SOME CONCLUDING REMARKS

It is important to realise that a successful export strategy hinges on a stable and competitive exchange rate. Problems typical of emerging markets like SA mean that this may not be always the case, where high volatility has been the norm. Indeed, a separate discussion on macroeconomic policy is needed to establish whether the exchange rate policy in SA has been conducive to exporting.

The point that this section makes is that it is important to recognise that the REER is critical to understanding export behaviour. However, any policy that focuses solely on REER as a tool for stimulating export growth – without addressing the capacity of domestic firms to respond to the changing incentives – is likely to be inadequate. Further, important commodity and regional level information is lost in the composite REER index. Nevertheless, the close relationship between exports and REER shown in Figure 4.2 suggests that a competitive REER will complement other strategies implemented to improve SA's export performance.

As an aside, it may also be worth noting that the decline in the REER in the last five years has been considerable. A firm's protection from import competition is now higher than what it was five years ago even if all its intermediates inputs are imported, but as long as some of the primary inputs (labour and capital) are locally sourced and do not demand increases in line with the depreciation.

It is further important to emphasise that there is no real disagreement about the importance of the realistic and stable exchange rate for exports. What is more controversial is how the exchange rate is, or to what extent it can be, managed under conditions of macroeconomic instability, and the extent to which preference is given to it, either as a nominal anchor or a measure of competitiveness.

5. THE IMPACT OF TRADE POLICY ON THE ECONOMY

5.1 INTRODUCTION

The impact of trade policy reform on the SA economy remains a contentious issue. Although there is almost universal consensus on the need for liberalisation, various factors – such as the pace of reform, specifically in the context of high unemployment and incidence of poverty, remaining tariff peaks in partner countries and supply-side problems in a liberalising SA economy – have dampened the enthusiasm for some of the virtues of trade liberalisation. The problem is compounded by the fact that the main rationale for trade liberalisation is dynamic gains and these are difficult to measure as they occur over a longer period, leading to a political asymmetry where short-term losses of production and employment in anticipation of long-term gains are politically difficult for governments to sell.

The actual impact of trade liberalisation on the economy is more multi-faceted than is identified here. Indeed, some evidence shows that trade liberalisation has contributed to productivity growth in the economy as a whole, together with positive developments in other sectors, such as agriculture. This chapter begins by tracing what has happened to various sectors in the economy in the 1990s under liberalisation. Due to reasons of complexity, this overview is not intended to make any links between performance and liberalisation; in addition, the current work undertaken and data collected in SA do not allow for conclusive assessments of how liberalisation impacts on the economy as a whole.

The rest of the chapter focuses on the welfare and employment implications of trade liberalisation in SA. In the case of welfare analysis, the aim is to give a rough idea, from a theoretical perspective, of what the costs are to the economy of maintaining tariffs. The interpretation of these, however, has to be treated carefully. The section on trade and employment consists of a review of research that attempts to find links between employment and trade.

5.2 THE ECONOMY UNDER LIBERALISATION

This subsection examines some key changes in indicators, specifically in the manufacturing sector, but does not aim to draw links between the liberalisation process and value-added exports. Rather, it should be seen as a review of the economic performance of various sub-sectors in the SA economy during the liberalisation period.

5.2.1 Brief Review of Some Work on the Impact of Liberalisation on the SA Economy

As noted earlier, trade liberalisation really began on a sustained basis in the mid-1990s. A review of some literature shows that the manufacturing sector has not really undergone any major deindustrialisation process, despite liberalisation. For example, Tsikata (1999) argues that, as is normal during the early stages of trade liberalisation, there has been an increase in import penetration in almost every manufacturing sector. Despite this rapid increase in competition from imports, trends in the contribution of manufacturing to GDP and employment do not suggest that deindustrialisation has taken place in SA. In other words, there has been no shrinking of the manufacturing sector output in real terms, although there has been a decline in manufacturing employment.

There is some evidence to show that liberalisation has had a positive effect on SA's agricultural sector. Trends in trade of agricultural products since the start of the liberalisation period indicate that the quantity of both imports and exports have increased almost fourfold. Imports in value terms have increased from roughly R2bn (1988-1991) to above R8bn after 1995. Exports increased from just over R4bn (1988-1991) to R14bn in 1999. It would appear that a strong relationship exists between the liberalisation of the broader import supply and the increase in exports (Steenkamp, 1999).

As earlier noted, the main purpose of trade liberalisation is to induce greater efficiency in the economy, partly through the allocation of resources to more productive sectors. According to the IMF (1998), there exists a significant positive relationship between trade and total factor productivity (TFP) in SA, over time and across sectors. This conclusion is arrived at after conducting a series of tests, including an aggregate time-series approach spanning the period 1970 to 1997, and a cross-sectional approach covering the manufacturing sector between 1970 and 1998. It is during the latter part of this period that the SA economy embarked on major trade reforms. The IMF study argues that the proposed correlation between trade and productivity is positive, with a high degree of statistical reliability. For instance, the ratio of openness increased by approximately 3.2% between 1990 and 1997, which is associated with an increase in TFP growth of about 1.6% per annum – results that are also mirrored by the cross-sectional study. With the actual annual growth in TFP in the same period being 1.8%, the implication according to the IMF is that increased openness accounted for close to 90% of total TFP growth in the period. The study also establishes that the average price reduction during the 1990s attributed to tariff changes was in the region of 14%, which is associated with higher TFP growth of 3% per annum.

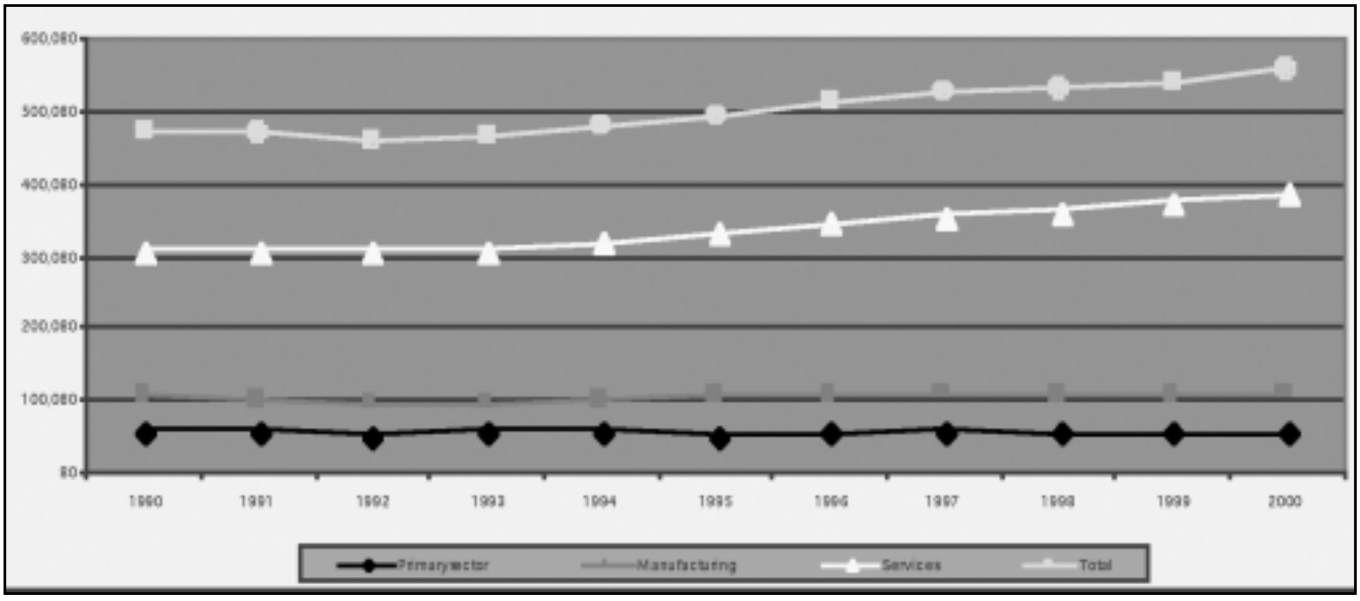
5.2.2 Trends in the Economy Under Liberalisation

This section presents a range of economic indicators, with emphasis on manufacturing, while focusing specifically on those variables that are most relevant to trade reform. The indicators are net output or value-added, employment, import and exports.

At the most aggregate level, three sectors are considered, namely the 'Primary sector' (SIC 1-2), the 'Manufacturing sector' (SIC 3) and the 'Services sector' (SIC 4-9). The services sector is, in a sense, an expanded definition of the tertiary sector, which for our purposes includes electricity and water supply (SIC 4) and construction and civil engineering (SIC 5).

It can be seen in Figure 5.1 below that during the 1990s, economy-wide value-added (GDP at factor cost) increased on average by 2.2% per annum (in constant 1995 prices), while value-added in 'Manufacturing' increased by 1.5%, in the 'Services sector' (broadly defined) by 2.8%, and by 0% in the 'Primary sector'.

Figure 5.1: Trends in value-added during the 1990s (in constant 1995 prices)



Source: TIPS SA Standardised Industrial Database

Although Figure 5.1 suggests that value-added remained fairly constant over the 1990s for manufacturing and primary goods, it increased steadily from the mid-1990s for services. A rough distinction between the first half and the second half of the 1990s, which more or less coincides with the introduction of trade liberalisation policies in SA, shows that manufacturing recorded a lower average annual growth rate during the second half, while the primary sector remained in negative territory. Only services managed to improve its growth performance.

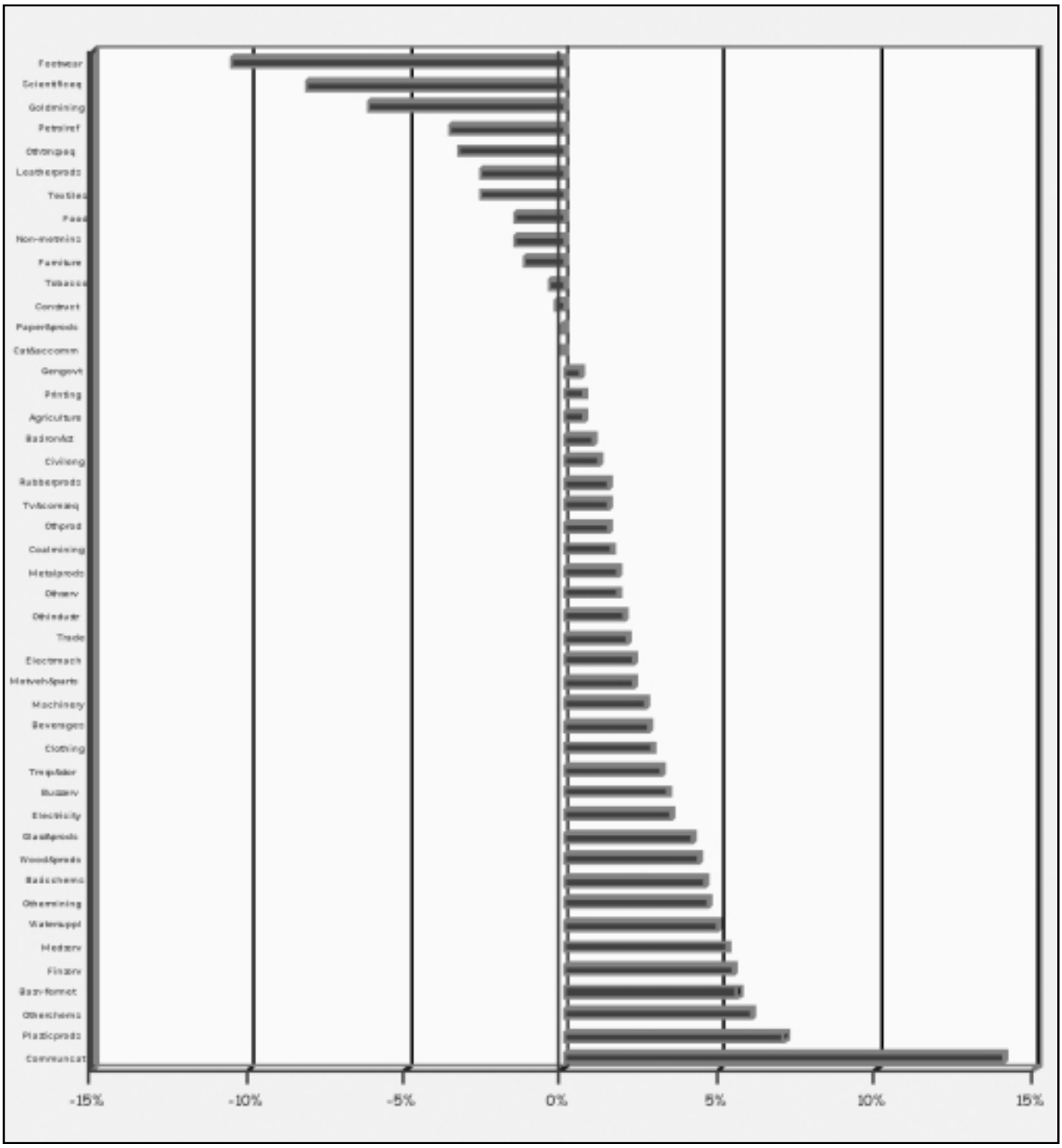
Table 5.1: Value-added for three sectors (weighted average percentage annual change, constant 1995 Rm)

		1991-1995	1996-2000	1991-2000
1	Primary sector	-0.8	-0.6	0.0
2	Manufacturing	1.1	0.5	1.5
3	Services	1.8	2.7	2.8
4	Total	1.3	1.9	2.2

Source: TIPS SA Standardised Industrial Database

At the most disaggregated level for which consistent trends are available, it can be seen in the next figure that 'Communications services' has recorded the highest weighted average annual growth rate in value-added during the 1990s with 14%, followed by 'Plastic prods' with 7%, and finally 'Other chemicals' and 'Basic and ferrous metals.' At the other end of the scale, 'Footwear' has recorded the poorest performance over this period with -10.6%, followed by 'Scientific equipment' with -8.3%, 'Gold mining' and 'Petrol ref.' Out of 46 industries, 'Food' is ranked 39th, 'Clothing' 15th, 'Textiles' 40th, 'Automotive' 18th and 'Communications equipment producers' 26th, in terms of average annual growth in value-added.

Figure 5.2: Value-added, average annual growth rates (constant 1995 Rm)



Source: TIPS SA Standardised Industrial Data Base

Turning to trade, the last column of Table 5.2 shows that exports performed fairly well under liberalisation in the 1990s. Total exports increased by 5.5%, in constant 1995 prices on average per annum, while exports in 'Manufacturing' increased by 11.2% and increased in the 'Services sector' (defined broadly) by 9.9%, but declined by 1.5% in the 'Primary sector.' However, for all sectors identified, the export growth performance during the second half of the 1990s is considerably less favourable when compared to the first half of the 1990s.

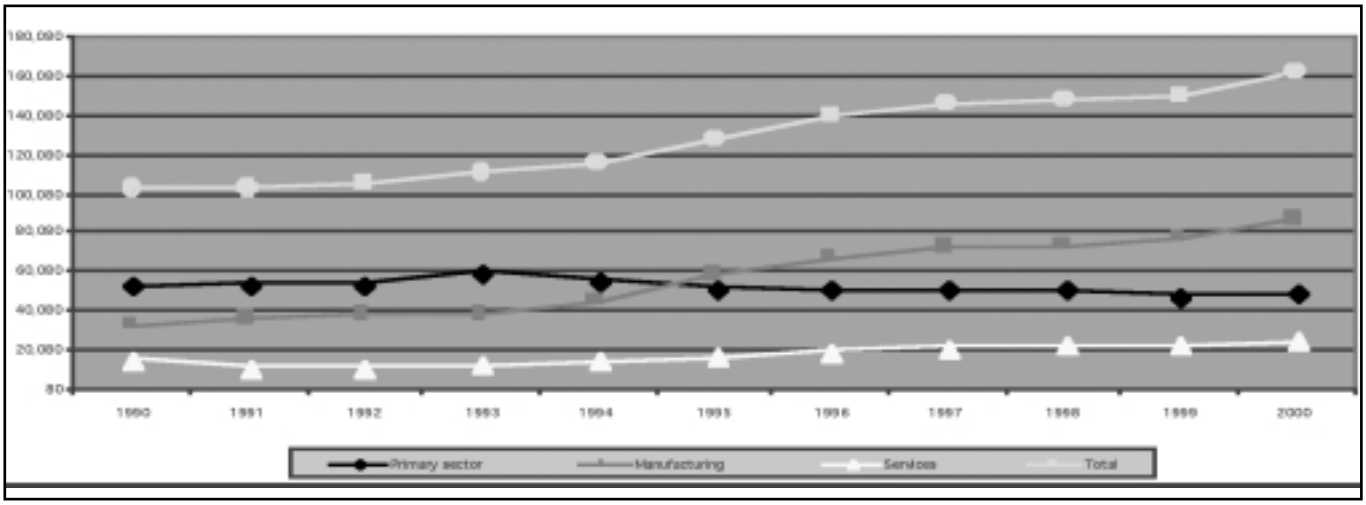
Table 5.2: Exports of goods and services (including gold, weighted average annual growth rates, constant 1995 Rm)

		1991-1995	1996-2000	1991-2000
1	Primary sector	-2.5	-5.2	-3.5
2	Manufacturing	-1.2	-3.0	-1.5
3	Services	0.3	-0.7	0.1
4	Total	-0.5	-1.9	-0.9

Source: TIPS SA Standardised Industrial Database

A closer examination of the trends in exports suggests that the mid-1990s was the turning point, with manufacturing exports suddenly jumping up to a seemingly higher level. However, growth since 1996 has not been as high when compared to the first half of the 1990s. Also note that the primary sector takes a downturn. As will be shown later in more detail, this coincides with a consistent downward trend in the real effective exchange rate during the latter half of the decade.

Figure 5.3: Trends in exports during the 1990s (constant 1995 Rm)

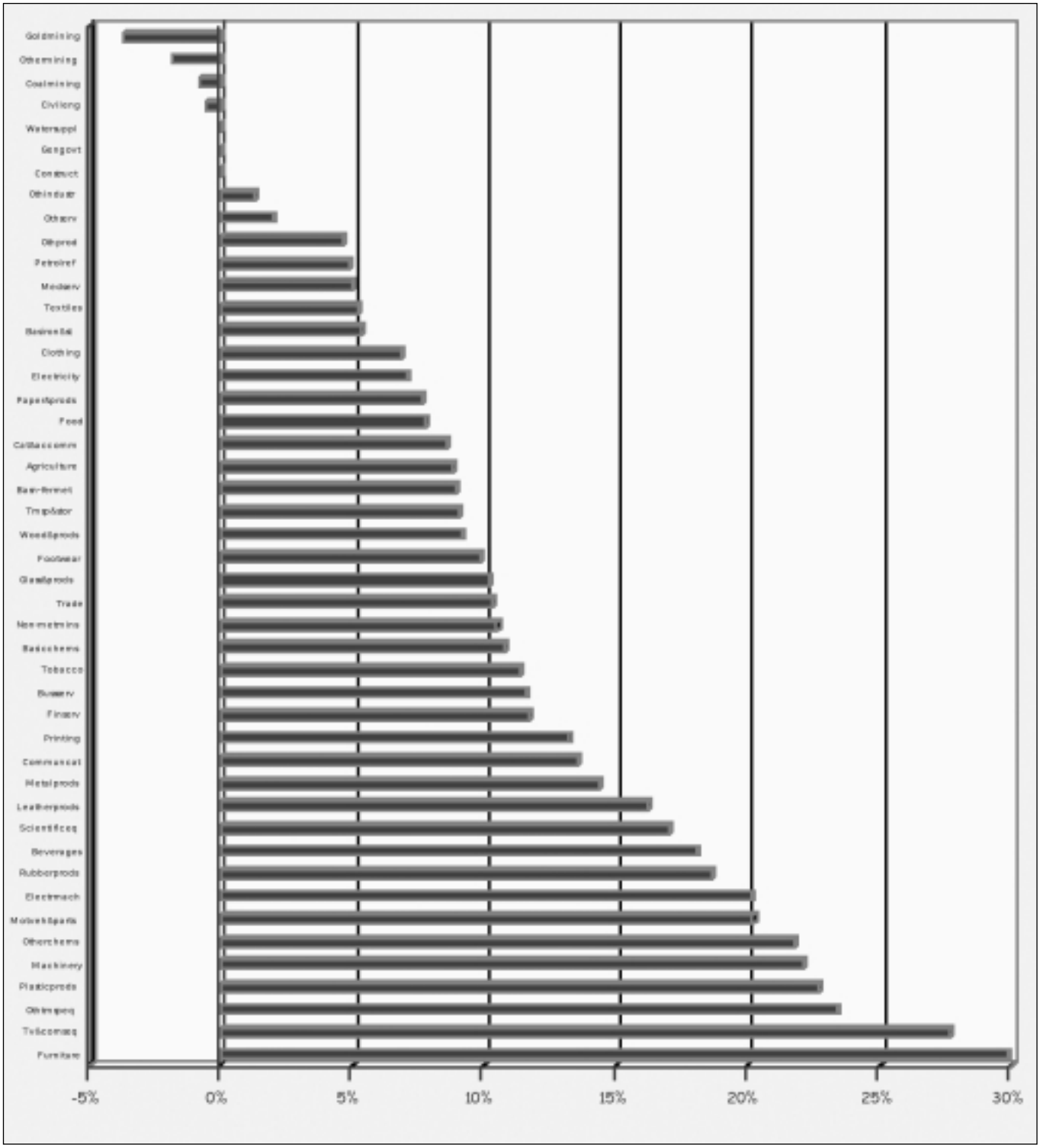


Source: TIPS SA Standardised Industrial Database

Further disaggregation of the performance of various sectors reveals that most of these sectors have experienced an increase in real exports during the 1990s, at least in manufacturing. Note also that for declining sectors such as coal and gold mining, the impact of the liberalisation process has not been as profound.

The figure shows that 'Furniture' has recorded the highest weighted average annual growth rate in exports during the 1990s with 29.8%, followed by 'Television and communications equipment' with 27.6%, 'Other transport equipment' and 'plastic products.' At the other end of the scale, 'Gold mining' has recorded the worst performance over this period with a -3.7% annual average growth rate followed by 'Other mining' with -1.9%, 'Coal mining' and 'Civil eng.' 'Food' is ranked 29th, 'Clothing' 32th, 'Textiles' 34th and 'Automotive' 7th. The growth of the automotive industry, in particular, has been very impressive, averaging 20% per annum over the 1990s. Even the other "sensitive industries" have seen annual average export growth of 5% or more during this period.

Figure 5.4: Annual average export growth rate for 46 sectors, 1990-2000 (constant 1995 Rm)



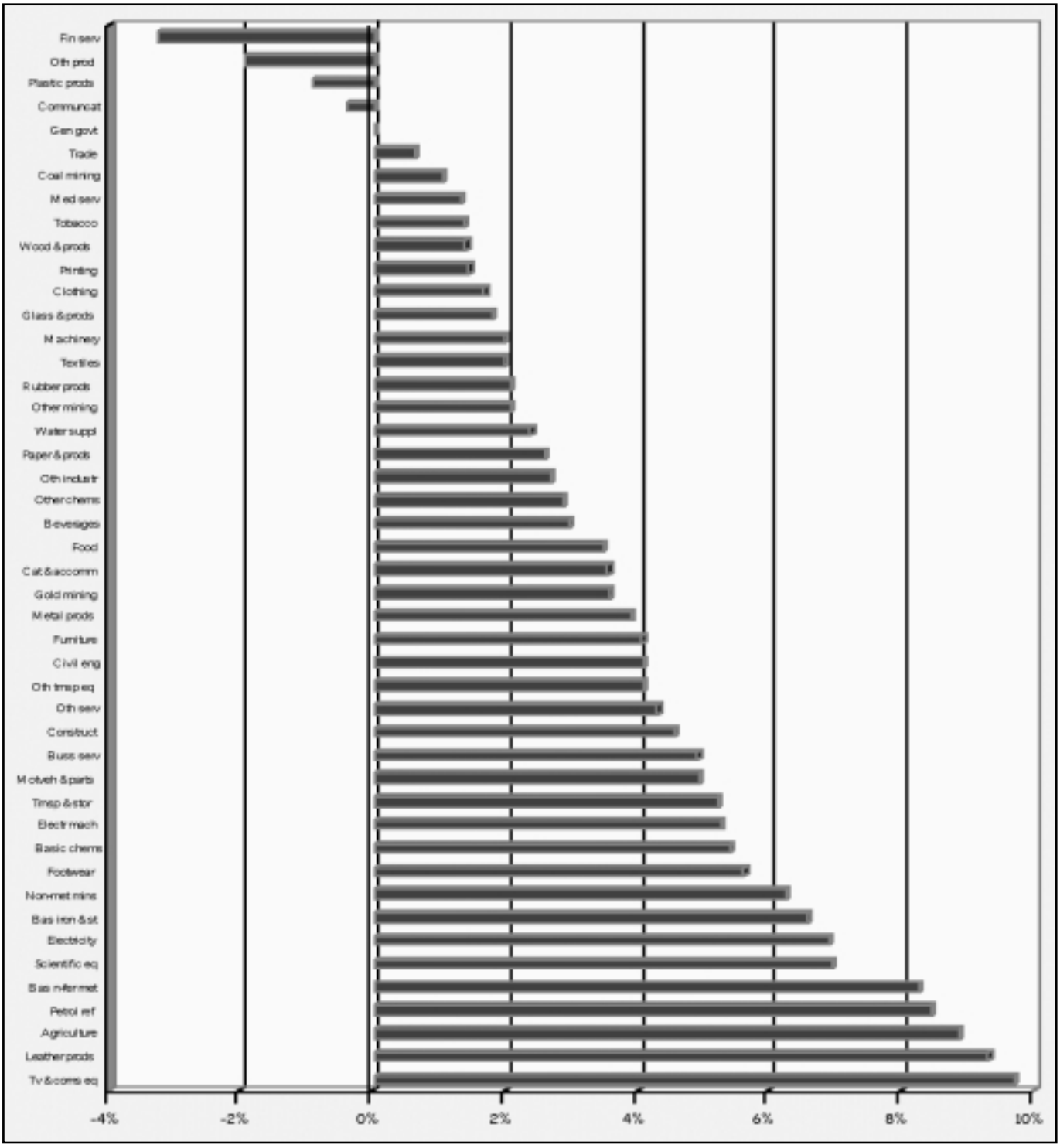
Source: TIPS SA Standardised Industrial Database

It is clear that when examining exports and value-added trends, the picture looks fairly positive. The interesting question is whether there is some correlation between import-penetration ratios and employment rates. Changes (calculated here as weighted average annual changes by means of fitting a log linear OLS curve) in the import-penetration ratios between 1991 and 2000 are given below. It is clear that there has been some growth in import penetration, but this has been accompanied by a simultaneous increase in exports in many of these sectors. What this implies is that ultimately the impact of trade on output is the first link to establish and the second is how exactly output trends influence employment.

Figure 5.5 shows that 'Television and communications equipment' has recorded the highest change in the import-penetration ratio during the 1990s with 9.7%, followed by 'Leather products,' with 9.3%, 'Agriculture' and 'Petroleum refined.' At the other end of the scale, 'Financial services' has shown negative change in import penetration over this period with -3.3%, followed by 'Other products', with -2%, 'Plastic products' and 'Communications'. Out of 46 industries, 'Food' is ranked 24th, 'Clothing' 35th, 'Textiles' 32th, and 'Automotive' 14th, in terms of change in import-penetration ratio.

Although in the anticipated direction the correlation coefficient between the change in the import penetration ratio and employment growth rates is low at -35%, the rank correlation across the 46 industries is -38%. It could be argued that it is not surprising that there is a weak correlation between import-penetration and growth in employment. At this stage, several suggestive reasons can be advanced for this observation. The first is that sectors that have shown increased import penetration have also shown export growth. However, the correlation coefficient between growth in imports and growth in exports, although of the anticipated sign, is also relatively low at 33%, with the rank correlation coefficient even lower at 26%. The correlation coefficient between the change in the import-penetration ratio and export growth during the 1990s across the 46 sectors is only 15%, with a rank coefficient of 12%. The question we are then left with concerns the extent to which exports or imports have impacted on sectoral output and, in turn, how output patterns influenced employment. These issues are addressed in the following sections.

Figure 5.5: Change in import penetration ratio, 1991-2000 (current prices)



Source: TIPS SA Standardised Industrial Database

5.3 TRADE AND EMPLOYMENT

In spite of high export growth in many sectors, overall economic growth has been disappointing, and the implications for employment are worrying. Indeed employment has decreased under liberalisation. How much is attributed to liberalisation is a matter of debate and some evidence (see next section) suggests that it is very little.

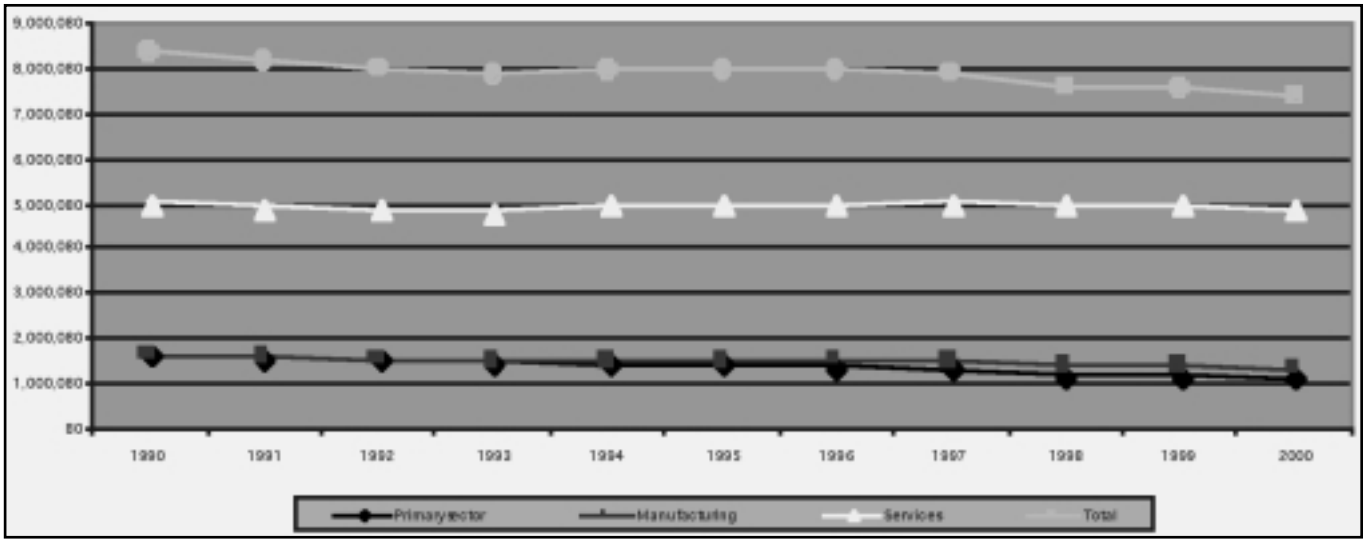
Table 5.3: Employment (weighted average annual growth rates)

		1991-1995	1996-2000	1991-2000
1	Primary sector	-0.3	-1.2	-1.5
2	Manufacturing	11.6	5.8	11.2
3	Services	8.7	5.2	9.9
4	Total	5.5	3.3	5.5

Source: TIPS SA Standardised Industrial Database

During the 1990s, overall employment increased on average by 0.9% per annum, and while employment in 'Manufacturing' decreased by 1.5%, it increased in the 'Services sector' (defined broadly) by 0.1% and declined by 3.5% in the 'Primary sector.' However, overall, the decline is more pronounced during the second half of the decade.

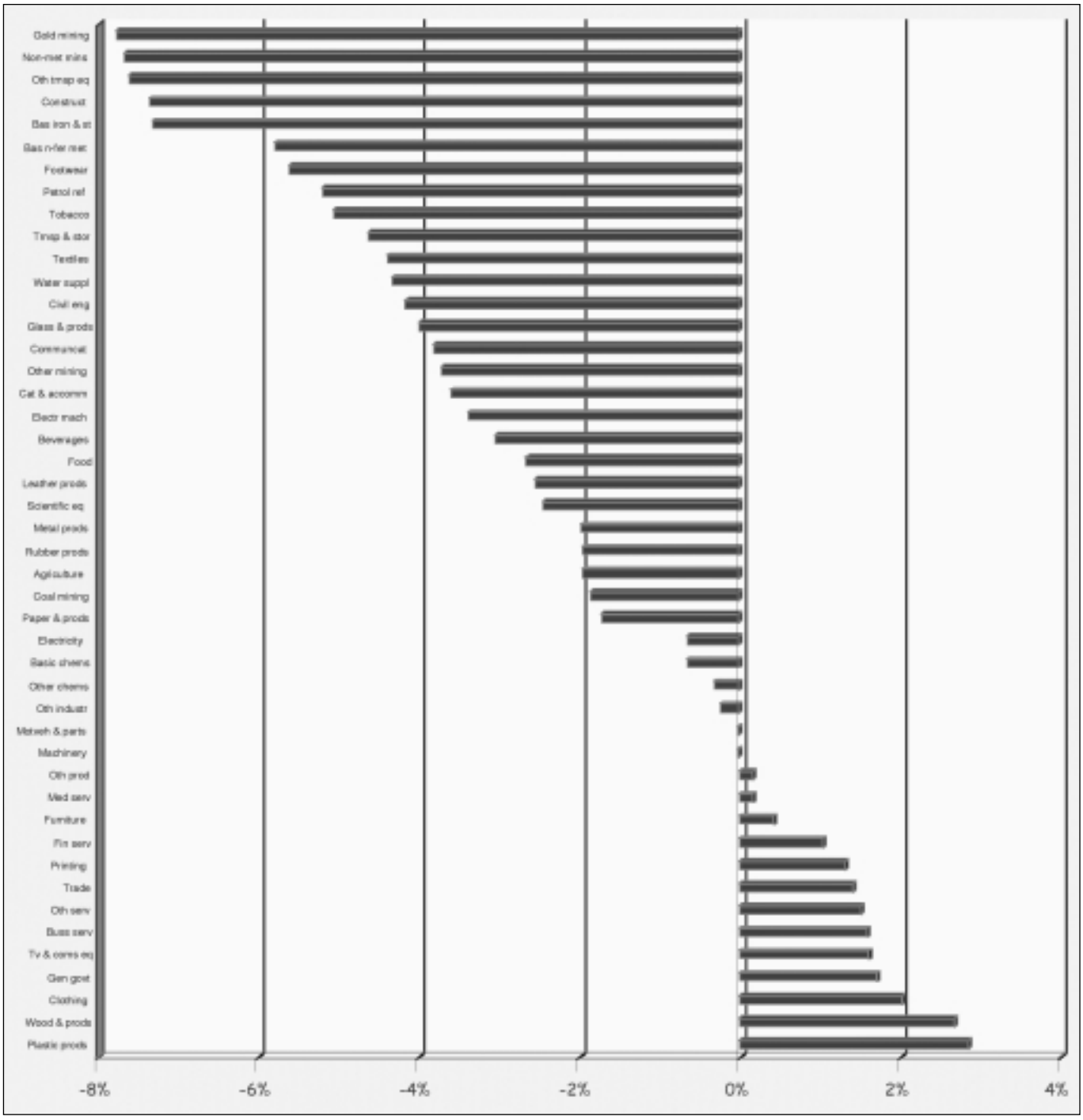
Figure 5.6: Trends in employment during the 1990s



Source: TIPS SA Standardised Industrial Database

The employment trends sharply contrast those of value-added and exports, with most sectors having seen a decline in the demand for labour. Figure 5.6 shows that 'Plastic products' recorded the highest weighted average annual growth rate in employment during the 1990s with 2.9%, followed by 'Wood and wood products' with 2.7%, 'Clothing' and 'General government.' At the other end of the scale, 'Gold mining' has recorded the worst performance over this period with -7.8% followed by 'Non-metallic minerals' with -7.7%, 'Other transport equipment' and 'Construction.' Out of 46 industries, 'Food' is ranked 27th, 'Clothing' 3rd, 'Textiles' 36th, 'Automotive' 15th and 'Communications equipment producers' 5th, in terms of average annual growth in employment.

Figure 5.7: Average annual growth rates in employment for 46 sectors



Source: TIPS SA Standardised Industrial Database

In spite of the potential welfare gains to consumers discussed in the previous section, the increased openness of the SA economy during the second half of the 1990s has taken place in the context of modest economic growth (see Section 5.2). As a result, the impact of trade liberalisation on employment in SA has become a burning issue in the policy debate. It is indeed a difficult debate, as the relationship between trade and employment is multifaceted. For instance, how do trade flows impact on the demand for labour? Is it via import liberalisation or other competitive effects? Is the impact of trade liberalisation greatest in reducing prices (wages) or quantities (increase or decrease in jobs)?

One of the major challenges faced in attempting to evaluate the impact of trade liberalisation on employment is to understand the patterns prevalent in both the labour market and the external sector, in the light of the structural shifts that

the SA economy has experienced over the past 25 years. These shifts refer to changes in modes of production, such as declining shares of primary production in the GDP, stabilisation of manufacturing and growth of the services sector.

The specific focus on the SA labour market is complex, encompassing labour market flexibility, wages and employment trade-offs, the structure and nature of wage dispersion in the country and many other critical issues. The aim here is not to investigate these issues by means of primary research, but to review selected recent work undertaken in SA to assess whether any systematic links exists between employment patterns and trade liberalisation.

5.3.1. The SA Labour Market

The SA labour market is characterised by high levels of unionisation, mandatory minimum wages and high variance in wages, skill levels and productivity. According to Lewis (2001), the total supply of labour is currently (in 2000) estimated at just below 15-million workers. Of that, about 10-million workers are semi- or unskilled or offer their labour in the informal sector. Less than 10% of the total labour force is highly skilled, and unemployment amongst this labour category is close to 0%. However, at the lower end of the labour market the unemployment rates are very high, estimated by Lewis to be between 40% and 50%. With a total labour demand (summed over all skill classes) of less than 9.5-million workers, including those operating in the informal sector, total unemployment is estimated at around 36%. While there were more than four million semi- and unskilled workers employed in the formal sector at the beginning of the 1980s, employment dropped to just over three million at the end of the 1990s. Although the informal sector managed to absorb some of those low-skilled workers, this offers only partial relief.

One of the explanations for the poor performance of semi- and unskilled employment can be found in the sectoral distribution of the demand for labour, as presented in the next table. In the last column of the table, we present weighted average annual growth rates during the 1990s. These have been negative for all sectors represented, except for the services sector (here including construction, utilities and the tertiary sectors). Note especially the decline in the demand for labour in the primary sectors, which are typically more intensive in the use of semi- and unskilled labour.

Table 5.4: Formal employment for three sectors

												Average Annual Change
	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**91-00**
Primary sector	1,662	1,607	1,537	1,484	1,468	1,448	1,412	1,380	1,211	1,189	1,163	-3.5%
Manufacturing	1,640	1,600	1,555	1,528	1,519	1,525	1,548	1,490	1,425	1,389	1,376	-1.5%
Services	5,020	4,928	4,900	4,846	4,981	4,963	4,991	5,020	4,974	4,956	4,854	0.1%
Total	8,322	8,136	7,991	7,858	7,968	7,935	7,951	7,891	7,610	7,535	7,393	-0.9%

Source: TIPS SA Standardised Industrial Database

As was seen in Section 5.2, real growth in value-added at factor cost of close to 3% was recorded in the services sectors during the 1990s, which was almost twice as high as that in manufacturing with 1.5%, while the primary sectors did not experience any growth whatsoever. The main reason for this is the divergence in sectoral labour demand and its skill composition.

A result and manifestation of the relatively rapid output growth of the services sector have been an increase in the adoption of information technologies in certain fields, including non-service oriented industries, mirroring global trends in developed and some developing countries, where the growth in the services industry has been significant.

Although Lewis (2001) is clear in stating that there are many other factors that may have contributed to the high levels of unemployment amongst low-skilled workers, he does point to the remarkable trends in real wages for these workers, which show a 2.5-fold increase over the 30 years ending 2000, while the index for real wages of skilled and highly skilled workers has remained relatively flat.

In terms of labour income distribution, low-income households have seen their potential to generate labour income deteriorate considerably in the face of higher unemployment. Although real wage growth has softened the blow to some degree, the net effect on household income at the lower end has been negative, as has been pointed out by Whiteford and Van Seventer (2000). Judging from the Gini coefficient measure of total household income inequality, which includes income from non-labour sources, poor households were worse off, as measured during the 1996 population census, compared to the same event five years later.

What does remain a puzzle in the SA labour market is that despite the continued increased in demand for skilled labour, and the contrasting decline in demand for unskilled labour, there has been a consistent rise in wages of unskilled labour relative to skilled labour. This relative rise in less skilled wages during the time of trade liberalisation could be purely coincidental, but it does pose more of a challenge in trying to identify what impact trade liberalisation has on employment and wages.

A review of the evidence of the relationship between trade, employment and earnings in SA during the 1990s yields mixed evidence. However, it can be concluded from that literature that, in general, trade liberalisation has had less negative effects on labour markets than other causes. In fact, some studies argue that trade liberalisation has had a positive impact on unskilled labour. The various findings on the impact of trade liberalisation on employment make use of numerous techniques, ranging from econometric estimates to input-output decomposition calculations and labour demand decomposition methods (see Holden, 2001). In the rest of this subsection we review some of these studies.

5.3.2 The Negative Effect of Trade Liberalisation on Employment

One of the first attempts to investigate links between trade, or more specifically growing imports and employment, is that by Bhorat (2000). He uses both survey and time-series data for the SA economy, between 1970 and 1995, to establish the determinants of employment trends in the wake of changes in the country's industrial structure and trade flow movements. Employing a decomposition analysis, he also estimates the impact of trade flows on labour demand by examining those categories of workers that have gained from rising levels of trade.

One of Bhorat's major findings is that over the period 1970 to 1995, trade flows impacted favourably on the employment of all categories of labour, with skilled employment gaining proportionately more than unskilled labour. In the period since the major trade liberalisation of the 1990s, the picture is mixed. Using data for the manufacturing sector only, Bhorat suggests that from 1993 to 1997 trade had led to an overall decline in the employment of labour. However, unskilled employment had fallen while skilled employment levels had risen. This argument is suggestive, but one of the limitations of Bhorat's study is that it does not pay much attention to whether changes in the labour market were brought about by technical change or trade flows.

An International Labour Organisation (ILO) study (1998), on the other hand, finds that employment losses appear to have been due to a rationalisation of industry while restructuring production for export, rather than due to a substitution of capital for labour. The study also argues that export-oriented sectors in SA have registered better performance in terms of gross output, productivity gains and wage increases than import-competing sectors, and that trade liberalisation has increased the demand for capital-intensive goods.

By grouping industries into import-competing and export-oriented industries, the study argues that employment losses were not directly correlated with higher competition from imports. The ILO also found that investment and employment are positively correlated, and that industries with high investment ratios perform better in terms of employment creation. In export sectors, there is evidence of firms' downsizing, rationalising their product ranges and changing their production processes. In import competing sectors, no direct link is established between import penetration and job losses.

The ILO does, however, recognise that their work is rather crude in terms of the classification of labour market performance by trade orientation, and the extent to which technology was an important factor. Beside the inability to isolate various other influences at work during liberalisation, and the short period under consideration, one other limitation of this study is the quality of data, which precludes a more rigorous analysis of the relationship between trade and employment. According to the ILO study, Statistics SA data do not track employment accurately and is also likely to overstate job losses since some job losses are merely shifts from full-time employment to self-employment. The data also fail to pick up the labour absorption performance of sectors that had more tariff reductions, and there is a need for disaggregated data, failing which the studies will not be conclusive. Implicit in the ILO perspective is that the negative effect on employment has come about through restructuring of firms, owing to pressure to export rather than from imports itself.

5.3.3 Trade or Technology?

What can be said about the growth of increasing demand for skilled labour in the SA economy? Is this simply the result of increasing technological innovation, or is trade liberalisation a major cause? Some work has been done in SA that attempts to single out which of the two factors – trade or technology – reinforce patterns of skilled-biased growth in the economy.

Studies subsequent to Bhorat (2000) arrive at similar conclusions about trends in the labour market, but differ as to the causes. Both Fedderke (2001) and Edwards (2001) argue that trade has had a net positive effect on unskilled labour, but that technological change may have reversed some of the gains. Skilled-biased technological change is largely responsible for some of the losses in employment.

Fedderke (2001), using dynamic heterogeneous panel estimation techniques on data from 1970 to 1997, shows that, to the extent that output prices change due to trade liberalisation, trade in manufactures has led to positive effects on the earnings of both labour and capital, with labour gaining proportionately more than capital. Industries with lower capital-labour ratios witnessed a higher increase in output as a result of trade liberalisation, assuming that this brought about a change in output prices in manufacturing. Trade has not only benefited earnings of labour relative to capital, but also unskilled workers relative to skilled workers.

The effects of technology, as measured by total factor productivity, are estimated to have had a negative impact on earnings for both labour and capital. Fedderke (2001) demonstrates that the earnings of unskilled labour relative to those of skilled workers have been adversely affected by technology improvements. Given problems of identification, researchers are reluctant to suggest that trade liberalisation has unambiguously had a positive impact on labour markets, but are prepared to support the proposition that trade has led to a decline in earnings inequality in manufacturing.

One of the assumptions of the approach taken by the Fedderke model is that increasing output prices will result in an increase in the demand for labour-intensive products. The extent to which trade liberalisation – or other external factors like growth in the world economy or changes in world market prices – is driving changes in prices remains a debatable issue. One way of looking at this is to compare protection rates in labour-intensive products with protection rates in skills-intensive products. A key area of further work includes understanding the link between prices and trade liberalisation, and the extent to which variables other than trade influence output prices.

Following the well-known methodologies of Chenery et al. (1987), Edwards (2001) conducts a demand-side analysis of structural change, trade liberalisation and employment, with the aim of isolating the driving forces behind the changing production structure and the consequent impact on employment in SA for selected years 1984, 1993 and 1997. He also attempts to analyse the impact of structural change on the occupational structure of employment, using an input-output based methodology to decompose changes in occupational employment, in terms of demand-side factors such as domestic demand expansion, export demand, import substitution and technological change.

Edwards (2001) finds that for the economy as a whole, net trade does not appear to have had a negative effect on employment, although in manufacturing, this conclusion is less robust. Nevertheless, he finds that between 1993 and 1997, gains from employment arising from export expansion outweighed losses in employment from import penetration by 60,000 jobs. Final demand influences had expanded jobs by 642,000 workers and technology decreased jobs by 931,000 workers. His main finding is that since 1984, and especially between 1993 and 1997, there has been an increase in the capital intensity of exports, while a rise in import penetration has occurred in labour-intensive industries, indicating a diminishing capacity for trade to generate more employment. The net effect of the above mentioned components is that the labour market shed 230,000 jobs over the period.

In decomposing the effects in terms of labour skill levels, Edwards also demonstrates that export expansion has benefited the employment of elementary and unskilled workers more than skilled and semi-skilled, while net trade benefited elementary and unskilled workers more than skilled workers, with semi-skilled jobs actually declining. In summary, once all demand-side influences (domestic, import, export and technology) are accounted for, skilled jobs rose while the number of jobs in all other categories fell. Most prominently, technological change has had a destructive influence on demand for labour in all categories other than the skilled category.

One of the attractions of the Edwards' study is that it attempts to separate out the differential impact of technology changes on employment across industries from that of trade effects. However, one requirement for appropriate accounting of these changes is appropriate data. Here it should be realised that the structures of the underlying input-output tables used for 1993 and 1997 are essentially the same and based on an input-output table for the year 1988, which is only partially updated using limited lower level control totals. Unfortunately, it is not possible to determine a priori what impact this bias will have on the results. Moreover, our policy interest around trade liberalisation focuses on the period after the WTO offer was made by SA. If any structural changes were to have taken place as a result of the recent trade liberalisation, the benchmark is 1995 and drawing any conclusions in this regard, from a single observation in 1997, may need to be treated with caution. An update of this application is urgently required.

Finally, in terms of employment it is often assumed that for all sectors that will receive a boost as a result of the change in final demand (domestic or foreign), average employment/output ratios of the relevant industries apply. This can be highlighted with the help of the following example. If the sector producing plastic products employs 8,000 workers and the gross value of production is R4bn in a given year, the average employment output ratio is 2 (workers per R1m) in that sector - R0.5m/worker. Suppose, as a result of an increase in final demand, output of the plastic products sector increases by R5m, employment is then assumed to have increased by 10 workers in this sector, with no change in technology.

However, substantial evidence exists of economies of scale in the employment of labour, especially when it involves the marginal expansion of output in a sector. It could well be the case that in our example, the rise in output is absorbed by slack or more efficient use of existing labour or by means of overtime, although the latter would still entail an increase in the work-year equivalents.

For purposes of economic impact analysis, which often examines changes in output at the margin, this calls for an alternative specification of the relationship between changes in employment and output. As confirmed by Edwards (2001), using the traditional input-output method may lead to an inflated view of the employment generating capacity of any change in demand. Even if one were to decompose observed changes in employment, the sectoral variation of employment elasticities may be very different to that of average employment output ratios, which may lead to differential impacts on employment by sectors following trade liberalisation.

5.4 A PARTIAL WELFARE ANALYSIS

Although the broad trends that we presented above are interesting in their own right, they can only contribute in a limited way to our understanding of the impact of trade liberalisation during the 1990s on economic performance and employment creation. The reason is these trends do not easily allow us to control for other events that took place during the period of observation. Various efforts have been made to analyse the impact of trade liberalisation on the economy.[13] These attempts have been conducted mainly at the economy and manufacturing-wide or very micro-firm level nature. In this section, however, an attempt will be made, following a methodology developed by Greenaway and Milner (1993), to consider the partial equilibrium effects of trade liberalisation on selected SA sectors and clusters of commodities. This methodology falls in between the general equilibrium analysis and firm-level analysis, in that it can be conducted not only across the whole range of imported merchandise, but also at a fine level of commodity detail (HS8). This methodology is applied to recent tariffs, allowing for the evaluation of welfare gains and losses of tariff changes, at a detailed level of clusters of commodities, in the context of the SA economy. This analysis is followed, in the next subsection, by a review of SA literature on the relationship between trade reform and employment.

It is clear from a static economic analysis perspective that there are costs to SA in maintaining tariffs. These costs take the form of forgone consumer surplus, and are typically dependent on:

- The value of the imports of the commodity: the higher the value, the higher the costs
- The tariff level of the commodity: the higher the tariff, the higher the costs
- The level of the import price elasticity of the commodity: the higher the elasticity, the more sensitive the demand for imports to price changes following a reduction in the tariff, and therefore the higher the costs (making the small country assumption that the supply of imports is given, a factor over which SA has no control).

[13] See for example IDC (1997), Valodia (1998), Lewis (2001), Edwards (2001), Edwards and Abdi (2001) and Fredderke *et al* (2000)

The basic logic behind welfare analysis is that tariff protection imposes a wedge between the local and the international price. Consuming products in the SA market, at prices well above those prevailing in a free trade environment, imposes a welfare cost to the economy. This analysis can be extrapolated to SA circumstances to illustrate the cost of maintaining tariffs. Assuming the following set of circumstances:

- A downward sloping import demand curve: The quantity of imports demanded will increase with a lower world price
- A horizontal import supply curve: Since SA accounts for less than 1% of imports from the rest of the world, it is unlikely to face upward sloping foreign export supply curves.

Although this may be useful in terms of giving us a sense of costs, in terms of foregone consumer surplus, it should also be realised that it is a very crude measure in that it does not take into consideration adjustment costs such as short-term loss of output and employment.

5.4.1 Application to SA Data

An exposition of the theoretical framework and its operationalisation is available in Appendix 2. The operationalisation of the methodology requires detailed continuous trade and tariff data, sources of which appeared to be limited in SA. Consequently, the methodology is applied to a select number of years. Data sources are discussed below, together with the results of the applications to the methodologies.

5.4.2 Using IDC data for 1996

Data published by the IDC (Kuhn and Jansen 1997) for the year 1996 is used (shown in columns 1 to 2 of Table 5.5).

Table 5.5: Imports, tariffs and net change in welfare (small country assumption and import demand elasticity = -1.56)

			1	2	3	4
SIC		Sector	Imports (Rm '96)	Tariff (1996 schedule)	Net Δ in welfare Rm '96, ε_D =1.56	Net Δ in welfare / imports
1	3843/0	Motor vehicles	24,392.51	39.7%	2,145.92	8.8%
2	3220	Wearing apparel exc footwear	3,995.83	67.3%	842.70	21.1%
3	3240	Footwear	2,453.65	38.7%	206.87	8.4%
4	3211	Spinning, wool,weaving & finishing of fabrics	3,264.82	32.3%	200.85	6.2%
5	3213	Knitting mills	2,351.32	33.4%	152.91	6.5%
6	3111	Slaughtering, preparing & preserving meat	9,576.59	15.4%	152.80	1.6%
7	3118	Sugar factories & refineries	2,139.76	35.0%	151.40	7.1%
8	3212	Made-up textile goods, exc wearing apparel	1,396.36	40.6%	127.71	9.1%
9	3112	Dairy products	2,134.48	30.6%	119.04	5.6%
10	3117	Bakery products	2,880.78	25.8%	119.00	4.1%
11	3131	Distilleries & wineries	2,243.33	29.3%	116.20	5.2%
12	3140	Tabacco products	1,732.81	32.0%	104.81	6.0%

			1	2	3	4
SIC		**Sector**	**Imports (Rm '96)**	**Tariff (1996 schedule)**	**Net Δ in welfare Rm '96, ε_D =1.56**	**Net Δ in welfare / imports**
13	3523	Soap, cosmetics & toilet preparations	3,780.66	19.1%	89.91	2.4%
14	3320	Furniture	2,589.87	22.1%	80.89	3.1%
15	1100	Agriculture, forestry and fishing	11,747.13	8.8%	64.38	0.5%
16	3233	Leather products & leather substitutes	926.68	28.3%	45.18	4.9%
17	3113	Canning & preserving of fruit & vegetables	2,851.55	14.6%	41.22	1.4%
18	353/4	Other basic chemicals, petroleum & coal	7,362.00	8.6%	39.38	0.5%
19	2100	Mining	52,086.58	3.0%	34.12	0.1%
20	3819	Other fabricated metals, exc machinery	3,801.67	7.8%	16.66	0.4%
21	3560	Other plastic products	1,157.20	14.2%	15.94	1.4%
22	3551	Tyres & tubes	933.51	14.4%	13.22	1.4%
23	3214	Carpets & rugs, mats & matting	302.28	26.6%	13.17	4.4%
24	3833	Electrical appliances & housewares	625.66	17.7%	12.95	2.1%
25	3122	Prepared animal feeds	1,158.66	11.7%	11.04	1.0%
26	3119	Cocoa, chocolate & sugar confectionery	1,254.85	11.2%	10.97	0.9%
27	3811	Cutlery, hand tools & general hardware	1,348.94	10.6%	10.63	0.8%
28	3829	Other machinery & equipment, exc electrical	14,698.62	2.8%	8.93	0.1%
29	3419	Other pulp, paper & paperboard	1,184.70	10.2%	8.77	0.7%
30	3121	Other food products	2,172.62	7.0%	7.83	0.4%
31	3710	Iron & steel basic industries	12,325.15	2.7%	6.58	0.1%
32	3813	Structural metal products	1,858.83	6.4%	5.60	0.3%
33	3812	Furniture & fixtures primarily of metal	347.06	15.2%	5.42	1.6%
34	3691	Bricks, tiles, refractories, etc	495.40	12.4%	5.30	1.1%
35	3411	Pulp, paper & paperboard	2,533.88	5.2%	5.08	0.2%
36	3215	Cordage, rope & twine industries	178.35	20.8%	4.96	2.8%
37	3610	Pottery, china & earthenware	181.87	20.4%	4.88	2.7%
38	3115	Vegetable & animal oils & fats	2,306.52	5.2%	4.64	0.2%
39	3620	Glass & glass products	1,007.28	7.5%	4.11	0.4%
40	3831	Electrical industrial machinery	3,717.98	3.6%	3.69	0.1%
41	3851/4/5/9	Other transport	5,624.45	2.9%	3.64	0.1%
42	3134	Soft drinks & carbonated waters industries	2,105.64	4.8%	3.57	0.2%
43	3720	Non-ferrous metal basic industries	3,610.21	3.6%	3.56	0.1%
44	3521	Paints, varnishes & lacquers	607.77	9.0%	3.49	0.6%
45	3219	Textiles, not elsewhere classified	251.71	13.3%	3.04	1.2%
46	3420	Printing & publishing	5,152.95	2.5%	2.49	0.0%
47	3699	Other non-metallic mineral products	673.06	6.6%	2.13	0.3%
48	3116	Grain mill products	3,734.02	2.7%	2.08	0.1%
49	3832	Radio, television & communication equipment	7,286.17	1.7%	1.60	0.0%

			1	2	3	4
SIC		Sector	Imports (Rm '96)	Tariff (1996 schedule)	Net Δ in welfare Rm '96, ε_D =1.56	Net Δ in welfare / imports
50	3513	Synthetic resins & plastic materials	1,249.58	4.1%	1.55	0.1%
51	3310	Wood & wood products, exc furniture	1,388.82	3.8%	1.48	0.1%
52	3511	Industrial chemicals	9,562.88	1.2%	1.03	0.0%
53	3529	Other chemical products	3,423.81	1.9%	0.96	0.0%
54	3839	Other electrical apparatus & supplies	1,834.94	2.5%	0.87	0.0%
55	386/390/2 /39,033,909	Other manufacturing industries	6,594.55	1.2%	0.73	0.0%
56	3821	Engines & turbines	1,008.65	2.6%	0.53	0.1%
57	3114	Canning, preserving & processing of fish	2,136.57	1.6%	0.43	0.0%
58	3133	Malt liquors & malt	3,564.82	0.9%	0.23	0.0%
59	3901	Jewellery and related articles	1,428.13	1.2%	0.15	0.0%
60	3512	Fertilizers & pesticides	1,211.44	1.0%	0.09	0.0%
62	3822	Agricultural machinery & equipment	381.33	0.6%	0.01	0.0%
63	3522	Medicinal & pharmaceutical preparations	2,676.69	0.2%	0.01	0.0%
64	3692	Cement	29.17	0.8%	0.00	0.0%
65	3823	Metal & woodworking machinery	2,879.40	0.1%	0.00	0.0%
66	3825	Office, computing & accounting machinery	5,184.07	0.0%	0.00	0.0%

Source: Kuhn and Jansen (1996), Gumede (2000) and own calculations
Note: imports in 1996 Rm; 1996 Tariff Schedule

The net welfare changes for the small country assumption (with high large-import supply elasticities, that is a horizontal import supply curve) and setting the import demand elasticity at -1.56, following Gumede (2000), for all sectors, are shown in column 3. Welfare changes are divided by imports of the relevant sector to place them in a better context. It can be seen from Table 5.6 that the motor vehicles, textiles, clothing, footwear and food processing sectors offer large net gains to the SA consumer. Note that the consumer welfare changes are net of the losses in government revenue, assuming that this would have been redistributed to consumers one way or another.

As mentioned above, import demand elasticities are set to the value of -1.56 across all commodities, that is, we ignore any commodity variation in the response to changes in border prices. The challenge therefore is to find estimates of sector specific import demand functions. Gumede (2000) has attempted to estimate import price elasticities for a limited number of sectors; however, not all of these estimates could be used for our purposes as some of the signs of the elasticities are in the wrong direction - either suggesting that the import demand goes up with an increase in the prices, or simply no estimates were recorded. The following results by Gumede (2000) were considered to be usable for our purposes.

Table 5.6: Estimated import price elasticities used in the welfare gains and losses calculations

Sector		Estimated import price elasticity
1	Chemicals	-0.3010
2	Machinery	-0.2125
3	Electrical machinery	-0.1130
4	Other Manufacturing	-0.3640

Source: Gumede (2000)

It can be seen that the estimated import price elasticities are much lower than the -1.56 used above. As a result, the welfare effects will be only about a quarter to a fifth of what is estimated in Table 5.6 above, as is shown below (Table 5.7).

Table 5.7a: Imports, tariff schedule and net change in welfare (small country assumption and sector specific demand elasticities)

			1	2	3	4
SIC		Sector	Imports (Rm '96)	Tariff (1996 schedule)	Net Δ in welfare Rm '96, ε_{Δ} = sector specific	Net Δ in welfare / imports
1	3843/0	Motor vehicles	24,392.51	39.7%	500.63	2.1%
2	3220	Wearing apparel exc footwear	3,995.83	67.3%	196.60	4.9%
3	3240	Footwear	2,453.65	38.7%	48.26	2.0%
4	3211	Spinning, wool,weaving & finishing of fabrics	3,264.82	32.3%	46.86	1.4%
5	3213	Knitting mills	2,351.32	33.4%	35.67	1.5%
6	3111	Slaughtering, preparing & preserving meat	9,576.59	15.4%	35.65	0.4%
7	3118	Sugar factories & refineries	2,139.76	35.0%	35.32	1.7%
8	3212	Made-up textile goods, exc wearing apparel	1,396.36	40.6%	29.79	2.1%
9	3112	Dairy products	2,134.48	30.6%	27.77	1.3%
10	3117	Bakery products	2,880.78	25.8%	27.76	1.0%
11	3131	Distilleries & wineries	2,243.33	29.3%	27.11	1.2%
12	3140	Tabacco products	1,732.81	32.0%	24.45	1.4%
13	3320	Furniture	2,589.87	22.1%	18.87	0.7%
14	3523	Soap, cosmetics & toilet preparations	3,780.66	19.1%	17.34	0.5%
15	1100	Agriculture, forestry and fishing	11,747.13	8.8%	15.02	0.1%
16	3233	Leather products & leather substitutes	926.68	28.3%	10.54	1.1%
17	3113	Canning & preserving of fruit & vegetables	2,851.55	14.6%	9.62	0.3%
18	2100	Mining	52,086.58	3.0%	7.96	0.0%
19	353/4	Other basic chemicals, petroleum & coal	7,362.00	8.6%	7.60	0.1%
20	3560	Other plastic products	1,157.20	14.2%	3.07	0.3%
21	3214	Carpets & rugs, mats & matting	302.28	26.6%	3.07	1.0%
22	3122	Prepared animal feeds	1,158.66	11.7%	2.58	0.2%
23	3119	Cocoa, chocolate & sugar confectionery	1,254.85	11.2%	2.56	0.2%
24	3551	Tyres & tubes	933.51	14.4%	2.55	0.3%
25	3811	Cutlery, hand tools & general hardware	1,348.94	10.6%	2.48	0.2%
26	3819	Other fabricated metals, exc machinery	3,801.67	7.8%	2.27	0.1%
27	3419	Other pulp, paper & paperboard	1,184.70	10.2%	2.05	0.2%
28	3121	Other food products	2,172.62	7.0%	1.83	0.1%
29	3710	Iron & steel basic industries	12,325.15	2.7%	1.53	0.0%
30	3691	Bricks, tiles, refractories, etc	495.40	12.4%	1.24	0.2%
31	3829	Other machinery & equipment, exc electrical	14,698.62	2.8%	1.22	0.0%

			1	2	3	4
SIC		Sector	Imports (Rm '96)	Tariff (1996 schedule)	Net Δ in welfare Rm '96, ε_Δ = sector specific	Net Δ in welfare / imports
32	3411	Pulp, paper & paperboard	2,533.88	5.2%	1.19	0.0%
33	3215	Cordage, rope & twine industries	178.35	20.8%	1.16	0.6%
34	3610	Pottery, china & earthenware	181.87	20.4%	1.14	0.6%
35	3115	Vegetable & animal oils & fats	2,306.52	5.2%	1.08	0.0%
36	3620	Glass & glass products	1,007.28	7.5%	0.96	0.1%
37	3833	Electrical appliances & housewares	625.66	17.7%	0.94	0.1%
38	3851/4/5/9	Other transport	5,624.45	2.9%	0.85	0.0%
39	3134	Soft drinks & carbonated waters industries	2,105.64	4.8%	0.83	0.0%
40	3720	Non-ferrous metal basic industries	3,610.21	3.6%	0.83	0.0%
41	3813	Structural metal products	1,858.83	6.4%	0.76	0.0%
42	3812	Furniture & fixtures primarily of metal	347.06	15.2%	0.74	0.2%
43	3219	Textiles, not elsewhere classified	251.71	13.3%	0.71	0.3%
44	3521	Paints, varnishes & lacquers	607.77	9.0%	0.67	0.1%
45	3420	Printing & publishing	5,152.95	2.5%	0.58	0.0%
46	3699	Other non-metallic mineral products	673.06	6.6%	0.50	0.1%
47	3116	Grain mill products	3,734.02	2.7%	0.49	0.0%
48	3310	Wood & wood products, exc furniture	1,388.82	3.8%	0.35	0.0%
49	3513	Synthetic resins & plastic materials	1,249.58	4.1%	0.30	0.0%
50	3831	Electrical industrial machinery	3,717.98	3.6%	0.27	0.0%
51	3511	Industrial chemicals	9,562.88	1.2%	0.20	0.0%
52	3529	Other chemical products	3,423.81	1.9%	0.18	0.0%
53	386/390/ 239033909	Other manufacturing industries	6,594.55	1.2%	0.17	0.0%
54	3832	Radio, television & communication equipment	7,286.17	1.7%	0.12	0.0%
55	3114	Canning, preserving & processing of fish	2,136.57	1.6%	0.10	0.0%
56	3821	Engines & turbines	1,008.65	2.6%	0.07	0.0%
57	3839	Other electrical apparatus & supplies	1,834.94	2.5%	0.06	0.0%
58	3133	Malt liquors & malt	3,564.82	0.9%	0.05	0.0%
59	3901	Jewellery and related articles	1,428.13	1.2%	0.03	0.0%
60	3512	Fertilizers & pesticides	1,211.44	1.0%	0.02	0.0%
61	3824	Special industrial machinery & equipment	7,157.83	0.2%	0.00	0.0%
62	3822	Agricultural machinery & equipment	381.33	0.6%	0.00	0.0%
63	3522	Medicinal & pharmaceutical preparations	2,676.69	0.2%	0.00	0.0%
64	3692	Cement	29.17	0.8%	0.00	0.0%
65	3823	Metal & woodworking machinery	2,879.40	0.1%	0.00	0.0%
66	3825	Office, computing & accounting machinery	5,184.07	0.0%	0.00	0.0%

Source: Kuhn and Jansen (1996), Gumede (2000) and own calculations
Note: imports in 1996 Rm; 1996 Tariff Schedule

Because the variation in the estimated elasticities shown in Table 5.6 is relatively small, the ranking of Table 5.7 does not differ much from Table 5.5.

5.4.3 Using Customs and Excise data for 2000 with July 2000 tariff data

This section concludes with an application of the same methodology, now using ad valorem tariff data for 2000 (excluding non-ad valorem tariffs) and import data for 2000, both available to the DTI from the SA Revenue Service. Although the data are classified according the HS coding, it is hoped that some shifts can be identified, now that it is possible to add a second observation to 1996. First, the import values and corresponding import tariffs are presented.

Table 5.8 demonstrates that the highest import tariffs are recorded for tobacco and original equipment components (HS2 and HS98 respectively). Tariffs on clothing have dropped from levels higher than 55% in 1996 to below 30% in 2000. Motor vehicle tariffs on the other hand have risen from 20% to 31%, which is probably the result of the import weighting procedure, with imports switching to the higher tariff lines in the group. The HS2 commodity groups of large value with relatively high tariffs are: unclassified, motor vehicles, rubber products and, to a lesser degree, furniture (see row 17).

Table 5.7b: SA merchandise imports (2000) and import-weighted tariffs, ranked according to tariff (Rm, current prices)

		Imports	Tariff			Imports	Tariff
1	HS24: Tobacco and manufactured tobacco substitutes.	23	42.9%	50	HS06: Live trees and other plants; bulbs, roots and t	37	4.2%
2	HS98: Special classifications provisions	15,008	35.0%	51	HS53: Other vegetable textile fibres; paper yarn and w	56	4.1%
3	HS87: Vehicles (excluding railway or tramway rolling-s	10,566	31.5%	52	HS89: Ships, boats and floating structures.	107	4.0%
4	HS62: Items of app and clothing acc, not knitted or cr	37	31.1%	53	HS12: Oil seeds and oleaginous fruits; miscellaneous g	222	3.7%
5	HS57: Carpets and other textile floor coverings.	144	30.0%	54	HS37: Photographic or cinematographic goods.	612	3.5%
6	HS64: Footwear, gaiters and the like; parts of such it	666	28.1%	55	HS85: Electrical machinery and equipment and parts the	23,600	3.5%
7	HS42: Items of leather; saddlery and harness; travel g	358	28.1%	56	HS44: Wood and items of wood; wood charcoal	1,015	3.2%
8	HS66: Umbrellas, sun umbrellas, walking-sticks, seat s	29	27.3%	57	HS11: Products of the milling industry; malt; starches	191	3.0%
9	HS65: Headgear and parts thereof	93	26.1%	58	HS15: Animal or vegetable fats; oils etc & waxes	773	2.9%
10	HS61: Items of app and clothing acc, knitted or croche	41	25.0%	59	HS74: Copper and items thereof	330	2.8%
11	HS19: Preparations of cereals, flour, starch, or milk;	146	24.3%	60	HS72: Iron and steel.	1,721	2.7%
12	HS63: Other made up textile items; sets; worn clothing	140	22.8%	61	HS32: Tanning or dyeing extracts, tannins and their de	1,321	2.7%
13	HS16: Preparations of meat, of fish or of crustaceans,	18	22.7%	62	HS03: Fish and crustaceans, molluscs and other aquatic	10	2.1%
14	HS60: Knitted or crocheted fabrics.	129	20.2%	63	HS49: Printed books, newspapers, pictures and other pr	998	1.9%
15	HS93: Arms and ammunition; parts and acc thereof.	0	20.0%	64	HS95: Toys, games and sports requisites; parts and acc	1,293	1.4%
16	HS46: Manufactures of straw, of esparto or of other pl	30	17.5%	65	HS55: Man-made staple fibres.	391	1.3%
17	HS94: Furniture; bedding, mattresses, mattress support	1,019	17.4%	66	HS25: Salt, sulphur, earths and stone, plastering mate	610	1.3%
18	HS02: Meat and edible meat offal	596	17.1%	67	HS36: Explosives; pyrotechnic products; matches; pyrop	110	1.2%
19	HS22: Beverages, spirits and vinegar.	96	16.5%	68	HS09: Coffee, tea, mate and spices	290	1.0%
20	HS17: Sugars and sugar confectionery	117	16.2%	69	HS29: Organic chemicals.	4,321	1.0%
21	HS67: Prepared feathers and down and items made of fea	40	15.5%	70	HS71: Natural or cultured pearls, precious or semi-pre	3,551	0.9%
22	HS22: Miscellaneous edible preparations	455	15.1%	71	HS38: Miscellaneous chemical products.	3,120	0.9%

		Imports	Tariff			Imports	Tariff
23	HS34: Soap, organic surface-active agents, washing pre	489	14.6%	72	HS28: Inorganic chemicals; organic or inorganic compou	3,841	0.9%
24	HS40: Rubber and items thereof.	2,305	14.1%	73	HS84: Nuclear reactors, boilers, machinery and mechani	29,124	0.8%
25	HS83: Miscellaneous items of base metal.	537	13.6%	74	HS90: Optical, photographic, cinematographic, measurin	6,516	0.5%
26	HS56: Wadding, felt and nonwovens; special yarns; twin	217	13.4%	75	HS51: Wool, fine or coarse animal hair; horsehair yarn	114	0.2%
27	HS54: Man-made filaments	502	13.0%	76	HS30: Pharmaceutical products.	4,293	0.1%
28	HS58: Special woven fabrics; tufted textile fabrics; l	150	12.3%	77	HS10: Cereals	1,165	0.0%
29	HS59: Impregnated, coated, covered or laminated textil	470	12.2%	78	HS35: Albuminoidal substances; modified starches; glue	448	0.0%
30	HS20: Preparations of vegetables, fruit, nuts or other	125	12.1%	79	HS27: Mineral fuels, oils and products of their distil	25,685	0.0%
31	HS96: Miscellaneous manufactured items.	501	11.9%	80	HS01: Live animals	44	0.0%
32	HS33: Essential oils and resinoids; perfumery, cosmeti	959	10.3%	81	HS05: Products of animal origin, not elsewhere specifi	159	0.0%
33	HS07: Edible vegetables and certain roots and tubers	185	10.3%	82	HS14: Vegetable plaiting materials; vegetable products	32	0.0%
34	HS52: Cotton	12	9.8%	83	HS26: Ores, slag and ash.	226	0.0%
35	HS48: Paper and paperboard; items of paper pulp, of p	2,437	9.2%	84	HS31: Fertilizers.	858	0.0%
36	HS70: Glass and glassware.	672	8.2%	85	HS45: Cork and items of cork	164	0.0%
37	HS18: Cocoa and cocoa preparations	212	7.6%	86	HS47: Pulp of wood or of other fibrous cellulosic mate	275	0.0%
38	HS39: Plastics and items thereof.	5,109	7.2%	87	HS50: Silk	24	0.0%
39	HS76: Aluminium and items thereof	699	7.1%	88	HS75: Nickel and items thereof	762	0.0%
40	HS23: Residues and waste from the food industries; pre	839	6.4%	89	HS78: Lead and items thereof.	45	0.0%
41	HS69: Ceramic products.	1,553	6.1%	90	HS79: Zinc and items thereof.	111	0.0%
42	HS68: Items of stone, plaster, cement, asbestos, mica	448	6.0%	91	HS80: Tin and items thereof.	84	0.0%
43	HS04: Dairy produce; birds' eggs; natural honey; edibl	14	5.8%	92	HS81: Other base metals; cermets: items thereof.	145	0.0%
44	HS13: Lac; gums, resins and other vegetable saps and e	119	5.7%	93	HS86: Railway or tramway locomotives, rolling-stock an	103	0.0%
45	HS82: Tools, implements, cutlery, spoons and forks, of	1,095	5.7%	94	HS88: Aircraft, spacecraft and parts thereof.	4,748	0.0%
46	HS73: Items of iron or steel.	2,026	5.6%	95	HS91: Clocks and watches and parts thereof.	335	0.0%
47	HS41: Raw hides and skins (excluding furskins) and lea	728	4.9%	96	HS92: Musical instruments; parts and acc of such items	57	0.0%
48	HS08: Edible fruit and nuts; peel of citrus fruit or	147	4.9%	97	HS97: Works of art, collectors' pieces and antiques.	220	0.0%
49	HS43: Furskins and artificial fur; manufactures there	4	4.7%	98			

Source: Customs and Excise and DTI

This is confirmed in Table 5.8, which presents the same information as in Table 5.7 but ranked according to the value of imports. Commodities with high values of imports include, among others, machinery, electrical machinery and fuels, and also some chemicals groups and special equipment.

Table 5.8: SA merchandise imports (2000) and import-weighted tariffs, ranked according to value of imports (Rm, current prices)

		Imports	Tariff			Imports	Tariff
1	HS84: Nuclear reactors, boilers, machinery and mechani	29,124	0.8%	50	HS09: Coffee, tea, mate and spices	290	1.0%
2	HS27: Mineral fuels, oils and products of their distil	25,685	0.0%	51	HS47: Pulp of wood or of other fibrous mate	275	0.0%
3	HS85: Electrical machinery and equipment and parts the	23,600	3.5%	52	HS26: Ores, slag and ash.	226	0.0%
4	HS98: Special classifications provisions	15,008	35.0%	53	HS12: Oil seeds and oleaginous fruits; miscellaneous g	222	3.7%
5	HS87: Vehicles (excluding railway or tramway rolling-s	10,566	31.5%	54	HS97: Works of art, collectors' pieces and antiques.	220	0.0%
6	HS90: Optical, photographic, cinematographic, measurin	6,516	0.5%	55	HS56: Wadding, felt and nonwovens; special yarns; twin	217	13.4 %
7	HS39: Plastics and items thereof.	5,109	7.2%	56	HS18: Cocoa and cocoa preparations	212	7.6%
8	HS88: Aircraft, spacecraft and parts thereof.	4,748	0.0%	57	HS11: Products of the milling industry; malt; starches	191	3.0%
9	HS29: Organic chemicals.	4,321	1.0%	58	HS07: Edible vegetables and certain roots and tubers	185	10.3 %
10	HS30: Pharmaceutical products.	4,293	0.1%	59	HS45: Cork and items of cork	164	0.0%
11	HS28: Inorganic chemicals; organic or inorganic compou	3,841	0.9%	60	HS05: Products of animal origin, not elsewhere specifi	159	0.0%
12	HS71: Natural or cultured pearls, precious or semi-pre	3,551	0.9%	61	HS58: Special woven fabrics; tufted textile fabrics; l	150	12.3 %
13	HS38: Miscellaneous chemical products.	3,120	0.9%	62	HS08: Edible fruit and nuts; peel of citrus fruit or	147	4.9%
14	HS48: Paper and paperboard; items of paper pulp, of p	2,437	9.2%	63	HS19: Preparations of cereals, flour, starch, or milk;	146	24.3 %
15	HS40: Rubber and items thereof.	2,305	14.1%	64	HS81: Other base metals; cermets: items thereof.	145	0.0%
16	HS73: Items of iron or steel.	2,026	5.6%	65	HS57: Carpets and other textile floor coverings.	144	30.0 %
17	HS72: Iron and steel.	1,721	2.7%	66	HS63: Other made up textile items; sets; worn clothing	140	22.8 %
18	HS69: Ceramic products.	1,553	6.1%	67	HS60: Knitted or crocheted fabrics.	129	20.2 %
19	HS32: Tanning or dyeing extracts, tannins and their de	1,321	2.7%	68	HS20: Preparations of vegetables, fruit, nuts or other	125	12.1 %
20	HS95: Toys, games and sports requisites; parts and acc	1,293	1.4%	69	HS13: Lac; gums, resins and other vegetable saps and e	119	5.7%
21	HS10: Cereals	1,165	0.0%	70	HS17: Sugars and sugar confectionery	117	16.2 %
22	HS82: Tools, implements, cutlery, spoons and forks, of	1,095	5.7%	71	HS51: Wool, fine or coarse animal hair; horsehair yarn	114	0.2%

		Imports	Tariff			Imports	Tariff
23	HS94: Furniture; bedding, mattresses, mattress support	1,019	17.4%	72	HS79: Zinc and items thereof.	111	0.0%
24	HS44: Wood and items of wood; wood charcoal	1,015	3.2%	73	HS36: Explosives; pyrotechnic products; matches; pyrop	110	1.2%
25	HS49: Printed books, newspapers, pictures and other pr	998	1.9%	74	HS89: Ships, boats and floating structures.	107	4.0%
26	HS33: Essential oils and resinoids; perfumery, cosmeti	959	10.3%	75	HS86: Railway or tramway locomotives, rolling-stock an	103	0.0%
27	HS31: Fertilizers.	858	0.0%	76	HS22: Beverages, spirits and vinegar.	96	16.5%
28	HS23: Residues and waste from the food industries; pre	839	6.4%	77	HS65: Headgear and parts thereof	93	26.1%
29	HS45: Cork and items of cork	773	2.9%	78	HS80: Tin and items thereof.	84	0.0%
30	HS75: Nickel and items thereof	762	0.0%	79	HS92: Musical instruments; parts and acc of such items	57	0.0%
31	HS41: Raw hides and skins (excluding furskins) and lea	728	4.9%	80	HS53: Other vegetable textile fibres; paper yarn and w	56	4.1%
32	HS76: Aluminium and items thereof	699	7.1%	81	HS78: Lead and items thereof.	45	0.0%
33	HS70: Glass and glassware.	672	8.2%	82	HS01: Live animals	44	0.0%
34	HS64: Footwear, gaiters and the like; parts of such it	666	28.1%	83	HS61: Items of app and clothing acc, knitted or croche	41	25.0%
35	HS37: Photographic or cinematographic goods.	612	3.5%	84	HS67: Prepared feathers and down and items made of fea	40	15.5%
36	HS25: Salt, sulphur, earths and stone, plastering mate	610	1.3%	85	HS06: Live trees and other plants; bulbs, roots and t	37	4.2%
37	HS02: Meat and edible meat offal	596	17.1%	86	HS62: Items of app and clothing acc, not knitted or cr	37	31.1%
38	HS83: Miscellaneous items of base metal.	537	13.6%	87	HS14: Vegetable plaiting materials; vegetable products	32	0.0%
39	HS54: Man-made filaments	502	13.0%	88	HS46: Manufactures of straw, of esparto or of other pl	30	17.5%
40	HS96: Miscellaneous manufactured items.	501	11.9%	89	HS66: Umbrellas, sun umbrellas, walking-sticks, seat s	29	27.3%
41	HS34: Soap, organic surface-active agents, washing pre	489	14.6%	90	HS50: Silk	24	0.0%
42	HS59: Impregnated, coated, covered or laminated textil	470	12.2%	91	HS24: Tobacco and manufactured tobacco substitutes.	23	42.9%
43	HS45: Cork and items of cork	455	15.1%	92	HS16: Preparations of meat, of fish or of crustaceans,	18	22.7%
44	HS35: Albuminoidal substances; modified starches; glue	448	0.0%	93	HS04: Dairy produce; birds' eggs; natural honey; edibl	14	5.8%
45	HS68: Items of stone, plaster, cement, asbestos, mica	448	6.0%	94	HS52: Cotton	12	9.8%
46	HS55: Man-made staple fibres.	391	1.3%	95	HS03: Fish and crustaceans, molluscs and other aquatic	10	2.1%
47	HS42: Items of leather; saddlery and harness; travel g	358	28.1%	96	HS43: Furskins and artificial fur; manufactures there	4	4.7%
48	HS91: Clocks and watches and parts thereof.	335	0.0%	97	HS93: Arms and ammunition; parts and acc thereof.	0	20.0%
49	HS74: Copper and items thereof	330	2.8%	98			

Source: Customs and Excise and IDC

As with the earlier results presented in Tables 5.5 and 5.7, it is possible to report on net welfare changes, expressed in terms of millions of Rands and as a proportion of total imports. The left-hand side of the next table shows results for the economy-wide import demand elasticity of -1.56, while the right-hand side represents the results for sector specific import demand elasticities. As before, the small country assumption is chosen so that the import supply elasticity is very high.

Due to the small variation in the estimates of the import demand elasticities, the ranking of HS2 commodities is nearly identical. In both cases, unclassified commodities offer the largest consumer gains with the full elimination of trade barriers. This includes mainly original equipment components for motor vehicles (HS98010030-40), followed by the HS2 group of complete motor vehicles. In the case of motor vehicles, the results are distorted by the rebate system that is currently in place in which firms can claim back a large part of the import duties, if they engage in exports. The nominal tariff is therefore in reality much lower than the scheduled tariff.

Table 5.9: Net change in welfare (July 2000 tariff schedule, small country assumption, import demand elasticity: -1.56 and sector-specific import demand elasticities respectively, Rm, current prices)

	Based on economy-wide import demand elasticity of -1.56	Net Δ in welfare	Imports		Based on sector-specific import demand elasticities	Net Δ in welfare	As % of imports
1	HS98: Special classifications provisions	1,061	15,008	1	HS98: Special classifications provisions -248		-1.7%
2	HS87: Vehicles (excluding railway or tramway rolling-s	-623	10,566	2	HS87: Vehicles (excluding railway or tramway rolling-s	-145	-1.4%
3	HS64: Footwear, gaiters and the like; parts of such it	-32	666	3	HS64: Footwear, gaiters and the like; parts of such it	-7	-1.1%
4	HS40: Rubber and items thereof.	-31	2,305	4	HS40: Rubber and items thereof.	-7	-0.3%
5	HS85: Electrical machinery and equipment and parts the	-22	23,600	5	HS85: Electrical machinery and equipment and parts the	-5	0.0%
6	HS94: Furniture; bedding, mattresses, mattress support	-20	1,019	6	HS94: Furniture; bedding, mattresses, mattress support	-5	-0.5%
7	HS39: Plastics and items thereof.	-19	5,109	7	HS39: Plastics and items thereof.	-4	-0.1%
8	HS42: Items of leather; saddlery and harness; travel g	-17	358	8	HS42: Items of leather; saddlery and harness; travel g	-4	-1.1%
9	HS48: Paper and paperboard; items of paper pulp, of p	-15	2,437	9	HS48: Paper and paperboard; items of paper pulp, of p	-3	-0.1%
10	HS02: Meat and edible meat offal	-12	596	10	HS02: Meat and edible meat offal	-3	-0.5%
11	HS57: Carpets and other textile floor coverings.	-8	144	11	HS57: Carpets and other textile floor coverings.	-2	-1.3%
12	HS33: Essential oils and resinoids; perfumery, cosmeti	-7	959	12	HS33: Essential oils and resinoids; perfumery, cosmeti	-2	-0.2%
13	HS34: Soap, organic surface-active agents, washing pre	-7	489	13	HS34: Soap, organic surface-active agents, washing pre	-2	-0.3%
14	HS45: Cork and items of cork	-7	455	14	HS45: Cork and items of cork	-2	-0.4%
15	HS83: Miscellaneous items of base metal.	-7	537	15	HS83: Miscellaneous items of base metal.	-2	-0.3%
16	HS54: Man-made filaments	-6	502	16	HS54: Man-made filaments	-1	-0.3%
17	HS19: Preparations of cereals, flour, starch, or milk;	-5	146	17	HS19: Preparations of cereals, flour, starch, or milk;	-1	-0.9%
18	HS96: Miscellaneous manufactured items.	-5	501	18	HS96: Miscellaneous manufactured items.	-1	-0.2%
19	HS59: Impregnated, coated, covered or laminated textil	-5	470	19	HS59: Impregnated, coated, covered or laminated textil	-1	-0.2%
20	HS63: Other made up textile items; sets; worn clothing	-5	140	20	HS63: Other made up textile items; sets; worn clothing	-1	-0.8%

	Based on economy-wide import demand elasticity of -1.56	Net Δ in welfare	Imports		Based on sector-specific import demand elasticities	Net Δ in welfare	As % of imports
21	HS73: Items of iron or steel.	-5	2,026	21	HS73: Items of iron or steel.	-1	-0.1%
22	HS69: Ceramic products.	-4	1,553	22	HS69: Ceramic products.	-1	-0.1%
23	HS65: Headgear and parts thereof	-4	93	23	HS65: Headgear and parts thereof	-1	-1.0%
24	HS60: Knitted or crocheted fabrics.	-3	129	24	HS60: Knitted or crocheted fabrics.	-1	-0.6%
25	HS70: Glass and glassware.	-3	672	25	HS70: Glass and glassware.	-1	-0.1%
26	HS56: Wadding, felt and nonwovens; special yarns; twin	-3	217	26	HS56: Wadding, felt and nonwovens; special yarns; twin	-1	-0.3%
27	HS82: Tools, implements, cutlery, spoons and forks, of	-3	1,095	27	HS82: Tools, implements, cutlery, spoons and forks, of	-1	-0.1%
28	HS76: Aluminium and items thereof	-3	699	28	HS76: Aluminium and items thereof	-1	-0.1%
29	HS23: Residues and waste from the food industries; pre	-2	839	29	HS23: Residues and waste from the food industries; pre	-1	-0.1%
30	HS24: Tobacco and manufactured tobacco substitutes.	-2	23	30	HS24: Tobacco and manufactured tobacco substitutes.	-1	-2.3%
31	HS62: Items of app and clothing acc, not knitted or cr	-2	37	31	HS62: Items of app and clothing acc, not knitted or cr	0	-1.3%
32	HS17: Sugars and sugar confectionery	-2	117	32	HS17: Sugars and sugar confectionery	0	-0.4%
33	HS22: Beverages, spirits and vinegar.	-2	96	33	HS22: Beverages, spirits and vinegar.	0	-0.4%
34	HS61: Items of app and clothing acc, knitted or croche	-2	41	34	HS61: Items of app and clothing acc, knitted or croche	0	-0.9%
35	HS58: Special woven fabrics; tufted textile fabrics; l	-2	150	35	HS58: Special woven fabrics; tufted textile fabrics; l	0	-0.2%
36	HS84: Nuclear reactors, boilers, machinery and mechani	-1	29,124	36	HS84: Nuclear reactors, boilers, and mechani	0	0.0%
37	HS07: Edible vegetables and certain roots and tubers	-1	185	37	HS07: Edible vegetables and certain roots and tubers	0	-0.2%
38	HS66: Umbrellas, sun umbrellas, walking-sticks, seat s	-1	29	38	HS66: Umbrellas, sun umbrellas, walking-sticks, seat s	0	-1.1%
39	HS41: Raw hides and skins (excluding furskins) and lea	-1	728	39	HS41: Raw hides and skins (excluding furskins) and lea	0	0.0%
40	HS20: Preparations of vegetables, fruit, nuts or other	-1	125	40	HS20: Preparations of vegetables, fruit, nuts or other	0	-0.2%
41	HS68: Items of stone, plaster, cement, asbestos, mica	-1	448	41	HS68: Items of stone, plaster, cement, asbestos, mica	0	-0.1%
42	HS72: Iron and steel.	-1	1,721	42	HS72: Iron and steel.	0	0.0%
43	HS18: Cocoa and cocoa preparations	-1	212	43	HS18: Cocoa and cocoa preparations	0	-0.1%
44	HS44: Wood and items of wood; wood charcoal	-1	1,015	44	HS44: Wood and items of wood; wood charcoal	0	0.0%
45	HS32: Tanning or dyeing extracts, tannins and their de	-1	1,321	45	HS32: Tanning or dyeing extracts, tannins and their de	0	0.0%
46	HS67: Prepared feathers and down and items made of fea	-1	40	46	HS67: Prepared feathers and down and items made of fea	0	-0.4%
47	HS46: Manufactures of straw, of esparto or of other pl	-1	30	47	HS46: Manufactures of straw, of esparto or of other pl	0	-0.5%
48	HS16: Preparations of meat, of fish or of crustaceans,	-1	18	48	HS16: Preparations of meat, of fish or of crustaceans,	0	-0.8%
49	HS37: Photographic or cinematographic goods.	-1	612	49	HS37: Photographic or cinematographic goods.	0	0.0%

Source: Customs and Excise and IDC

5.4.4 Conclusions

Welfare costs are a function of the tariff level of tariffs and the value of imports. The highest static welfare costs of maintaining tariffs are revealed for motor vehicles and original equipment components thereof. The main reason for this is the low absolute value of imports, as well as the high tariff level. In other words, consumers in SA are likely to benefit most noticeably by the removal of tariffs on motor vehicles. Further analysis is recommended with regard to detailed commodities that are currently 'hidden' in the special classifications category (HS98). Although some items of apparel face even higher tariffs, the welfare losses of maintaining the existing tariff are less. Moreover, from 1996 to 2000, welfare costs of protection on textiles, clothing and footwear commodities have declined considerably. The same applies to some of the processed food commodities.

5.5 FUTURE RESEARCH: TRADE, TRADE LIBERALISATION, EMPLOYMENT, LABOUR MARKETS AND POVERTY

The predicament of low growth in the economy remains an urgent challenge to policy makers. Trade reform is a critical component of this challenge, but certainly in itself does not make or break growth or employment.

From the review of research described in this section, it would appear that a reasonable body of analysis exists in the area of the impact of trade and trade liberalisation on the SA economy. However, most of the analysis only covers the first few years of trade liberalisation and if we are to believe that dynamic effects are stronger than any of the other more immediate effects, an update of some of this research is now urgently required. In general, it makes sense for policy makers at the DTI to develop a systematic and ongoing approach to the monitoring of trade liberalisation along the lines suggested above, as the process gradually unfolds. An important lesson that comes out of the literature review is that the findings vary from study to study, and are therefore inconclusive. What can authoritatively be said is that trade plays a small part amongst a range of other policy variables in determining patterns of equality.

There are two specific areas where further research can contribute to policy making. First, a better understanding of the impact of trade liberalisation on technological change and innovation is required. It is important to grasp the degree to which technological upgrading is simply a substitution effect, that is, a response to changes in factor costs (increases in the cost of labour or decrease in cost of capital), or simply the result of firms innovating to become internationally competitive.

Moreover, it is important to clarify how exactly trade liberalisation, or the general opening up of the SA economy, contributes to changes in output prices in different sectors. Is it driven by tariffs, the exchange rate or other, perhaps external, factors? Related to this is another area where the DTI's attention is urgently required: the potential impact of trade liberalisation, and trade policy in general, on income distribution and poverty. Some of the analyses discussed in this section noted the differential impact on skilled and unskilled labour earnings, as well as on the rewards of the factors of production, but few studies in SA have gone so far as to consider the impact on household income. Such analysis is now becoming more popular in developing economies but only limited investigation has taken place in SA.

Standard economic theory suggests that trade liberalisation reduces poverty. Since trade raises the demand for traded goods relative to that of non-traded goods, in the wake of trade liberalisation, price of non-traded goods should fall relative to that of traded goods. If poor households are net suppliers of labour, and if the traded goods sector is more labour intensive than the non-traded goods sector – both of which are, by assumptions, expected to be true for developing countries – then, according to the Stolper-Samuelson Theorem, real wages in terms of non-traded goods will rise, and the poor will be the net gainers. However, in real life there can be many caveats to this scenario.

While the major channels of transmission of the impact of changes in trade policy on income distribution and poverty will be through the labour market, as well as through changes in the level and structure of prices, there could also be other channels of transmission. Trade reforms could be instrumental in bringing about changes in household dynamics, for instance through migration of earning adult members of households or arrival of parents in the household consequent to job losses.

Also, in deciphering the impact of trade policy on labour markets and poverty, it should be remembered that policy interventions do not take place in a vacuum. In the first place, there are other policy interventions that may be operational simultaneously with trade policy, and that could have a direct impact on poverty and labour markets. Reductions in, or reallocation of, social sector budgets or policies designed to alter asset ownership patterns, as, for instance, through reformulations in land policy, are some examples. These will be among factors that will define the shape of the counter-factuals. A simple before/after comparison would generally be replete with a large amount of noise.

Secondly, the same policy initiative could have very pronounced differences in impact depending on the environment in which it is being implemented. In other words, the impact of the initiative will be shaped, among other things, by the initial conditions, including the existing structure of markets and the macroeconomic (fiscal and monetary) stance. The major point that needs to be emphasised here is that whether trade liberalisation is going to be beneficial for employment creation and poverty alleviation or not is primarily an empirical question: the answer largely depends, to a large extent, on the specific context.

To investigate some of the issues mentioned above, it should be noted that, currently, there appears to be a lack of adequate usable information on the channels through which trade liberalisation efforts are transmitted, and the impact of trade-induced shocks in the SA economy. This affects the ability to conduct an assessment of how different groups of the population, especially the poor, are affected by such measures.

To the extent that the trading status of the poor differs from that of the non-poor in different markets, trade-induced price changes are likely to have some impact on income distribution and on poverty levels. Food, fuel and transport comprise the three main items of expenditure for the poor in SA. There is a great deal of heterogeneity in the trading status of the poor in the food market in different countries of the developing world: although in many countries of Africa the poor are net producers of food, the available statistics in SA seem to suggest that in this country they are net buyers of food. Trade-induced increases in prices of food or fuel are therefore likely to affect the poor adversely (Case 2000).

The consumption baskets of the poor, as well as their income and price elasticities, are likely to be very different from those of the non-poor. The 1995 household income expenditure data available in SA can be used to estimate such parameters. This can be done in a partial equilibrium setting by using the Linear Expenditure System for different income groups. Subsequently, it would be useful to work out the implications of such distributional consequences of trade-induced price changes in the context of an economy-wide framework.

In summary, the measurement of trade liberalisation is highly sensitive to simultaneous movement in policies, prices and other factors. The impact of liberalisation depends critically on what assumptions are made about the supply of skilled and unskilled labour as well as the distribution of wages. In addition, the impact of trade liberalisation does not only take place at the firm level but also at the household level. It also impacts on both employment and the prices of goods that the poor consume. All these factors are important and need to be investigated in the future.

6 GROWTH AND COMPETITIVENESS OF SA EXPORTS[14]

6.1 INTRODUCTION

As noted in Chapter 5, the link between exports and trade liberalisation is often not clear-cut as a range of other factors – other than a change in the trade regime – also influence trade patterns. This chapter does not aim to provide a conclusive analysis of this link; instead it is more modest in that it is aims to provide a somewhat detailed overview of SA's export performance and competitiveness in the 1990s. The results, although not offering a direct link to trade liberalisation, could still be suggestive.

The primary objective of this chapter is to give a comprehensive overview of SA exports from various vantage points. Reporting exports is highly dependent on data availability and classification, and an attempt is made to review SA exports using both the Harmonised System (HS) codes as well as the SIC system.

The chapter first provides a descriptive analysis of SA's balance of payments situation between 1990 and 2000, before examining the economy's export performance in a global context. It then undertakes a brief examination of the country's growth rates of demand for imports before looking at the most significant exports. This is followed by an overview of the main destinations of the country's total exports, and an analysis of export growth rates in the recent past. The chapter then analyses, in detail, the geographical breakdown of exports before examining how competitive SA's exports are vis-à-vis other regions of the world.

6.2 THE TRADE BALANCE

The structure of the current account has been largely influenced by historical developments. Before 1994, the balance of payments was mainly managed with the objective of compensating for the weakness of financial inflows due to a hostile international environment, coupled with the 1985 moratorium on external debt. In fact, SA was led to produce trade surpluses to generate foreign currency and repay external debt. After 1994, the turnaround of capital flows dramatically changed the need for a positive current account. The positive trade balance in merchandise goods consequently narrowed and the service, income and current account transfer balance increased its negative impact on the current account. The external current account deficit has then remained roughly stable through 1999 and 2000. Indeed, in 2000 the deficit was 0.6% of GDP, close to the 1999 0.4% deficit.

[14] This chapter draws heavily on a TIPS-commissioned paper by Edwards and Schoer (2001). Throughout the chapter, SACU exports are used as a proxy for South Africa's exports.

Table 6.1: Balance of payments (Rm, constant 1995 prices)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Trade balance	23,366	21,753	20,100	10,482	4,776	5,873	6,368	7,917	20,243	23,025
Exports	101,700	104,276	109,324	114,061	125,867	137,514	145,097	148,262	150,145	162,500
Imports	78,334	82,523	89,224	103,579	121,091	131,641	138,729	140,345	129,902	139,475
Percentage growth										
Exports		2.5	4.8	4.3	10.4	9.3	5.5	2.2	1.3	8.2
Imports		5.3	8.1	16.1	16.9	8.7	5.4	1.2	-7.4	7.4
As a percentage of GDP										
Trade balance	4.5	4.3	3.9	2.0	0.9	1.0	1.1	1.3	3.4	3.7
Exports	19.6	20.5	21.2	21.5	23.0	24.1	24.8	25.2	25.0	26.3
Imports	15.1	16.2	17.3	19.5	22.1	23.1	23.7	23.8	21.6	22.5

Source: SARB Quarterly Bulletin

In 2000, both import and export volumes increased markedly, with the overall trade balance registering a healthy surplus of 3.7% of GDP. The 8.2% increase in exports reflected the good performance of the agriculture sector coupled with the output growth of the secondary sector. Platinum exports within the mining sector have been boosted by strong price increases. Vehicle manufacturers in particular have benefited from a rise in global demand for catalytic converters in the latter part of the year. Imports increased by 7.4% in response to stronger growth.

6.3 EXPORT PERFORMANCE

These trends are to some degree also reflected in the changing composition of the export basket, with the gold mining sector and primary products declining in importance (Table 6.2).

Table 6.2: Exports by stage of manufacturing, as a percentage of total exports

Category	1990	1993	1996	1999
Gold	33.7	31.2	23.5	16.3
Primary products	24.5	25.4	21.5	20.4
Material-intensive products	6.1	5.7	7.1	7.9
Manufactured products	9.2	14.4	19.9	23.6

Source: IDC, 2000

6.3.1 Minerals and commodities exports

A more detailed view on SA's commodity exports is shown in Table 6.3, where it can also be seen that the importance of gold and coal is declining, while metallic minerals and diamond exports, as well as the export of basic metals, have maintained their position during the 1990s.

Table 6.3: SA's commodity exports during the 1990s (current Rm)

	Code		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	% growth
1	21	Coal mining	4,157	4,300	5,663	5,173	6,732	7,868	8,289	9,371	9,705	10,442	11.6
2	23	Gold and uranium ore	19,783	19,585	22,673	23,907	22,763	26,563	26,076	26,166	24,522	27,434	3.5
3	22/24/ 25/29	Other mining	13,354	14,270	17,898	17,540	17,497	18,692	19,771	23,005	24,155	31,004	8.2
4	351	Basic iron and steel	6,325	6,835	7,295	9,493	11,973	12,783	14,593	17,005	16,594	21,941	15.0
5	352	Basic non-ferrous metals	2,892	2,747	2,653	2,770	3,675	6,254	6,922	7,391	8,653	9,846	18.1
6		Total	46,512	47,737	56,184	58,883	62,640	72,160	75,651	82,938	83,629	100,667	8.7
Percentage growth													
7	21	Coal mining	8.9	9.0	10.1	8.8	10.7	10.9	11.0	11.3	11.6	10.4	
8	23	Gold and uranium ore	42.5	41.0	40.4	40.6	36.3	36.8	34.5	31.5	29.3	27.3	
9	22/24/ 25/29	Other mining	28.7	29.9	31.9	29.8	27.9	25.9	26.1	27.7	28.9	30.8	
10	351	Basic iron and steel	13.6	14.3	13.0	16.1	19.1	17.7	19.3	20.5	19.8	21.8	
11	352	Basic non-ferrous metals	6.2	5.8	4.7	4.7	5.9	8.7	9.1	8.9	10.3	9.8	

Source: TIPS SA Standardised Industrial Database

6.4 SOUTH AFRICA'S AGRICULTURAL AND MANUFACTURED EXPORTS IN A GLOBAL CONTEXT

A highlight of South Africa's trade regime has been the gradual reorientation from an inward-looking to an outward-looking economy with emphasis on increased exports, beginning in 1990 and gaining impetus when the country made its formal offer to the WTO in 1994 and entered a stage of trade liberalisation. This has contributed towards a diversification of South African exports away from mining (Table 6.4)

6.4 SA'S AGRICULTURAL AND MANUFACTURED EXPORTS IN A GLOBAL CONTEXT

A highlight of SA's trade regime has been the gradual reorientation from an inward-looking to an outward-looking economy with emphasis on increased exports, beginning in 1990 and gaining impetus when the country made its formal offer to the WTO in 1994 and entered a stage of trade liberalisation. This has contributed towards a diversification of SA exports away from mining (Table 6.4).

Table 6.4: World exports by broad product group (current US$ bn)

	SACU 1994	SACU 1998	SACU % change	World 1994	World 1998	World % change
Total merchandise	18,852	17,559	-1.5	4,245,357	5,369,681	5.7
Agriculture and food	2,118	2,407	4.1	393,439	443,784	2.6
Minerals	6,052	3,939	-9.9	445,808	518,500	4.9
Manufactures	10,682	11,212	1.2	3,406,110	4,407,397	6.1
Commercial services	3,556	5,109	9.2	1,086,946	1,374,052	5.9

Sources: Merchandise – UNComTrade, as reported by Statistics Canada's World Trade Analyser; Commercial services – World Development Indicators; notes: Agr & food – SITC 0,1, & 4; Minerals – SITC 2 & 3; Manufactures – SITC 5, 6, 7 & 8

Between 1994 and 1998, world trade in merchandise grew by 5.7% from US$4,200bn to US$5,400bn, while SACU's total exports declined by 1.5% in US$ terms from US$19bn to US$17bn. The main culprit of SA's disappointing performance is the exports of minerals, which declined from US$6bn to US$4bn. SA's exports of agriculture and food products, as well as commercial services, outperformed global trade at 4% and 9% respectively. Manufacturing exports, at 1.2%, also grew at a much lower rate than global trade in manufacturing.

6.5 LEADING GLOBAL IMPORTERS AND SA'S EXPORTS TO THESE MARKETS

What is SA's role in the greater scheme of global trade? It is of critical importance to SA's exports to evaluate country growth rates in the world economy. More important than GDP growth rates are the growth rates of demand for total imports and manufactured imports. The following table lists the 50 most important importers in the world for the year 1998.

Table 6.5: Leading importers and SA's exports to these markets for total merchandise and manufactured goods (1998 US$bn)

	Total Imports	1	2	3	4	5	6	7	Manufacturing	8	9	10	11	12	13	14
	Source →	World	World	World	SA	SA	Rank	SA		World	World	World	SA	SA	Rank	SA
	Destination ↓		Share %	Δ94-98		Share %		Δ94-98			Share %	Δ94-98		Share %		Δ94-98
1	USA	911,889	17.0	7.6	1,708	0.2	86	6.7	USA	782,696	17	7.9	1,24	0.2	80	3.1
2	Germany	461,233	8.6	2.8	1,590	0.3	61	4.7	Germany	377,574	8.6	3.3	1,11	0.3	58	7.9
3	UK	307,677	5.7	7.4	2,106	0.7	39	-1.3	UK	263,546	6.0	8.3	1,44	0.5	43	-3.0
4	France	300,757	5.6	4.5	455	0.2	90	-0.8	France	248,418	5.6	5.0	202	0.1	101	-4.6
5	Japan	261,650	4.9	2.1	889	0.3	62	-10.3	Canada	173,828	3.9	7.5	166	0.1	94	10.1
6	Italy	206,235	3.8	5.4	718	0.3	60	1.7	Japan	162,259	3.7	3.2	252	0.2	81	-17.6
7	Canada	197,273	3.7	7.4	226	0.1	100	10.5	Italy	159,112	3.6	6.8	415	0.3	62	4.8
8	Netherlands	180,261	3.4	5.4	678	0.4	57	18.8	China	148,504	3.4	5.4	153	0.1	91	10.1
9	China	175,898	3.3	6.4	263	0.1	91	6.6	Netherlands	141,971	3.2	6.5	320	0.2	68	16.1
10	Belgium-Lux	163,139	3.0	5.0	865	0.5	48	6.5	Belgium-Lux	133,197	3.0	6.1	550	0.4	48	8.7
11	Hong Kong	147,837	2.8	3.1	291	0.2	83	-8.9	Hong Kong	132,378	3.0	3.1	225	0.2	77	-6.9
12	Spain	138,333	2.6	8.8	405	0.3	71	-3.1	Spain	109,625	2.5	10.1	154	0.1	84	3.7
13	Mexico	118,073	2.2	12.9	53	0.0	129	10.2	Mexico	105,046	2.4	13.4	46	0.0	123	7.9
14	Singapore	96,031	1.8	0.7	132	0.1	95	25.6	Singapore	82,810	1.9	0.9	112	0.1	85	23.2
15	Taiwan	89,180	1.7	3.5	397	0.4	52	-6.6	Taiwan	78,460	1.8	4.5	196	0.2	65	-12.0
16	Former USSR	87,420	1.6	20.9	52	0.1	120	33.3	Switzerland	73,420	1.7	2.2	41	0.1	115	-64.6
17	Switzerland	84,051	1.6	2.3	70	0.1	111	-57.7	Former USSR	60,323	1.4	18.2	14	0.0	136	51.9
18	Korea Republic	83,280	1.6	-1.4	327	0.4	56	-10.6	Austria	59,761	1.4	3.0	26	0.0	124	5.5
19	Austria	68,794	1.3	3.5	77	0.1	102	-8.1	Sweden	56,704	1.3	5.8	69	0.1	87	35.4
20	Sweden	66,423	1.2	5.3	91	0.1	96	30.7	Korea Republic	54,375	1.2	-3.7	113	0.2	72	-18.3
21	Brazil	62,221	1.2	14.4	219	0.4	59	2.4	Malaysia	53,570	1.2	-0.8	39	0.1	105	-3.0
22	Malaysia	59,919	1.1	-0.3	67	0.1	101	-2.0	Australia	50,914	1.2	4.5	284	0.6	41	10.3
23	Australia	57,193	1.1	4.5	318	0.6	47	10.5	Brazil	49,649	1.1	16.5	156	0.3	55	0.8
24	Poland	46,817	0.9	19.5	52	0.1	103	14.8	Poland	38,826	0.9	21.6	15	0.0	127	71.4
25	Denmark	45,040	0.8	5.1	25	0.1	123	20.5	Ireland	38,254	0.9	15.4	32	0.1	100	17.9
26	Turkey	44,523	0.8	19.9	105	0.2	78	4.2	Denmark	36,721	0.8	5.4	9	0.0	135	27.2
27	Ireland	43,691	0.8	14.2	45	0.1	104	-2.6	Turkey	35,990	0.8	21.7	26	0.1	106	-5.3
28	Former Czechoslovakia	42,451	0.8	14.4	21	0.0	127	3.5	Former Czechoslovakia	35,579	0.8	13.2	12	0.0	131	0.5
29	Portugal	39,450	0.7	7.6	110	0.3	74	2.4	Norway	33,542	0.8	7.9	8	0.0	138	3.4
30	Norway	38,929	0.7	7.2	76	0.2	84	-11.9	Thailand	31,604	0.7	-7.6	69	0.2	70	-21.5
31	Thailand	35,134	0.7	-8.2	103	0.3	72	-19.9	Portugal	31,470	0.7	8.8	32	0.1	92	15.9
32	Saudi Arabia	34,950	0.7	8.4	116	0.3	65	28.2	Saudi Arabia	30,883	0.7	10.0	48	0.2	82	49.7
33	Finland	32,509	0.6	8.4	22	0.1	116	-5.9	Argentina	27,759	0.6	11.5	83	0.3	57	4.2
34	Philippines	31,455	0.6	14.8	30	0.1	107	-7.2	Finland	26,175	0.6	8.7	9	0.0	129	11.4
35	Argentina	30,803	0.6	11.1	103	0.3	63	2.9	Philippines	25,533	0.6	16.6	15	0.1	113	-16.0
36	Greece	29,639	0.6	7.8	47	0.2	88	6.4	Israel	23,725	0.5	3.2	93	0.4	49	-14.0
37	India	28,990	0.5	4.9	196	0.7	40	11.6	India	23,095	0.5	6.3	110	0.5	46	4.4
38	Israel	26,500	0.5	3.3	216	0.8	37	8.2	Hungary	22,946	0.5	17.5	5	0.0	140	29.6
39	Indonesia	26,226	0.5	-2.6	107	0.4	54	38.6	Greece	22,864	0.5	9.0	22	0.1	95	38.4

	Total Imports	1	2	3	4	5	6	7	Manufacturing	8	9	10	11	12	13	14
	Source →	World	World	World	SA	SA	Rank	SA		World	World	World	SA	SA	Rank	SA
	Destination ↓		Share %	Δ94-98		Share %		Δ94-98			Share %	Δ94-98		Share %		Δ94-98
40	Hungary	26,086	0.5	17.8	5	0.0	143	29.0	South Africa	21,247	0.5	3.9	0	0.0	155	0.0
41	Former Yugoslavia	25,934	0.5	14.5	10	0.0	135	53.7	UAE	21,120	0.5	4.1	106	0.5	44	17.4
42	Area NES	25,860	0.5	0.2	192	0.7	38	-17.9	Former Yugoslavia	20,246	0.5	14.3	5	0.0	134	59.4
43	South Africa	24,189	0.5	3.7	0	0.0	157	-0.0	Indonesia	18,512	0.4	-4.9	51	0.3	60	66.0
44	UAE	23,463	0.4	3.6	135	0.6	46	18.8	Areas NES	16,692	0.4	-1.9	188	1.1	31	208
45	Chile	17,583	0.3	9.8	59	0.3	64	5.4	Chile	14,673	0.3	10.1	53	0.4	50	3.6
46	Egypt	16,743	0.3	9.6	15	0.1	109	19.1	Venezuela	13,506	0.3	14.5	12	0.1	98	-10.2
47	Venezuela	15,936	0.3	13.4	14	0.1	110	0.5	Panama	12,232	0.3	3	2	0.0	144	-30.6
48	Colombia	14,546	0.3	5.2	8	0.1	124	-26.1	Colombia	12,156	0.3	4.4	7	0.1	112	-14.3
49	Panama	13,517	0.3	2.8	2	0.0	145	-25.1	Egypt	12,015	0.3	10.5	14	0.1	88	28.2
50	Romania	12,212	0.2	14.3	8	0.1	115	-12.0	Romania	9,323	0.2	15.9	5	0.1	121	-16.6
51	Total	5,369,6	100	5.7	17,559	0.3		1.1	Total	4,407,3	100	6.1	11.2	3		1.2

Source: UNComTrade, as published by Statistics Canada's World Trade Analyser;
Note: D94-98 is the nominal weighted average annual change calculated with the least squares method, ranking out of 176 countries and regions

It is evident that the US is the world's largest importer, as well as SA's second-largest trading partner, for both merchandise and manufactured goods. SA's largest trading partner for both merchandise and manufactured goods is the UK, and the third most important market is Germany. Column 5 suggests that in all the leading markets, imports from SA constitute a relatively low share, which suggests some scope for market diversification. A similar picture emerges when considering SA's exports in manufactured merchandise.

In addition to export penetration, it is useful to consider SA's trade balances with selected regions in the global economy (Table 6.6).

Table 6.6: SA trade balances with selected regions, 2000 (Current Rm)

	Total exports	Percentage share	Total imports	Percentage share	Trade balance
	226,084		190,317		35,767
By Region					
EU	77,229	34.2	75,831	39.8	1,397
SADC	22,570	10	2,647	1.4	19,923
NAFTA	28,240	12.5	24,570	12.9	3,669
Asia Pacific	38,671	17.1	44,446	23.4	-5,775
South Asia	3,541	1.6	2,209	1.2	1,332
East Africa ex SADC	3,077	1.4	110	0.1	2,968
Middle East	6,713	3	25,802	13.6	-19,089
North Africa	841	0.4	146	0.1	695
Europe ex EU	598	0.3	290	0.2	308
Eastern Europe	7,765	3.4	6,699	3.5	1,066
Americas ex NAFTA	3,101	1.4	4,089	2.1	-988
West Africa	2,471	1.1	1,581	0.8	890
Unspecified and Allocated	31,267	13.8	1,896	1	29,370

Source: Customs and Excise

Table 6.6 indicates that the EU is SACU's largest export destination by region, followed by the North America Free Trade Agreement (NAFTA) countries (US, Canada and Mexico) and SADC. Similarly, the EU and NAFTA account for the main sources of SACU imports, followed by North Africa and the Middle East, the latter mainly because in recent years the region's main sources of crude oil have been Saudi Arabia and Iran. The table also indicates that for the rest of the African continent, Eastern Europe and the Americas excluding the NAFTA partners, trade is heavily tilted in favour of SACU. It is worth pointing out that the trade balance between SACU and the EU has for the first time been in SACU's favour.

6.6 DIVERSIFICATION OF EXPORT PRODUCTS

It is instructive to note that although the share of gold as a percentage of total exports has steadily declined, and the share of beneficiated primary products and manufactured goods has risen, the dominance of gold, coal, diamonds and ferrous and non-ferrous ore exports is still very much evident. Similarly, while agricultural exports as a whole have declined in significance, wine, fortified wine, citrus and sugar exports still appear among the top twenty exports. Table 6.7 shows the top 20 exports by commodity (excluding gold and diamonds) and their total share of SA's exports for each year, using data based on the four-digit HS classification to allow for a fairly detailed analysis.

Table 6.7: Top 20 non-gold and diamond exports from SA by HS4 Category, 1990-2000; value as percentage of total exports

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1	Coal and other solid fuel derivatives thereof (2701) 12.25%	Coal and solid fuel derivatives thereof (2701) 11.82%	Coal and solid fuel derivatives thereof (2701) 10.66%	Coal and solid fuel derivatives thereof (2701) 12.66%	Coal and solid fuel derivatives thereof (2701) 9.18%	Used household effects (9990) 14.90%	Coal and solid fuel derivatives thereof (2701) 9.67%	Platinum, unwrought, semi-anufactured or in powder form (7110) 8.27%	Platinum, unwrought, semi-manufactured or in powder form (7110) 9.70%	Platinum, unwrought, semi-manufactured or in powder form (7110) 10.03%	Platinum, unwrought, semi-manufactured or in powder form (7110) 13.9%
2	Ferro-alloys (7202) 6.73%	Iron ores and concentrates (2601) 2.36%	Ferro-alloys (7202) 4.35%	Ferro-alloys (7202) 4.42%	Ferro-alloys (7202) 5.34%	Coal and solid fuel derivatives thereof (2701) 6.28%	Ferro-alloys (7202) 5.62%	Coal and solid fuel derivatives thereof (2701) 7.17%	Coal and solid fuel derivatives thereof (2701) 6.9%	Coal and solid fuel derivatives thereof (2701) 6.36%	Coal and solid fuel derivatives thereof (2701) 5.32%
3	Iron ores and concentrates (2601) 2.46%	Ferro-alloys (7202) 6.06%	Flat hot rolled iron and non-alloy steel products (7208) 2.90%	Flat hot rolled iron and non-alloy steel products (7208) 2.92%	Flat hot rolled iron and non-alloy steel products (7208) 4.53%	Ferro-alloys (7202) 4.41%	Petroleum oils and oils derived from bituminous minerals (2710) 3.94%	Ferro-alloys (7202) 4.84%	Ferro-alloys (7202) 5.45%	Ferro-alloys (7202) 4.88%	Ferro-alloys (7202) 4.9%
4	Solid cane or beet sugars and pure sucrose (1701) 2.41%	Flat hot rolled iron and non-alloy steel products (7208) 1.98%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 2.11%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 2.34%	Maize (corn) (1005) 3.24%	Platinum, unwrought, semi-manufactured or in powder form (7110) 2.47%	Unwrought aluminium (7601) 3.92%	Unwrought aluminium (7601) 3.53%	Ferro-alloys (7202) 4.9%	Motor cars and other motor vehicles (excl heading 87.02) (8703) 3.81	Petroleum oils and oils derived from bituminous minerals (2710) 4.69%

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
5	Manganese ores and concentrates (2602) 2.03%	Manganese ores and concentrates (2602) 1.85%	Iron ores and concentrates (2601) 2.07%	Iron ores and concentrates (2601) 2.23%	Iron ores and concentrates (2601) 1.83%	Petroleum oils and oils derived from bituminous minerals (2710) 1.85%	Maize (corn) (1005) 2.15%	Petroleum oils and oils derived from bituminous minerals (2710) 3.45%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 1.88%	Unwrought aluminium (7601) 3.45%	Motor cars and other motor vehicles (excl heading 87.02) (8703) 4.34%
6	Ferro-alloys (7202) 6.73%Chemical wood pulp (4702) 2.02%	ISolid cane or beet sugars and pure sucrose (1701) 1.75%	Chemical wood pulp (4702) 1.72%	Apples, pears and quinces, fresh (0808) 1.55%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 1.68%	Chemical wood pulp (4702) 1.48%	Titanium oxides (2823) 1.93%	Iron ores and concentrates (2601) 1.72%	Iron ores and concentrates (2601) 1.85%	Petroleum oils and oils derived from bituminous minerals (2710) 2.58%	Centrifuges and other filtering/ purifying machinery (8421) 2.94%
7	Maize (corn) (1005) 2.01% Iron ores and concentrates (2601) 2.46%	Chemical wood pulp (4702) 1.65%	Semi-manufactured base metals of silver or gold, clad with platinum (7111) 1.68%	Angles and sections of iron or non-alloy steel (7216) 1.53%	Chemical wood pulp (4702) 1.57%	Iron ores and concentrates (2601) 1.42%	Solid cane or beet sugars and pure sucrose (1701) 1.79%	Flat-rolled stainless steel products (7219) 1.58%	Seats and parts thereof (excl heading 94.02) (9401) 1.62%	Centrifuges and other filtering/ purifying machinery (8421) 2.22%	Unwrought aluminium (7601) 2.92%
8	Wood, not carded or combed (5101) 1.82%	Refined copper and copper alloys, unwrought (7403) 1.60%	Apples, pears and quinces, fresh (0808) 1.58%	Chemical wood pulp (4702) 1.51%	Citrus fruit, fresh or dried (0805) 1.53%	Ships stores, unclassified (9992) 1.36%	Seats and parts thereof (excl heading 94.02) (9401) 1.75%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 1.46%	Petroleum oils and oils derived from bituminous minerals (2710) 1.56%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 2.02%	Flat-rolled stainless steel products (7219) 1.76%

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
9	Flat hot-rolled iron and non-alloy steel products (7208) 1.68%	Apples, pears and quinces, fresh (0808) 1.52%	Citrus fruit, fresh or dried (0805) 1.44%	Citrus fruit, fresh or dried (0805) 1.30%	Titanium oxides (2823) 1.30%	Flat-rolled products of iron or non-alloy steel (7210) 1.35%	Iron ores and concentrates (2601) 1.67%	Seats and parts thereof (excl heading 94.02) (9401) 1.41%	Solid cane or beet sugars and pure sucrose (1701) 1.55%	Iron ores and concentrates (2601) 1.59%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 1.57%
10	Nickel mattes, oxides and other products thereof (7501) 1.40%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 1.49%	Manganese ores and concentrates (2602) 1.33%	Motor cars and other motor vehicles (excl heading 87.02) (8703) 1.20%	Aircraft, spacecraft, spacelaunch and suborbital vehicles (8802) 1.29%	Titanium oxides (2823) 1.24%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 1.58%	Chemical wood pulp (4702) 1.33%	Centrifuges and other filtering/ purifying machinery (8421) 1.51%	Seats and parts thereof (excl heading 94.02) (9401) 1.49%	Chemical wood pulp (4702) 1.57%
11	Refined copper and copper alloys, unwrought (7403) 1.39%	Angles and sections of iron or non-alloy steel (7216) 1.47%	Flat-rolled products of iron or non-alloy steel (7210) 1.28%	Nickel mattes, oxides and other products thereof (7501) 1.19%	Flat-rolled products of iron or non-alloy steel (7210) 1.15%	Flat hot rolled iron and non-alloy steel products (7208) 1.22%	Nickel mattes, oxides and other products thereof (7501) 1.44%	Titanium oxides (2823) 1.33%	Titanium ores and concentrates (2614) 1.48%	Flat-rolled stainless steel products (7219) 1.41%	Iron ores and concentrates (2601) 1.31%
12	Iron and steel slag and dross (2619) 1.28%	Citrus fruit, fresh or dried (0805) 1.42%	Motor cars and other motor vehicles (excl heading 87.02) (8703) 1.27%	Containers, including those for the transport of fluids (8609) 1.15%	Grapes, fresh or dried (0806) 1.03%	Unspecified (9900) 1.12%	Flat hot rolled iron and non-alloy steel products (7208) 1.43%	Solid cane or beet sugars and pure sucrose (1701) 1.19%	Motor cars and other motor vehicles (excl heading 87.02) (8703) 1.40%	Citrus fruit, fresh or dried (0805) 1.41%	Seats and parts thereof (excl heading 94.02) (9401) 1.19%

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
13	Unwrought aluminium (7601) 1.27%	Ships stores, unclassified (9992) 1.35%	Refined copper and copper alloys, unwrought (7403) 1.22%	Fruit, nuts and other edible plant parts (2008) 1.13%	Containers, including those for the transport of fluids (8609) 1.02%	Uncoated Kraft paper and paper-board (4804) 1.11%	Chemical wood pulp (4702) 1.34%	Motor cars and other motor vehicles (excl heading 87.02) (8703) 1.15%	Flat-rolled stainless steel products (7219) 1.40%	Titanium ores and concentrates (2614) 1.35%	Flat hot rolled iron and non-alloy steel products (7208) 1.11%
14	Angles and sections of iron or non-alloy steel (7216) 1.20%	Wool and coarse/fine animal hair (5105) 1.35%	Fruit, nuts and other edible plant parts (2008) 1.17%	Flat rolled products of iron or non-alloy steel (7210) 1.11%	Fruit, nuts and other edible plant parts (2008) 1.01%	Seats and parts thereof (excl heading 94.02) (9401) 1.10%	Flat-rolled stainless steel products (7219) 1.43%	Maize (corn) (1005) 1.14%	Chemical wood pulp (4702) 1.29%	Chemical wood pulp (4702) 1.32%	Solid cane or beet sugars and pure sucrose (1701) 1.08%
15	Semi-finished products of iron or non-alloy steel (7207) 1.18%	Wool, not carded or combed (5101) 1.34%	Angles and sections of iron or non-alloy steel (7216) 1.11%	Grapes, fresh or dried (0806) 0.99%	Motor cars and other motor vehicles (excl heading 87.02) (8703) 0.98%	Parts and accessories for motor vehicle headings 87.01 to 07.05 (8708) 1.07%	Motor vehi-cles for the transport of goods (8704) 1.15%	Flat hot rolled iron and non-alloy steel products (7208) 1.12%	Citrus fruit, fresh or dried (0805) 1.23%	Solid cane or beet sugars and pure sucrose (1701) 1.11%	Aircraft, spacecraft, spacelaunch and suborbital vehicles (8802) 1.07%
16	Citrus fruit, fresh or dried (0805) 1.14%	Fruit, nuts and other edible plant parts (2008) 1.24%	Wool and coarse/fine animal hair (5105) 1.09%	Unwrought aluminium (7601) 0.94%	Seats and parts thereof (excl heading 94.02) (9401) 0.98%	Apples, pears and quinces, fresh (0808) 0.85%	Wine of fresh grapes and fortified wines (2204) 1.08%	Containers, including those for the transport of fluids (8609) 1.01%	Containers, including those for the transport of fluids (8609) 1.12%	Flat hot rolled iron and non-alloy steel products (7208) 0.98%	Titanium ores and concentrates (2614) 0.99%

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
17	Apples, pears or quinces, fresh (0808) 1.13%	Unwrought aluminium (7601) 1.20%	Copper mattes and cement copper (7401) 1.06%	Manganese ores and concentrates (2602) 0.89%	Wool and coarse/fine animal hair (5105) 0.90%	Cobalt oxides and hydroxides (4703) 0.82%	Containers, including those for the transport of fluids (8609) 1.01%	Citrus fruit, fresh or dried (0805) 0.91%	Flat hot rolled iron and non-alloy steel products (7208) 1.10%	Grapes, fresh or dried (0806) 0.96%	Wine of fresh grapes and fortified wines (2204) 0.98%
18	Wool and coarse/fine animal hair (5105) 1.12%	Semi-finished products of iron or non-alloy steel (7207) 1.17%	Nickel mattes and other products thereof (7501) 1.01%	Refined copper and copper alloys, unwrought (7403) 0.89%	Cold-rolled products of iron or non-alloy steel, not clad, plated or coated (7209) 0.89%	Chemical wood pulp (4702) 0.82%	Insecticides, rodenticides, herbicides and similar products (3808) 0.98%	Centrifuges and other filtering/ purifying machinery (8421) 0.91%	Wine of fresh grapes and fortified wines (2204) 0.88%	Wine of fresh grapes and fortified wines (2204) 0.92%	Citrus fruit, fresh or dried (0805) 0.92%
19	Fruit, nuts and other edible plant parts (2008) 1.10%	Containers, including those for the transport of fluids (8609) 1.14%	Cold-rolled products of iron or non-alloy steel, not clad, plated or coated (7209) 0.95%	Flat-rolled stainless steel products (7219) 0.89%	Solid cane or beet sugars and pure sucrose (1701) 0.87%	Citrus fruit, fresh or dried (0805) 0.78%	Angles and sections of iron or non-alloy steel (7216) 0.94%	Wine of fresh grapes and fortified wines (2204) 0.80%	Wine of fresh grapes and fortified wines (2204) 0.88%	Containers, including those for the transport of fluids (8609) 0.81%	Grapes, fresh or dried (0806) 0.96%
20	Used house-hold effects (9999) 1.10%	Flat-rolled products of iron or non-alloy steel (7210) 1.10%	Flat-rolled stainless steel products (7219) 0.95%	Uncoated Kraft paper and paperboard (4804) 0.86%	Nickel mattes and other products thereof (7501) 0.84%	Angles and sections of iron or non-alloy steel (7216) 0.755	Citrus fruit, fresh or dried (0805) 0.94%	Angles and sections of iron or non-alloy steel (7216) 0.80%	Grapes, fresh or dried (0806) 0.81%	Motor vehicles for the transport of goods (8704) 0.77%	Waste and scrap precious metal and other precious metal compounds (7112) 0.86%

Source: Customs and Excise

From Table 6.7, it is evident that even after factoring out gold and diamonds, the largest contributors to South African exports are primary commodities and first-stage beneficiated products. The leading players are coal, platinum, and ferrous and non-ferrous metals. From the mid-1990s onwards, there has been a marked upsurge in the export of beneficiated iron, steel and other non-ferrous metals, which can be attributed to very heavy capital investments in the sector, especially steel and aluminium.

Closer examination of the table reveals that while the share of agricultural product lines among the top 20 exports has shown a marked decline, as would be expected of a country moving towards increased export of manufactured and beneficiated goods, some produce, such as wine and fortified wine (HS 2204; although this is, strictly speaking, a food-processing product), citrus fruit (HS 0805 and HS 0808), and sugar exports (HS 1701) is still important.

One of the most significant increases in exports is to be found in the automotive industry. From export values of nearly zero at the beginning of the decade, there has been a marked increase in the export of motor vehicles, parts and accessories. This is due to SA's motor vehicle industry becoming increasingly connected to the global networks of their overseas-based parent companies. In addition, the export of leather upholstery, vehicle seats and parts thereof, catalytic converters with their high local content of platinum, and alloy wheels have significantly contributed to this increase. The surge in exports of vehicles and automotive components can also be attributed to the implementation of the Motor Industry Development Programme (MIDP), a scheme designed to stimulate exports.

The share of high value-added machinery and equipment still remains small, with centrifugal equipment and other filtering/purifying machinery under HS 8421 being the only category among the top 20, and in 1994 and 2000, spacecraft, satellites and allied equipment. However, by increasing the export drive to the rest of Sub-Saharan Africa and other hitherto non-traditional markets, there is scope for increasing the export values of items such as machinery, electrical goods and electronics.

An examination of growth rates of South African exports between 1990 and 2000 reveals some interesting trends. Overall, it can be seen from Table 6.8 that the highest percentage growth in exports is attributed to nickel (203%) and closely followed by zirconium (201%). High value-added exports are light vessels and floating docks (HS 8905). However, most of the exports with high growth rates have been off a very small base, hence the magnitude of the growth rates.

Table 6.8: Top 20 growth rates of SA exports, 1990-2000

HS4	Description	Percentage growth in exports, 1990-2000
7506	Nickel plates, sheets, strip and foil.	202.9
8109	Zirconium and articles thereof, including waste and scrap.	200.9
2708	Pitch and pitch coke, obtained from coal tar or from other mineral tars.	159.0
8905	Light-vessels, fire-floats, dredgers, floating cranes, and other vessels the navigability of which is subsidiary to their main function; floating docks; floating or submersible drilling or production platforms.	148.1
6704	Wigs, false beards, eyebrows and eyelashes, switches and the like, of human or animal hair or of textile materials; articles of human hair not elsewhere specified or included.	131.4
4401	Fuel wood, in logs, in billets, in twigs, in faggots or in similar forms; wood in chips or particles; sawdust and wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms.	125.3
2901	Acyclic hydrocarbons.	122.6
9401	Seats (excluding those of heading no.94.02), whether or not convertible into beds, and parts thereof.	104.4
7605	Aluminium wire.	98.1
2706	Tar distilled from coal, from lignite or from peat, and other mineral tars, whether or not dehydrated or partially distilled, including reconstituted tars.	96.6
2845	Isotopes (excluding those of heading no. 28.44); compounds, inorganic or organic, of such isotopes, whether or not chemically defined.	95.4
5501	Synthetic filament tow.	94.7
0302	Fish, fresh or chilled, (excluding fish fillets and other fish meat of heading no. 03.04):	79.9
1004	Oats.	79.5
2844	Radioactive chemical elements and radioactive isotopes (including the fissile or fertile chemical elements and isotopes) and their compounds; mixtures and residues containing these products	79.2
3302	Mixtures of odoriferous substances and mixtures (including alcoholic solutions) with a basis of one or more of these substances, of a kind used as raw materials in industry; other preparations based on odoriferous substances	79.0
4903	Children's picture, drawing or colouring books.	76.4
0102	Live bovine animals.	73.0
8108	Titanium and articles thereof, including waste and scrap.	72.2
2308	Vegetable materials and vegetable waste, vegetable residues and by-products, whether or not in the form of pellets, of a kind used in animal feeding, not elsewhere specified or included:	71.9

Source: Customs and Excise
Note: Average annual weighted growth rates of exports

Looking at exports from a different angle, we examine the growth of exports as a percentage of total output and whether this has changed. In other words, to what extent have industries in the SA economy become more export oriented?

Table 6.9: Exports as percentage of total sales, 1990-2000; lower rank indicates lower percentage of exports

Year / Industry	1990	1995	2000	Rank 1990	Rank 1995	Rank 2000	Δ Rank 1990-2000
Gold and uranium ore mining [23]	0.99	0.99	1.01	1	1	2	-1
Other mining [22/24/25/29]	0.95	0.73	0.59	2	2	6	-4
Basic non-ferrous metals [352]	0.61	0.48	0.75	3	5	4	-1
Basic iron and steel [351]	0.40	0.51	0.67	4	3	5	-1
Coal mining [21]	0.37	0.42	0.43	5	7	10	-5
Professional and scientific equipment [374-376]	0.22	0.36	0.86	6	8	3	3
Basic chemicals [334]	0.19	0.45	0.51	7	6	8	-1
Paper and paper products [323]	0.18	0.29	0.28	8	11	14	-6
Coke and refined petroleum products [331-333]	0.16	0.16	0.34	9	13	13	-4
Agriculture, forestry and fishing [1]	0.15	0.16	0.19	37	32	27	10
Transport and storage [71-74]	0.14	0.12	0.11	11	17	29	-18
Other transport equipment [384-387]	0.13	0.51	1.65	12	4	1	11
Textiles [311-312]	0.11	0.16	0.22	13	14	17	-4
Catering and accommodation services [64]	0.11	0.10	0.13	14	21	27	-13
Other manufacturing [392-393]	0.09	0.11	0.16	15	18	22	-7
Glass and glass products [341]	0.09	0.08	0.19	16	25	21	-5
Machinery and equipment [356-359]	0.09	0.27	0.59	17	12	7	10
Leather and leather products [316]	0.09	0.32	0.38	18	10	12	6
Food [301-304]	0.08	0.09	0.12	19	23	28	-9
Metal products excluding machinery [353-355]	0.06	0.11	0.21	20	20	18	2
Wood and wood products [321-322]	0.06	0.06	0.09	21	29	31	-10
Communication [75]	0.06	0.04	0.05	22	32	35	-13
Furniture [391]	0.05	0.33	0.43	23	9	11	12
Motor vehicles, parts and accessories [381-383]	0.05	0.08	0.22	24	24	16	8
Finance and insurance [81-82]	0.05	0.04	0.06	25	33	32	-7
Wholesale and retail trade [61-63]	0.04	0.04	0.06	26	34	33	-7
Wearing apparel [313-315]	0.04	0.06	0.13	27	30	26	1
Electrical machinery and apparatus [361-366]	0.04	0.10	0.21	28	22	19	9
Rubber products [337]	0.04	0.11	0.23	29	19	15	14
Television, radio and communication equipment [371-373]	0.04	0.14	0.44	30	16	9	21
Tobacco [306]	0.03	0.04	0.14	31	31	24	7
Other chemicals and man-made fibres [335-336]	0.03	0.08	0.16	32	26	23	9
Non-metallic minerals [342]	0.03	0.07	0.10	33	28	30	3
Beverages [305]	0.02	0.07	0.14	34	27	25	9
Business services [83-88]	0.02	0.01	0.02	35	38	38	-3
Excluding medical, dental and veterinary services [94-96]	0.02	0.01	0.01	36	39	39	-3
Plastic products [338]	0.01	0.04	0.06	37	35	34	3
Medical, dental and veterinary services [93]	0.01	0.01	0.01	38	42	42	-4
Printing, publishing and recorded media [324-326]	0.01	0.02	0.02	39	37	37	2
Other producers [98]	0.01	0.01	0.01	40	40	40	0
Electricity, gas and steam [41]	0.01	0.01	0.01	41	41	41	0
Footwear [317]	0.00	0.03	0.04	42	36	36	6
Civil engineering and other construction [52-53]	0.00	0.00	0.00	43	43	43	0
Water supply [42]	0.00	0.00	0.00	44	44	44	0
Building construction [51]	0.00	0.00	0.00	44	44	44	0
General government services [99]	0.00	0.00	0.00	44	44	44	0

Source: Calculated from TIPS' SA Standardised Industry Database

Table 6.9 presents SA's exports as a percentage of total sales between 1990 and 2000. What is immediately apparent is that the bulk of gold production is exported. Of significance in the table is that in 2000, other transport equipment (SIC 384-387) displaced gold as the most significant exporter in relation to total sales, which could probably be attributed to the MIDP that has spurred exports from this sector. Other notable sectors where the proportion of exports as a percentage of total sales has increased between 1990 and 2000 are television, radio and communication equipment, coal and petroleum products, and rubber. However, it is evident that mining still constitutes a significant proportion of SA's exports.

6.7 GEOGRAPHIC BREAKDOWN OF SACU EXPORTS

In terms of destinations, the main markets for SA exports are, in descending order: the UK, US, Japan and Germany (see Table 6.10). Their total share of imports from SA between 1995 and 2000 has risen, from 28.9% to 38.5%, corroborating findings that the geographic pattern of trade is increasingly becoming concentrated among particular countries (see for example also, Tsikata 1999). For the most part, the EU still remains an important destination for exports, closely followed by the NAFTA countries and South Asia. The rest of Africa is beginning to be an important destination, as are the Indian Ocean Rim islands.

Table 6.10: Top 10 export destinations (1995-2000); percentage of total exports in parentheses

Rank	1995	1996	1997	1998	1999	2000
1	UK (9.6)	UK (10.8)	UK (11.0)	UK (11.0)	UK (10.4)	UK (13.4)
2	US (7.3)	US (7.9)	US (8.1)	US (10.0)	US (7.7)	US (11.4)
3	Japan (6.2)	Japan (7.0)	Japan (8.1)	Japan (6.5)	US (7.3)	Japan (7.5)
4	Germany (5.9)	Germany (4.5)	Germany 4.8	Germany (6.1)	Japan (4.8)	Germany (7.2)
5	Zimbabwe (4.8)	Zimbabwe (4.3)	Zimbabwe (4.0)	Netherlands (3.7)	Netherlands (4.0)	Netherlands (3.1)
6	Switzerland (4.2)	Belgium (2.9)	Netherlands (3.1)	Zimbabwe (3.7)	Belgium (3.6)	Belgium (2.9)
7	Belgium (3.5)	Switzerland (2.9)	Taiwan (2.7)	Switzerland (3.6)	Italy (3.2)	Switzerland (2.8)
8	Italy (3.4)	Netherlands (2.7)	Belgium (2.6)	Belgium (3.0)	Zimbabwe (3.2)	Italy (2.7)
9	Netherlands (2.8)	Taiwan (2.3)	Korea (2.6)	Italy (2.7)	Korea (2.8)	Zimbabwe (2.4)
10	Taiwan (2.7)	Korea (2.3)	Italy (2.4)	Taiwan (2.0)	Mozambique (2.8)	Mozambique (2.2)

Source: Customs and Excise

Using Standard Industrial Trade Classification (SITC) data, we find that over the period 1994 to 1998, SACU exports to the rest of Africa and the Middle East recorded the highest growth rates in current US Dollar prices. Exports to Asia, Europe and Latin America clearly still suffered from the effects of the financial crises that occurred at the time in these regions, although percentage growth in global exports to these regions was positive. A further comparison of Tableaux A and B of Table 6.11 reveals that, to some extent, SACU exports were diverted away from fast-growing markets in Europe and Latin America to slower growing markets such as Africa, the Middle East and Oceania. In the case of North America and Asia, one could argue that SACU export growth was more or less in line with global markets.

Table 6.11: Average annual growth rates of exports of SA and total exports to selected regions (1994-1998, current US$ prices)

	Tableau A: SACU exports	Total	Manufacturing	Food and Agriculture	Minerals and Fuels
1.	SADC (excl SACU)	5.8	6.5	13.1	-16.9
2.	Rest of Africa	14.3	19.3	6.1	5.9
3.	Middle East	13.1	3.3	12.1	99.8
4.	North America	7.1	3.8	12.3	24.7
5.	Latin America and the Caribbean	2.9	3.3	-12.0	10.0
6.	Asia	-5.8	-8.3	-6.8	-1.5
7.	Europe	-2.5	-4.9	3.6	0.4
8.	Oceania	8.4	8.6	17.5	-4.4
9.	Total	-1.5	1.2	4.1	-9.9
	Tableau B: World Exports				
10.	SADC (excl SACU)	3.2	3.3	4.6	3.3
11.	Rest of Africa	3.2	3.7	1.6	2.1
12..	Middle East	3.9	5.0	-1.2	-3.6
13..	North America	7.6	7.8	7.2	5.8
14.	Latin America and the Caribbean	10.2	11.0	7.4	6.4
15.	Asia	2.2	2.2	0.1	3.4
16..	Europe	6.4	7.0	2.3	6.0
17.	Oceania	3.6	3.4	3.1	6.4
18..	Total	5.7	6.1	2.6	4.9

Source: UNComTrade as published by Statistics Canada's World Trade Analyser;
Notes: Growth rates are weighted average annual calculated using the least squares method; Food and Agriculture - SITC 0, 1 and 4; Minerals and Fuels - SITC 2 and 3; Manufacturing - SITC 5, 6, 7 and 8.

The same picture appears for manufacturing, and agriculture and food, shown in the next two columns of Table 6.11, except that agriculture and food exports to Europe maintained a higher (weighted average annual) growth rate compared to total imports into this market. As a result of the growth rates shown in the table above, an inter-temporal view on SACU's export shares to these markets is shown in Table 6.12.

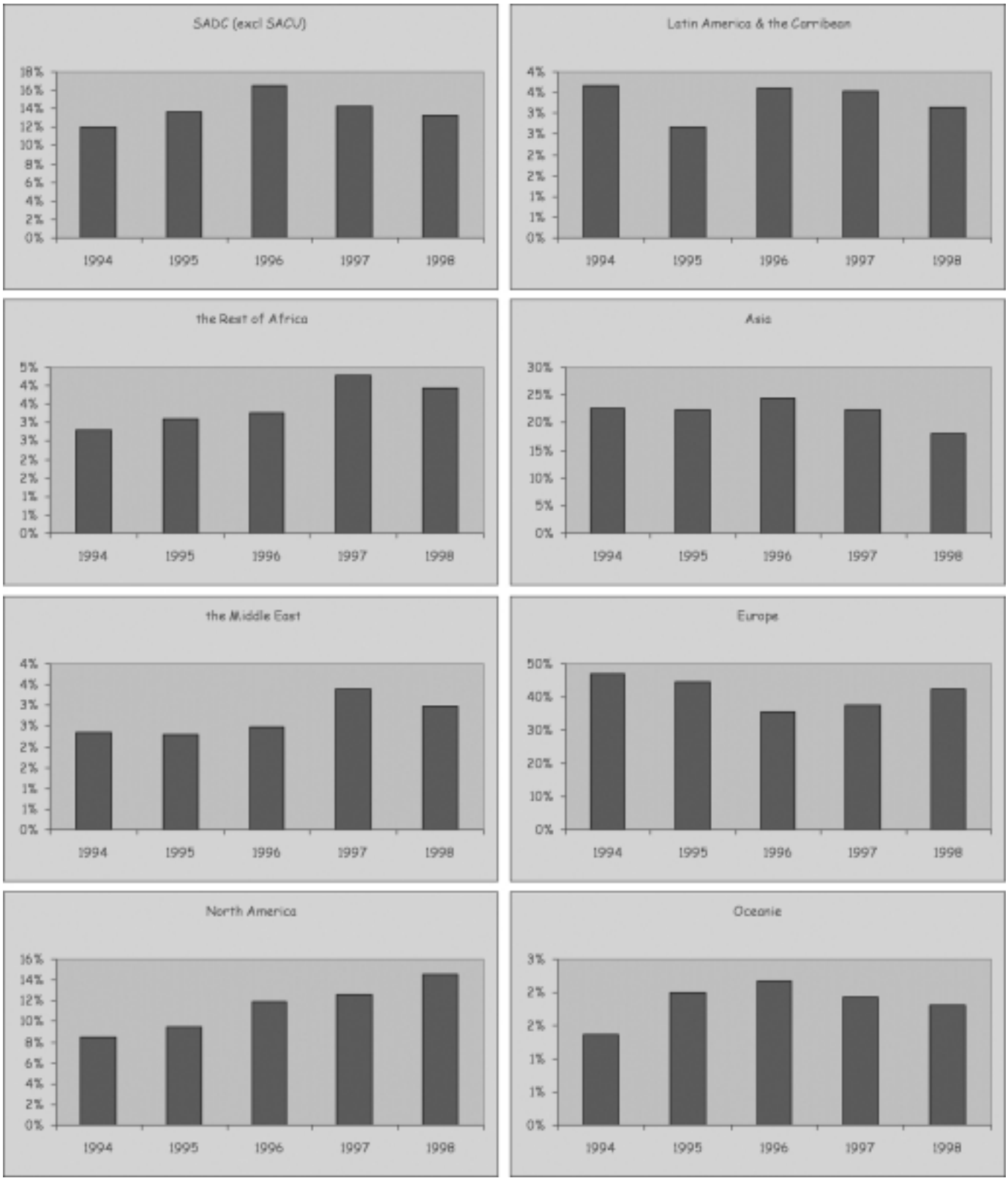
Table 6.12: An inter-temporal view on SACU's percentage export shares by geographical region (US$bn, current prices)

		US$bn					Shares (%)				
		1994	**1995**	**1996**	**1997**	**1998**	**1994**	**1995**	**1996**	**1997**	**1998**
1.	SADC (excl SACU)	1,955	2,887	3,058	2,868	2,600	12.1	13.6	16.6	14.3	13.3
2.	Rest of Africa	452	653	602	857	770	2.8	3.1	3.3	4.3	3.9
3.	Middle East	381	484	461	682	581	2.4	2.3	2.5	3.4	3.0
4.	North America	1,366	2,000	2,194	2,532	2,843	8.5	9.5	11.9	12.6	14.5
5.	Latin America and the Caribbean	593	569	667	708	613	3.7	2.7	3.6	3.5	3.1
6.	Asia	3,631	4,717	4,492	4,459	3,532	22.5	22.3	24.3	22.3	18.1
7.	Europe	7,556	9,420	6,589	7,545	8,260	46.8	44.5	35.7	37.7	42.2
8.	Oceania	220	423	400	387	354	1.4	2.0	2.2	1.9	1.8
9.	Total	16,153	21,152	18,461	20,037	19,553	100.0%	100.0%	100.0%	100.0%	100.0%

Source: UNComTrade as published by Statistics Canada's World Trade Analyser

A clearer picture is obtained from Table 6.12, which shows an initial increase in the share of SA exports to SADC, which declined to 1994 levels after 1996. The shares of exports going to the rest of Africa, the Middle East and North America have all increased up to 1997, after which they have declined slightly. It would appear that while some of the increase in these export shares was initially diverted away from Europe, this process has been reversed in 1998. What is clear is that the share of Asia has been badly affected over the last few years of the period of observation. This information is graphically represented in Figure 6.1.

Figure 6.1: An inter-temporal view on SACU's export shares by geographical region (current US$bn)



Source: UNComTrade as published by Statistics Canada's World Trade Analyser

A static geographic breakdown at the broad one-digit SITC commodity level is shown in Table 6.13, for the years 1994 (Tableau A) and 1998 (Tableau B), while the difference in the geographic shares, whenever it is larger than 4% in absolute terms, is shown in Tableau C. From the latter it can be seen that the share of SACU's exports in agricultural and food products (excluding beverages) to SADC has increased significantly - at the cost of the Asian market, it would seem. The shares of primary products (rows 23 and 27) have shifted from Asia to North America, while the shares of exports of beverages, machinery and other fabricates have shifted away from SADC towards Europe. In general, it would seem that Europe has become a more important destination for SA exports with small gains also made in Africa and North America. Exports seem to have been shifted away from Asia over the period of observation.

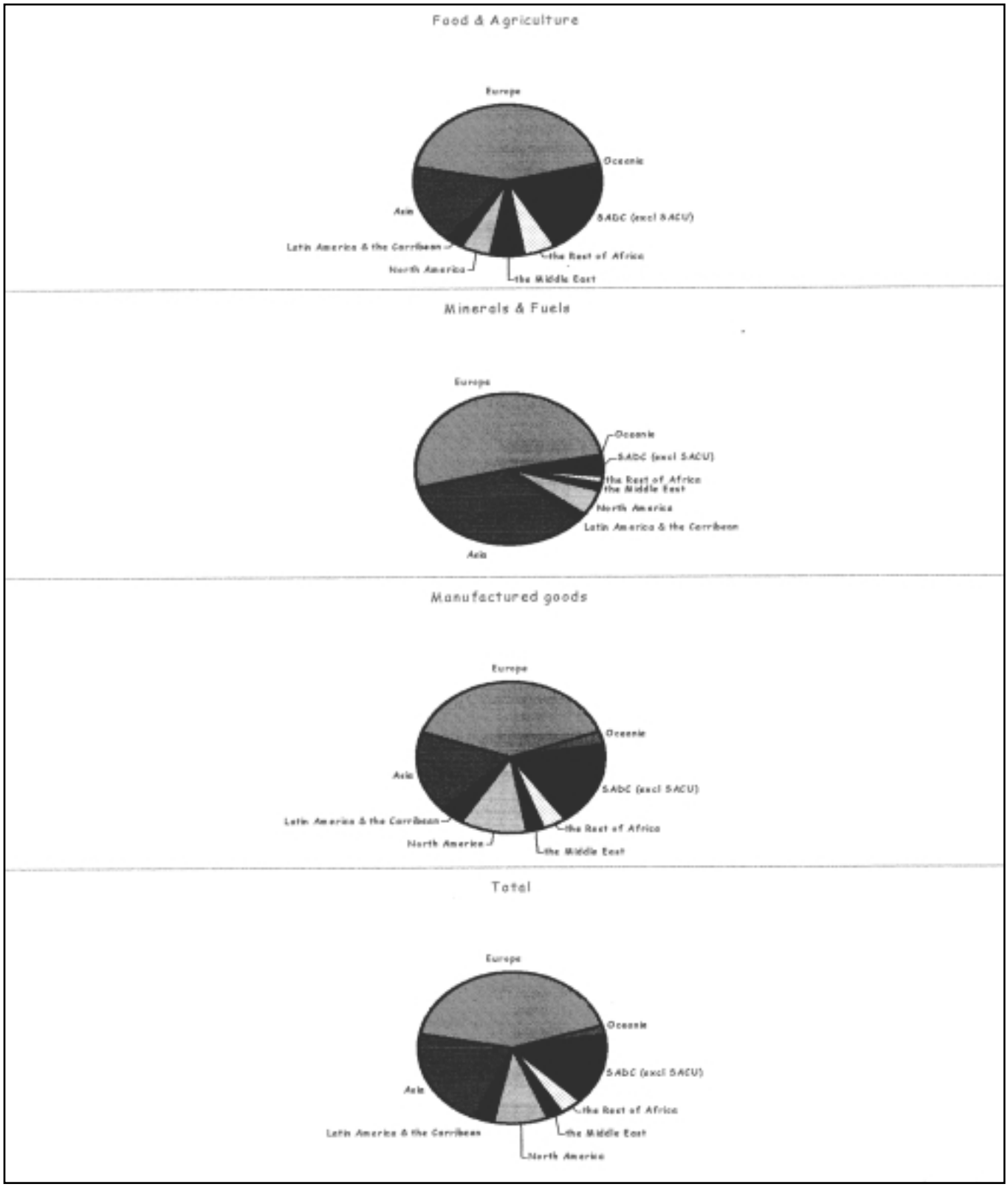
Table 6.13: Geographic breakdown of SACU exports by percentage share

		SADC	RoA	ME	NA	LA	Asia	EU	Ocean	Total
SITC	**Tableau A: SA Exports: Product Share in Geographical Regions (1994)**									
1.	Food and live animals	10.4	7.0	5.9	4.9	3.0	23.8	44.5	0.6	100.0
2.	Beverages and tobacco	42.0	7.4	0.7	6.3	6.4	5.8	29.1	2.3	100.0
3.	Crude materials, inedible, except fuels	3.5	0.7	0.6	6.1	0.6	38.3	49.5	0.6	100.0
4.	Mineral fuels, lubricants and related materials	2.7	2.1	0.0	1.0	3.1	30.5	60.3	0.2	100.0
5.	Animal and vegetable oils, fats and waxes	51.9	4.0	0.1	0.1	0.1	36.3	7.4	0.0	100.0
6.	Chemicals and related products, n.e.s.	23.1	3.4	1.3	16.4	11.3	18.4	22.6	3.5	100.0
7.	Manufactured goods classified chiefly by material	7.5	1.8	2.7	9.6	3.4	22.4	51.3	1.4	100.0
8.	Machinery and transport equipment	31.9	3.8	1.8	8.9	3.1	9.1	39.3	2.0	100.0
9.	Miscellaneous manufactured articles	22.5	3.0	3.7	11.3	1.4	3.4	53.1	1.6	100.0
10.	Total	12.1	2.8	2.4	8.5	3.7	22.5	46.8	1.4	100.0
	Tableau B: SA Exports: Product Share in Geographical Regions (1998)									
11.	Food and live animals	20.2	5.1	6.9	6.5	0.6	14.4	45.1	1.3	100.0
12.	Beverages and tobacco	27.3	4.6	1.3	5.2	2.7	8.1	50.0	0.7	100.0
13.	Crude materials, inedible, except fuels	2.4	1.1	0.8	14.9	1.0	34.2	45.2	0.4	100.0
14.	Mineral fuels, lubricants and related materials	1.7	2.6	7.2	0.9	4.2	21.9	61.2	0.2	100.0
15.	Animal and vegetable oils, fats and waxes	60.8	1.6	0.3	1.2	1.7	24.8	9.6	0.0	100.0
16.	Chemicals and related products, n.e.s.	24.3	7.4	2.6	16.3	6.5	17.7	21.9	3.4	100.0
17.	Manufactured goods classified chiefly by material	11.3	4.2	3.8	14.1	4.2	17.1	43.0	2.4	100.0
18.	Machinery and transport equipment	24.1	5.6	1.5	9.8	5.1	6.9	43.6	3.3	100.0
19.	Miscellaneous manufactured articles	17.1	5.1	2.2	11.2	0.6	3.7	58.6	1.5	100.0
20.	Total	13.3	3.9	3.0	14.5	3.1	18.1	42.2	1.8	100.0
	Tableau C: SA Exports: Change in Product Share by Geographical Regions 1994-1998, if larger than 4.0%									
21.	Food and live animals	9.8					-9.4			
22.	Beverages and tobacco	-14.7						21.0		
23.	Crude materials, inedible, except fuels				8.8		-4.2	-4.3		
24.	Mineral fuels, lubricants and related materials			7.2			-8.6			
25.	Animal and vegetable oils, fats and waxes	8.9					-11.5			
26.	Chemicals and related products, n.e.s.					-4.9				
27.	Manufactured goods classified chiefly by material				4.5		-5.3	-8.3		
28.	Machinery and transport equipment	-7.8						4.2		
29.	Miscellaneous manufactured articles	-5.4						5.4		
30.	Total				6.1		-4.4	-4.5		

Source: UNComTrade as published by Statistics Canada's World Trade Analyser

The patterns of geographic distribution of exports for a more aggregate level of commodities are presented in Figure 6.2. For all three groups of commodities, Europe is the single most important destination, followed by either Asia or SADC, and North America at some distance.

Figure 6.2: Geographic breakdown of SACU's exports by broad cluster of commodities



Source: UNComTrade as published by Statistics Canada's World Trade Analyser;
Notes: Food and Agriculture - SITC 0, 1 and 4; Minerals and Fuels - SITC 2 and 3; Manufacturing - SITC 5, 6, 7 and 8.

6.8 ANALYSING THE COMPETITIVENESS OF SA'S PRODUCTION

Understanding export behaviour is quite complex as a myriad of micro-firm, product-specific, or sector-specific factors on the one hand, and macro factors on the other, influence export growth potential. The key questions are: to what extent is current export behaviour explained by competitiveness factors? and to what extent is competitiveness the result of macroeconomic policies, such as exchange rate depreciation, or more structural factors such as comparative advantage on the basis of skills, technology and so on?

This section has two parts. The first attempts to review SA exports and to some extent imports, on the bases of factor content or classification. The second part presents some competitive indicators of SA exports based primarily on revealed comparative advantage analysis.

SA's export profile has remained a paradox, given limited capital and a surplus of unskilled labour. Despite this, SA shifted towards a more capital-intensive export structure during the 1980s and early 1990s (Bell and Cattaneo 1997). Tsikata (1999) finds that SA has a rapidly declining share of those exports that use unskilled labour, with the share in total exports declining from 55.3% in 1992 to 20.8% in 1996. The implied shift towards high-skilled exports is supported by Edwards (2001), who finds a positive relationship between skill intensity of production and export growth between 1993 and 1997.

The paradoxical structure is in part related to SA's dual structure of trade vis-à-vis developed and developing countries. SA's net trade is positive in natural resource and basic manufactures, but is negative in sophisticated products for middle- and high-income countries (IMF 2000). In contrast, net trade is negative in natural resource goods, but positive in sophisticated products for low-income countries. Using the Heckscher-Ohlin-Vanek model, the IMF (2000) shows that SA is revealed to be capital, as opposed to labour, abundant relative to high-, middle- and low-income countries. When using a skilled-unskilled categorisation, South Africa is revealed to be unskilled abundant relative to middle- and high-income countries, but high-skilled abundant relative to low-income countries.

The main reasons for SA paradoxical export structure are not clear-cut. Some of the arguments put forward are that it may be the result of a distorted labour market or historical state-led investment in highly capital-intensive sectors. These issues are beyond our scope here.

6.8.1 Structural Changes in SA Manufacturing Exports According to Factor Classification

This section complements other work that analyses the regional and commodity structure of SA exports (GESP 2001). By classifying manufacturing along dimensions similar to Nordås (1996), Tsikata (1999) and Lewis (2001), the results are directly comparable to earlier work. The World Bank studies conducted by Tsikata (1999) and Lewis (2001) use a factor content classification system for manufacturing drawn originally from Krause (1988). The factor classifications are as follows:

- Agriculture resource intensive;
- Mineral resource intensive;
- Unskilled labour intensive;
- Technology intensive; and
- Human capital intensive.

Regional data are classified according the following categories:

- Rich;
- Rest of SADC (RSADC); and
- Rest of the world (ROW).

Since disaggregated commodity data are only available for SACU as a whole and not for individual member states, some of the important inter-regional trade patterns between SACU members are therefore lost. Furthermore, any classification using aggregated data hides much of the diversity occurring within the sectors. Hence the factor classification analysis presented is only illustrative of possible changes in the relative use of factors and the competitiveness of various sectors.

6.8.1.1 Regional and commodity structure of exports

Table 6.14 shows an inter-temporal view of SACU's manufacturing exports by region, as well as the value and growth of total SACU exports in current US Dollars. It shows that SA exports grew strongly during the 1990s, particularly as it re-entered the international market with the ending of sanctions in the mid-1990s. Since then, export performance has been mediocre and has not exceeded growth in world trade. As a result, the share of SA exports in world trade, which initially rose from 0.25% in 1990 to a peak of 0.29% in 1995, has remained constant in recent years.

Table 6.14: Inter-temporal view of SACU's manufacturing exports by region; percentage share total SACU exports

	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**19991**
Rich	62.10	57.15	52.26	50.67	49.11	48.72	51.78	48.74	48.30	55.12	53.44
RSADC	14.48	16.12	18.39	17.37	18.88	19.79	18.88	20.02	18.80	17.53	Na
ROW	23.4	26.73	29.36	31.95	32.01	31.49	29.35	31.24	32.90	27.35	46.56
Total value (US$bn)	**7.13**	**7.62**	**8.23**	**9.45**	**9.14**	**10.40**	**13.37**	**13.77**	**14.61**	**13.74**	**14.61**
Growth	**16.22**	**6.83**	**8.03**	**14.74**	**-3.21**	**13.80**	**28.47**	**2.99**	**6.12**	**-5.92**	**6.27**
World trade (current US$bn)	2644.9	3019.2	3121.8	3407.5	3488.1	3894.3	4641.0	4878.5	5051.7	4970.9	
Growth	9.00	14.15	3.40	9.15	2.37	11.64	19.18	5.12	3.55	-1.60	
SA share world trade	0.27	0.25	0.26	0.28	0.26	0.27	0.29	0.28	0.29	0.28	

Source: Edwards and Schoer (2001);
Notes: SA data is based on Customs and Excise Harmonised System classification; world data is UNComTrade data as published by Statistics Canada's World Trade Analyser; RSADC data for 1999 is included in ROW.

Between 1989 and 1994, the share of exports accounted for by RSADC and the ROW rose from 14.48% to 19.79% and 23.43% to 31.49% respectively. Overall, while the growth in exports to RSADC has steadily increased with the re-integration of SA into the regional market after 1990, this has not been sustained, resulting in a decline in share to 17.53% in 1998. The export share attributable to ROW has increased in the period under observation, except for 1998, due to the global financial crisis and the resultant pressure on the Rand.

Table 6.15 presents the share distribution of manufacturing exports according to factor usage. Because of the lack of sectoral deflators, nominal data is used to calculate the share structure of trade. This implicitly assumes a common deflator for all products, and may over-estimate the importance of natural resource-intensive products that have experienced rising prices in the latter part of the 1990s.

Table 6.15: Structure of SA exports according to factor usage classification; percentage share

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Agriculture intensive	19.3	19.3	18.9	17.0	17.0	18.3	19.2	18.1	16.1	17.2	15.9
Mineral intensive	17.9	15.2	14.9	13.1	12.1	10.2	10.3	14.6	13.7	12.5	12.9
Unskilled labour intensive	12.1	13.7	14.4	17.2	18.2	15.5	15.0	16.0	17.0	18.4	22.0
Technology intensive	15.7	16.8	17.9	22.1	21.8	24.4	26.7	25.0	26.0	24.9	25.3
Human capital intensive	35.0	34.9	33.8	30.6	30.9	31.5	28.8	26.5	27.3	27.0	23.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Edwards and Schoer (2001);

Notes: SA data is based on Customs and Excise Harmonised System classification; world data is UNComTrade data as published by Statistics Canada's World Trade Analyser; RSADC data for 1999 is included in ROW; nominal data is used to calculate the share structure of trade.

An examination of the composition of total SA exports reveals a paradoxically low percentage of unskilled labour-intensive exports relative to the technology-intensive and human capital-intensive exports. Whereas the former accounts for less than 20% of total exports, the latter categories exceed 50% of total exports for most years. As Tsikata (1999) notes, this structure contrasts starkly with that of many other labour-abundant economies. Agricultural and mineral resource-intensive exports were also important, making up approximately 40% of total exports, and correctly reflecting SA's natural resource endowment. The results of Table 6.15 come as no surprise, because distortions created by the protection of capital-intensive industries are eroded as trade liberalisation occurs so that exports shift to those products using relatively more abundant factors.

It is also evident that the structure of exports has changed over the past decade. In particular, the role of unskilled labour-intensive and technology-intensive exports has risen, while the importance of resource-intensive and human capital-intensive exports has fallen. This result contrasts sharply with that of Tsikata (1999) who notes a decline in importance of unskilled labour-intensive exports, as well as Nordås (1996), who argued that the re-integration of SA into the world economy was likely to reinforce dependence on resource-intensive industries.

Table 6.16 presents a breakdown of manufacturing exports by region and factor usage in an attempt to highlight whether significant structural differences exist with respect to the composition of regional exports that may explain the relatively

low unskilled labour intensity of total exports shown earlier. *A priori*, it would be expected that SA would export relatively high value-added products to developing regions such as RSADC, and low value-added products to rich countries. A further interest is to see whether these structural differences (if any) have changed over the past decade as trade liberalisation has taken place.

Table 6.16: Inter-temporal view of SACU's manufacturing exports by region and factor usage; percentage share of total regional exports

Rich	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**19991**
Agriculture intensive	18.9	18.7	19.6	17.9	17.1	17.9	19.3	17.8	15.6	15.1	13.3
Mineral intensive	21.6	18.9	18.2	15.2	13.8	11.4	9.6	13.2	11.1	12.3	9.3
Unskilled labour intensive	12.4	15.2	15.1	17.2	18.4	17.4	16.4	17.9	19.6	21.7	29.3
Technology intensive	13.6	16.3	18.3	24.1	23.2	26.3	28.2	24.4	26.5	23.5	24.3
Human capital intensive	33.5	31.0	28.8	25.6	27.5	27.0	26.5	26.7	27.3	27.4	23.9
RSADC											
Agriculture intensive	13.9	16.0	19.3	18.2	18.1	16.1	17.4	17.2	16.8	18.2	Na
Mineral intensive	15.0	11.9	10.1	10.6	10.5	7.5	7.1	9.2	9.4	8.6	Na
Unskilled labour intensive	18.1	18.7	21.1	20.7	21.9	21.4	19.6	21.0	22.4	19.4	Na
Technology intensive	30.8	32.6	29.6	32.0	31.2	29.4	30.0	33.0	31.4	31.1	Na
Human capital intensive	22.3	20.9	20.0	18.5	18.4	25.6	25.8	19.6	20.1	22.7	Na
RoW											
Agriculture intensive	23.6	22.6	17.6	15.1	16.4	20.4	20.3	19.1	16.5	20.9	18.8
Mineral intensive	9.9	9.4	12.0	11.2	10.4	10.2	13.6	20.1	19.9	15.3	17.0
Unskilled labour intensive	7.7	7.5	9.0	15.2	15.6	8.9	9.5	9.6	10.1	11.1	13.7
Technology intensive	11.9	8.6	9.9	13.5	14.1	18.3	21.9	20.7	22.1	23.9	26.4
Human capital intensive	47.0	51.9	51.4	45.0	43.4	42.2	34.6	30.4	31.4	28.9	24.0

Sources: Edwards and Schoer (2001);
Notes: Customs and Excise and converted from HS8 to SIC coding; the factor classification mapping was obtained from Tsikata (1999); RSADC data for 1999 is included in ROW.

Table 6.16 depicts the adjustment in export patterns arising from trade liberalisation in the 1990s. What is apparent is that changing regional comparative advantage has played a role in the restructuring of exports. The share of unskilled labour-intensive exports to rich countries rose from 12.4% in 1989 to 21.7% in 1998, while human capital-intensive exports declined from 33.5% to 27.4% over the same period. Interestingly, export shares of agricultural and mineral resource-intensive exports to rich countries declined from a combined 40.5% in 1989 to 27.4% in 1998.

An examination of exports to RSADC suggests that the structure of exports during the last decade has been relatively constant. The expected shift towards a more high technology export structure has not emerged, although the growth in exports between 1994 and 1995 appears to have been dominated by human capital-intensive exports. The human capital-intensive share of exports to RSADC briefly rose to over 25% during this period. Further, the rise in share of unskilled labour-intensive exports to RSADC from 1989 contradicts our *a priori* expectations regarding the restructuring of exports and suggests that other factors such as domestic policy may have played a role.

A closer look at the sector level data suggests that this may be the case. For instance, the rise in share of unskilled labour-intensive exports has been driven by rapid growth in exports of motor vehicles, and motor vehicle parts and accessories (grouped into SIC v3, commodity 3840). The replacement of the Phase VI programme with the MIDP programme in 1995 which, due to its import-export trade balance rebate system, has boosted both exports and imports of products from the motor industry (Tsikata 1999). The effect has been a rise in the share of manufacturing exports accounted for by this sector from 2.24% in 1989 to 7.18% in 1998 and 14.99% in 1999. For RSADC countries the share rose from 7.46% to 8.99% over the same period.[15]

6.8.1.2 Regional and commodity structure of imports

Table 6.17 presents a share breakdown of total imports according to region, and indicates that import growth, like export growth, was strong after the ending of sanctions, but low during the early 1990s and late 1990s as result of poor economic growth during these periods. Over 70% of imports are made up of intermediate and capital goods, implying a close relationship between output growth and import growth. Substantial depreciations in the currency in 1996 also helped to depress import growth.

As shown, the bulk of imports are sourced from rich countries, although the share accounted for by labour-intensive countries such as China and India has risen over the last decade. Between 1988 and 1998, the share of total SA manufacturing imports purchased from China and India rose from 0.79% to 4.5%. The share of imports sourced from RSADC has also more than doubled, but remains less than 1% of total imports because of fast growth in exports to RSADC. The effect is a widening trade imbalance with the region as a whole.

Table 6.17: Inter-temporal view of SACU's manufacturing imports and net trade ratio, by region[16]

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Rich	85.02	84.84	82.48	79.81	79.54	79.57	79.46	77.69	76.76	77.17	71.98
RSADC	0.29	0.26	0.27	0.38	0.46	0.45	0.40	0.38	0.55	0.63	0.00
China and India	0.79	0.96	1.25	1.67	2.20	2.40	2.81	3.43	4.23	4.50	4.99
ROW	13.90	13.94	16.00	18.14	17.81	17.58	17.33	18.50	18.46	17.70	23.03
Total value (US$ Bn)	13.53	13.43	14.11	15.38	15.43	19.00	23.85	23.69	23.79	23.83	21.35
Growth	0.57	-0.75	5.08	9.01	0.27	23.15	25.55	-0.67	0.40	0.16	-10.39
SACU share world trade	0.51	0.44	0.45	0.45	0.44	0.49	0.51	0.49	0.47	0.48	
Net trade ratio (X-M)/(X+M)											
World	-0.31	-0.28	-0.26	-0.24	-0.26	-0.29	-0.28	-0.27	-0.24	-0.27	-0.19
Rich	-0.44	-0.45	-0.46	-0.44	-0.46	-0.50	-0.47	-0.47	-0.44	-0.42	-0.33
RSADC	0.93	0.94	0.95	0.93	0.92	0.92	0.93	0.94	0.91	0.88	
ROW	-0.09	0.01	0.00	-0.01	-0.03	-0.07	-0.10	-0.09	-0.06	-0.17	0.06

Source: Edwards and Schoer (2001)

The structure of trade according to factor content is presented in Table 6.18, and shows that, unlike the structure of exports, the aggregate structure of imports has remained relatively constant over time. The structure of imports is biased towards high technology products, suggesting that SA behaves as a developing country in relation to the import market. Unskilled labour imports are also high, but have not risen dramatically over the past decade. Although trade liberalisation may have raised international competition in unskilled labour-intensive sectors, this has not resulted in above-average increases in imports of these products. The share of unskilled labour-intensive products in total imports actually declined from 27.1% in 1993 to 24.4% in 1998.

[15] While the classification of the motor vehicle industry as unskilled labour intensive may seem unusual, it nonetheless explains the anomaly of relatively high exports of unskilled intensive exports to RSADC.

[16] China and India are included, as it is widely believed that the integration of these economies into the world market has substantially altered the relative competitiveness of middle-income countries such as SA.

Table 6.18: Structure of SA imports according to factor usage classification (percentages)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Agriculture intensive	7.4	7.5	7.2	8.3	7.4	8.6	8.6	8.1	8.7	7.7	7.6
Mineral intensive	3.1	3.2	3.1	3.3	3.2	2.8	3.8	4.5	3.9	4.4	4.6
Unskilled labour intensive	28.0	27.0	26.9	25.9	27.9	27.1	27.5	27.6	25.5	24.3	27.1
Technology intensive	46.9	47.5	49.0	48.5	47.1	45.9	44.7	43.2	44.4	42.6	42.0
Human capital intensive	14.6	14.8	13.8	14.1	14.4	15.5	15.5	16.6	17.5	21.0	18.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Edwards and Schoer (2001)

Looking at the commodity structure of regional trade presented in Table 6.19, it can be seen that imports are sharply defined along regional lines, a result not found in the analysis of exports. Imports from rich countries largely fall within the technology and human capital-intensive sectors, although labour-intensive imports are also very high. In contrast, imports from RSADC are largely agricultural resource intensive. As expected, imports from China and India are dominated by unskilled labour-intensive products, which exceeded 50% during the early 1990s but have declined sharply and steadily over the decade as their exports have become more technology and human capital-intensive.

Table 6.19: Inter-temporal view of SACU's manufacturing imports by region and factor usage; percentage share total regional imports

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Rich											
Agriculture intensive	5.0	5.5	5.2	6.1	5.7	6.3	6.4	6.0	6.4	5.7	5.8
Mineral intensive	3.0	3.0	3.0	3.0	3.1	2.7	3.6	3.6	3.5	3.5	3.7
Unskilled labour intensive	27.8	26.1	25.2	25.0	27.1	26.5	27.4	27.4	24.3	23.1	27.3
Technology intensive	50.1	50.8	53.4	52.1	50.0	49.3	47.4	46.6	48.0	46.0	45.0
Human capital intensive	14.1	14.5	13.1	13.8	14.0	15.2	15.3	16.4	17.8	21.7	18.2
RSADC											
Agriculture intensive	30.7	43.0	54.5	52.1	44.4	24.9	18.3	21.2	20.7	17.0	N/a
Mineral intensive	39.0	21.3	11.8	7.9	7.4	17.0	13.2	9.1	8.1	10.9	N/a
Unskilled labour intensive	19.8	24.4	21.8	24.1	23.5	41.2	43.1	52.8	48.2	48.4	N/a
Technology intensive	7.3	3.3	4.8	6.7	7.7	7.7	8.3	8.3	16.7	18.4	N/a
Human capital intensive	3.1	8.1	7.1	9.2	17.1	9.2	17.1	8.7	6.3	5.2	N/a
China and India											
Agriculture intensive	7.3	8.1	8.4	16.9	10.5	12.4	13.4	12.4	14.2	11.6	11.1
Mineral intensive	17.6	16.5	9.5	9.4	7.1	6.0	5.7	6.0	6.3	7.7	6.7
Unskilled labour intensive	56.5	52.9	60.1	51.2	54.0	48.4	43.1	40.8	39.2	35.9	35.4
Technology intensive	10.3	10.4	8.4	11.6	15.0	17.4	22.9	25.0	25.8	29.0	30.4
Human capital intensive	8.3	12.1	13.6	10.9	13.4	15.8	14.8	15.8	14.6	15.8	16.5
RoW											
Agriculture intensive	21.1	18.6	16.6	16.3	13.4	18.4	17.7	15.9	16.7	14.8	12.7
Mineral intensive	2.7	2.8	2.8	3.5	2.8	2.4	4.3	8.2	4.9	7.5	7.2
Unskilled labour intensive	28.1	31.0	32.6	27.5	28.6	26.7	24.7	25.6	26.7	25.9	24.4
Technology intensive	29.9	30.9	30.1	37.1	39.0	35.2	36.8	32.8	34.5	32.3	35.0
Human capital intensive	18.3	16.8	17.8	15.6	16.1	17.3	16.4	17.4	17.2	19.5	20.7

Source: Edwards and Schoer (2001)

Sharp shifts in the structure of imports have also occurred since the ending of sanctions and the acceleration of trade liberalisation in 1993. Imports of human capital-intensive products from rich countries and the rest of the world have risen, reflecting the declining competitiveness of many of the knowledge-intensive industries in SA. Changes in the structure of demand towards more high-technology automation equipment, the expansion and digitalisation of the telecommunications networks, the building of the cellular phone network infrastructure and the recapitalisation of many industries during the 1990s have also raised imports of human capital and technology-intensive products (Edwards and Schoer 2001).

Substantial restructuring of imports from RSADC has also occurred, with the share of unskilled labour-intensive imports rising from 23.5% in 1993 to 48.2% between 1993 and 1998. During the same period, the share of agricultural resource-intensive imports fell from 44.4% to 17%. While the growth of unskilled labour-intensive imports from RSADC reflects the significant positive impacts SA can have on the development of the region, the very small share of imports sourced from RSADC highlights the extent of further possible gains.

The structure of trade with China and India has also changed significantly since trade liberalisation and the ending of sanctions in 1993/1994. Although unskilled labour-intensive imports continue to dominate, its importance has declined (its share fell from 54% in 1993 to 35.9% in 1998) as technology and human capital-intensive imports have grown. In 1989, these two categories only accounted for 18.6% of total imports from the region. By 1998 they accounted for 44.8%. These trends may signal relative declines in SA competitiveness vis-à-vis these countries in the production of high-technology products.

6.8.1.3 SACU share of world trade

The above analysis presented a picture of the changing structure of SA exports and imports. While inferences are made with respect to the changing competitiveness of SA production, these fail to consider the changing dynamics of world trade. A more informative approach is to analyse the changing shares of SA exports and imports in world exports and imports. For example, a rise in the share of SA exports of a particular commodity does not necessarily indicate a rise in competitiveness as the share of this commodity in world trade may have increased at a faster rate. In this case, SA can be said to be lagging world competitiveness. In this section, the share of SACU exports and imports in world trade is presented according to factor usage classification (Table 6.20). These results also serve as an introductory insight into the dynamic analysis that follows.

Table 6.20: Inter-temporal view of SACU's manufacturing exports as percentage share of world exports by factor usage classification

	1990	1994	1998
Exports			
Agriculture intensive	0.48	0.48	0.52
Mineral intensive	0.32	0.34	0.44
Unskilled labour intensive	0.13	0.15	0.19
Technology intensive	0.13	0.19	0.19
Human capital intensive	0.52	0.44	0.38
Total	0.25	0.27	0.28
Imports			
Agriculture intensive	0.33	0.42	0.40
Mineral intensive	0.12	0.17	0.27
Unskilled labour intensive	0.44	0.47	0.43
Technology intensive	0.63	0.65	0.56
Human capital intensive	0.39	0.39	0.52
Total	0.44	0.49	0.48

Source: Edwards and Schoer (2001);
Notes: SA data is based on Customs and Excise Harmonised System classification; world data is UNComTrade data as published by Statistics Canada's World Trade Analyser; world trade is balanced, implying total world exports equal total world imports.

The results from this approach present a different picture from the simple share structure analysis of exports and imports. Although the share of agricultural and mineral-intensive products in SACU exports declined since 1990 (see Table 6.18), export growth still exceeded world export growth. As a result, the share of SACU exports in agriculture and mineral-intensive products in world trade rose from 0.48% and 0.32% to 0.52% and 0.44% respectively between 1990 and 1998.

The trends in world shares of the remaining classifications are consistent with the changing share structure of SACU exports presented in Table 6.16, which described the adjustment in export patterns in the 1990s owing to trade liberalisation, and suggested that changing regional comparative advantage had been instrumental in the restructuring of exports. These results indicate that when compared to world trade, the shift towards more high-skilled and capital-intensive exports suggested by Bell and Cattaneo (1997) and Tsikata (1999) may be over-exaggerated. Instead, SA exports may have become more concentrated in natural resource-intensive products.

On the import side, the trends in world share are similar to the changing structure of SACU imports. Significant increases in world share of mineral-intensive and human capital-intensive products imports occurred between 1994 and 1998.These are largely driven by rising petroleum imports as well as the importation of television, radio and communication equipment to supply the burgeoning cellular phone industry.[17]

6.8.2 Review of Revealed Comparative Advantage Measures for SA

As noted earlier, there exists diverse literature on competitiveness, ranging from micro firm-based studies examining a host of factors such as company strategy, location advantages, product quality and reliability, to more macro-based strategies that attempt to understand how indicators like the exchange rate and tariffs influence exports. This section specifically analyses the competitiveness of SA exports using a range of revealed comparative advantage (RCA) measures. Given the difficulty in analysing pre-trade prices, indirect methods using post-trade data have been used to 'reveal' a country's comparative advantage (see Greenaway and Milner 1993). Various forms of these RCA measures have been used to analyse the existing and changing comparative advantage of SA trade (Edwards and Schoer 2000, Valentine and Krasnik 2000, and GESP 2001). It is important to bear in mind that RCA measures do not explain why a country is competitive in different products, but elucidates in more accurate ways – relative to a simple analysis of export trends – how a country features in the context of world trade.

The primary measure used in SA is one in which the share of commodity j in a country's total exports is compared to the share of that commodity in world exports. Using this approach, the RCA of commodity j is defined as:

(5) $$RCA_j = \frac{X_{ij}}{\sum_j X_{ij}} \Big/ \frac{X_{wj}}{\sum_j X_{wj}}$$

where i refers to countries 1,....., *n*, (total of n countries in world), j stands for commodities 1, ..., *m* and *w* stands for world, thus: $X_{wj} = \sum_{i=1}^{n} X_{ij}$ This equation compares the share of commodity '*j*' in country '*i*'s total exports, $\frac{X_{ij}}{\sum_j X_{ij}}$ with the world share of commodity '*j*' in total world exports, $\frac{X_{wj}}{\sum_j X_{wj}}$

[17] The share of television, radio and communication equipment in total trade rose from 3.45% to 11.47% between 1990 and 1998.

All values greater than 1 signal that the country has a revealed comparative advantage in the production of that product. For example, if paper constitutes 10% of SA's exports but constitutes 5% of world trade, SA would have an RCA (=2) in the production of paper. Numerous other measures are also used, but the results of these are very similar. Edwards and Schoer (2001) find that correlation coefficients between these measures generally exceed 0.8.

The results of the studies by Edwards and Schoer (2001) and Valentine and Krasnik (2000) are broadly similar, although the latter is more extensive and uses SITC data at the four-digit level (as opposed to an aggregated 26 commodities in the former). SA is revealed to have a comparative advantage in the production of agriculture, mining and manufacturing products relating to these sectors (Table 6.21). These results appear consistent with those of Nordås (1996) and suggest that SA is relatively competitive in the production of mineral and agricultural resource-intensive products. SA is revealed to have a comparative disadvantage in the production of the more high-technology products such as electrical machinery, apparatus and appliances (Edwards and Schoer 2001, and GESP 2001).

Table 6.21: Top five RCA commodities for SA exports

Valentine and Krasnik (2000) for 1995	Edwards and Schoer (2000) for 1996	GESP (2001) for 1998
1. Coal, coke and briquettes	1. Sugar, sugar preparations and honey	1. Minerals
2. Inorganic chemicals	2. Pulp and waste paper	2. Manufacturing
3. Metalliferous ores and metal scrap	3. Crude materials, inedible	3. Fresh food
4. Animals, live, zoo animals, dogs, cats, etc	4. Iron and steel	4. Wood products
5. Non-metallic mineral manufactures, n.e.s	5. Beverages	5. Processed food

Source: Edwards and Schoer (2001);
Note: all sources utilise the SITC classification employed by the Statistics Canada version of the UN ComTrade database (World Trade Analyser); differences arise from alternative measures used, aggregation procedures and different years analysed.

A problem with this measure is that the indicator is static and does not take into consideration changes in RCA over time. Valentine and Krasnik (2000) extend the static use of RCA measures and interpret growth in RCA as reflecting a country's changing competitiveness in particular commodities. Thus, commodities with rising RCA measures are those that are becoming increasingly competitive. Using this approach they find that for many of the SADC countries it is the relatively high-technology sectors that are revealed to be 'dynamically' competitive between 1986 and 1995.

In a further attempt to identify sectors that offer the greatest export potential, Valentine and Krasnik (2000) create a composite RCA indicator calculated as the weighted sum of the static RCA value, the natural log of the RCA growth rate and the growth in share of world trade. If the latter was positive, this raised the RCA composite indicator, as it was interpreted as reflecting a greater export potential. This is an interesting approach to measuring the competitiveness of a sector, although the somewhat arbitrary construction and weighting of the elements within this indicator make it difficult to interpret.

The bulk of the top 25 sectors for SADC as a whole can be classified as medium technology-intensive or resource-intensive.[18] However, seven of the top 25 sectors are high-technology sectors.[19] These results are in stark contrast with the static RCA results (none of these sectors showed a positive RCA in 1995), but more importantly, contradict what we would expect given the natural resource endowments of these economies. Their inclusion partly reflects the strong world growth of these commodities, but may also arise from the strong growth in exports of these commodities from SA into other SADC countries during the 1990s. Some of this is merely re-exports, suggesting that the RCA composite indicator may over-exaggerate the potential for exports to the rest of the world.

6.8.3 The 'Dynamic' Competitiveness of SA Exports

Edwards and Schoer (2001) built on the approach by Valentine and Krasnik (2000) to create a dynamic RCA indicator of competitiveness, taking into account the shortcomings this method presents, such as the combination of both static and change variables in the derivation of the composite competitiveness index and the emphasis on the change in RCA indicator but not the forces driving this change, which results in information being lost.

By taking the logs of equation (5) and then totally differentiating, growth in RCA can be decomposed into the following:

(6) $$\frac{\Delta RCA_j}{RCA_j} = \frac{\Delta\left(X_{i,j}/\sum_j X_{i,j}\right)}{X_{i,j}/\sum_j X_{i,j}} - \frac{\Delta\left(X_{w,j}/\sum_j X_{w,j}\right)}{X_{w,j}/\sum_j X_{w,j}}$$

The first term on the right-hand side reflects the growth in share of commodity j in total SA trade while the second term reflects the growth in share of commodity j in world trade.[20] The following scenarios are possible:

[18] Although the data is for SADC, SA dominates the results.

[19] Arms of war, electrical machinery and apparatus, chemical materials and products, n.e.s., medicinal and pharmaceutical products, general industrial machinery and equipment, telecommunications and sound recording apparatus, and office machinery and automatic data processing equipment.

[20] Note that equation 2 can be decomposed further. For the purpose of this study, the current degree of decomposition is adequate.

Table 6.22: Market position of exports

	Share*j* in SA exports		Share *j* in world exports	
Increasing RCA	↑	>	↑	Rising stars
	↑		↓	Falling stars
	↓	>	↓	Lagging retreat
Decreasing RCA	↓		↑	Lost opportunity
	↓	<	↓	Leading retreat
	↑	<	↑	Lagging opportunity

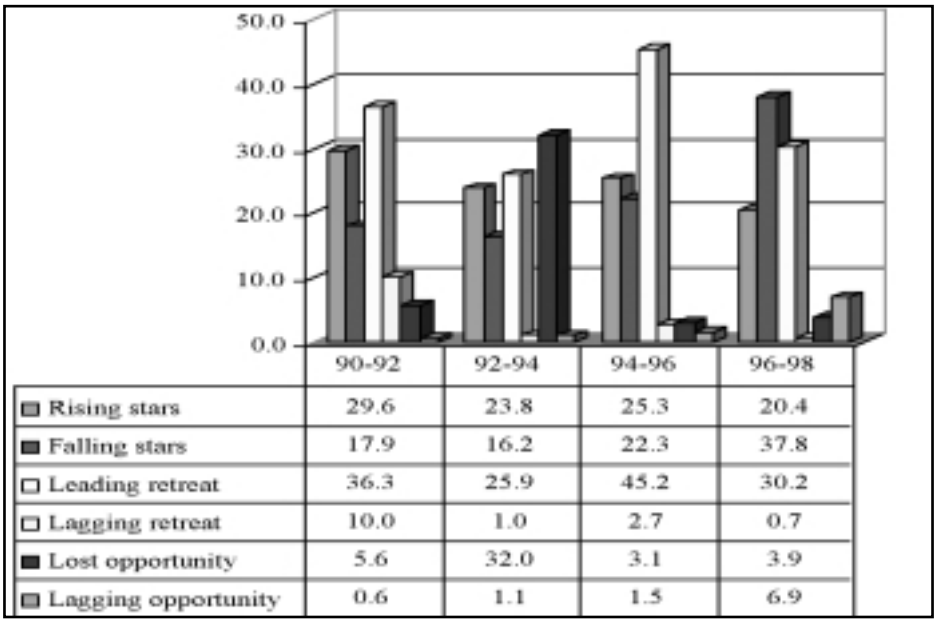
Source: Edwards and Schoer (2001)

This approach is a variant of the work by Tsikata (1999) who uses a similar categorisation but allocates SA exports according to their penetration into growing or declining world trade sectors. The results differ in the following respects. First, the methodology provides insight into the competitiveness of SA exports using the standard RCA measures. Second, Tsikata's analysis only extends to 1996, while Edwards extends the analysis to 1998. Third, the paper provides insight into the regional and commodity composition of these categories. While strong exports to RSADC have helped to raise export growth since 1994, it is not known how this has affected the competitiveness of SA exports.

6.8.3.1 Dynamic analysis: world market positioning

Figure 6.3 shows SA's market positioning from 1990 to 1998 according to the classifications in Table 6.22. Although the classifications have been extended by two additional categories (breakdown of "retreat" and "lost opportunity"), the results seem to confirm trends that Tsikata (1999) identified in her earlier analysis for 1992 to 1996.

Figure 6.3: Inter-temporal view of SA's world market positioning; classifications as percentage share of manufacturing export to world



	90-92	92-94	94-96	96-98
Rising stars	29.6	23.8	25.3	20.4
Falling stars	17.9	16.2	22.3	37.8
Leading retreat	36.3	25.9	45.2	30.2
Lagging retreat	10.0	1.0	2.7	0.7
Lost opportunity	5.6	32.0	3.1	3.9
Lagging opportunity	0.6	1.1	1.5	6.9

Source: Edwards and Schoer; (2001)
Note: export shares are calculated using the final year data in each period.

Looking first at the total structure of exports from a static perspective, we find that the bulk of SA exports fall within markets that are declining in terms of share in world trade ("falling stars" and the "retreat" categories). In 1992, 64.2% of total SA exports fell within declining world markets. By 1998 this had risen to 68.7%, which reflected the high share of agriculture and mineral resource-intensive products in SA exports identified in the RCA analysis. As a combined share of the world market, trade in these two categories declined from 22.3% to 16.9% between 1990 and 1998.

The "leading retreat" classification, which symbolises the rapid restructuring of SA's exports out of declining/ stagnating/decreasing world markets, is first examined. From a dynamic perspective, evidence of successful restructuring would be reflected in high shares of trade falling within the "leading retreat" and "rising star" categories. This would indicate that exports are rapidly moving out of stagnating markets and into dynamic markets. As shown in Figure 6.3, SACU has been relatively successful in moving out of stagnating markets, with 25.9% and 45.2% of total exports falling within the "leading retreat"category. Much of this has been due to the declining share of iron and steel in SA exports, particularly during 1990 to 1992 and 1994 to 1996. "Lagging retreats" have been less important and generally seem to show a declining trend. Hence it can be said that SA has restructured quickly out of unsustainable markets.

Unfortunately most of the restructuring has occurred into markets that are not dynamically competitive. As the "rising stars" category shows, SA has continuously decreased its market share of growing world markets, in which it has a competitive edge. The share of rising stars in total exports fell from almost 30% to only 20% between 1990 and 1998. More worrying is the increase of falling stars from 17.9% to 37.8% of total exports.[21] SA has doubled its market share of stagnant/decreasing world markets, in which it has a competitive edge. In the long run, these markets may not be sustainable, and hence will leave SA behind other countries that have improved their share of "rising star" markets. On a positive note, SA has been improving its share of lagging opportunities, i.e., growing world markets, in which it could also increase its competitiveness.

The least desirable classification is "lost opportunity". Except for the period between 1992 and 1994, SA has been fairly consistent in keeping "lost opportunities" relatively low. The high percentage of "lost opportunities" in 1992 to 1994 was caused by a slight increase in share of world trade of SIC commodity 3710 (iron and steel) while this commodity continued to fall as a share of SA's exports.

Overall, the picture is mixed, with both positive and negative developments. In the following sub-sectors, a closer look at the geographical and commodity structure of the world market positioning is presented.

6.8.3.2 Commodity breakdown of market positioning

Table 6.23 presents the commodity breakdown of the highest and lowest 10 growth rates in RCA values for two-year intervals between 1990 and 1998. Also presented is the market positioning categories of each commodity.

[21] The significant rise from 1994-1996 to 1996-1998 is partially explained by the shift of iron and steel from the "leading retreat" category to the "falling star" category as the result of a slight increase in domestic market share. The removal of this product from the data reduces the downward trend in "rising stars, increases the upward trend in leading retreats, and stabilises the share of falling stars.

Table 6.23: Commodity breakdown of marketing positioning

Rank	1990-1992		1992-1994		1994-1996		1996-1998	
	Top 10							
1	Footwear	RS	Sugar factories & refineries	FS	Paper & paperboard, nec	FS	Ship building & repairing	RS
2	Man-made fibres	FS	Distilleries & wineries	RS	Musical instruments	FS	Petroleum refineries	FS
3	Ship building & repairing	FS	Musical instruments	FS	Distilleries & wineries	RS	Products of leather	FS
4	Leather tanning & dressing	FS	Printing & publishing	FS	Coke oven products	FS	Tobacco products	FS
5	Aircraft & spacecraft	RS	Wooden containers	FS	Railroad equipment	FS	Aircraft & spacecraft	RS
6	Products of leather	RS	Paper packaging	RS	Structural metal products	RS	TV, radio & communication	RS
7	Wooden containers	RS	Soap, perfumes & other toilet preparations	RS	Sugar factories & refineries	RS	Cement, lime & plaster	FS
8	Coke oven products	FS	Aircraft & spacecraft	FS	Clocks & watches	FS	Other chemicals nec	FS
9	Wearing apparel	RS	Furniture, excl metal	RS	Electrical apparatus nec	RS	Motor cycles & bicycles	FS
10	Distilleries & wineries	FS	Coke oven products	FS	Machinery & equipment nec	FS	Machinery & equipment nec	FS
	Bottom 10							
70	Paints, varnishes & lacquers	LO	Man-made fibres	LO	Jewellery	LR	Clocks & watches	LR
71	Articles of fur	LR	Meat products	LR	Motor cycles & bicycles	LR	Paper packaging	LR
72	Printing & publishing	LO	Structural clay products	LO	Prepared animal feeds	LO	Footwear	LR
73	Medicinal & pharmaceutical	LO	Textile preparation & spinning	LR	Cement, lime & plaster	LR	Structural metal products	LR
74	Jewellery	LO	Pottery, china & earthenware	LR	Soap, perfumes & other toilet preparations	LR	Distilleries & wineries	LR
75	Musical instruments	LR	Soft drinks	LO	Petroleum refineries/synthesisers	LO	Malt liquors & malt	LR
76	Metal products nec	LO	Non-ferrous metals	LR	Wood products, nec	LR	Jewellery	LO
77	Sawmilling & planting of wood	LR	Wearing apparel, excl footwear	LR	Paper packaging	LO	Cordage, rope & twine	LR
78	Prepared animal feeds	LO	Vegetable & animal oils & fats	LO	Aircraft & spacecraft	LR	Paper & paperboard, nec	LR
79	Sugar factories & refineries	LR	Ship building & repairing	LR	Articles of fur	LO	Musical instruments	LR

Source: Edwards and Schoer; (2001).
Notes: RS, FS, LO and LR respectively stand for rising star, falling star, lost opportunity and leading retreat.

A striking feature of Table 6.23 is the volatility of RCA growth rates. Many commodities appear in the top 10 in one period and then drop to the bottom 10 in the subsequent period. This is most noticeable when comparing 1994 to 1996 and 1996 to 1998, where four of the top 10 dropped to the bottom 10, and four of the bottom 10 rose to the top 10. This high level of volatility arises from the very small base values in the denominators of equation (2) and the disaggregated level at which RCA growth rates were calculated: the greater the disaggregation, the more susceptible is the share of trade to once-off changes in export sales. This volatility indicates that care must be taken when interpreting the results in this analysis.

No clear structure according to factor usage is evident from Table 6.23. Some commodities such as aircraft and spacecraft, distilleries and wineries, building and repairing of ships appear regularly in the top 10, but these do not consistently fall in any single factor-usage category. Most of these commodities are not natural resource intensive, suggesting that much of the action is occurring outside the traditional export sectors. The main insight presented in Table 6.23 is the shift in growing RCAs towards "falling stars" (FS) and the increasing importance of "leading retreats" (LR) in declining RCA commodities. In 1992, half of the top 10 rising RCA commodities were "falling stars". By 1998, this had risen to seven.

The changing composition of rising RCAs highlights the difficulty in interpreting these values [as is attempted by Valentine and Krasnik (2000)] as indicators of long-term dynamic competitiveness. Declining RCAs are also not necessarily an indicator of poor dynamic competitiveness. This is evident in the rising importance of leading retreats in the bottom 10 RCA growth products. The number of leading retreats in the bottom 10 RCA growth products rose from four in 1990 to1992 to nine between 1996 to 1998, and reflects a positive adjustment out of stagnating markets. These trends are also evident over a longer time frame (1990 to 1994 and 1994 to 1998) where RCA growth values are less susceptible to the volatility displayed in Table 6.16. [22]

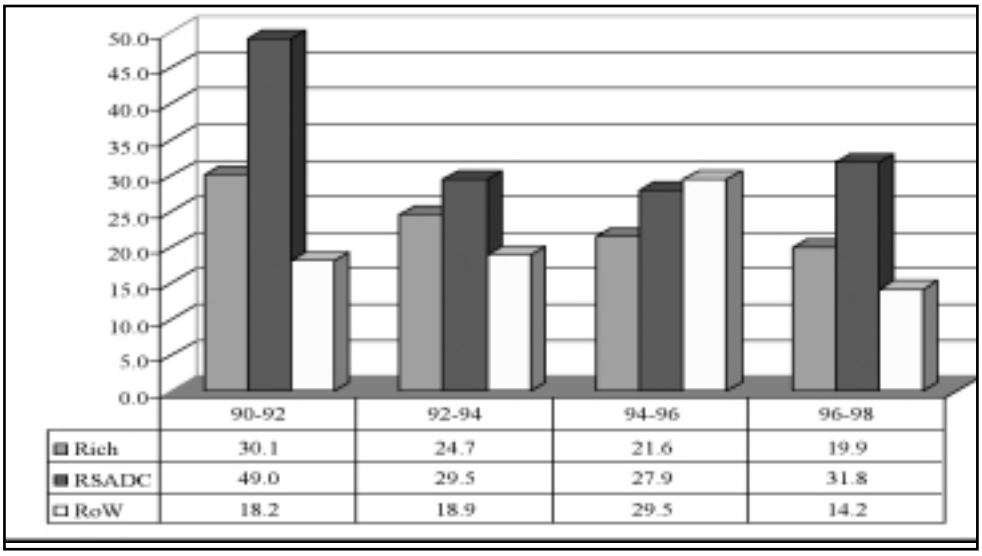
6.8.3.3 Geographical market positioning

The world market positioning can be broken down into trade with three regions: Rich, RSADC and rest of world (RoW), with the aim of establishing whether trade with particular regions had a significant impact on SA's market positioning. Because of their relative importance only "rising stars", "falling stars" and "leading retreat" classifications will be addressed. More information on the factor usage classification of exports according to region is provided in Appendix 3. Further, this analysis is only illustrative, and more disaggregated regional breakdowns would be required for an analysis of the country-specific changes that may exist.[23]

[22] When using 1990 to 1994 and 1994 to 1998 time frames, the number of falling stars in the top 10 growing RCA commodities rose from two to eight. The number of leading retreats rose from four to eight.

[23] There is a more fundamental criticism of the regional breakdown of market positioning. The overall market positioning of each sector is determined by changing sectoral shares of total SACU trade relative to world trade, according to Table 6.16. Because the volume of exports to regions affects the classification according to market positioning, the classifications will be biased towards large-country trade flows. Thus a low share of "rising stars" in RSADC does not necessarily reflect a failure of SACU to exploit market opportunities in these regions, as the composition of import demand from RSADC may not correspond with world market demand. A better approach would be to deal with import demand by each region separately, and toanalyse whether SACU has managed to expand its exports into those markets characterised by increasing import demand.

Figure 6.4: Inter-temporal view of SACU's regional market positioning for "rising stars"; percentage of regional total



Source: Edwards and Schoer (2001)

Figure 6.4 shows the percentage share of "rising stars" in total manufacturing exports according to geographical region. "Rising stars" as a share of total trade to rich countries has consistently declined from 30.1% to 19.9% between 1990 and 1998. On the other hand, after an initial fall from almost 50% in 1990 to 1992 to 29.5% in 1992 to 1994, the share of "rising star" exports to RSADC has been constant at almost 30%. The relatively larger and more stable share of "rising stars" in total exports to RSADC after 1992 suggests that the RSADC has been a relatively important market through which SACU is restructuring exports into sustainable competitive markets. Given SA's proximity to RSADC and its regional comparative advantage in non-resource intensive products, export growth to RSADC may therefore provide a platform for the emergence of dynamic high value-added production sectors.

A look at the commodity breakdown for rising stars according to region in Table 6.24 provides some support for this view.

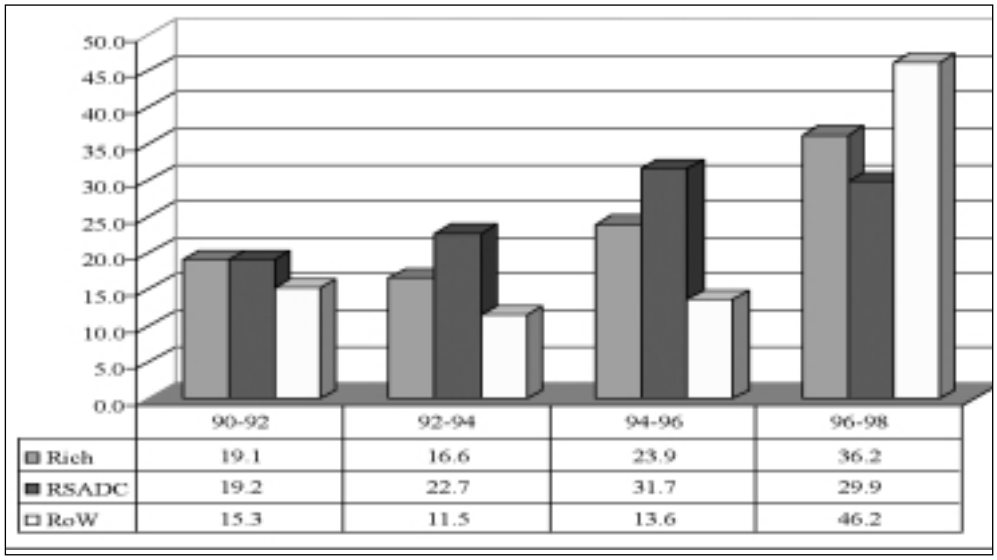
Table 6.24: Inter-temporal view of the commodity breakdown for rising stars according to region; percentage of regional total

	1990-1992	1992-1994	1994-1996	1996-1998
Rich				
Agriculture intensive	22.1	10.9	20.1	0.0
Mineral intensive	3.0	0.0	52.8	0.0
Unskilled labour intensive	35.2	17.0	1.1	60.7
Technology intensive	25.6	64.2	17.3	31.0
Human capital intensive	14.0	7.9	8.8	8.3
RSADC				
Agriculture intensive	25.9	3.8	15.5	0.0
Mineral intensive	2.5	2.0	25.4	0.0
Unskilled labour intensive	30.1	9.3	4.3	48.2
Technology intensive	29.3	43.9	42.9	25.0
Human capital intensive	12.2	41.1	11.9	26.8

Source: Edwards and Schoer (2001)

While all regions show similar trends in the commodity breakdown of "rising star" exports, a difference in levels exists, with the combined share of human capital and technology-intensive products in total trade being relatively high to RSADC compared to rich countries. Also evident in Table 6.24 is the lack of an obvious trend in the commodity structure of SA's "rising stars". This may reflect the volatility in domestic and world trade, but also reveals a failure of the economy to consistently shift into growing world markets. In world trade, the bulk of commodities experiencing rising shares fell within the technology and human capital-intensive sectors. From a long-term dynamic perspective it is important that the structure of SA exports mimics this process. Turning to "falling stars", Figure 6.5 presents the percentage share of "falling stars" in total manufacturing exports according to geographical region.

Figure 6.5: Inter-temporal view of SACU's regional market positioning for "falling stars"; percentage of regional exports



	90-92	92-94	94-96	96-98
Rich	19.1	16.6	23.9	36.2
RSADC	19.2	22.7	31.7	29.9
RoW	15.3	11.5	13.6	46.2

Source: Edwards and Schoer (2001)

A more consistent trend than in the case of "rising stars" is indicated, with the share of "falling stars" in total export to each region rising for all regions. SACU has almost doubled its share of "falling star" exports to rich countries from 19.1% in 1990 to 1992 to 36.2% in 1996 to 1998. The share of falling star exports to RSADC has shown a similar trend, increasing from 19.1% in 1990 to 1992 to 29.9% in 1996 to 1998. The trade to the rest of the world has, after being relatively stable around 13% in the first six years, increased dramatically to 46.2% in 1996 to 1998.

The changing commodity composition of "falling stars" presented in Table 6.25 is similarly consistent. Because the trends across regions are similar, the commodity breakdown of total "falling stars" is prominent.

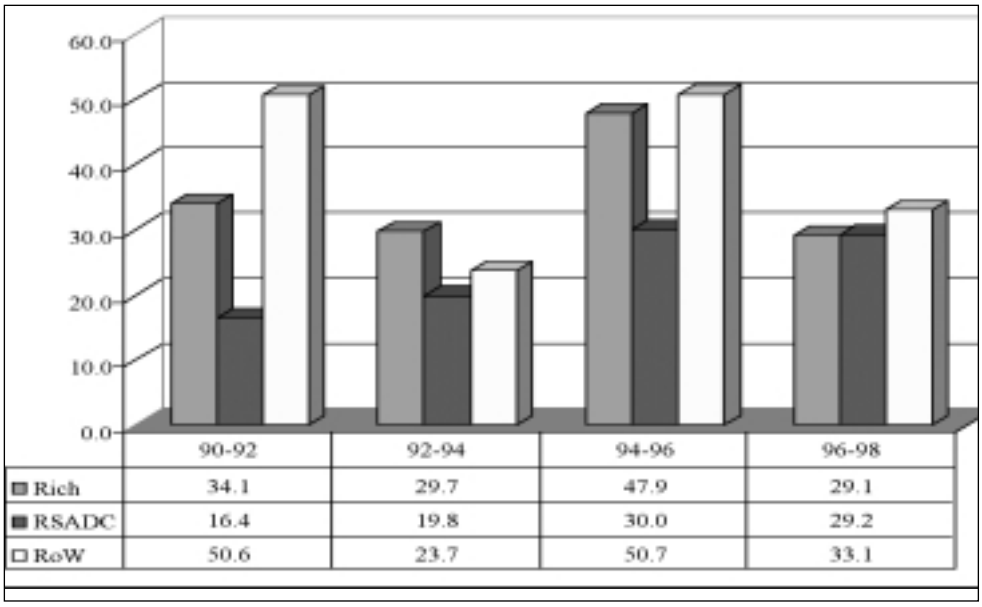
Table 6.25: Inter-temporal view of the commodity breakdown for "falling stars"; percentage share

	1990-1992	1992-1994	1994-1996	1996-1998
Agriculture intensive	17.9	19.0	10.6	27.5
Mineral intensive	8.9	18.1	5.3	2.6
Unskilled labour intensive	5.8	13.2	44.2	0.4
Technology intensive	67.5	42.1	20.7	16.6
Human capital intensive	0.0	7.6	19.2	52.9

Source: Edwards and Schoer (2001)

Three distinct trends are discernible in the commodity breakdown of "falling stars". First, mineral-intensive products have been falling as a share of "falling stars". An even stronger decline can be seen in the technology-intensive sectors, which fell from 67.5% in 1990 to 1992 to only 16.6% in 1996 to 1998. On the other hand, SA has increasingly exported falling stars in human capital-intensive sectors, the share of which increased from 0% to 52.9% between 1990 and 1998. The large rise in 1996 to 1998 is due to iron and steel, which was previously a leading retreat. Also noticeable is the high share of agriculture-intensive sectors, although they do not seem to follow a particular trend.

Figure 6.6: Inter-temporal view of SACU's regional market positioning for "leading retreat" commodities, percentage of regional exports



Source: Edwards and Schoer (2001)

As shown in Figure 6.6, "leading retreat" has been a major share of regional exports to rich countries (between 29% and 48%) and the RoW (between 24% and 50%), while as a share of exports to RSADC, it only developed as a major share from 1994 to 1996 onwards. "Leading retreat" as a share of exports to RSADC increased from 16.4% in 1990 to 1992 to 29.2% in 1996 to 1998. Two possible interpretations for this trend arise. First, trade with RSADC may have increased the pressure for SA to restructure and move away from stagnating/decreasing markets. As mentioned earlier, these trends reflect reasonable success in moving out of stagnating markets. However, as shown in the breakdown of "falling" and "rising stars", exports have shifted to the "falling stars", rather than the more desirable "rising stars". Second, in the face

of greater international competition for declining markets, SACU producers are redirecting exports of these products away from rich countries towards RSADC. In this case, RSADC is serving as a buffer against increased world competition. The redirection of these products towards RSADC is, however, still insufficient to prevent their share in total SACU exports from declining.

The commodity breakdown of leading retreats is highly volatile, which prevents a coherent analysis. A large share of leading retreats between 1990 and 1992, and 1994 and 1996 can be attributed to the export of iron and steel. From 1994, the share accounted for by technology-intensive products – largely chemicals (SIC commodity 3511/3) – rose.

6.8.3.4 Other classifications

The export volumes of the other classifications are very small compared to the first three classifications. Hence, in terms of share of total trade and share of trade to each region, the results are highly volatile and do not follow particular trends. It should nevertheless be mentioned that commodities with lagging opportunities have continuously increased as a share of trade to each region, which shows that SA restructured at least to some extent into growing world markets. However, unless these shares grow more rapidly, the opportunities to exploit these growing markets will be lost. The commodity-level analysis shows that "lagging retreats" are mainly in the agriculture-intensive and unskilled labour-intensive sectors, while "lagging opportunities" include unskilled labour-intensive, technology-intensive and human-capital-intensive sectors (see Appendix 3). A high percentage of lost opportunities are made up of human capital-intensive products. We also note a rising share of agriculture-intensive products amongst the "lost opportunity" exports to RSADC. This could reflect the impact of increased competition in agricultural products with the region.

6.9 DIRECTIONS FOR FUTURE RESEARCH

This chapter focused largely on an aggregate product-level evaluation of competitiveness of SA exports. However, a more comprehensive understanding of firm behaviour is needed to fine-tune policy to encourage more exports. More research is needed on how firms compete, be it on the basis of price, quality and reliability, technology, etc. Anecdotal consultations with SA export councils in 2000 reveal some interesting issues pertaining to export potential. Great benefit would be derived from rigorous analyses of the following issues:

Competing on Cost Basis: Various factors influence the cost structure of firms. These include input tariffs and dual pricing policies. Dual pricing occurs when a lower export price is subsidised by a higher domestic price. This practice creates a disadvantage for downstream producers and appears to be common practice in the primary beneficiated sector, such as structural (worked) steel and other resource-based goods like sugar.

For two reaons, wage costs matter less for exporting firms. First, SA's exports, owing to various distortions, are in sectors that are capital and material intensive. Second, wage or factor costs matter more at the level of firms' decision to invest. The issue of wages is over-emphasised, as other non-wage elements of the cost structure, such as logistics and information technology, come into play.

The Role of Technology and Innovation: Owing to the hitherto closed nature of SA's economy, most manufacturing sectors have outdated technology. Moreover, in attempting to manufacture as wide a range of items as possible, firms appear to have shorter production runs compared to international best practices seen in countries in Asia, the EU and the Americas, which dictate longer runs of a lower variety of items. Discussions conducted with a cross-section of export

council representatives, such as aluminium and structural steel, indicate that this is indeed the case, as these sectors have not been able to establish their core competencies. Ultimately, manufacturers end up being at a price disadvantage due to the inefficient use of capital.

Scale Economies: Scale economies are closely related to technology and innovation, and are only efficiently attained when there are longer production runs per item. Evidence indicates that SA has some way to go before most sectors can attain scale economies in production. However, the relationship between scale economies and exports is not clear-cut. At one level, exports in addition to domestic markets provide an opportunity for firms to expand production and benefit from scale economies. In the case of SA, experience shows that the increase in exports has largely been as a result of the contraction of the domestic market, and to some extent the significant depreciation of the Rand.

There is another important link between scale economies and exports: anecdotal experience suggests that in some sectors, export demand can be overwhelming for firms with small production runs. Hence, there is a difficulty in accommodating once-off large orders.

Quality and Reliability: Quality and reliability encompass factors such as consistency in quality and reliability of supply. Some sectors, such as capital equipment and structural steel, have achieved first-world standards in quality control, supply and after-sales service/support. However, for some newly exporting firms there are measures related to Customs and Excise, such as bureaucratic red tape, which act more as a hindrance, making repair work take longer than expected, especially when plant and equipment is imported and when products are re-exported after service. A consequence of this is that SA firms therefore lack a competitive edge in offering these services, in comparison to international competitors. Customs bureaucracy is also responsible for delays that make it expensive to use road and rail transport for Africa-bound equipment, even where this is the most logical mode of transportation.

Investment: One of the major constraints to increased exports is the lack of investment in the relevant sectors. For instance, in some sectors like stainless steel, which are operating at near–full capacity, increased exports would only be realised through increased investment in the sector, which is currently constrained by high interest rates. This raises an important issue of the dependence of growth in exports on increasing investment. From preliminary evidence it is clear that in some sectors with low capacity utilisation, exports can increase significantly without much investment, while in other sectors at full or near-full capacity utilisation, only increased capital investment will boost exports.

Sunk Costs as a Barrier to Potential Exports: Increasing exports, as noted earlier, could come from current firms expanding their export volumes and/or new exporters entering the market. One of the problems of entering the export market for the first time is that firms encounter sunk costs – that is, one-off costs that cannot be recovered. One of the key issues is how the DTI can help to bring down sunk costs.

Evidence from other countries shows that there is no substitute for firms incurring these start-up costs themselves, although the DTI can assist in providing a more enabling and supportive environment. The jewellery sector, for example, which represents small-scale jewellery manufacturers, decries the heavy expense incurred by members in acquiring equipment when getting started. Further, the cost of the main raw material (gold) is prohibitively high and subject to, among other things, VAT and Reserve Bank control. All of these factors make it extremely difficult to produce for the local market, let alone compete with overseas jewellery manufacturers, who enjoy the benefits of, among other things, gold loans and exemption from VAT on raw materials.

Trade Facilitation: Transport costs, customs and excise and other services have come to be recognised as a major determinant of competitiveness.

7 CONCLUSION / POLICY RECOMMENDATIONS

The aim of this study was to locate the trade regime in the larger economic policy landscape in SA. SA is a moderately open economy as far as the trade regime is concerned. Is there a case for a further opening up of the economy? Alternatively, what is the counterfactual of maintaining the tariffs at their current rates? Is there a deadweight loss to the protection of certain sectors of the economy?

It is clear that a dramatically accelerated trade reform programme will not make or break the economy. Moreover, there is overwhelming evidence to show that growth and distribution is dependent on many other policies such as labour market policy, political and economic governance, etc. Nevertheless, there is an important case for simplifying the tariff structure and revisiting tariff peaks. An assumption is made that a myriad of simultaneous policy reforms will contribute to better growth prospects for SA. There is, however, still a case for some improvement in the trade regime in SA, in its own right.

Some of the important issues examined in this study were:

- **The Process of Tariff Liberalisation**

Tariff liberalisation in SA has been an ongoing process since the early 1970s, with the introduction of export subsidies and quantitative restrictions on imports, together with the imposition of tariffs and other duties. By the end of the 1980s, however, SA's exports had not changed fundamentally, owing to the emphasis on addressing the anti-export bias rather than across-the-board import liberalisation. Despite limited tariff liberalisation, the incentive to export increased in the 1990s with the introduction of the General Export Incentive Scheme (GEIS), tailored to foster the export of goods with high local content and value added. What was more significant in the 1990s was SA's commitment to the Uruguay Round, under the auspices of what was then called the GATT. The country committed itself to a five-year tariff reduction and rationalisation programme, which involved the reduction of tariff categories and weighted average import duties. There was also a substantial increase in the proportion of bound tariffs and zero-rated tariffs, together with a reduction by one-third of the simple average industrial tariff.

Besides tariff liberalisation and the abolition of QRs, SA has also made significant moves towards strengthening bilateral ties with its main trading partners. The essence of this asymmetric agreement entails the liberalisation of tariffs on 95% of EU imports from SA, mostly between 2000 and 2003. Trade statistics from the DTI show that 99% of tariff lines, consisting of 97% imports from SADC, will qualify for duty-free access to SA by 2005, with tariffs on 69% of SADC imports being zero-rated upon implementation of the accord. Once again, this is an asymmetric arrangement, with SA liberalising most of its sectors to imports from SADC countries faster than they would for imports from SA.

While tariffs have declined over the period 1997 to 2001, notably for manufacturing, the overall pace of tariff liberalisation has significantly slowed down, with only a small reduction in the number of tariff bands, a modest decline in the maximum tariff and a small increase in the dispersion of tariff codes. By 2000, approximately 25% of the HS8 commodity lines still faced non-*ad valorem* tariffs, although the value of imports involved was not more than 4% of total imports.

- **Further Simplification of SA's Tariff Structure**

The key problem is that SA's tariff structure still remains cumbersome, with some 47 *ad valorem* tariff bands, and over 7,000 lines. It may be worth considering a highly simplified tariff structure with a greatly reduced number of *ad valorem* tariff lines.

The structure of the tariff schedule may have an important bearing on efficiency. A highly dispersed and cumbersome tariff structure may mean that protection remains uneven, and gains from openness may still be limited. Thus, although SA has reduced the overall tariff rate, the large number of different tariff bands render the system unwieldy to administer and not very transparent. In addition, the high degree of dispersion and discretion evident in SA's tariff regime is likely to send a confusing message to SA exporters and importers alike.

In summary, a more uniform tariff rate is likely to create higher efficiency in the economy while creating less arbitrary protection for firms. It will be easier to bring imported intermediate inputs into the country that are important for international competitiveness of firms, less rent-seeking will occur at customs and excise, and less distortion in the economy. Such an initiative is less controversial than are attempts to accelerate tariff reform. From a political economy point of view, it is relatively easy for government to give this immediate attention.

- **The Case for Reducing Tariffs Peaks**

Overall, between 1997 and 2001, there has been a reduction in tariffs across the board, especially in the manufacturing sector where the unweighted average tariff has dropped from 16% to 7%. The total unweighted average tariff has over the same period declined from 15% to 6.5%.

While the simplification of the tariff regime would go a long way to improve the overall trade system, high tariffs in themselves need some scrutiny. With regard to the second issue - further tariff liberalisation of sectors that still enjoy high protection - it is important to reduce tariff levels in these sectors. In view of the natural protection offered by a highly depreciated currency, the high transport costs for shipping inputs to SA, and a more modest tariff rate of 10% for peak tariffs to offer more moderate protection, the arguments for further protection are not persuasive.

Tariff peaks still exist for a number of broad categories of commodities such are processed foods (HS 0-2), vehicles and components thereof (HS 87), tobacco products (HS 24), rubber products (HS 40) and clothing and textiles (HS6). Existing tariff peaks suggest that trade reform might not be completely successful in encouraging exports, especially for those sectors that rely on internationally competitive inputs.

There are several reasons why tariffs could be reduced at this point. The basis of successful international competition is access to cheap inputs (a free trade regime on inputs is necessary for competitiveness of firms). the current duty drawback system is cumbersome and is a poor substitute to a low tariff regime on inputs. Even if it were efficient and had a high rate of usage in some sectors - which is true for SA - there are still some costs to the consumer from imposing high tariffs on imports. Apart from the cost to consumers, there are also efficiency implications.

- **Nominal Versus Effective Rates of Protection**

The study has also examined effective rates of protection, which are the extent of protection on a final product arising from tariffs imposed on intermediate inputs. It is often argued that although SA's nominal tariffs are average by middle-income country standards, the existing effective rates of protection are high. Through the use of various methods of comparison between nominal and effective rates of protection, it is established that the nominal rate of protection is a reasonable indicator of the ranking of the effective rate of protection, and where nominal rates of protection are low, they are a reasonable indicator, as would be expected, of negative effective rates of protection.

The study finds that negative real effective protection exists for activities enjoying zero protection on output, such as non-traded goods produced and traded activities, such as office equipment, sugar, cement and fertiliser. Those sectors with low levels of output protection, such as electrical equipment, agriculture, grain milling, optical equipment and other chemicals also have negative rates of real protection as a result of the weighted tariffs on their inputs exceeding their output tariff. Taking into consideration the ratio of effective and nominal rates of protection of the tariff schedule with that of the collection rates, it is evident that they were much higher for the nominal rates. Relatively high effective rates of protection are found in textiles, leather, footwear, clothing, motor vehicles and parts, food processing and to some degree chemicals and other rubber products.

The study also points to the fact that, with the increasing liberalisation of world trade and the decline of tariff levels, countries are beginning to resort to the use of non-tariff barriers such as anti-dumping duties to impede the free flow of trade. SA is no exception to this phenomenon - as studies have shown that anti-dumping actions by trading partners are a problem for exports.

- **The Exchange Rate**

The study focuses to a limited degree on exchange rate issues. Needless to say, the exchange rate is important for two reasons. First, along with tariffs, it impacts on the level of protection firms in SA enjoy. Second, it is a major determinant of export behaviour and also influences the extent to which the economy has a bias in favour of tradeables or non-tradeables.

The decline in the real effective exchange rate (REER) in the last five years in SA has been considerable. A firm's protection from import competition is now higher than it was five years ago even if all its intermediate inputs were imported, as long as some of the primary inputs (labour and capital) are locally sourced and do not demand increases in line with the depreciation.

- **Trade Reform and its Impact on the Economy**

The economy-wide impact the trade reform process has had on the economy is still open to debate, a factor that can be attributed to the multi-faceted nature of trade liberalisation. As was noted in the study, the links between trade reform, employment and growth are not clear-cut. However, some evidence is suggestive of the positive contributions to overall productivity growth. What is clear from the evidence is that the impact of trade reform on the economy is limited in either direction - in dislocated jobs or in creating employment opportunities. Employment is dependent on a host of other factors, such as investment in the economy, the overall state of domestic and foreign demand, and the nature of the labour market. In fact, one important determinant of a growing skills bias in the economy is technological change.

In trying to establish whether any correlation exists between import-penetration ratios and employment rates, it is shown that the correlation coefficient between the change in the import-penetration ratio and employment growth rates is low at -35%, while the rank correlation across the 46 industries is -38%. The figures further suggest that the sectors that have shown increased import penetration have also shown export growth. However, the correlation coefficient between growth in imports and growth in exports, although of the anticipated sign, is also relatively low at 33%, with the rank correlation coefficient even lower at 26%, while the correlation coefficient between the change in the import penetration ratio and export growth during the 1990s across the 46 sectors is only 15%, with a rank coefficient of 12%.

- **Welfare Implications and the Cost of Protection**

Besides an in-depth examination of the impact of trade policy reform on value added, exports and employment, the study also carries out an assessment of the welfare implications on the SA economy of maintaining tariffs that have the effect of increasing the prices of imported goods to levels above those prevailing in the world.

There is a cost to the economy of maintaining prices above international prices. They increase the cost of real wages. Indeed, there is a trade-off between consumer welfare gains and producer welfare and associated employment loss. Recent empirical evidence shows that import penetration ratios have on average been relatively low, and a large part of the employment loss does not appear to originate in trade liberalisation but rather from a mismatch between skills supply and demand. An important review is needed of consumption above international prices, and of who is in actual fact being protected. Would the gains in consumption compensate for the loss in employment (if there is indeed a loss in employment)?

With the assumption that SA is a small country whose import levels are given and over which it has no control, and bearing in mind that the import demand curve is downward sloping, the import quantity increases with a lower world price. The net change in welfare from maintaining tariffs is examined using three scenarios with varying import demand elasticities. These show that tariffs on clothing have dropped from levels higher than 55% in 1996 to below 30% in 2000. Motor vehicle tariffs, on the other hand, have risen from 20% to 31%, which is probably the result of the import weighting procedure, with imports switching to the higher tariff lines in the group. However, while some clothing commodities face even higher tariffs, the welfare losses of maintaining the tariffs are less.

There are also considerable costs incurred in maintaining tariffs by way of forgone consumer surplus. These costs are dependent upon the import value of the commodity, the tariff level of the commodity, and the import price elasticity. While the total costs of tariff protection have declined considerably between 1996 and 2000, there has been a slight reversal in these trends between 1998 and 2000, presumably due to inconsistencies in data sources, increases in certain tariffs on narrow groups and an increase in the weighted average tariff for groups of commodities for which more than one tariff is applicable. Also significant is the significant increase in imports of commodities that are subject to high tariffs.

- **Trade Performance and Competitiveness**

Much attention is also paid to the issue of growth and competitiveness of the SA economy. Total exports increased by 5.5%, in constant 1995 prices on average per annum, in the 1990s, while exports in manufacturing increased by 11.2% and in the services sector by 9.9%, but declined by 1.5% in the primary sector. Even the other 'sensitive industries' have seen annual average export growth of 5% or more during this period.

A descriptive analysis has been carried out on the balance of payments situation between 1990 and 2000, as well as the growth rate in exports and the demand for imports. This is augmented by a detailed review on the geographical break-down of exports and how competitive the country's exports are vis-à-vis other regions of the world.

SA's net trade is positive in natural resource and basic manufactures, but negative in sophisticated products for middle- and high-income countries. In 2000, both import and export volumes increased markedly, with the overall trade balance registering a healthy surplus of 3.7% of GDP. The 8.2% increase in exports reflected the good performance of the agri-culture sector coupled with the output growth of the secondary sector. Platinum exports within the mining sector have been boosted by strong price increases. Imports increased by 7.4% in response to stronger economic growth. However, while exports have grown significantly in the past decade, SA's share of global trade still remains small. The

share of SA exports in world trade, which initially rose from 0.25% in 1990 to a peak of 0.29% in 1995, has remained constant in recent years, suggesting that there is scope for diversification.

Regarding the composition of the export basket, SA's largest exports by value still remain gold and diamonds, although first-level beneficiated products are increasingly becoming significant. High growth rates of exports have also been reported in the last decade, although these exports have typically taken off from a low base.

There are a host of factors that influence export behaviour, both at micro, macro and firm level. In addition, the country's export profile has remained a paradox, with a marked shift towards a more capital-intensive export structure during the 1980s and early 1990s. Regarding the skills composition of exports, there is a low percentage of unskilled labour-intensive exports relative to the technology-intensive and human capital-intensive exports. Whereas the former accounts for less than 20% of total exports, the latter categories exceed 50% of total exports for most years. Agricultural and mineral resource-intensive exports were also important, making up approximately 40% of total exports, and correctly reflecting SA's natural resource endowment. In particular the role of unskilled labour-intensive and technology-intensive exports has risen, while the importance of resource-intensive and human capital-intensive exports has fallen.

Regarding imports, their structure is biased towards high-technology products, suggesting that SA behaves as a developing country in relation to the import market. Imports from rich countries largely fall within the technology and human capital-intensive sectors, although labour-intensive imports are also very high. Imports of human capital-intensive products from rich countries and the rest of the world have risen, reflecting the declining competitiveness of many of the knowledge-intensive industries in SA. During the same period, the share of agricultural resource-intensive imports fell from 44.4% to 17%.

APPENDIX 1: Conversion of Specific and Mixed Tariffs to *Ad Valorem* Tariffs

It was noted in Chapter 3 that although 24% of the HS8 commodity lines in the July 2000 schedule are of a specific or other nature they only represented about 4% of the value of imports over the year 2000. Nevertheless, from a point of identifying tariff peaks, it makes sense to try to convert these tariffs to ad valorem tariffs. This section first discusses the methods adopted to convert other tariffs to *ad valorem* tariffs, after which some results are shown.

Specific to *ad valorem* tariff conversion

The unit value of the relevant HS8 commodity lines for the period of observation are first calculated by dividing value of imports by volume of imports.

(1) $x_i = X_i / V_i$

in which x_i is the per unit value of HS8 commodity line i, X_i the total imports of the same commodity line and V_i the volume imported during the period of observation. By taking the ratio of the specific tariff of the relevant HS8 commodity line ($t_{i,spec}$) by its per-unit value, one arrives at the *ad valorem* equivalent ($t_{i,ave}$). This can be written as follows:

(2) $t_{i,ave} = t_{i,spec} / x_i = t_{i,spec} / (X_i / V_i)$

For example, if the value of imports is R20m and the volume is 5-million kg, the unit value is R4 per kg. If the specific tariff is 36 cents per kg, the *ad valorem* equivalent is 9% (= 36 / 400). Clearly, the *ad valorem* equivalent is dependent on the unit values. If by any chance an importer got a "good deal", paying, for example R3 per kg, the *ad valorem* equivalent of the specific rate of 36 cents per kg would rise to 12% (36/300). On the other hand, exchange rate devaluation would result in a decline in the *ad valorem* equivalent. For example, if the imported commodity is purchased in USDollar terms and the Rand/USDollar exchange rate devalues by 50%, the Rand unit value would become R6 per kg and the *ad valorem* equivalent would drop to 6% (= 36/ 600). An example of a variation to the specific tariff is "110c/kg less 80%", which can be approached in the same way as above.

Other tariffs to *ad valorem* tariff conversion

The *ad valorem* equivalent of a mixed specific/*ad valorem* tariff is difficult to establish, as it depends on the size of the shipment. There does not seem to be a single set of rules that can easily be applied. What is presented here is therefore rather arbitrary and certainly open for discussion and different options. For example, the *ad valorem* equivalent "22% or 30% with a maximum of 1000c/kg" could take two different tariffs that vary with the size of the shipment, as is shown in the next table - 22% and 30%. In this case, it is perhaps reasonable to argue that the relevant importers will try to ensure that the size of the shipment is such that the lowest rate applies. This approach also seems to be followed by the DTI negotiation team when simplifying the general applied schedule during the EU / SA FTA negotiations.

However, with a mixed rate such as "35% or 500c/2u"[24], one of two rates could be taken - the *ad valorem* equivalent of the specific rate 500c/2u and the *ad valorem* rate of 35%. If the *ad valorem* equivalent of the specific component happens to yield an equivalent rate of only 23%, while the *ad valorem* rate is 35%, one solution is to take the unweighted average of these two rates, which then results in an *ad valorem* equivalent of 29%. All in all, a number of conversions rules can be identified and are summarised in the following table.

Table A1: Rules for the selection of the appropriate *ad valorem* equivalent of specific, mixed and combined tariffs

	Condition	Rule
1	If imports are zero and the tariff is specific or the first component of the mixed tariff is specific	Accept "na" - not available
2	If imports are zero and the first component of the mixed tariff is *ad valorem*	Accept the *ad valorem* rate.
3	If the tariff is specific	Accept the *ad valorem* equivalent as calculated in equation (2)
4	If the first component of the mixed rate is *ad valorem* and this rate is smaller than the second *ad valorem* component or *ad valorem* equivalent of the second component	Accept the minimum rate (as with the EU / SA FTA schedule)
5	If the first component of the mixed rate is specific and this rate is smaller than the *ad valorem* equivalent of the second component	Accept the minimum rate
6	Else	Accept the simple average of the *ad valorem* and *ad valorem* equivalent rates

The last condition also occurs if the first component of the mixed rate is specific, and the second component is an *ad valorem* maximum rate and lower than the *ad valorem* equivalent of the first component. The results of the above conversion application are shown in Table A2. Note that the findings are reported in two sets of columns, so that each column appears twice. The original, specific or other tariff is presented in column 1, while column 2 shows the number of HS8 commodity lines with this tariff. In the third column, the value of imports under the relevant tariff is reflected. Note that this may or may not be an aggregation of multiple HS8 commodity lines (this can be verified in the second column). The duties collected for each tariff are shown in the next column, followed by the collection rate in column 5. The collection rate is defined as the ratio of the actual duties collected and the value of the imports.

Column 6 presents the weighted average of the *ad valorem* equivalent of the tariff shown in column 1, while the unweighted average *ad valorem* equivalent can be found in the last column. It can be seen that in one case, the unweighted ad valorem equivalent of the specific rate is as high as 73% (see row 153, although the weighted average is less than 20%) while there are also equivalent rates of 60% (see row 169) and in the high 50% (see rows 18, 105 and 157).

[24] Refers to footwear, 2u stands for 2 units or a pair.

Table A2: *Ad valorem* equivalents tariffs, July 2000 (imports and duties collected: year 2000, R'000)

	1	2	3	4	5	6	7		1	2	3	4	5	6	7
	Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average		Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average
1	0.091c/li	1	554	116	20.9%	0.0%	0.0%	88	22% or 30%, max 3840c/kg	14	670	135	20.1%	22.0%	22.0%
2	0.183c/li	3	50,573	231	0.5%	0.1%	0.1%	89	22% or 30%, max 690c/kg	21	9,150	1,430	15.6%	22.0%	22.0%
3	0.1c/li, max 8%	1	72,295	42	0.1%	4.0%	4.0%	90	22% or 30%, max 770c/kg	16	51,490	5,819	11.3%	22.0%	22.0%
4	0.44c/kg	2	1,694	0	0.0%	0.4%	0.2%	91	22% or 30%, max 775c/kg	47	9,923	1,971	19.9%	22.0%	22.0%
5	0.45c/kg	1	735	0	0.0%	0.0%	0.0%	92	22% or 30%, max 800c/kg	30	11,478	2,413	21.0%	22.0%	22.0%
6	0.55c/li, max 8%	2	6,250	4	0.1%	4.0%	4.1%	93	22% or 30%, max 820c/kg	46	13,867	2,244	16.2%	22.0%	22.0%
7	0.65c/kg	3	130,941	2,321	1.8%	0.5%	0.3%	94	22% or 30%, max 890c/kg	92	80,476	13,826	17.2%	22.0%	22.0%
8	0.85c/kg	2	7	0	0.1%	0.1%	0.1%	95	22% or 30%, max 900c/kg	1	112	33	29.4%	22.0%	22.0%
9	0.8c/kg	1	92	0	0.3%	0.3%	0.3%	96	22% or 30%, max 960c/kg	50	22,495	4,496	20.0%	22.0%	22.0%
10	0.99c/kg	1	1,277	1	0.1%	0.1%	0.1%	97	22% or 33%, max 1000c/kg	1	104	0	0.0%	22.0%	22.0%
11	1.1c/kg	1	1,312	4	0.3%	0.7%	0.7%	98	22% or 33%, max 1830c/kg	1	0	0	0.0%	0.0%	22.0%
12	1.8c/kg, max 15%	1	4,963	5	0.1%	7.6%	7.6%	99	22% or 33%, max 2880c/kg	2	81	12	15.3%	22.0%	22.0%
13	10% or 55c/kg less 90%	1	14	1	10.0%	5.8%	5.8%	100	22% or 33%, max 960c/kg	1	1,435	338	23.5%	22.0%	22.0%
14	100c/u	1	0	0	0.0%	0.0%	0.0%	101	22%, max 1700c/kg	1	2,584	388	15.0%	22.0%	22.0%
15	10c/kg	1	545	1	0.1%	0.1%	0.1%	102	22%, max 700c/kg	69	148,740	16,103	10.8%	22.0%	22.0%
16	110c/kg less 80%	1	829	0	0.0%	6.4%	6.4%	103	22%, max 910c/kg	3	905	127	14.0%	22.0%	22.0%
17	110c/kg net	1	17,289	6,919	40.0%	0.2%	0.2%	104	22.2c/kg	1	0	0	0.0%	0.0%	0.0%
18	118.9c/kg	4	12,383	6,372	51.5%	72.1%	58.9%	105	220c/kg	2	61,702	26,181	42.4%	76.8%	57.4%
19	11c/li	3	42,894	974	2.3%	2.8%	2.2%	106	23.1c/kg	1	2,216	1	0.1%	8.4%	8.4%
20	12.5c/kg	1	2,239	0	0.0%	5.6%	5.6%	107	25% or 150c/kg	6	35	0	0.0%	22.6%	3.8%
21	136c/li	7	89,864	49	0.1%	8.4%	6.3%	108	25% or 200c/kg	11	6,225	79	1.3%	21.7%	14.3%
22	15% or 860c/kg less 85%	2	293,122	2,142	0.7%	10.5%	10.5%	109	25% or 70c/kg	26	22,281	158	0.7%	19.8%	9.6%
23	15% plus 200c/u	3	0	0	0.0%	0.0%	0.0%	110	25% plus 1.04c/li	1	5,206	1,284	24.7%	25.2%	25.2%

	1	2	3	4	5	6	7		1	2	3	4	5	6	7
	Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average		Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average
24	15% plus 50c/u	2	0	0	0.0%	0.0%	0.0%	111	25.3c/kg	1	32	2	5.5%	0.4%	0.4%
25	15.103c/kg	2	213,883	13,865	6.5%	17.9%	14.3%	112	26.9c/kg	1	563,124	138,701	24.6%	34.2%	34.2%
26	150c/u	2	0	0	0.0%	0.0%	0.0%	113	3.3c/li	1	666	9	1.3%	0.5%	0.5%
27	154c/li	8	397,394	3,848	1.0%	5.6%	7.0%	114	3.6c/kg, max 25%	1	56	0	0.6%	12.8%	12.8%
28	16.5c/kg, max 25%	1	121	1	0.5%	12.8%	12.8%	115	30% or 4.5c/kg	3	3,514	709	20.2%	15.2%	15.2%
29	160c/kg	1	215,920	50	0.0%	18.9%	18.9%	116	30% or 500c/2u	6	221,600	39,767	17.9%	23.3%	25.3%
30	17c/kg	1	437	19	4.3%	4.3%	4.3%	117	30% or 7.25c/kg	2	617	185	30.0%	15.4%	7.7%
31	2.25c/kg	2	32	0	0.1%	0.1%	0.0%	118	317c/li of absolute alcohol	2	202	86	42.7%	43.1%	56.6%
32	2.4c/kg net	3	14,263	13	0.1%	0.1%	0.1%	119	325c/kg, max 39%	1	1,639	463	28.2%	39.0%	39.0%
33	2.75c/kg	8	8	0	0.0%	0.0%	0.0%	120	35% or 500c/2u	4	516,966	156,653	30.3%	29.3%	27.2%
34	20% or 215c/kg less 80%	1	805	161	20.0%	11.2%	11.2%	121	35c/no	1	0	0	1.1%	0.0%	0.0%
35	21.2c/kg	1	94	1	0.6%	2.9%	2.9%	122	3c/kg	2	1,983	8	0.4%	0.4%	0.9%
36	22% or 30%, max 1000c/kg	188	384,911	57,899	15.0%	22.0%	22.0%	123	4.15c/kg	7	41,794	501	1.2%	1.2%	1.0%
37	22% or 30%, max 1030c/kg	1	55	14	25.5%	22.0%	22.0%	124	4.36c/li	1	105,405	1,234	1.2%	0.4%	0.4%
38	22% or 30%, max 1040c/kg	62	91,057	15,970	17.5%	22.0%	22.0%	125	40% or 120c/u	3	291	76	26.2%	21.0%	20.8%
39	22% or 30%, max 1060c/kg	5	7,126	1,635	22.9%	22.0%	22.0%	126	40% or 60%, max 10700c/kg	2	993	510	51.3%	40.0%	40.0%
40	22% or 30%, max 1090c/kg	1	3	1	22.0%	22.0%	22.0%	127	40% or 60%, max 11520c/kg	2	8,400	2,556	30.4%	40.0%	40.0%
41	22% or 30%, max 1100c/kg	15	13,576	2,740	20.2%	22.0%	22.0%	128	40% or 60%, max 1630c/kg	1	4,142	911	22.0%	40.0%	40.0%
42	22% or 30%, max 1135c/kg	43	20,223	3,774	18.7%	22.0%	22.0%	129	40% or 60%, max 190c each	2	504	240	47.6%	40.0%	40.0%
43	22% or 30%, max 1145c/kg	4	5,698	1,454	25.5%	22.0%	22.0%	130	40% or 60%, max 190c/kg	1	15	6	40.1%	40.0%	40.0%
44	22% or 30%, max 1150c/kg	16	8,880	1,713	19.3%	22.0%	22.0%	131	40% or 60%, max 20500c/kg	1	15,603	7,146	45.8%	40.0%	40.0%
45	22% or 30%, max 1230c/kg	4	620	128	20.7%	22.0%	22.0%	132	40% or 60%, max 270c/pr	4	4,774	555	11.6%	40.0%	40.0%
46	22% or 30%, max 1280c/kg	70	198,401	32,367	16.3%	22.0%	22.0%	133	40% or 60%, max 3380c/kg	13	48,117	18,066	37.5%	40.0%	40.0%
47	22% or 30%, max 1300c/kg	15	15,181	2,893	19.1%	22.0%	22.0%	134	40% or 60%, max 3460c/kg	1	537	223	41.4%	40.0%	40.0%

	1	2	3	4	5	6	7		1	2	3	4	5	6	7
	Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average		Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average
48	22% or 30%, max 1320c/kg	8	41,686	7,539	18.1%	22.0%	22.0%	135	40% or 60%, max 3590c/kg	6	88,486	37,570	42.5%	40.0%	40.0%
49	22% or 30%, max 1330c/kg	1	465	24	5.2%	22.0%	22.0%	136	40% or 60%, max 4225c/kg	20	67,089	19,986	29.8%	40.0%	40.0%
50	22% or 30%, max 1410c/kg	51	63,414	11,545	18.2%	22.0%	22.0%	137	40% or 60%, max 4800c/kg	57	387,454	125,700	32.4%	40.0%	40.0%
51	22% or 30%, max 1430c/kg	2	38,843	7,353	18.9%	22.0%	22.0%	138	40% or 60%, max 5000c/kg	3	26,978	13,555	50.2%	40.0%	40.0%
52	22% or 30%, max 1500c/kg	1	18,523	4,887	26.4%	22.0%	22.0%	139	40% or 60%, max 5090c/kg	3	1,400	564	40.3%	40.0%	40.0%
53	22% or 30%, max 1540c/kg	5	35,541	6,916	19.5%	22.0%	22.0%	140	40% or 60%, max 5280c/kg	67	431,839	158,337	36.7%	40.0%	40.0%
54	22% or 30%, max 1550c/kg	1	777	128	16.5%	22.0%	22.0%	141	40% or 60%, max 5740c/kg	4	1,762	555	31.5%	40.0%	40.0%
55	22% or 30%, max 1555c/kg	15	65,424	12,575	19.2%	22.0%	22.0%	142	40% or 60%, max 5810c/kg	8	1,480	381	25.8%	40.0%	40.0%
56	22% or 30%, max 1600c/kg	3	1,430	322	22.5%	22.0%	22.0%	143	40% or 60%, max 6105c/kg	2	200	103	51.6%	40.0%	40.0%
57	22% or 30% max 1650c/kg	2	27,947	5,783	20.7%	22.0%	22.0%	144	40% or 60%, max 6865c/kg	7	40,418	14,475	35.8%	40.0%	40.0%
58	22% or 30%, max 1660c/kg	14	55,765	9,463	17.0%	22.0%	22.0%	145	40% or 60%, max 7180c/kg	7	492	222	45.1%	40.0%	40.0%
59	22% or 30%, max 1665c/kg	3	7,823	1,698	21.7%	22.0%	22.0%	146	40% or 60%, max 7500c/kg	3	3,518	1,006	28.6%	40.0%	40.0%
60	22% or 30%, max 1730c/kg	3	7,035	1,439	20.5%	22.0%	22.0%	147	40% or 60%, max 8000c/kg	2	79,816	23,779	29.8%	40.0%	40.0%
61	22% or 30%, max 1760c/kg	1	6,702	186	2.8%	22.0%	22.0%	148	40% or 60%, max 8160c/kg	3	358	157	43.9%	40.0%	40.0%
62	22% or 30%, max 1790c/kg	4	2,805	534	19.0%	22.0%	22.0%	149	40% or 60%, max 8975c/kg	1	182	79	43.3%	40.0%	40.0%
63	22% or 30%, max 1830c/kg	60	138,794	25,182	18.1%	22.0%	22.0%	150	40% or 60%, max 8980c/kg	21	14,007	5,119	36.6%	40.0%	40.0%
64	22% or 30%, max 1920c/kg	1	387	93	24.1%	22.0%	22.0%	151	40% or 60%, max 9700c/kg	5	27,475	12,734	46.4%	40.0%	40.0%
65	22% or 30%, max 1980c/kg	1	1,037	135	13.0%	22.0%	22.0%	152	40% or 60%, max 9780c/kg	4	2,460	1,141	46.4%	40.0%	40.0%
66	22% or 30%, max 2000c/kg	1	512	119	23.3%	22.0%	22.0%	153	40% plus 40.3c/kg	1	312	62	19.8%	73.0%	73.0%
67	22% or 30%, max 2020c/kg	95	157,549	30,569	19.4%	22.0%	22.0%	154	40%, max 3000c/kg	32	119,705	29,928	25.0%	40.0%	40.0%
68	22% or 30%, max 2080c/kg	1	843	84	10.0%	22.0%	22.0%	155	400c/kg	2	115,814	17,776	15.3%	50.4%	28.2%
69	22% or 30%, max 2160c/kg	20	18,810	3,874	20.6%	22.0%	22.0%	156	40c/kg	1	261,278	4,644	1.8%	20.5%	20.5%
70	22% or 30%, max 2240c/kg	1	906	62	6.8%	22.0%	22.0%	157	450c/kg	8	174,569	23,538	13.5%	44.4%	57.8%
71	22% or 30%, max 2296c/kg	1	549	107	19.5%	22.0%	22.0%	158	4c/kg	4	36,752	76	0.2%	0.2%	0.3%

	1	2	3	4	5	6	7		1	2	3	4	5	6	7
	Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average		Tariff	# lines	Imports	Duties Collected	Collection Rate	Weighted average	Unweighted average
73	22% or 30%, max 2350c/kg	14	12,136	1,464	12.1%	22.0%	22.0%	159	50.3c/kg	1	45	2	3.8%	3.8%	3.8%
74	22% or 30%, max 2355c/kg	2	579	124	21.4%	22.0%	22.0%	160	500c/kg	8	119,401	22,697	19.0%	35.7%	24.2%
75	22% or 30%, max 2380c/kg	48	22,403	1,390	6.2%	22.0%	22.0%	161	50c/no	1	8	0	0.0%	31.8%	31.8%
76	22% or 30%, max 2425c/kg	1	160	19	11.8%	22.0%	22.0%	162	55.5c/kg	1	9,075	1,218	13.4%	13.8%	13.8%
77	22% or 30%, max 2440c/kg	2	12,963	2,523	19.5%	22.0%	22.0%	163	56.7c/kg	1	4	0	4.4%	4.4%	4.4%
78	22% or 30%, max 2568c/kg	2	11,469	56	0.5%	22.0%	22.0%	164	57.7c/kg	1	275	18	6.7%	6.7%	6.7%
79	22% or 30%, max 2570c/kg	55	17,704	1,433	8.1%	22.0%	22.0%	165	5c/kg	7	98,483	125	0.1%	0.3%	0.4%
80	22% or 30%, max 2640c/kg	42	11,441	2,185	19.1%	22.0%	22.0%	166	5c/li	1	4,233	23	0.6%	0.6%	0.6%
81	22% or 30%, max 2690c/kg	16	2,624	490	18.7%	22.0%	22.0%	167	6.6c/kg, max 25%	1	113	1	0.5%	12.8%	12.8%
82	22% or 30%, max 2880c/kg	16	18,718	2,588	13.8%	22.0%	22.0%	168	60% or 2500c/kg	2	31,072	1,994	6.4%	60.0%	60.0%
83	22% or 30%, max 2960c/kg	15	5,690	933	16.4%	22.0%	22.0%	169	6c/kg	58	227,822	969	0.4%	0.5%	0.3%
84	22% or 30%, max 3070c/kg	5	6,006	1,399	23.3%	22.0%	22.0%	170	77c/kg	1	2,729	37	1.4%	22.1%	22.1%
85	22% or 30%, max 3170c/kg	31	1,698	200	11.8%	22.0%	22.0%	171	78c/kg	1	350	50	14.3%	25.3%	25.3%
86	22% or 30%, max 3200c/kg	1	7,607	298	3.9%	22.0%	22.0%	172	8c/kg	6	17,659	230	1.3%	1.5%	0.9%
87	22% or 30%, max 3425c/kg	4	7,660	669	8.7%	22.0%	22.0%	173	9.2c/kg	1	545	2	0.3%	0.4%	0.4%

Source: DTI

A consolidated view on the *ad valorem* equivalents of other than *ad valorem* tariffs is shown in Table A3. Note that the number of HS8 commodity lines with specific, mixed or compound tariffs amounts to almost 2,000, as can be seen in row 10. Most of the HS8 commodity lines for which *ad valorem* equivalents have been calculated fall in the 20% to 30% category (see row 3), followed by the *ad valorem* equivalent tariff band of 40% or more (see row 1) and the 0% to 5% band with about 6% of the HS8 commodity lines (see row 7).

Table A3: Consolidated tariff analysis of *ad valorem* equivalents of other than *ad valorem* tariffs of the July 2000 tariff schedule and associated imports for 2000 (current Rand values)

		# of HS8 lines	% of # of lines	Imports 2000	% Imports 2000
		1	2	3	4
1	tariff ≥ 40%	295	15.2%	1,706,893,493	22.6%
2	30% ≤ tariff < 40%	10	0.5%	711,692,907	9.4%
3	20% ≤ tariff < 30%	1,104	56.9%	3,139,638,416	41.5%
4	15% ≤ tariff < 20%	16	0.8%	228,638,743	3.0%
5	10% ≤ tariff < 15%	13	0.7%	219,918,439	2.9%
6	5% ≤ tariff < 10%	15	0.8%	575,691,938	7.6%
7	0% ≤ tariff < 5%	122	6.3%	984,213,102	13.0%
8	0%	3	0.2%	326	0.0%
9	Zero import lines for which no AVE is available	363	18.7%	0	0.0%
10	Total imports specific, etc	1,941	100.0%	7,566,687,364	100.0%

Source: DTI and own calculations; see Table A2

In terms of value of imports it can be seen in the second-last entry of the last row that during 2000 about R7.5bn imported by SA faced non-*ad valorem* duties. The distribution of the value of imports across the bands of *ad valorem* equivalents mirrors that of the number of HS8 commodity lines, albeit in a more compressed way. The *ad valorem* equivalent tariff band with the highest value of imports remains the 20% to 30% range, which accounts for almost 40% of the value of non-*ad valorem* imports during 2000, followed by the top band with about 20% and the bottom band with about 13%. A consolidation of the *ad valorem* and *ad valorem*-equivalent tariffs is shown in Table A4.

Table A4: Consolidated tariff analysis of *ad valorem* and *ad valorem*-equivalent tariff rates of the July 2000 tariff schedule and associated imports for 2000 (current Rand values)

		# of HS8 lines	% of # of lines	Imports 2000	% Imports 2000
		1	2	3	4
1	tariff ≥ 40%	354	4.5%	7,840,372,919	4.3%
2	30% ≤ tariff < 40%	170	2.2%	17,873,137,892	9.7%
3	20% ≤ tariff < 30%	1,742	22.3%	12,910,881,748	7.0%
4	15% ≤ tariff < 20%	547	7.0%	6,100,106,953	3.3%
5	10% ≤ tariff < 15%	532	6.8%	6,822,393,474	3.7%
6	5% ≤ tariff < 10%	366	4.7%	10,197,888,207	5.5%
7	0% ≤ tariff < 5%	125	1.6%	1,028,683,515	0.6%
8	0%	3,230	41.3%	121,357,372,605	65.9%
9	Zero import lines for which no AVE is available	758	9.7%	0	0.0%
10	Total imports specific, etc	7,824	100.0%	184,130,837,313	100.0%

Source: DTI and own calculations, see Tables A3 and 3.6

With specific, mixed and compound rates accounting for about 25% of the total number of HS8 commodity lines, the *ad valorem* equivalent conversion is expected to have a significant impact on the distribution of HS8 commodity lines across the broad bands that have been identified. The 20% to 30% band now accounts for more than 22% of the HS8 commodity lines, compared to almost 9% before the integration of the *ad valorem* equivalents. Similarly, the top band now represents about 4.5% compared to 1% before and the bottom band (0% to 5%) captures 122 lines (or 1.6%) compared to only five HS8 lines previously.

Given that the value of imports for 2000 associated with specific, mixed and compound rates only amounted to about 4% of the total imports over this period, the final distribution is not much affected, except for the top band, which now accounts for more than 4% compared to 3.5% before the application of the *ad valorem*-equivalent conversion, the 20% to 30% band with 7.0% compared with 5.4% and the 0% to 5% band with 0.6% compared to 0% respectively.

This appendix closes with a brief look at those HS8 commodity lines that have the highest *ad valorem*-equivalent tariffs. It can be seen that the highest *ad valorem* equivalents are recorded for processed food, in various stages, and textiles.

Table A5: HS8 lines with *ad valorem* equivalent tariffs of more than 40% (Imports in current Rand values) based on the July 2000 schedule and 2000 importss

	HS8 code	HS8 description (truncated at 90 characters)	Original rate	Average	Imports
1	04029100	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Milk and cream, concentrated or conta	450c/kg	127.7%	1,057
2	22071000	Beverages, spirits and vinegar. Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol or higher; ethyl alcohol and other spirits, d	317c/li of absolute alcohol	102.7%	71,414
3	04029900	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Milk and cream, concentrated or conta	450c/kg	97.2%	2,336,919
4	17019100	Sugars and sugar confectionery Cane or beet sugar and chemically pure sucrose, in solid form. - other : - containing added flavouring or colouring mat	118.9c/kg	86.3%	6,407,847
5	02071490	Meat and edible meat offal Meat and edible offal, of the poultry of heading no. 01.05, fresh, chilled or frozen - of fowls of the species gallus domes	220c/kg	77.6%	60,552,750
6	17011100	Sugars and sugar confectionery Cane or beet sugar and chemically pure sucrose, in solid form. - raw sugar not containing added flavouring or colouring	118.9c/kg	77.4%	2,474,582
7	11010000	Products of the milling industry; malt; starches; inulin; wheat gluten Wheat or meslin flour. - wheat or meslin flour.	40% plus 40.3c/kg	73.0%	312,330
8	04041000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Whey, whether or not concentrated or	450c/kg	62.7%	34,688,627
9	63090017	Other made up textile articles; sets; worn clothing and worn textile articles; rags Worn clothing and other worn articles. - other worn clothing	60% or 2500c/kg	60.0%	21,802,777
10	63090013	Other made up textile articles; sets; worn clothing and worn textile articles; rags Worn clothing and other worn articles. - worn overcoats, car-coat	60% or 2500c/kg	60.0%	9,269,262
11	09024000	Coffee, tea, mate and spices Tea, whether or not flavoured - other black tea (fermented) and other partly fermented tea	400c/kg	50.8%	114,951,583
12	04051000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Butter and other fats and oils derive	500c/kg	48.9%	53,655,921
13	04059000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Butter and other fats and oils derive	500c/kg	46.7%	2,226,166
14	17019900	Sugars and sugar confectionery Cane or beet sugar and chemically pure sucrose, in solid form. - other : - other	118.9c/kg	43.9%	3,133,051
15	04039000	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included Buttermilk, curdled milk and cream, y	450c/kg	42.6%	16,804,488
16	62034200	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace over	40% or 60%, max,5280c/kg	40.0%	118,382,492
17	62052000	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' shirts. - of cotton	40% or 60%, max,4800c/kg	40.0%	77,298,465
18	62034300	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace over	40% or 60%, max,5280c/kg	40.0%	54,171,377
19	61091000	Articles of apparel and clothing accessories, knitted or crocheted T-shirts, singlets and other vests, knitted or crocheted. - of cotton	40% or 60%, max,8000c/kg	40.0%	46,408,424
20	62053000	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' shirts. - of man-made fibres	40% or 60%, max,4800c/kg	40.0%	42,791,689
21	61113000	Articles of apparel and clothing accessories, knitted or crocheted Babies' garments and clothing accessories, knitted or crocheted. - of synthetic fi	40% or 60%, max,3590c/kg	40.0%	36,701,236
22	61099000	Articles of apparel and clothing accessories, knitted or crocheted T-shirts, singlets and other vests, knitted or crocheted. - of other textile mater	40% or 60%, max,8000c/kg	40.0%	33,407,384
23	62059000	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' shirts. - of other textile materials	40% or 60%, max,4800c/kg	40.0%	29,808,993
24	62046200	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' suits, ensembles, jackets blazers, dresses, skirts, divided s	40% or 60%, max,5280c/kg	40.0%	29,418,237
25	61112000	Articles of apparel and clothing accessories, knitted or crocheted Babies' garments and clothing accessories, knitted or crocheted. - of cotton	40% or 60%, max,3590c/kg	40.0%	26,617,426

	HS8 code	HS8 description (truncated at 90 characters)	Original rate	Average	Imports
26	62019300	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski- jac	40% or 60%, max,4225c/kg	40.0%	26,509,864
27	62069000	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' blouses, shirts and shirt-blouses. - of other textile materi	40% or 60%, max,4800c/kg	40.0%	25,999,340
28	62046300	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' suits, ensembles, jackets blazers, dresses, skirts, divided s	40% or 60%, max,5280c/kg	40.0%	23,010,361
29	61121200	Articles of apparel and clothing accessories, knitted or crocheted Track suits, ski suits and swimwear, knitted or crocheted. - track suits : - of syn	40% or 60%, max,5000c/kg	40.0%	22,461,178
30	61051000	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' shirts, knitted or crocheted. - of cotton	40% or 60%, max,4800c/kg	40.0%	22,312,073
31	62064000	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' blouses, shirts and shirt-blouses. - of man-made fibres	40% or 60%, max,4800c/kg	40.0%	22,280,553
32	62063000	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' blouses, shirts and shirt-blouses. - of cotton	40% or 60%, max,4800c/kg	40.0%	22,098,754
33	61103020	Articles of apparel and clothing accessories, knitted or crocheted Jerseys, pullovers, cardigans, waist- coats and similar articles, knitted or croche	40% or 60%, max,6865c/kg	40.0%	21,958,101
34	61052000	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' shirts, knitted or crocheted. - of man-made fibres	40% or 60%, max,4800c/kg	40.0%	20,601,373
35	62034900	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace over	40% or 60%, max,5280c/kg	40.0%	19,418,436
36	61143000	Articles of apparel and clothing accessories, knitted or crocheted Other garments, knitted or crocheted. - of man-made fibres	40% or 60%, max,4800c/kg	40.0%	19,364,670
37	61059000	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' shirts, knitted or crocheted. - of other textile materials	40% or 60%, max,4800c/kg	40.0%	18,201,813
38	63026090	Other made up textile articles; sets; worn clothing and worn textile articles; rags Bed linen, table linen, toilet linen and kitchen linen. - toilet l	40%, max,3000c/kg	40.0%	16,413,532
39	61082200	Articles of apparel and clothing accessories, knitted or crocheted Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas, neglig	40% or 60%, max,9700c/kg	40.0%	16,181,695
40	62121000	Articles of apparel and clothing accessories, not knitted or crocheted Brassieres, girdles, corsets, braces, suspenders, garters and similar articles	40% or 60%, max,20500c/kg	40.0%	15,603,091
41	63022100	Other made up textile articles; sets; worn clothing and worn textile articles; rags Bed linen, table linen, toilet linen and kitchen linen. - other be	40%, max,3000c/kg	40.0%	15,253,335
42	61034300	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls	40% or 60%, max,5280c/kg	40.0%	15,087,270
43	62029300	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-	40% or 60%, max,4225c/kg	40.0%	14,273,245
44	62011990	Articles of apparel and clothing accessories, not knitted or crocheted Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski- jac	40% or 60%, max,3380c/kg	40.0%	13,222,881
45	61031900	Articles of apparel and clothing accessories, knitted or crocheted Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls	40% or 60%, max,5280c/kg	40.0%	13,021,944
46	62093000	Articles of apparel and clothing accessories, not knitted or crocheted Babies' garments and clothing accessories. - of synthetic fibres	40% or 60%, max,3590c/kg	40.0%	12,441,745
47	63023200	Other made up textile articles; sets; worn clothing and worn textile articles; rags Bed linen, table linen, toilet linen and kitchen linen. - other be	40%, max,3000c/kg	40.0%	12,078,463
48	62113390	Articles of apparel and clothing accessories, not knitted or crocheted Track suits, ski suits and swimwear; other garments. - other garments, men's or	40% or 60%, max,4800c/kg	40.0%	11,753,381
49	62044300	Articles of apparel and clothing accessories, not knitted or crocheted Women's or girls' suits, ensembles, jackets blazers, dresses, skirts, divided s	40% or 60%, max,5280c/kg	40.0%	11,328,593
50	61142000	Articles of apparel and clothing accessories, knitted or crocheted Other garments, knitted or crocheted. - of cotton	40% or 60%, max,4800c/kg	40.0%	10,843,561

Source: DTI and own calculations

APPENDIX 2: THEORETICAL OVERVIEW OF WELFARE ANALYSIS

Much of the welfare gains or losses arising from the imposition of a tariff depend on the elasticity of export supply. The more inelastic the export supply, the greater the potential gains. In this section we continue with an exposition of the application of the above theory to SA circumstances. For expositional purposes we turn the situation around and consider the elimination of tariffs.

From basic theory on the welfare gains and losses of tariff changes, the imposition of a tariff on an imported commodity has a number of welfare implications on the following economic actors:

- Consumers;
- Government; and
- International producers.

The welfare effect is further dependent upon:

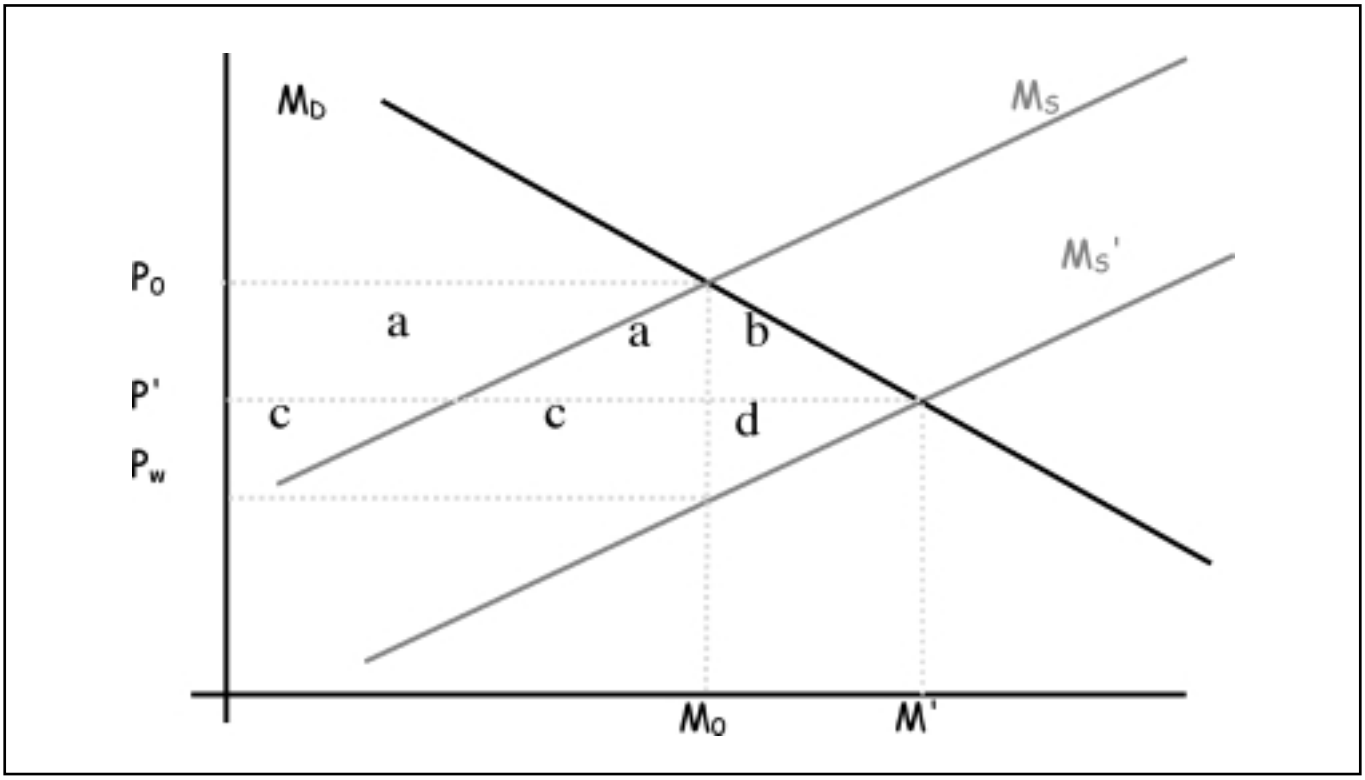
- The size of the home country;
- The responsiveness of foreign suppliers (as reflected in the import supply curve); and
- The responsiveness of domestic consumers to changes in the price of the commodity.

Much of the welfare gains or losses arising from the imposition of a tariff depend upon the elasticity of supply. The more inelastic the supply, the greater the potential gains from a tariff reduction or elimination. This analysis can be extrapolated to SA circumstances to illustrate the impact of the elimination of tariffs. We assume the following set of circumstances:

- A downward sloping import demand curve *MD* ; and
- For reasons of convenience, an upward sloping import supply curve *MS*.

Since SA accounts for less than 1% of imports from the rest of the world, it is unlikely to face upward sloping foreign export supply curves. Nevertheless, as a starting point of this exposition, an upward sloping supply curve is used to create a generic template in which demand and supply elasticities can be changed to any level.

Figure A1: Gains and losses of a tariff reduction with upward sloping import supply curve (large country)



From the above figure it can be seen that demand and supply of imports are in equilibrium at price P_0 and quantity M_0. The equilibrium is reached given a tariff t such that

(1) $$P_0 = P_w(1+t)$$

After the tariff is eliminated, imports will increase to *M'* at a new world price *P'*. The new world price *P'* only differs from P_W if there is a positively sloped import supply curve (referred to as foreign export supply curve above). Making the small country assumption, the import supply curve will flatten out as the supply elasticity approaches infinity and *P'* will converge on P_W.

To determine the welfare gains and losses, it is necessary to include in the calculations an initial value for the current imports, M_0, the tariff t and some estimates for the import demand and import supply elasticities, ε_D and ε_S respectively. Elasticities, which indicate responsiveness of demand and supply to price changes, can easily be converted into the slopes of the demand and supply curves according to the following relationships consistent with the notation of the above figure.

(2a) $$\varepsilon_D = \frac{\Delta M_D / M_D}{\Delta P / P_0} = \frac{\Delta M_D}{\Delta P}\frac{P_0}{M_D} = \alpha \frac{P_0}{M_D} \Leftrightarrow \alpha = \varepsilon_D \frac{M_D}{P_0} = \varepsilon_D \frac{M_0}{P_w(1+t)}$$ (Note $\varepsilon_D < 0$ and $\varepsilon_S > 0$)

(2b) $$\varepsilon_S = \frac{\Delta M_S / M_S}{\Delta P / P_w} = \frac{\Delta M_S}{\Delta P}\frac{P_w}{M_S} = \beta \frac{P_w}{M_S} \Leftrightarrow \beta = \varepsilon_S \frac{M_S}{P_w} = \varepsilon_S \frac{M_0}{P_w}$$

α and β are thus the slopes of the import demand and supply functions respectively. Given the co-ordinates of Figure A1, the slopes of the import demand and supply functions can be approximated as follows:

(3a) $$\alpha = \frac{M' - M_0}{P' - P_0} \Leftrightarrow M' - M_0 = \alpha(P' - P_0) = \alpha[P' - P_w(1+t)]$$

(3b) $$\beta = \frac{M' - M_0}{P' - P_w} \Leftrightarrow M' - M_0 = \beta(P' - P_w)$$

We can now solve for the new equilibrium price *P'*

(4) $$\alpha[P' - P_w(1+t)] = \beta(P' - P_w) <=> (\alpha - \beta)P' = \alpha P_w(1+t) - \beta P_w$$

If we scale output such that $P_W = 1$, this reduces further to

$$(\beta - \alpha)P' = \beta - [\alpha(1+t)] <=> P' = \frac{\beta - \alpha - \alpha t}{\beta - \alpha} <=> P' = 1 - \frac{\alpha t}{\beta - \alpha}$$

It can now be seen that if β approaches infinity, i.e., if the elasticity of import supply is very high as would be expected for a small economy like SA, *P'* approaches the P_W. Substituting the results of equation (4) into equation (3a) returns the equilibrium quantity of imports *M'*

(5) $$M' = M_0 - (P_0 - P')\alpha$$

Using equations (1) to (5) we can now express areas a to d in terms of our known variables P_0, M_0, *t*, ε_S and ε_D.

From Figure A1 area a can be calculated as

(6) $$a = (P_0 - P')M_0$$

Substituting equation (4) for *P'* , the following equation can be written and simplified

$$a = \left[P_0 - \left(1 - \frac{\alpha t}{\beta - \alpha}\right)\right] M_0 = \left[(1+t) - 1 + \frac{\alpha t}{\beta - \alpha}\right] M_0 = \left[\frac{\beta t}{\beta - \alpha}\right] M_0 = \left[\frac{\varepsilon_S \frac{M_0}{P_w} t}{\varepsilon_S \frac{M_0}{P_w} - \varepsilon_D \frac{M_0}{P_w(1+t)}}\right] M_0 = \left[\frac{\varepsilon_S t}{\varepsilon_S - \frac{\varepsilon_D}{(1+t)}}\right] M_0$$

Note that in the last step M_0 is substituted out and $P_W = 1$. Moreover, in terms of known variables, only *t*, M_0 and the elasticities are known. P_0, cannot be seen, but by assuming $P_W = 1$ the problem is solved. Imports have essentially been re-scaled imports such that each unit is exactly equal to R1 at world prices. From Figure A1 area *b* can be calculated as

$$b = (P_0 - P')(M' - M_0)/2 \tag{7}$$

Substituting equation (5) for *M'* we can write

$$b = -(P_0 - P')^2 \alpha / 2$$

In calculating *a* it was shown that

$$P_0 - P' = \frac{\varepsilon_S t}{\varepsilon_S - \varepsilon_D/(1+t)}$$

Letting $P_W = 1$ and substituting $P_0 - P'$ and eqn (2a), b can be written as

$$b = \frac{1}{2} \varepsilon_D \frac{M_0}{(1+t)} \left[\frac{\varepsilon_S t}{\varepsilon_S - \varepsilon_D/(1+t)}\right]^2$$

From the above equation it can be seen that the dead weight loss b to consumers is proportional to the square of the tariff rate. The losses arising from the imposition of a tariff thus increase at an exponential rate.

Turning now to *c*, this area in Figure A1 can be calculated as

$$c = (P' - P_w) M_0 \tag{8}$$

By again letting $P_W = 1$ and substituting equation (4) for *P'* we can write:

$$c = -\frac{\varepsilon_D \frac{M_0}{P_w(1+t)} t}{\varepsilon_S \frac{M_0}{P_w} - \varepsilon_D \frac{M_0}{P_w(1+t)}} M_0 = -\left[\frac{\frac{\varepsilon_D t}{(1+t)}}{\varepsilon_S - \frac{\varepsilon_D}{(1+t)}}\right] M_0$$

It can now be seen that if the elasticity of import supply approaches infinity, c is reduced to zero and the change in the producer's welfare due to lower world market prices becomes negligible. Finally, *d* in Figure A1 can be calculated as

(9) $$d = (P' - P_w)(M' - M_0)/2$$

Using equation (5) this becomes

$$d = -(P' - P_w)(P_0 - P')\alpha/2$$

Substituting $P'-P_W$ and P_0-P' derived when calculating a and c

$$d = \frac{1}{2}\left[\frac{\varepsilon_S t}{\varepsilon_S - \frac{\varepsilon_D}{(1+t)}}\right]\left[\frac{\frac{\varepsilon_D t}{(1+t)}}{\varepsilon_S - \frac{\varepsilon_D}{(1+t)}}\right]\frac{\varepsilon_D M_0}{(1+t)}$$

which reduces to

$$d = \frac{1}{2}\left[\frac{\frac{\varepsilon_S \varepsilon_D{}^2 t^2}{(1+t)^2}}{\left(\varepsilon_S - \frac{\varepsilon_D}{(1+t)}\right)^2}\right]M_0$$

As mentioned above, welfare loss of foreign producers becomes negligible if the supply elasticity ε_S is very large.

APPENDIX 3: GEOGRAPHICAL MARKET POSITIONING BY COMMODITY, PERCENTAGE SHARE

Rising stars	Rich 1990-92	1990-94	1994-96	1996-98	SADC 1990-92	1990-94	1994-96	1996-98	ROW 1990-92	1990-94	1994-96	1996-98
Agriculture intensive	22.1	10.9	20.1	0.0	25.9	3.8	15.5	0.0	23.0	24.2	15.1	0.0
Mineral intensive	3.0	0.0	52.8	0.0	2.5	2.0	25.4	0.0	2.6	1.6	64.0	0.0
Unskilled labour intensive	35.2	17.0	1.1	60.7	30.1	9.3	4.3	48.2	42.7	4.2	1.1	56.6
Technology intensive	25.6	64.2	17.3	31.0	29.3	43.9	42.9	25.0	17.3	55.3	15.3	28.8
Human capital intensive	14.0	7.9	8.8	8.3	12.2	41.1	11.9	26.8	14.4	14.7	4.6	14.7
Falling stars	**Rich**				**SADC**				**ROW**			
Agriculture intensive	22.6	18.8	11.5	20.2	11.6	14.6	9.5	34.7	12.8	25.0	9.9	36.2
Mineral intensive	3.6	15.2	5.6	2.7	22.6	19.1	4.2	3.7	10.1	23.7	6.1	1.9
Unskilled labour intensive	1.5	13.0	47.7	0.3	0.8	16.6	43.8	0.7	17.6	9.4	35.2	0.4
Technology intensive	72.4	47.2	16.7	15.8	65.0	36.3	25.2	29.7	59.5	37.9	24.9	12.3
Human capital intensive	0.0	5.9	18.5	60.9	0.0	13.5	17.3	31.2	0.0	4.1	23.9	49.2
Leading retreat	**Rich**				**SADC**				**ROW**			
Agriculture intensive	0.7	38.7	22.3	19.1	0.3	31.4	27.6	a20.3	0.0	45.5	25.2	10.8
Mineral intensive	37.5	29.7	0.0	36.4	24.4	10.8	0.7	24.5	17.6	29.7	0.4	41.7
Unskilled labour intensive	1.2	31.4	7.0	8.5	3.8	55.5	13.1	4.6	0.9	24.7	3.2	5.3
Technology intensive	3.1	0.0	28.1	35.2	19.8	0.0	25.7	43.9	0.9	0.0	21.0	40.3
Human capital intensive	57.5	0.2	42.6	0.9	51.7	2.4	32.9	6.8	80.5	0.2	50.2	1.8
Lagging retreat	**Rich**				**SADC**				**ROW**			
Agriculture intensive	59.8	a20.7	0.0	0.1	65.6	32.8	0.0	10.9	73.0	55.8	0.0	15.7
Mineral intensive	7.2	0.0	0.0	99.9	8.9	0.0	0.0	89.1	1.0	0.0	0.0	84.3
Unskilled labour intensive	33.0	79.3	100.0	0.0	25.5	67.2	100.0	0.0	25.9	44.2	100.0	0.0
Technology intensive	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Human capital intensive	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost opportunity	**Rich**				**SADC**				**ROW**			
Agriculture intensive	4.9	0.7	2.9	53.7	3.4	9.8	26.2	33.8	9.0	1.8	19.0	19.9
Mineral intensive	0.7	0.2	22.7	0.0	6.7	1.8	9.6	0.0	4.3	0.3	8.0	0.0
Unskilled labour intensive	31.0	3.6	0.0	10.4	32.2	11.1	0.0	19.7	24.7	1.6	0.0	9.2
Technology intensive	29.8	9.6	71.4	4.6	20.6	36.0	48.0	8.2	20.1	7.9	58.6	6.7
Human capital intensive	33.5	85.9	3.0	31.3	37.2	41.3	16.2	38.3	42.0	88.5	14.4	64.2
Lagging opportunity	**Rich**				**SADC**				**ROW**			
Agriculture intensive	0.0	74.0	0.0	0.0	0.0	85.0	0.0	0.0	0.0	95.6	0.0	0.0
Mineral intensive	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unskilled labour intensive	87.1	0.0	0.0	66.3	61.9	0.0	0.0	39.7	76.1	0.0	0.0	25.5
Technology intensive	0.0	0.0	100.0	11.3	0.0	0.0	100.0	33.6	0.0	0.0	100.0	17.9
Human capital intensive	12.9	26.0	0.0	22.4	38.1	15.0	0.0	26.8	23.9	4.4	0.0	56.5

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