Chapter 11

South Africa

by

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1.   Introduction

South Africa has managed to dramatically reinsert its economy back into the world trade environment in the mid 1990s following a long period of internal political difficulties and international reactions to the apartheid regime. Since the early 1990s South African governments have faced major economic policy challenges to change the institutional structure of the economy and adapt the trade policy regime to the new agenda and structures.

South Africa's re-entry into the global trade architecture can be visualised quantitatively by a network index of the country's role in the architecture of world trade in goods (see Chapter 1 for details). The index measures the likelihood that South Africa is involved in a randomly selected trade chain in the network of 217 countries that comprise the dataset. An intuitive explanation of this centrality measure is as follows. Let us assume that a node (South Africa) sends a message to a target node (say, Japan). The message is transmitted initially to a neighbouring node and then the message follows links from that node, chosen randomly, and continues until it reaches the target node. The probabilities assigned to outgoing links are determined by the intensity of the relationship (value of trade), so that links representing higher trade value will be chosen with higher probability. A high index for South Africa means that the likelihood it is a part of any given trade chain present within the network is high and therefore it has access to a higher proportion of shorter links to send a 'message' to any other potential country in the world trade network. Furthermore, a high proportion of 'messages' sent by other countries to all other countries will go through South Africa. The index thus reflects the trade connectivity (value and number of bilateral trade relationships) of a country and its partners, and its partners' partners, encompassing the whole trade chain. In other words, it captures the influence of South Africa across the whole lengths of all trade chains. The centrality index is expressed in percent (ile) form – in other words ranked against the other 216 countries in the analysis (see Reyes, Garcia and Lattimore, 2008 for details).

Figure 11.1 illustrates the relative importance of South Africa and some other larger emerging economies in the architecture of world trade via the country's degree of centrality in the world trade network in merchandise goods over the period 1980-2005. The decline in South Africa's trade centrality is clear during the 1980s as the trade embargoes took effect. The economy was deep in the "outer periphery" of the world network at this time (below the 85th percentile). Then from the early 1990s, the centrality index rose dramatically with the lifting of the trade sanctions, climbing into the inner periphery within five years (between the 90th and 95th percentiles). The trade economy has remained in this position ever since. Indeed, its centrality may have deteriorated slightly since 1995. This plateauing effect since 1995 contrasts with the performance of China, Russia and India whose indices continued to rise after 1995. China's performance has been outstanding and it is now a member of elite traders in the core of the network (above the 95th percentile). India too is approaching a core position.

Chapter 1 also shows this centrality index (and a number of other indices) for South Africa for four sub-groups of traded products – raw materials, intermediate goods, capital goods and consumer products. The network indices for these disaggregated products mirror the slight deterioration for total trade discussed above with some differences. The centrality index for raw materials falls from 1995 to 2000 and then again to 2005. This is somewhat surprising given South Africa's endowments in valuable

mineral resources. The index for intermediate goods trade also deteriorates from 1995 to 2000. However, it subsequently stabilises at this level. South Africa's centrality in global capital goods and consumer goods markets increases from 1995 to 2000 – again somewhat surprising given the strength of the minerals sector. However, even these later two categories have relatively low indices in 2005 which is consistent with the pattern for total goods trade.

This plateauing performance of South Africa in trade centrality terms could mean that there has been some stagnation in international market development relative to other countries. One can't be too emphatic about that, however, because the plateauing may result from a lesser need for South Africa to develop a higher range of trade links, given its pattern of comparative advantages, than China requires in its circumstances. Without further information we cannot distinguish between the two possibilities.

Figure 11.1. Striding towards the core of the trade network

Evolution of BRIICS centrality indices (1980 -2005)
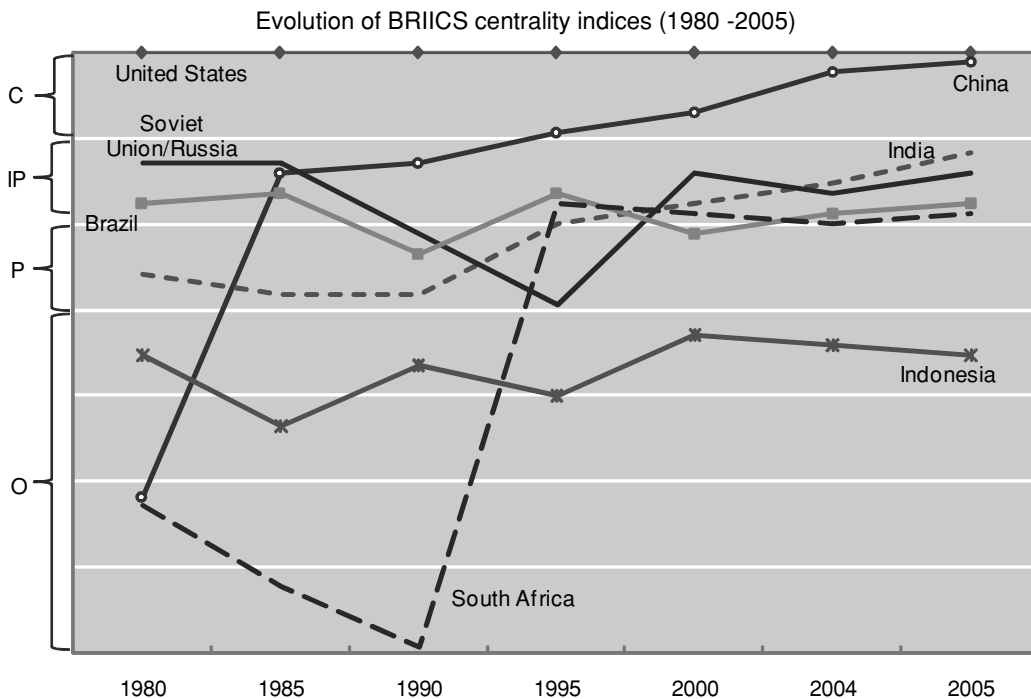
Note: Core countries are defined as in or above the 95th percentile of the Random Walk. Between Centrality index, inner periphery 90-94th percentile, periphery countries 85-89th percentile and outer periphery countries below the 80th percentile.

Source: Chapter 1.

Nevertheless, several other indicators considered in the remainder of this report suggest that this may be related to the process of liberalisation that has largely stalled or backed up in recent years. The decline in average tariff and duties collected, for example, seems to have stopped or even have been reversed since 2000 as a result of increasing duties on consumer and, to a lesser extent, intermediate products and raw materials. There are some signs that this is related to slow progress in ongoing multilateral trade negotiations, growing number of preferential trading agreements and the emerging industrial policy strategy, which seems to call for maintaining relatively high effective rates of protection on certain sectors.

It might be tentatively concluded that South Africa's trade performance received a very strong initial boost relative to other countries following the removal of the trade sanctions but that the trade sector has not been able to keep up with developments in other countries since 1995 – especially in raw materials and intermediate goods.

The renewed openness to trade since the mid-1990s provided South Africa with an opportunity to gain from the world trading environment but it did not provide guarantees of gains from trade. The gains from trade arise from creating a competitive tradeable sector that responds to changes in world demand patterns and the world architecture of global supply chains.

Table 11.1. Selected economic and geographical indicators

	China	India	South Africa	Germany	Japan	US
Agricultural land (000' sq. km) in 2003	5 563	1 802	996	170	47	4 148
Arable land (hectares, mln) in 2003	143	160	15	12	4	174
Population, total (mln)	1 312	1 110	47	82	128	299
Birth rate, crude (per 1,000 people)	12	24	23	8	9	14
Death rate, crude (per 1,000 people)	7	8	21	10	9	8
GDP (current US$ bln)	2 645	912	255	2 897	4 368	13 164
GDP per capita, PPP (constant 2005 international $)	4 501	2 393	8 807	31 324	30 961	42 610
GINI index	47	37	58	28	n/a	41
Goods exports (BoP, current US$ bln)	970	124	64	1 131	616	1 027
Goods imports (BoP, current US$ bln)	752	167	70	934	535	1 861
Service exports (BoP, current US$ bln)	92	75	12	173	117	419
Service imports (BoP, current US$ bln)	101	64	14	215	136	343
Distance from Belgium (in km)	7 971	6 420	9 536	-	9 463	5 892
Distance from US (in km)	10 994	11 762	12 582	6 035	10 856	-
Distance from Japan (in km)	2 098	5 848	14 746	9 298	-	10 856

Source: WDI, CEPII and authors' calculations.

Over a longer historical perspective, South Africa has developed from its status as a colony based on its resource endowments in agricultural land and mineral resources. In this respect South Africa has endowment ratios in physical resources that have similarities with Canada, Russia, Brazil, the US and Australia. The current endowment of agricultural land is two hectares per head of population (Table 11.1). This is nearly 50% more than the US, five times the ratio in China and ten times that of Germany.[1] For this reason South Africa developed a comparative advantage in agriculture from earliest times. The relative importance of trade in agricultural products changed, however, with the discovery of South Africa's large endowments in precious stones and metals. These mineral endowments make South Africa more like Canada and Russia in terms of mineral deposits but with agricultural land more like Australia's climatic zone.

South Africa's endowments in particular mineral resources have provided a major starting platform in tradeables for over a century. There is a long literature that has been concerned with the long term growth prospects of natural resource based exporters. Recent empirical work in this area has been conducted by Lederman and Maloney (2007). They have surveyed a number of natural resource based exporters and conclude that "natural resources are neither curse nor destiny". A natural resource base certainly provides a platform for growth but the destiny of a resource rich country, in developmental

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[1]   South Africa's endowments in arable land are only half that of the US in per capita terms, Table 1.1. Accordingly, it is not surprising that South African agriculture has tended to concentrate arable land use in high valued crops like grapes, fruit and nuts and relatively less in broad acre crops (like cereals) where the US specializes. Non-arable agricultural land is then devoted to sheep and cattle farming in addition to wildlife tourism and conservation purposes.

terms, usually requires major parallel investments in human and physical capital. The composition of South Africa's trade reflects these developments in education, social services and research and development and the concomitant broadening in comparative advantages over many years. As outlined in the recent review of the South African economy (OECD, 2008), the major challenges facing South Africa are to improve investments in these areas of human capital and infrastructure in the new political environment.

In the reminder of this report Section 2 deals with South Africa's recent economic growth in the context of its trade performance. Section 3 takes a closer look at the composition and performance of South Africa's exports at a product and sector level. Section 4 presents a discussion of the main historical and recent trade policy developments. Section 5 provides an econometric assessment of the impact of South Africa's trade liberalisation in period 1988-2003 on labour and total factor productivity across its industrial sectors.

2. South Africa's economic growth

2.1 GDP growth 1994-2002 and 2003-2007

With average annual real GDP growth of close to 5% since 2004, South Africa's economic performance has been distinguishably stronger than in the immediate post-apartheid period 1994-2003 (average real GDP growth of approximately 3% *per annum*, see Figure 11.2). Yet, the recent growth rates are not unprecedented in South Africa's history even if compared with the import substitution period of 1960s and 1970s. Most recently real GDP growth has reached 5.1% in 2007 and is estimated to have amounted to 4.2% in the first half of 2008, a growth rate at which income almost doubles over a 15 year period. The per capita income which is already high by BRIICS standards has also been increasing as was the total number of people in employment.

Figure 11.2. South Africa's GDP growth

moving five-year average of annual growth rates
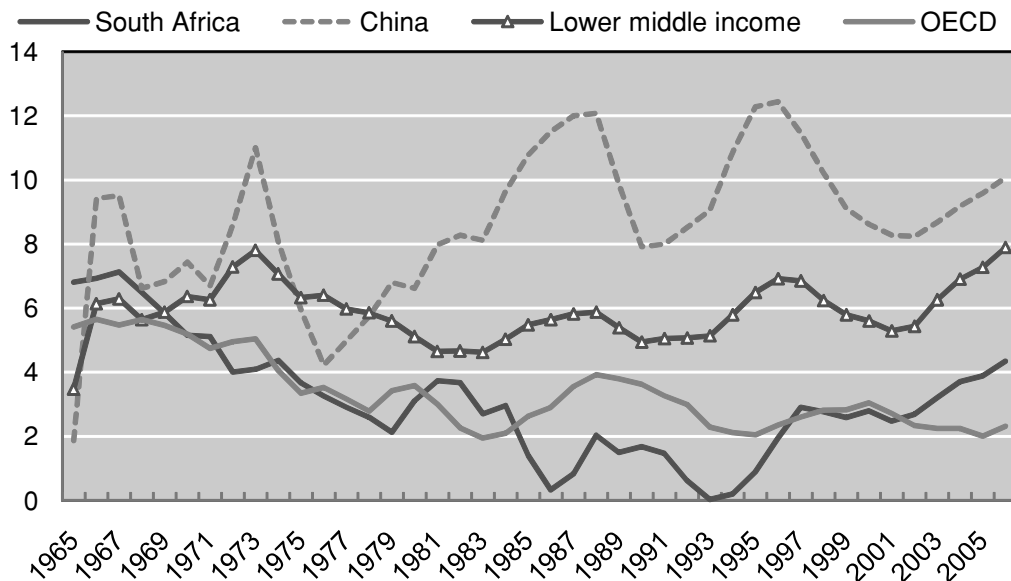
Source: WDI.

The employment rate has been lingering around a very low 42%-43% in the 1994-2006 period which meant that the growth was generated by less than half of the working age population. Such a low and persistent employment rate indicates that the benefits of recent growth have not been shared as widely as they might have been and that labour market performance represents one of the most essential and daunting challenges for South Africa.

South Africa's growth rates have been higher than the average growth rates for the OECD area and the world economy since 2000 but remain lower than those for the lower middle income countries, not to mention rapidly emerging economies such as China or other BRIICS countries (Brazil is an exception, Figure 11.3).

**Figure 11.3. Average real GDP growth rates**
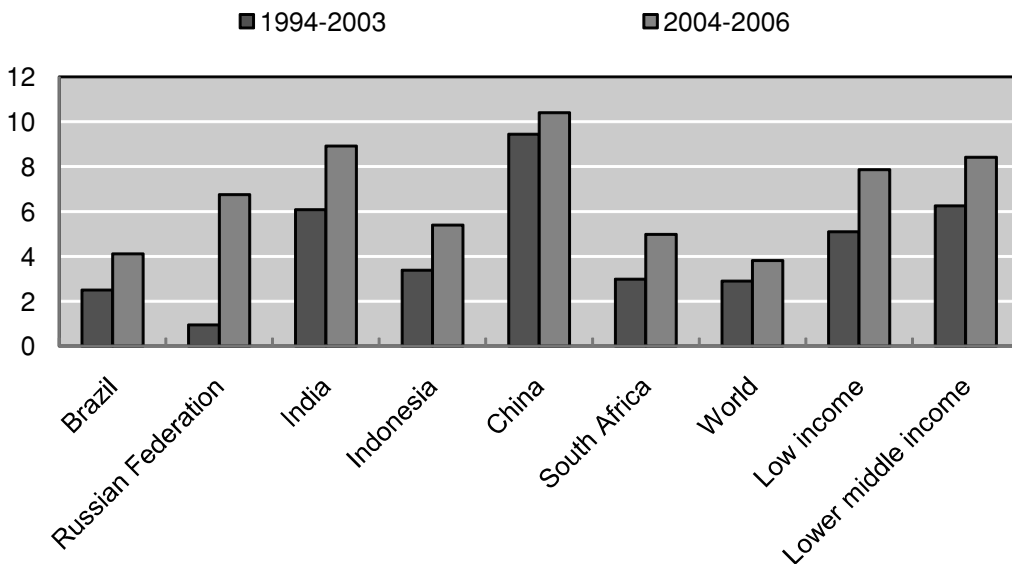
Source: WDI.

The expansion of South Africa's share of world GDP over the period 2003-2006, if sustained, could mark a break from a downward trend that has been observed since the beginning of 1980s. Interestingly, this coincided with an increase in South Africa's share of the value of world exports of goods and services, and services in particular (Figure 11.4). It is argued in OECD (2008) that the increase in South African share of world exports was more of a price effect and that the world market share in volume terms has continued to decrease through 2006. Indeed, South Africa's terms of trade improved considerably over the 2000-2007 period, Figure 11.5, and the prices of exports have been growing more dynamically than export volumes reflecting to a significant extent rising prices of platinum, gold and iron ore, Figure 11.6. Yet, the concurrent expansion of South Africa's share of world services exports signals that there may be more to the pick-up in South Africa's trade since 2003 than the rising precious metals prices.

With 66% of 2006 value added generated within the services sectors, 31% in industry and 3% in agriculture the structure of South Africa's economy resembles that of a developed economy more than any other of the BRIICS and is somewhere in between the structure of a typical high income and an upper middle income country, Figure 11.7. Indeed, since the end of the apartheid era the GDP shares of the agricultural and industrial sectors have decreased further from 5% to 3% and from 35% to 31%,

respectively. The share of services has increased from 60% to 66%, Figure 11.8. Annual growth rates of agricultural value added have been very volatile over the 1994-2006 period ranging from -11% to 20% and averaging -0.4% over the 1994-2006 period. With the exception of the 2000-2002 period the growth rates of services value added (4.3% average annual growth) have outstripped those of the industrial sector (2.4% average annual growth).

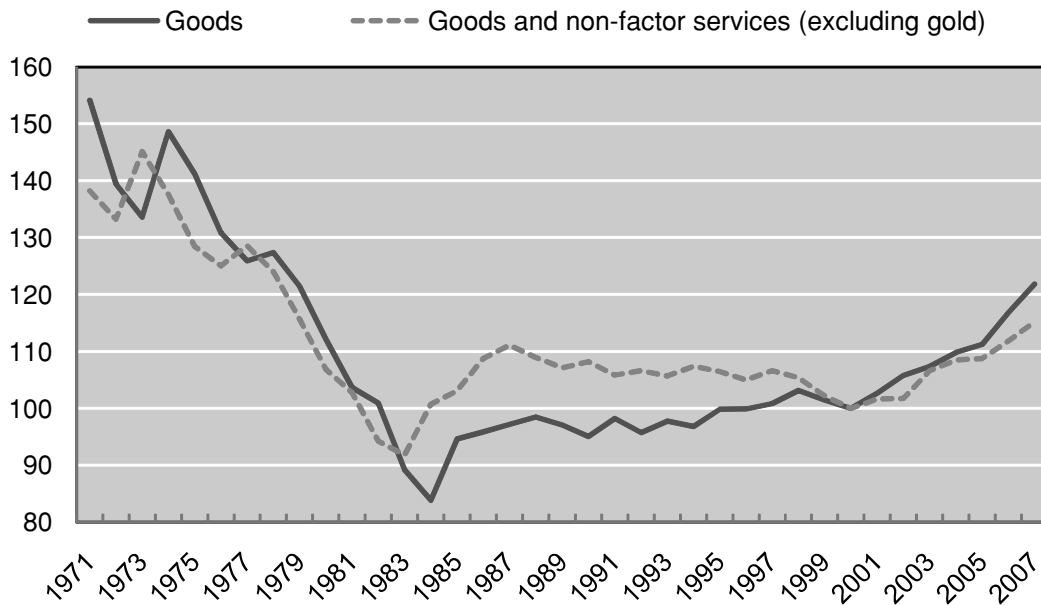**Figure 11.4. Share of goods and services in world trade**
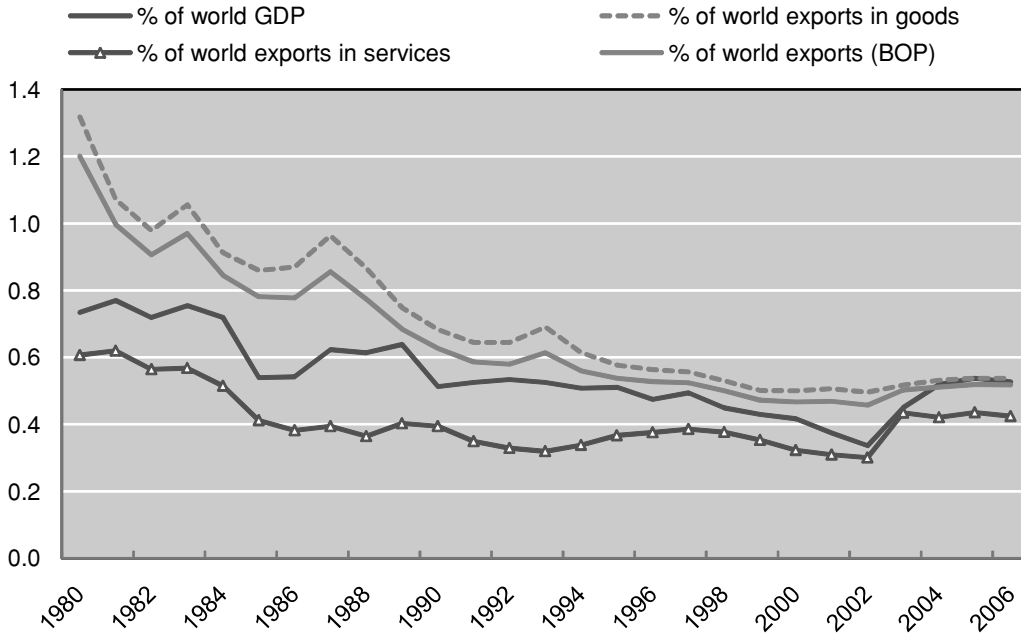
Source: WDI.

Figure 11.5. Terms of trade

2000=100

Source: WDI.

Figure 11.6. Volume and prices of exports of goods and non-factor services

2000=100
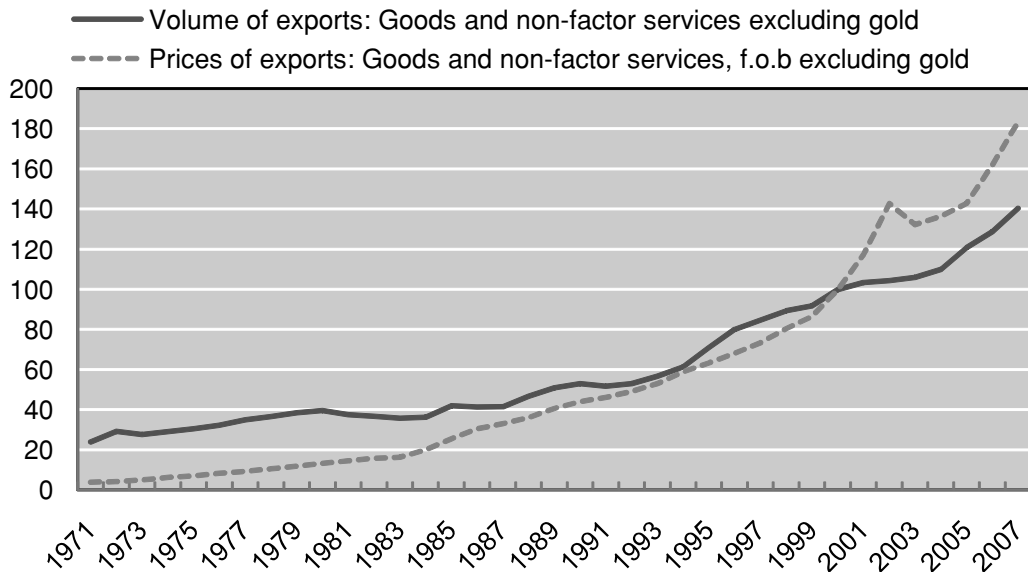
Source: SARB.

Figure 11.7. Average contribution to value added, by sector (% of GDP)
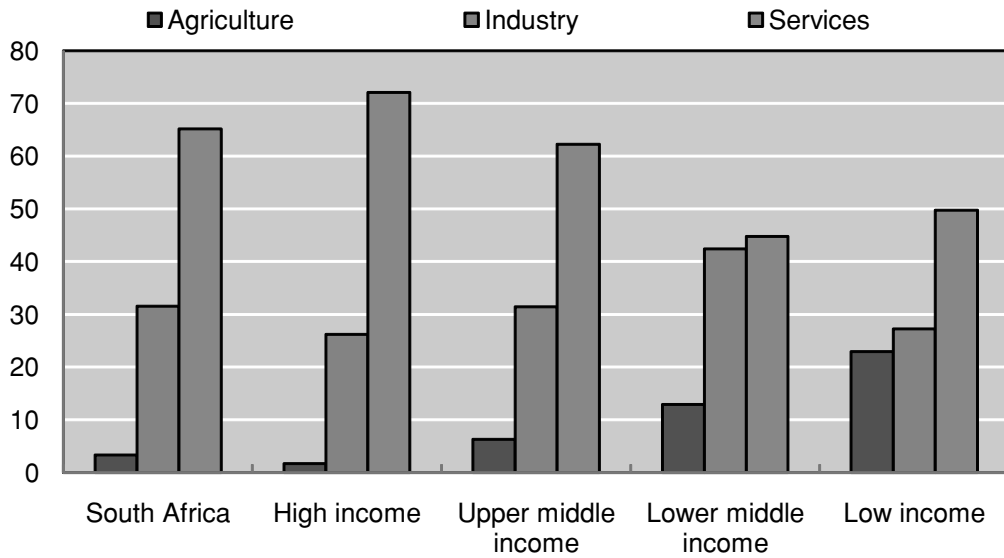
Source: WDI.

Figure 11.8. South Africa: contribution to value added in period 1994-2006
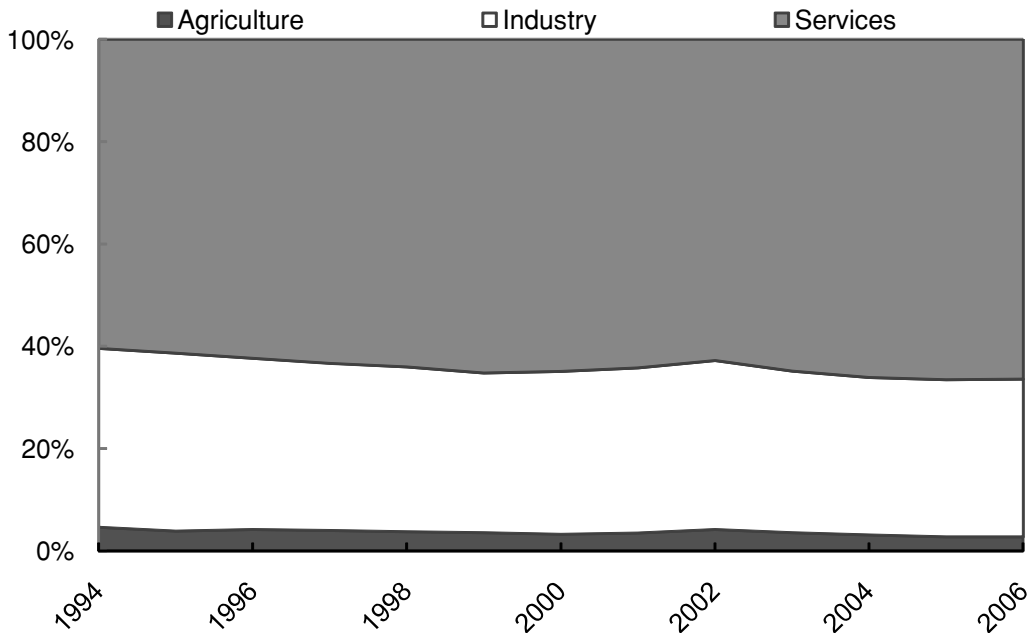
Source: WDI

Indeed, the composition of final output in Table 11.2 indicates that services accounted for the bulk of real output growth in the 1994-2007 period with the *Wholesale and retail trade* sector contributing approximately 20% of real growth in final output, *Communications* 14% and *Other services* 13%. Manufacturing as a whole contributed approximately 16%, mining 4% and the rest of the primary sector 3%. The highest average annual growth rates have been recorded in a number of mining and

manufacturing sectors such as *Other mining*, *Other non-metallic mineral products* and *Radio, TV, instruments, watches and clocks,* which nevertheless had low initial shares in South Africa's final output.

Industrial employment growth rate has picked up in 2004-2007 and averaged 2.1% for total industry. Again, the biggest increases have been generated by a number of services sectors such as *Wholesale and retail trade* and *Business services* which already account for high shares of employment and which enjoyed robust growth rates throughout the period. A number of manufacturing sectors have been consistently shedding labour over the period but typically their shares in industrial employment are already rather small.

2.2 General trends in trade performance, current account performance

The ratio of trade in goods and services to GDP has risen from below 40% in 1993 to over 60% in 2006 indicating that the international exchange of goods and services has been an ever more important element of economic activity in South Africa in the post-apartheid era. Yet, by the same indicator, the current levels of openness are only comparable to levels recorded at the end of the 1970s, Figure 11.9. In other words political difficulties (and perhaps other factors) caused South Africa to turn inwards during the 1980s and early 1990s and they have only recently recovered their earlier degree of outward focus.

Table 11.2. Final output composition

	Average annual growth rate			Value in 2007 (mln R)	Share in total value of final output in 2007	Approximative contribution to growth 1994-2007
	1994-2007	2000-2007	2004-2007			
A11: Primary [1-2]	2.8	4.2	12.2	109 559	7%	3%
A1121: Coal mining [21]	6.8	4.7	9.7	20 603	1%	1%
A1122: Gold and uranium ore mining [23]	-6.6	-6.2	-8.7	39 918	1%	-3%
A1123: Other mining [22/24/25/29]	67.1	28.7	53.7	12 343	3%	5%
A1210: Food, beverages and tobacco [301-306]	2.7	3.6	3.5	170 760	8%	7%
A1211: Textiles, clothing and leather [311-317]	2.4	1.4	-1.7	19 612	1%	1%
A1212: Wood and paper; publishing and printing [321-326]	4.7	-8.8	-21.4	7 370	0%	0%
A1213: Petroleum products, chemicals, rubber and plastic [331-338]	4.7	-3.7	-15.0	40 189	1%	0%
A1214: Other non-metallic mineral products [341-342]	55.3	22.8	49.5	(5 267)	0%	4%
A1215: Metals, metal products, machinery and equipment [351-359]	0.2	-2.5	-8.4	85 945	2%	0%
A1216: Electrical machinery and apparatus [361-366]	14.5	2.9	3.5	8 332	1%	5%
A1217: Radio, TV, instruments, watches and clocks [371-376]	16.9	14.9	25.6	(15 168)	-1%	-5%
A1218: Transport equipment [381-387]	2.3	3.6	8.8	52 507	2%	1%
A1219: Furniture and other manufacturing [391-392]	3.7	3.8	2.9	46 395	3%	3%
A1221: Electricity, gas and steam [41]	4.6	2.5	1.8	24 660	1%	2%
A1222: Water supply [42]	5.8	6.3	9.0	4 381	0%	0%
A1231: Building construction [51]	4.6	8.6	11.9	82 392	4%	5%
A1232: Civil engineering and other construction [52-53]	6.6	9.8	15.6	66 449	3%	5%
A1311: Wholesale and retail trade [61-63]	5.2	6.9	10.2	220 501	14%	20%
A1312: Catering and accommodation services [64]	3.2	4.5	3.8	24 692	1%	2%
A1321: Transport and storage [71-74]	4.4	6.3	4.9	77 249	5%	7%
A1322: Communication [75]	13.0	10.1	8.7	48 108	3%	14%
A1331: Finance and insurance [81-82]	5.3	5.0	7.5	73 500	5%	8%
A1332: Business services [83-88]	3.1	3.9	4.8	161 936	7%	6%
A1341: Other services [93-96]	7.0	6.1	3.0	112 346	6%	13%
A1342: Other producers [98]	3.0	1.2	2.6	28 313	2%	2%
A1343: General government services [99]	2.5	4.7	5.3	394 430	19%	14%
Total	3.4	4.3	5.5	1 912 052	100%	100%

Note: except for value in 2007 based on final output values in constant 2000 prices.
Source: Quantec database, authors' calculation.

Figure 11.9. Trade as percentage of GDP
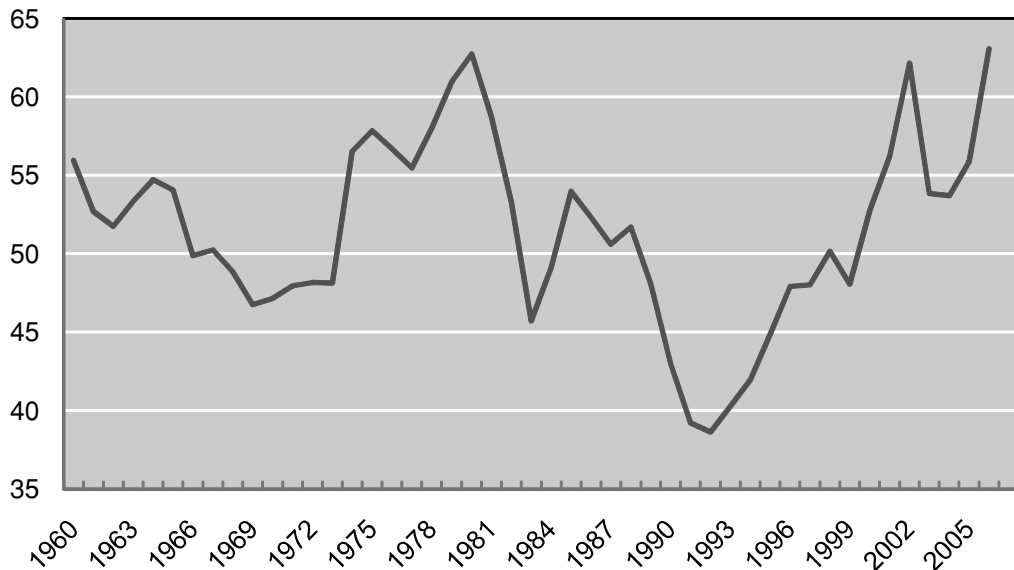
Trade reforms had already started to be implemented in the period preceding 1994. This was reflected in robust rates of export and import volumes growth in the 1988-1993 period, Table 11.3. Indeed in the first years of majority rule (1994-1999) the average growth rates of exports were actually slightly lower as compared to the preceding period while import volume growth rates picked up more quickly post 1994 and stayed above those of exports until very recently. Initially, average rates of import prices growth were higher than those for exports but this tendency has reversed more recently.

Table 11.3. Trade of goods and non-factor services (including gold)

Average annual growth rates

	Exports		Imports	
	Volume	Price	volume	Price
1971-1976	0.3	22.9	1.2	18.9
1977-1981	1.6	18.1	3.6	16.3
1982-1987	1.6	15.5	-3.5	13.3
1988-1993	4.0	6.2	4.3	9.2
1994-1999	3.8	8.2	6.7	9.1
2000-2007	5.6	10.5	9.1	8.7

These developments contributed to the worsening of South Africa's current account since 2003 which, up until then, was either in moderate surplus or an insignificant (below 2% of GDP) deficit, Figure 11.10. What drove these current account developments was a deteriorating balance on trade in goods which became negative in 2004 for the first time since the beginning of 1980s. Balances on services, income and current transfers have not undergone such significant changes although the balance on services in 2006 has reached its lowest position in the 1994-2006 period (-0.9% of GDP), Figure 11.10. As far as financing of these deficits is concerned, portfolio investment regained its position on the

financial account reaching almost 8% of GDP in 2006 and outperforming the levels from before 2001, Figure 11.11. Worryingly, direct investment flows have been oscillating around the zero axis with no systematic tendency in one direction or the other.
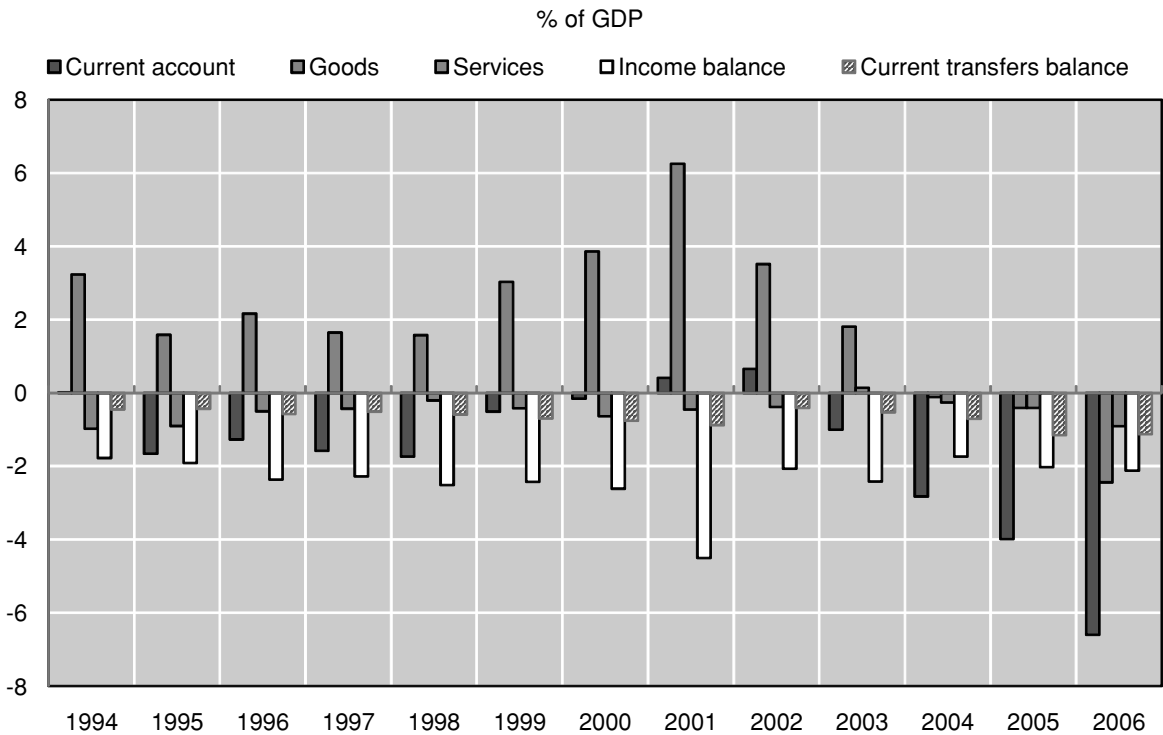
Figure 11.10. Structure of current account
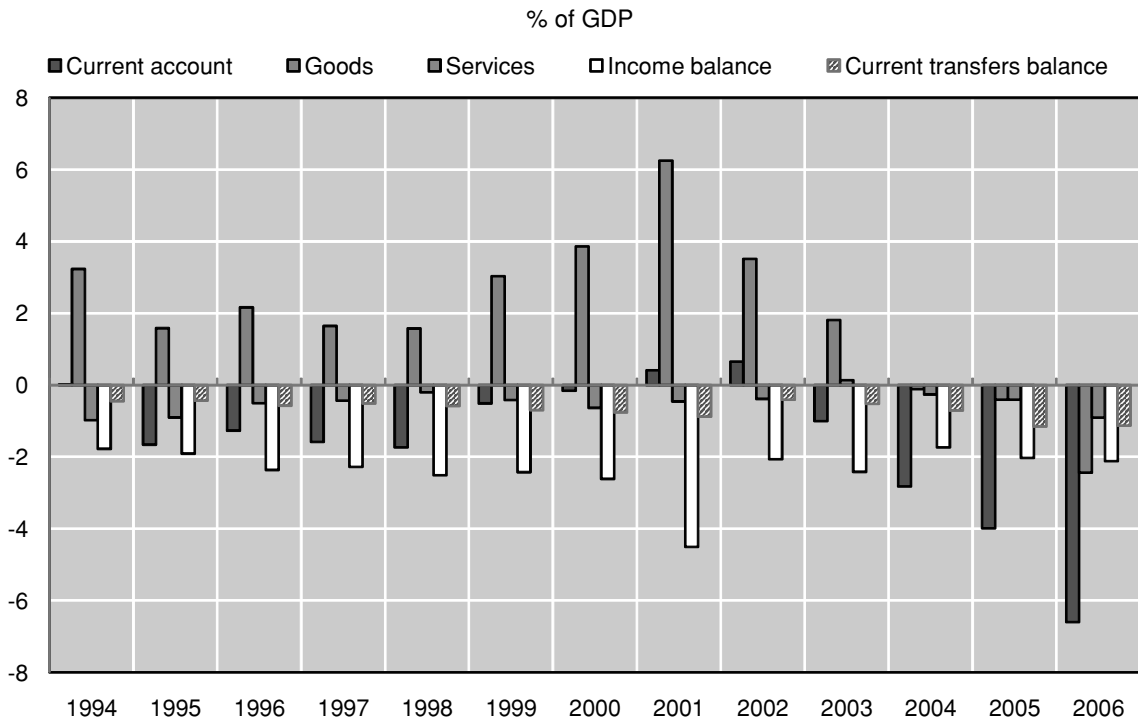
% of GDP

Source: International Financial Statistics, IMF; authors' calculations.

Figure 11.11. Structure of financial account

% of GDP

Source: International Financial Statistics, IMF; authors' calculations.

Table 11.4. Balance of payments items 1990-2006

% of GDP

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Current account	**1.37**	**1.15**	**1.62**	**2.24**	**0.02**	**-1.66**	**-1.27**	**-1.58**	**-1.74**	**-0.51**	**-0.16**	**0.41**	**0.65**	**-1.00**	**-2.83**	**-3.99**	**-6.60**
Goods	5.72	4.75	5.16	6.01	3.23	1.58	2.17	1.65	1.57	3.03	3.86	6.25	3.52	1.81	-0.11	-0.41	-2.44
Services	-0.29	-0.52	-0.82	-1.14	-0.98	-0.90	-0.50	-0.43	-0.21	-0.41	-0.64	-0.46	-0.38	0.13	-0.26	-0.41	-0.91
Income balance	-3.77	-2.65	-2.41	-2.12	-1.78	-1.91	-2.36	-2.28	-2.51	-2.43	-2.61	-4.50	-2.07	-2.42	-1.74	-2.02	-2.12
Current transfers balance	-0.28	-0.43	-0.30	-0.51	-0.45	-0.43	-0.57	-0.51	-0.59	-0.70	-0.76	-0.88	-0.41	-0.52	-0.71	-1.15	-1.13
Capital account	**-0.05**	**-0.03**	**-0.03**	**-0.05**	**-0.05**	**-0.03**	**-0.04**	**-0.14**	**-0.04**	**-0.05**	**-0.04**	**-0.04**	**-0.01**	**0.02**	**0.02**	**0.01**	**0.01**
Financial account	**-1.23**	**-1.30**	**-0.62**	**-0.24**	**0.36**	**2.25**	**3.13**	**2.51**	**3.15**	**0.94**	**-0.33**	**-1.39**	**-0.28**	**-0.85**	**0.54**	**2.80**	**4.39**
Direct investment	-0.09	0.04	-1.59	-0.22	-0.65	-0.83	-0.18	1.06	-0.86	-0.06	0.57	12.83	1.39	0.12	-0.24	2.31	-2.69
Portfolio investment	0.01	0.19	1.43	0.60	2.08	1.66	1.85	4.75	3.39	6.57	-1.53	-9.87	-0.31	0.38	2.58	1.97	7.84
Financial derivatives	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.08	-0.09	-0.12	0.00	0.00	0.00	0.00	0.00	0.00
Other investment	-1.13	-1.47	-0.26	-0.61	-0.80	2.03	0.11	-0.23	0.58	-4.03	1.14	-4.37	-1.61	-1.54	0.75	0.90	0.73
Reserve assets	-0.01	-0.06	-0.20	0.00	-0.27	-0.61	1.33	-3.10	-0.04	-1.45	-0.39	0.03	0.24	0.19	-2.55	-2.37	-1.49
Errors and omissions	**-0.09**	**0.17**	**-0.97**	**-1.95**	**-0.33**	**-0.57**	**-1.82**	**-0.80**	**-1.37**	**-0.38**	**0.53**	**1.02**	**-0.36**	**1.83**	**2.27**	**1.18**	**2.20**

Source: International Financial Statistics, IMF; authors' calculations.

Bearing in mind the intimate relationship between goods, services and financial flows in the balance of payments, it is not unusual for a transition or emerging economy to run a current account deficit in periods when it is importing capital needed for the restructuring of the economy. Yet, as pointed out in OECD (2008), while the recent levels of current account deficit are not extreme (current account deficit amounted to -7.3 of GDP in 2007 and is projected to deepen slightly in 2008), they may expose South Africa to the risk of financial crisis associated with a sudden drop of capital inflows. This may be even more so given the portfolio investment-dominated structure of the financial account and the current situation in the financial markets.

Indeed, the current financial market turmoil is likely to have a negative impact on international financial flows and thus can negatively impact the financing of South Africa's deepening current account deficits. Another aspect of the current global financial and economic turmoil is the worsening terms of trade for commodity producers, including South Africa. These recent unexpected events have added to already existing economic, social and political problems of the country. Thriving on cheap energy in the past, South Africa's economy has been recently suffering electricity shortages that manifested themselves with full force towards the end of 2007 and at the beginning of 2008. The government has devised a set of measures on both the supply and the demand side of the electricity market that can help in the long run (see OECD 2008) but most likely a combination of power shortages, restrictions on energy use and increasing energy prices is going to continue undermining the competitiveness of South Africa economy in the most immediate future. Inflation has been rising since early 2006 exceeding the South African Reserve Bank target of 3%-6% in April 2007 and reaching 13.6% in August 2008. Food and energy prices were the major contributors but inflation expectations have also risen.

These strictly economic concerns are additionally aggravated by a combination of social and political factors. Health, Nutrition and Population (HNP) statistics, for example, place South Africa below most of the corresponding upper middle income countries grouping averages in terms of nutrition, life expectancy and mortality.[2] The country also continues to have one of the world's highest crime rates, which is worsening the business and investment climate, and faces political instability in its immediate neighbourhood. Also, the recent unexpected resignation of President Thabo Mbeki and a part of his cabinet in September 2008 uncovered and perhaps exasperated the divisions within the African National Congress and contributed to political uncertainty. All these factors undermine somewhat the confidence with respect to South Africa's future growth and commercial performance.

3.   South Africa's Exports: Structure and Performance

3.1   *Composition and Destinations of Trade in Goods*

As foreshadowed in the introduction, South Africa is relatively well endowed with agricultural land and high valued minerals like Australia, Canada and Brazil. The skill composition of its labour force is similar to many middle income countries. Accordingly, South Africa's trade is most similar to Australia, Canada and especially Brazil. Its trade is quite dissimilar to other African countries.

The major categories of South African exports and imports are presented in Table 11.5. Nominal merchandise exports rose 188% over the period 1995-2006 while merchandise imports rose 259% - faster than the growth in world trade. South African exports are concentrated in manufactured goods, particularly machinery and equipment items where the country is a net importer. The importance of South African net exports in diamonds and precious metal is not obvious in this Table given the degree of aggregation - it is included in manufactured goods and commodities n.e.s.

Food has represented a declining share of exports and South Africa has maintained a small net export position in food and beverage products over the period. South Africa is also a major exporter of mineral fuels but its net import position has grown steadily.

The export picture becomes clearer by drilling down into the product detail. The major South African merchandise export sectors are listed in Table 11.6. These 43 HS 2-digit sectors are those that produced more than USD 100 million in revenue in 2006. They represent 98% of total merchandise exports. The final column of Table 11.6 gives the import/export ratio for each the sector in 2006. South Africa is a net exporter of the product line when this ratio is less than 1.0 and a net importer of the

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[2]   Health, Nutrition and Population (HNP) statistics, World Bank.

products when it is greater than 1.0. The major export sectors in 2003 were virtually the same as in 2006 and data for the earlier year are also presented in the table.

Not surprisingly, 21% of the nominal USD value of South African exports are concentrated in *pearls, precious stones and metals* (diamonds, gold and the platinum group), up from 17% in 2003. The trade ratio for this sector is 0.1 indicating that the country is a large net exporter of these products. Imports of these products are not zero though because firms find it profitable to aggregate supplies from other sources for further processing and trading requirements. This two-way intra-industry trade is typical of global supply chains where international trade in intermediate products (raw materials, parts and components) can be as important as trade in final consumer goods and capital goods.

Nineteen sectors produced more than 1% of South African exports in 2006. Six of these product lines are essentially primary products with five arising from the mining sector and one from the agricultural sector. The other 13 products are more highly processed (manufactured) goods although *Beverages and spirits* includes a major export in wine. The remaining manufactured export sectors are broadly based and include a number of highly elaborated manufactured products sectors from chapters 8 and 9 of the HS code.

South African export strengths can be viewed in this dataset (Table 11.6) by using a measure of the structural performance of an export sector. One such approach divides export products into four groupings according to two criteria: i) whether the world market for the product is growing faster or slower than average and ii) whether South Africa's world market share is growing or shrinking. A *star* product for South Africa is one in which the world market is growing faster than average and South Africa's market share is rising. Such products have obviously been performing very well. The polar extreme product type is called a *snail* and often will indicate a sector without solid future growth potential.

Table 11.5. South Africa: Composition of goods trade

Millions USD in bold and percentages

	1995	2002	2003	2004	2005	2006
Total goods	**54 971**	**49 276**	**66 179**	**87 867**	**102 024**	**122 355**
Total export	**28 226**	**23 064**	**31 636**	**40 264**	**46 991**	**53 170**
Food & live animals	6.4	8.3	7.6	6.6	6.5	5.5
Beverages and tobacco	1.3	2.1	2.1	2.0	1.8	1.5
Mineral fuel/lubricants	8.9	12.4	9.8	9.1	10.4	9.5
Animal/veg oil/fat/wax	0.2	0.1	0.1	0.1	0.1	0.1
Chemicals/products n.e.s	7.0	9.3	7.6	7.8	8.4	7.5
Manufactured goods	25.9	29.1	38.1	42.0	39.2	40.9
Machinery/transp equipmt	8.8	22.8	20.7	19.7	20.4	21.5
Miscellaneous manuf arts	3.4	5.2	4.8	4.1	3.4	2.9
Commodities nes	38.2	10.7	9.3	8.5	9.9	10.7
Total import	**26 745**	**26 212**	**34 543**	**47 603**	**55 033**	**69 185**
Food & live animals	4.6	3.5	3.4	3.4	3.2	3.1
Beverages and tobacco	0.6	0.6	0.7	0.7	0.6	0.6
Mineral fuel/lubricants	8.3	12.5	11.9	14.4	14.3	18.3
Animal/veg oil/fat/wax	1.2	0.8	0.8	0.8	0.6	0.6
Chemicals/products n.e.s	12.4	12.1	11.0	10.0	10.0	8.9
Manufactured goods	13.7	12.2	12.1	11.1	11.4	11.1
Machinery/transp equipmt	44.9	37.5	39.4	39.6	39.4	37.8
Miscellaneous manuf arts	8.0	8.5	8.2	8.3	9.0	8.9
Commodities nes	6.2	12.2	12.6	11.7	11.6	10.7

Source: UN ComTrade.

South African exports represent approximately 0.5% of world merchandise exports. Accordingly, the other two categories of products may also reflect potential. If world trade growth is below average but the country has a rising world market share, the product is called a *traditional* product in the table. Such products may represent niches for small and medium sized countries. The fourth type of product may be called an *emerging* product: the world market is growing faster than average but the country's world market share is declining. To have a declining world market share in a fast growing world market that China participates in strongly is not necessarily a bad omen for a country. This is the case of *Electrical and electronic equipment* (HS 85). This sector has been the basis of Chinese trade growth over the last decade and China's output and exports have grown at spectacular rates. It is a sector with high levels of intra-industry trade and long complex supply chains that provide a number of niches for other countries. So, while China is a major exporter of final goods from this sector, it is also a net importer of *Electrical and electronic equipment*. This sector is an emerging one for South Africa so while the country is a large net importer of this sector's products, the sector is showing some promise with over 2% of exports in these products in 2003 and 2006.

Pearls, precious stones and metals sector was a star performer for South Africa in both years. The star nature of this sector also indicates the strategic importance of South Africa to the world economy and probably explains why global trade links were able to recover so quickly in the early 1990s, as discussed earlier. However, there are risks associated with a country having a large resource-intensive export sector in the star category - so-called Dutch Disease events. That is, any volatility in real export prices in these products has a major effect on the positioning of tradeable sector resources - high product prices can quickly bid up the exchange rate, real wages expectations and the rental value of capital goods while mobilising large factor flows towards the sector. Low prices have the opposite effects. This can have destabilising effects on the rest of the tradable sector. The broad sectoral coverage of export sectors shown in Table 11.5 is some evidence that Dutch Disease effects are not obviously burdensome in South Africa.

Table 11.6. Major South African Export Sectors, 2003 and 2006

Chapter HS	Sector	Structural Performance 2003	Structural Performance 2006	Export 2003	Share % 2006	Trade Ratio M/X 2006
71	Pearls, precious stones and metals etc	star	star	17.0	21.0	0.1
72	Iron and steel	star	traditional	12.0	11.0	0.2
27	Mineral fuels	traditional	traditional	10.0	10.0	2.5
84	Boilers, machinery	emerging	emerging	8.0	9.0	2.4
87	Vehicles other than railway	emerging	emerging	10.0	9.0	1.5
26	Ores etc	snail	traditional	4.0	6.0	0.1
76	Aluminium	snail	star	3.0	4.0	0.1
85	Electrical, electronic equipment	emerging	emerging	2.4	2.3	6.5
8	Edible nuts, fruit	star	emerging	2.8	2.2	0.1
28	Inorganic chemicals	snail	traditional	1.8	2.0	0.9
29	Organic chemicals	star	emerging	1.6	1.8	1.2
73	Iron and steel	emerging	star	1.4	1.6	1.0
22	Beverages and spirits	star	snail	2.0	1.4	0.4
74	Copper, articles of	snail	star	0.5	1.2	0.4
88	Aircraft	emerging	emerging	0.3	1.1	1.4
39	Plastics	star	traditional	1.3	1.1	2.7
38	Misc. chemical products	traditional	emerging	1.0	1.1	1.4
48	Paper, paperboard	emerging	snail	1.5	1.0	1.4
94	Furniture, lighting, prefab buildings	emerging	snail	1.8	1.0	1.0
44	Wood, articles	emerging	snail	1.4	0.8	0.8
47	Wood pulp	emerging	snail	1.2	0.8	0.2
17	Sugars	snail	snail	0.8	0.8	0.2
3	Fish	emerging	snail	1.2	0.7	0.3
40	Rubber	star	traditional	0.9	0.6	2.3
20	Vegetables, fruit, nuts	star	snail	0.9	0.6	0.3
75	Nickel	star	star	0.3	0.6	1.8
90	Optical. photo, techical etc equipment	star	star	0.6	0.6	7.1
33	Essential oils, pefumes, cosmetics etc	traditional	snail	0.5	0.4	1.4
51	Wool, animal hair	emerging	emerging	0.6	0.4	0.1
68	Stone, plaster etc.	snail	star	0.3	0.4	0.9
86	Railways	traditional	traditional	0.5	0.4	0.7
24	Tobacco	na	emerging	na	0.4	0.6
41	Raw hides	snail	snail	0.5	0.4	0.5
25	Salt, sulphur etc.	snail	snail	0.5	0.3	0.8
31	Fertiliser	traditional	traditional	0.5	0.3	1.8
32	Tanning, dying	emerging	emerging	0.4	0.3	2.1
10	Cereals	snail	snail	0.5	0.3	2.2
81	Other base metals	na	star	na	0.3	0.4
30	Pharmaceuticals	na	traditional	na	0.2	11.0
21	Misc. edible products	na	emerging	na	0.2	1.5
49	Printed books	na	emerging	na	0.2	2.4
82	Tools, implements	emerging	snail	0.3	0.2	3.1
34	Soaps, waxes etc.	na	snail	na	0.2	1.4
	Share of total merchandise exports			94.3	98.2	

Column 2: names of sectors with import/export ratios less than one are shaded; Column 4: star and traditional sectors with growing country market shares in both 2003 and 2006 are shaded.

Source: International Trade Centre UNCTAD/WTO, Geneva.

The 2006 star performers are spread throughout this list of larger export sectors. Their contribution to employment can be gauged by comparing Table 11.6 with the capital/labour ratio given in the last column of Annex Table 5.1 The mineral and metal star performers (HS chapters 71, 76, 73, 74, 75, 68

and 91) have average or somewhat higher than average capital/labour ratios. Other mining and non-ferrous metals (aluminium, copper and nickel) are much more capital intensive than average. On the other hand, electronic and other equipment are very labour intensive in South Africa relative to the economy-wide average. There are 14 snail sectors in the list for 2006. These unpreferred sectors are not prevalent towards the top of the list – they tend to be clustered in the middle and at the bottom.

A number of the top 2-digit export sectors tend to involve capital intensive production. For example, six of the top 10 tend to have that characteristic (71, 72, 27, 26, 76 and 28). On the other hand, there are a number of emerging and traditional export sectors that can involve labour intensive operations.

Slightly over half of these larger export sectors have import/export ratios greater than one (the names of sectors with import/export ratios less than one are shaded). This provides some evidence of inter-industry trade in parts and components and accordingly, good South African interconnections into global supply chains. While international developments tend to promote globalisation, South Africa can further integrate itself into these supply chains efficiently but only if it can match the trade liberalisation efforts of other countries. On the one hand, the exportable sector has to be able to obtain parts, components and capital equipment at the lowest possible import price and it has to be able to export components and final goods of international quality at internationally competitive prices.

The structural status of these sectors in terms of the star/snail classification has changed between 2003 and 2006. One interesting dimension of these changes focuses on sectors where South Africa's world market share is increasing - regardless of the world market growth position. Star and traditional sectors involve growing country market shares and where this applies to both 2003 and 2006, the sector has been shaded in column 4 of Table 11.6. The first three sectors (71, 72 and 27) all fall into this category - South Africa's market share was growing in both periods. There are fourteen such sectors in the 43 sectors listed – their export performance has been very positive in recent years.

South Africa's top performing exporter sectors probably also include a number of sectors where South Africa's world market share is falling as mentioned above. Sectors 84, 87 and 85 fall into this group. Emerging markets have greatly expanded exports in these products recently and South Africa's falling world market shares may still represent good performance.

There are a number of sectors which have not performed well on these measures. *Beverages and spirits* (22) and *Vegetables, fruit and nuts* (20) are examples where the sector has moved from star status in 2003 to a snail in 2006 – South Africa's world market share has fallen (and world market growth has fallen below average). The first sector's performance may reflect recent over-supply problems in the world wine market. South Africa's export share in *Beverages and spirits* has fallen from 2% in 2003 to 1.4% in 2006.

An alternative measure of international competitive strength is revealed comparative advantage. [3] The revealed comparative indices are given in Kowalski *et al.* (2008) in Annex Table 3.1. As one would expect, South Africa had a revealed comparative advantage (RCA index greater than 1.0) in 2006 in the

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[3]   Revealed comparative advantage indices are defined as the ratio of a country's exports of a product to that country's total exports, divided by the ratio of world exports of the product to total world exports. The value of the index ranges from 0 (strong revealed comparative disadvantage) to a very large number. An index greater than (less than) 1.0 indicates a comparative advantage (disadvantage) in that product. RCA indices are very crude measures of true comparative advantage in some ways. RCA indices are not adjusted for a wide range of policy distortions that affect trade. The concept of true comparative advantage connotes a degree of competitiveness with no industry or trade policy intervention.

broad range of products towards the top of the major export sector list in Table 11.5. However, there are major differences to the order in which they appear in the RCA list and the top export list. This points to trade and industry policy distortions. For example, five agricultural and aquaculture HS2 sectors have a revealed comparative advantage (03, 08, 17, 20, 22 and 51) but they do not all appear in the major exporter list. South Africa has a revealed comparative advantage in a range of chemicals and forestry products (28, 31, 36 and 47). Again, unsurprisingly, the RCA indices are highest for mineral products (HS chapter 7).

South Africa also has a revealed comparative advantage in machinery and equipment items (86 and 87), although the indices are not high. These products are, however, towards the top of the major export list (Table 11.6). Furthermore, sectors 84 and 85 are amongst the top 10 exports and South Africa has a revealed comparative disadvantage in these products, though in the case of sector 86 the RCA index has been rising at 6.4% per year over the last decade. This is evidence that the two sectors are receiving industry protection, OECD (2008), which would bias the RCA index upwards. Likewise, the true comparative advantage index for the motor vehicle industry (HS87) is accordingly very likely to be less than 1.0 indicating a comparative disadvantage.

On the other hand, the situation for some agricultural products appears to be the reverse – there are fewer agricultural products in the major export list than one might expect from the RCA data. This suggests that industry and trade policy in South Africa is taxing the agricultural sector in some way. Anderson *et al*. (2007) confirm this conjecture. They estimate that the relative rate of agricultural to non-agricultural assistance was -5% over the period 2000-2005. That is, policy assistance to non-agricultural tradable sectors has increased relative to South African agricultural sectors. Furthermore, this implicit export tax on agricultural products has grown in recent years—from a relatively neutral position prior to 2000. In this environment resources will move from the agricultural sector to the non-agricultural sectors and exports originating in the non-agricultural sectors will tend to grow faster than from the agricultural sectors.

Most of the 2-digit sectors listed have RCA indices in 2006 that are less than 1.0 – indicating a comparative disadvantage (Kowalski *et al.,* 2008). From a low-skill employment perspective, the labour intensive chapter 5 and 6 products are less than 1.0, as is sector 85.

The RCA indices for many products have changed significantly over the period 1996-2006. The RCA index of chapter 86 has experienced a 11.1% annual decline while the index of chapter 87 has grown at 12.8% per year over the decade. The footwear, clothing and textile sectors have generally experienced rapid declines in revealed comparative advantage. These changes are part of the global changes in patterns of comparative advantage in recent decades. The changes are related in general to the rapid dispersion in economic activity globally and they require equally rapid adaptation on the part of firms and governments to select new competitive niches. Where countries have been able to do that, the RCA indices in particular sectors remain high but the component or product composition changes.

Figure 11.12 provides a picture of the evolution of South African goods exports by skill intensity. The notable feature of this figure is the decline in the proportion of low-skill manufactures in the mix since 1996. If this decline is an accurate depiction of a rising skill intensity in the export mix then it shows a lack of congruence with the low-skill endowment of the workforce as a whole and the slow progress in raising skill levels over the last decade, OECD (2008). However, some caution is required in interpreting this data as the classification system may not be fine enough to truly represent South African export production systems.

Figure 11.12. Evolution of South Africa's export mix according to skill intensity (based on SITC classification), 1996-2006

Percentages
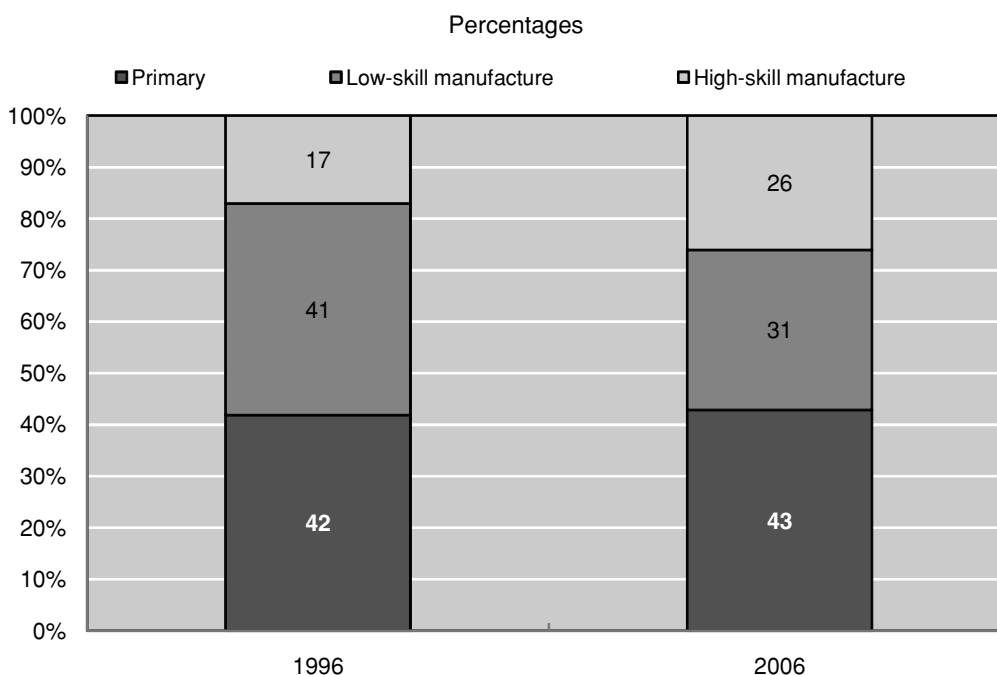
Source: UN ComTrade.

The main destinations for South African exports of goods are the EU, Japan, US, China, Switzerland and Australia, Figure 11.13. Overall, it is a tripolar export pattern of Europe, Asia-Pacific and Africa. The biggest changes over the decade from 1996 have been with respect to EU (down two percentage points), Japan (up four percentage points), US (up four percentage points) and Zimbabwe (down three percentage points). The concentration of exports in higher income countries reflects in part the industrial demand for precious metals and minerals by producers of high tech components and final goods.

South Africa's shares in export markets are, of course, highest in African countries, Table 11.13. Some emerging economies are also included for comparison. Its market share amongst BRIIC importers has trended differently. Interestingly, South Africa's market share in Brazil has been increasing in spite of the fact raised earlier that the two countries have a very high trade similarity index. Its share in China is also rising but falling in India where South Africa has had a 2% market share.

Trade intensity indices (Table 11.8) [4] provide another dimension on export market shares. Here South Africa's trade is examined with respect to a group of emerging economies and a group of African trading partners. The critical value for trade intensity is 1.0. South Africa trades much more intensively with a range of African countries than one would expect based on the global exports to these countries –

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[4]   The trade intensity index (T) is used to determine whether the value of trade between two countries is greater or smaller than would be expected on the basis of their importance in world trade. It is defined as the share of one country's exports going to a partner divided by the share of world exports going to the partner. It is calculated as: $T_{ij} = (x_{ij}/X_{it})/ (x_{wj}/X_{wt})$; where x_{ij} and x_{wj} are the values of country i's exports and of world exports to country j and where X_{it} and X_{wt} are country i's total exports and total world exports respectively. An index of more (less) than one indicates a bilateral trade flow that is larger (smaller) than expected given the partner country's importance in world trade.

the trade intensity indices for the countries from Guinea to Zimbabwe towards the bottom of the table are much greater than 1.0. However, the trade intensity with these African partners is generally weakening somewhat either because they are tending to source imports away from South Africa or because South Africa is tending to increasingly explore export markets away from Africa. This is not surprising given the rapid dispersion of economic activity globally in recent years and changing patterns of comparative advantages in goods and services that have resulted.

South Africa also trades intensively with India, Japan and Israel but while trade intensity with India and Israel is falling, it is rising sharply for Japan. Trade intensity is low for China but rising fairly rapidly. The EU is South Africa's major trading partner and the index has declined slightly but has tended to hover around 1.0 in recent years.

## 3.2   A Dynamic Analysis of Past Export Goods Performance

The view of South African and world trade through selected groups of HS6-digit products provides an opportunity to more closely relate changes in trade, to market and firm level changes in innovation, strategy and performance, and in relation to government policy changes that are often implemented at this micro level (*e.g.* with trade policy settings). Hausmann and Rodrik (2003) have promoted this approach as a potentially effective predictive tool for identifying comparative advantage. This is because, at this level of disaggregation, countries with very similar patterns of gross factor proportions (mineral resources, unskilled labour, agricultural land and capital ratios, for example) have quite different export product specialties. In part, this is due to difficulties in disaggregating factors of production finely enough, but it is also due to the impacts of past decisions by domestic and foreign firms to successfully specialise in particular products in particular global locations. Accordingly, micro trade categories might prove to be a valuable complement to factor proportions theory in understanding changes in comparative advantage.

There are approximately 6500 HS6-digit product codes. The top 25 export (import) product codes for individual countries are highly likely to comprise the set in which the country has a very high level of comparative advantage (disadvantage). Credence is given to this view by the fact that a surprisingly high proportion of world and country exports are encompassed by the top 25 HS6 products. It is certainly possible that government support policy is an important driver of export supply and/or import demand. Finally there is the question of the effects that South African trade policies are having on imports and exports in goods. This question is taken up in Section 5 of this report. Overall, however, it is likely that given the firm structure of the tradable industries, a product in the top 25 products would exhibit a comparative advantage without government support.

The top 25 HS6-digit products traded globally in 2006 encompassed only a few markets and they comprised 29% of world merchandise exports. They included:

- energy products (oil, gas and coal), 10% of world trade

- consumer electronics goods and their components, 11%

- pharmaceuticals, 2%

- cars and components, 6%

- aircraft components, 0.4%

Figure 11.13. Top 10 destinations of goods exports of South Africa in 1996 and 2006

Percentages

A. 1996

B. 2006
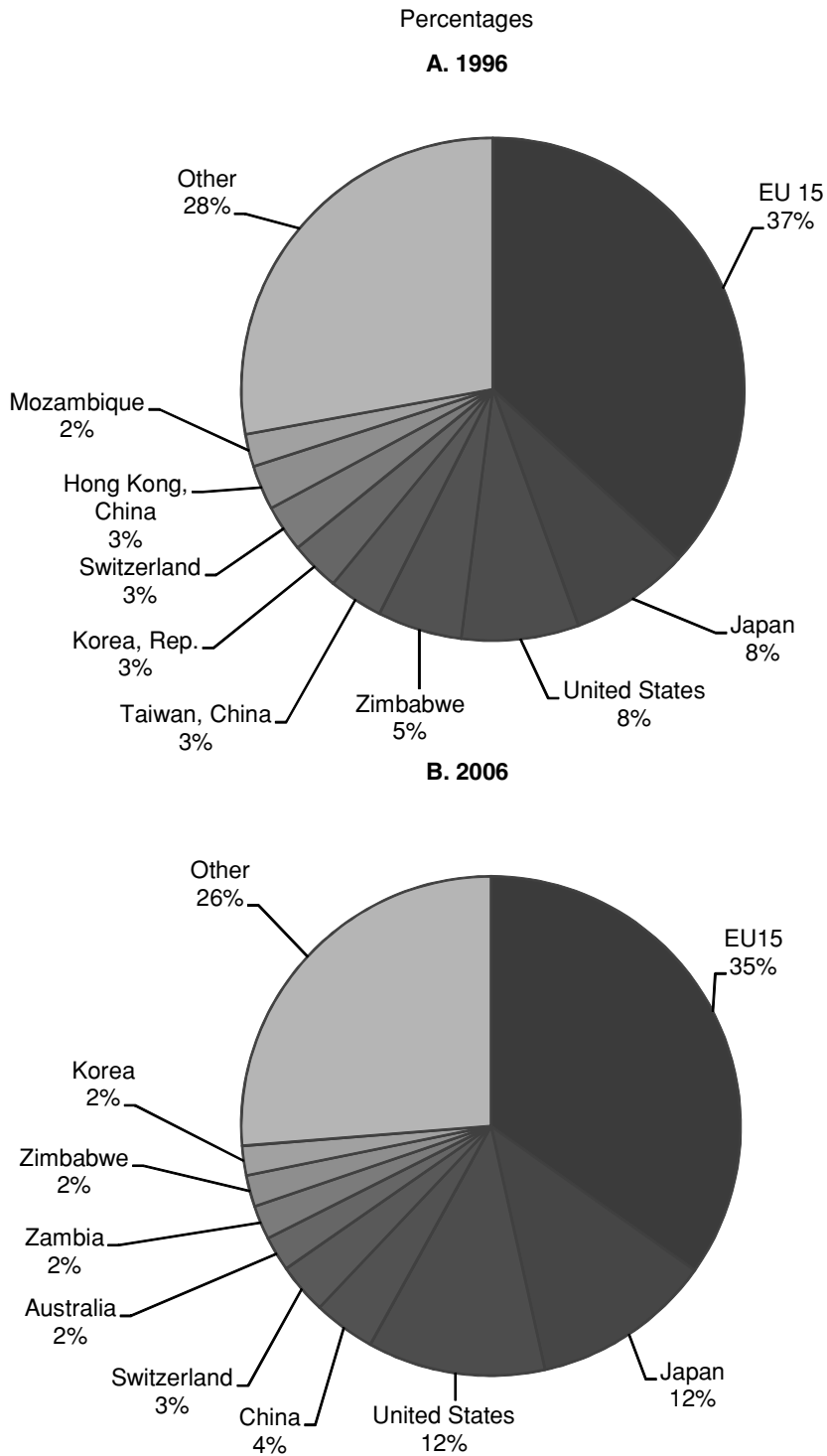
Source: UN ComTrade.

Table 11.7. Evolution of South Africa's market share in key markets

Percentages

	2000	2006	Annual growth rate
Brazil	0.41	0.47	2.48
China	0.32	0.45	5.99
EU15	0.59	0.56	-0.85
India	2.06	1.35	-6.80
Indonesia	0.54	0.37	-6.17
Israel	0.81	0.25	-17.72
Japan	0.82	1.16	5.93
Kenya	7.77	6.50	-2.94
Korea, Rep.	0.60	0.45	-4.88
Madagascar	3.60	5.75	8.10
Tanzania	12.14	12.32	0.24
Uganda	6.91	6.12	-2.00
Zambia	55.60	47.83	-2.48

Source: UN ComTrade.

Table 11.8. Merchandise trade intensities, selected partners

	2000	2001	2002	2003	2004	2005	2006
Brazil	1.00	1.23	1.00	0.85	0.89	0.94	0.97
Russia	0.19	0.14	0.20	0.23	0.21	0.12	0.14
India	2.49	2.52	2.24	1.47	1.77	2.30	1.31
Indonesia	0.98	0.84	0.90	0.70	0.56	0.67	0.56
China	0.44	0.53	0.47	0.56	0.49	0.52	0.68
EU25	1.02	0.78	1.01	0.91	0.93	0.95	0.93
Japan	1.16	1.08	1.40	2.20	2.48	2.35	2.78
United States	0.56	0.49	0.60	0.74	0.75	0.68	0.77
Guinea	3.00	1.96	3.74	11.70	9.72	6.28	6.28
Israel	4.42	4.50	4.97	3.95	3.70	3.96	3.32
Kenya	26.50	18.26	24.49	20.67	24.19	17.57	15.18
Madagascar	15.15	13.38	17.75	19.01	15.60	13.93	12.75
Mauritius	42.85	27.67	39.22	30.39	23.73	27.48	18.45
Mozambique	151.32	132.80	109.15	114.61	98.02	89.92	92.45
Seychelles	31.30	12.11	31.97	25.06	20.71	29.31	23.55
Tanzania	42.80	28.97	36.15	29.13	32.14	27.64	26.42
Zambia	163.94	151.95	128.27	135.62	125.05	123.16	125.57
Zimbabwe	127.83	125.14	146.95	132.32	119.50	127.33	117.84

Source: UN ComTrade.

If focus is shifted to the top 50 HS6-digit products a number of additional markets come into view. Other key groupings include other minerals (diamonds, gold and copper), jewellery products, other machinery and equipment (ships, trucks, excavators and valves), plastic products and chemicals. No agricultural or food products are currently in this top 50 grouping.

The fastest growing Top 50 HS6-digit goods on world markets over the period 1996-2006 are given in Annex Table 3.2 of Kowalski *et al.* (2008). These fifty products represented around 45% of world

trade growth over the period. The list is very similar to the Top 50 export products in 2006. The dark blue commodities are the ten energy and mineral products. The light blue products are the nineteen consumer electronics components and products that increasing dominated world trade in the decade.

South Africa's Top 25 HS6 exports in 1996 and in 2006 are given in Annex Table 3.3 of Kowalski *et al.* (2008). An overall feature of the Top 25 is the increase in export (and import) concentration. The Top 25 product coverage rose from 39% in 1996 to 52% in 2006, a level much higher than in a typical developed economy where one would normally expect the export mix to be more diversified (Hausmann and Rodrik, 2003). For example, countries like Germany have only 30% or so of their exports in the Top 25 HS6 products.

The Top 25 are dominated by the valuable mineral products South Africa is noted for. However, their composition changed significantly over the decade. In 1996, they included diamonds, chromium, gold, nickel, manganese, zirconium and copper. In 2006, platinum replaces diamonds at the top and rhodium and palladium replaces titanium, manganese and zirconium. The specific platinum, rhodium and palladium export products listed here were virtually zero in 1996. Coal, aluminium, oil and iron ore all retained their high ranking in 2006. All these mineral-based products are coded blue in Kowalski et al (2008, Table 3.4). There were 16 colour coded products in 1996 and 17 in 2006, virtually the same. However, there were some major changes in composition amongst the precious metals, special metals and oil exports.

Amongst other products, wine retained its high ranking as did parts of seats (940190). Gas filtering machinery (842139) exports have increased a great deal over the decade. Copper cathodes dropped off the list in 2006, in favour of waste copper, which had become part of the worldwide rise in recycled materials over the decade. Other agricultural products like maize, sugar cane and ethanol dropped out of the list. Non-agriculturally based manufactures like cargo containers, construction equipment and gas filtering machinery also dropped. However, these were replaced by new entrants, mid-sized automobiles (1500-3000cc) and diesel trucks. In summary there are a number of specific growth poles in exports of what might be referred to as non-traditional South African exports and a number of areas where competitiveness seems to have declined over the decade.

The Top 25 South African import products are given in Kowalski *et al*. (2008, Table 3.4). Again, the Top 25 products are concentrating—from 25% of total merchandise imports in 1996 to 37% in 2006. It is not clear how to interpret this concentration of imports. Given that trade is in inputs as well as final products it may well reflect imported inputs, like aluminium oxide, required to produce expanding exports of aluminium products. The large increase in automobile imports may reflect lower import barriers in these products and falling competitiveness in the domestic automobile assembly industry. In a number of areas consumer demand in South Africa follows global trends. The rapid growth in transmission apparatus (cell phones), televisions and videos and computers (digital automatic data processing machinery) and their components are cases in point. The rapid growth in these consumer electronics products reflects global consumer demand fragmentation associated with higher real incomes. Health equipment and especially medicaments have also been subject to rapidly growing trends (especially in Africa).

Table 11.9. Top 25 Export Growth Products 1994/96 to 2004/06, value terms, with exports exceeding USD50 million in 2006

Rank	Product	Product_Name	Value Growth %
1	711019	Platinum in other semi-manufactured	670 107 487
2	711011	Platinum unwrought or in powder form	580 953 720
3	711031	Rhodium unwrought or in powder form	246 679 447
4	711021	Palladium unwrought or in powder form	104 677 185
5	711039	Rhodium in other semi-manufactured	91 089 273
6	711029	Palladium in other semi-manufacture	71 251 081
7	711041	Iridium, osmium and ruthenium unwrought	38 277 940
8	720292	Ferro-vanadium	7 648 933
9	261590	Niobium, tantalum and vanadium ores	1 615 154
10	750610	Plates, sheet, strip and foil, nickel	550 157
11	260400	Nickel ores and concentrates	493 496
12	291612	Esters of acrylic acid	260 965
13	271000	Petroleum oils, etc, (excl. crude)	229 532
14	290513	Butan-1-ol (n-butyl alcohol)	184 971
15	240310	Smoking tobacco	112 506
16	480419	Kraftliner, uncoated	32 822
17	740811	Wire of refined copper	25 148
18	854140	Photosensitive semiconductor device	22 911
19	852721	Radio receivers	16 076
20	840820	Engines, diesel	14 555
21	721331	Bars/rods,i/nas,hr,in irreg wnd coils	13 305
22	721931	Flat rolled prod, stainless steel,	13 003
23	870332	Automobiles with diesel engine disp	11 588
24	760820	Tubes and pipe, aluminium alloy	9 424
25	870850	Drive axles with differential	6 358

Source: UN ComTrade.

If we maintain the HS6-digit product focus the growth in the value of exports provides an interesting picture for South Africa and affirms a number of points raised with respect to Annex Table 3.3 in Kowalski *et al.* (2008). The Top 25 fastest growing South African exports are listed in Table 11.9. These products tend to be ones that were hardly exported at all in 1996 but are important exports in 2006. Not unexpectedly, the top half of the table reflects the fast growing exports in the platinum group of metals used in the manufacture of catalysts and principally in the automotive industry—platinum, rhodium, palladium, indium, osmium and ruthenium. The fastest growing list includes a number of other metal products: copper, steel, nickel and aluminium.

Outside these metals are a disparate group of products, tobacco, industrial chemicals, paper and two electronics products. Three automotive products are included: diesel powered automobiles, diesel engines, and drive axles for vehicles. Refined oils (271000) are included reflecting a niche South Africa appears to have in oil refining in spite of the fact that the country is not self-sufficient in crude oil.

3.3   Composition and Destinations of Trade in Services

South African services exports represent around 18% of current account credits. Services exports are heavily concentrated in travel services (65.6% in 2006) and their importance has risen 50%[5] since the trade embargo was lifted (Table 11.10). In absolute terms the rise is more dramatic—exports of travel services rose from USD 2.1 billion in 1995 to USD 7.9 billion in 2006. Figure 11.14 illustrates that the post mid-1990s expansion of services exports of South Africa can be attributed almost entirely to exports of travel services. In fact, the ratios of transport and other commercial services exports to GDP have been stagnant in the considered period. Figure 11.15 demonstrates that South Africa seems to have developed a strong advantage in travel services as its share of world travel services trade has gone up dramatically starting in 2003 and now stands above South Africa's share of world GDP. These developments point to the important endowments the country has in tourist attractions. This is a valuable set of resources in balance of payments terms and also because the provision of tourism services is usually very intensive in its employment of low-skilled labour.

In a similar way travel exports have dominated services exports, transport dominated services imports and they now corresponds to close to 3% of GDP (Figure 11.14). Transport services amount to nearly 50% of South African imports of services as compared to 12.4% services exports of transport services. This reflects both large distances to major markets (see Table 11.1) economic and political instability in South Africa's neighboring countries and the relative use of foreign carriers. Imports of travel services, on the other hand, are much less than exports.

South Africa is a net importer of other services reflecting relatively large imports of foreign patents and licenses and insurance services. The business services deficit is less marked, however, and South Africa exports of business services represent 7.2% of total services exports in 2006. However, business services exports have tended to trend down in percentage terms since 1995 while imports of business services have tended to trend upwards in the same terms.

South Africa's export performance in the services trade is illustrated in Figure 11.16 using the `star' performance indicator discussed earlier. The *star* performers (world services trade growing faster than average and South Africa's market share increasing) are computer and information services, insurance, financial services and communications services. The fact that the travel sector is not considered a star performer shows limitations of the given methodology; this is the case only because the share of this sector in total services trade has gone down globally. The only *snail* service is transportation. The general pattern of these structure performance indicators reflects future potential in service sector trade performance though development of transportation services should be seen as a priority.

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[5]   From 46% of USD 4.6 billion in 1995 to 65.6% of USD 12 billion in 2006.

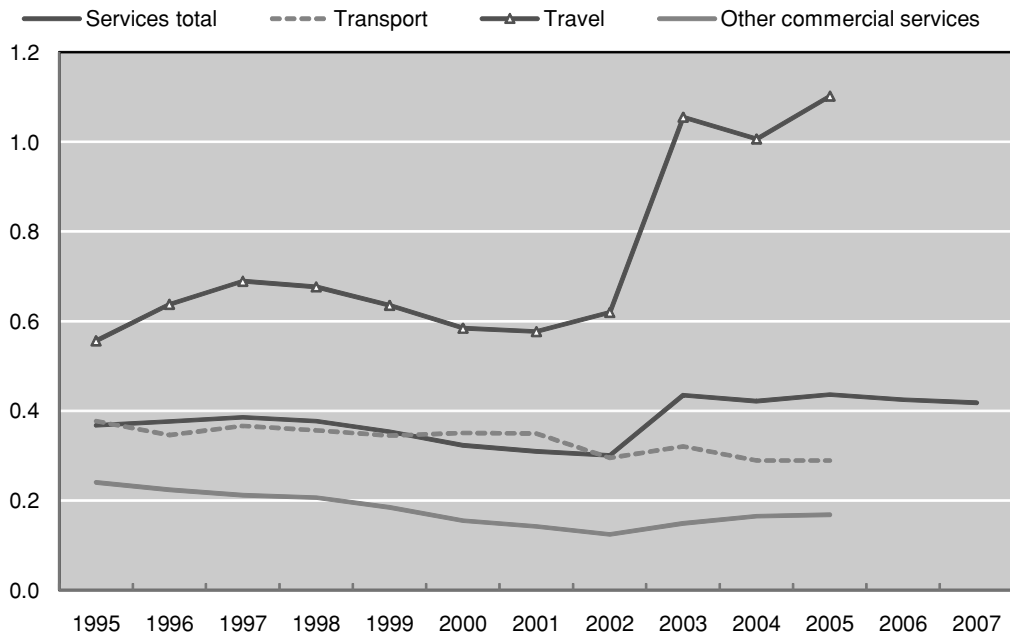**Figure 11.14 South Africa's services trade (as a % of GDP)**
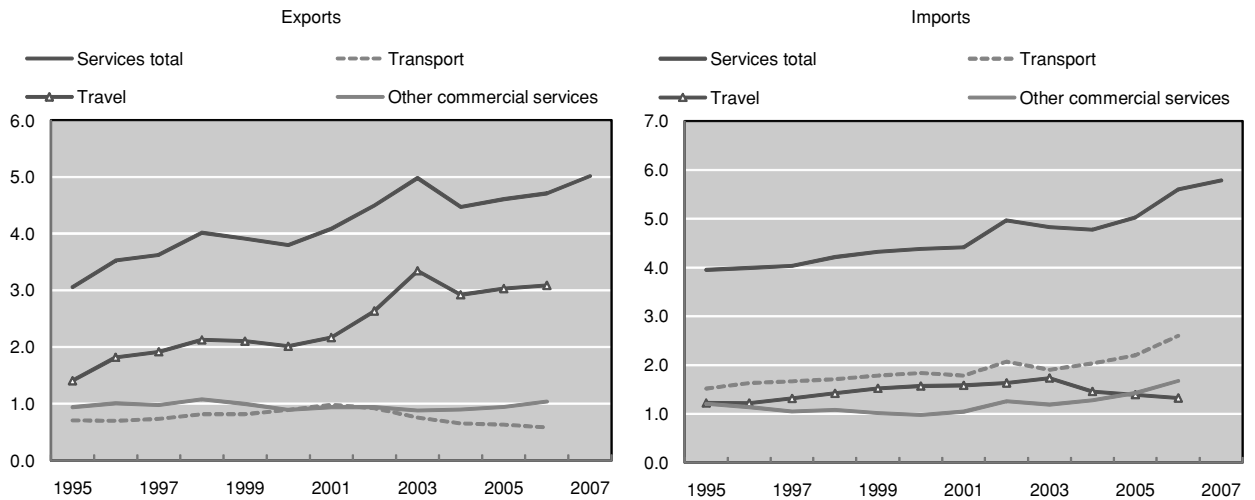
Source: WTI (2008).

Table 11.10 Composition of services trade

Million USD and percentages

|	1990	1995	2002	2003	2004	2005	2006
SERVICES	**-331**	**-1 352**	**-519**	**254**	**-646**	**-998**	**-2 276**
Total export	**3 407**	**4 619**	**4 985**	**8 298**	**9 682**	**11 157**	**12 014**
Transportation services	20.8	23.2	20.5	15.2	14.6	13.7	12.4
Travel	53.9	46.0	58.6	67.1	65.3	65.7	65.6
Other services	25.3	30.8	20.9	17.7	20.1	20.5	22.1
Communications	*1.5*	*0.9*	*1.9*	*1.6*	*1.9*	*2.1*	*2.5*
Construction	*..*	*..*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*
Insurance	*10.4*	*9.5*	*1.1*	*0.9*	*1.1*	*1.1*	*1.3*
Financial	*..*	*..*	*4.5*	*3.6*	*4.4*	*4.8*	*5.9*
Computer and information	*..*	*..*	*0.9*	*0.8*	*0.9*	*1.0*	*1.1*
Royalties and licence fees	*0.6*	*1.0*	*0.4*	*0.3*	*0.4*	*0.4*	*0.4*
Other business services	*9.5*	*15.0*	*8.6*	*7.3*	*7.7*	*7.5*	*7.2*
Personal, cultural, and recreational	*..*	*..*	*0.8*	*0.7*	*0.9*	*1.0*	*0.9*
Government, n.i.e.	*3.4*	*4.4*	*2.5*	*2.2*	*2.5*	*2.3*	*2.5*
Total import	**3 738**	**5 971**	**5 504**	**8 045**	**10 328**	**12 155**	**14 291**
Transportation services	38.6	38.5	41.7	39.5	42.6	43.8	46.4
Travel	30.3	31.0	32.9	35.9	30.6	27.8	23.7
Other services	31.1	30.6	25.4	24.6	26.8	28.4	29.9
Communications	*2.5*	*2.1*	*1.3*	*1.2*	*1.4*	*1.6*	*1.7*
Construction	*..*	*..*	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*
Insurance	*11.2*	*13.6*	*4.1*	*3.7*	*3.8*	*3.9*	*4.1*
Financial	*..*	*..*	*1.4*	*1.3*	*1.4*	*1.5*	*1.2*
Computer and information	*..*	*..*	*0.8*	*0.7*	*0.8*	*0.9*	*0.9*
Royalties and licence fees	*3.5*	*4.9*	*8.1*	*7.7*	*8.6*	*8.8*	*9.0*
Other business services	*10.1*	*6.4*	*7.4*	*7.5*	*8.1*	*9.1*	*10.5*
Personal, cultural, and recreational	*..*	*..*	*0.1*	*0.0*	*0.0*	*0.1*	*0.1*
Government, n.i.e.	*3.8*	*3.6*	*2.3*	*2.5*	*2.6*	*2.4*	*2.4*

Source: IMF BOP (2008).

Figure 11.15 South Africa's services exports (as a % of world trade)

Source: WTI (2008).

Figure 11.16 South Africa's export performance: services trade, 2001-2006
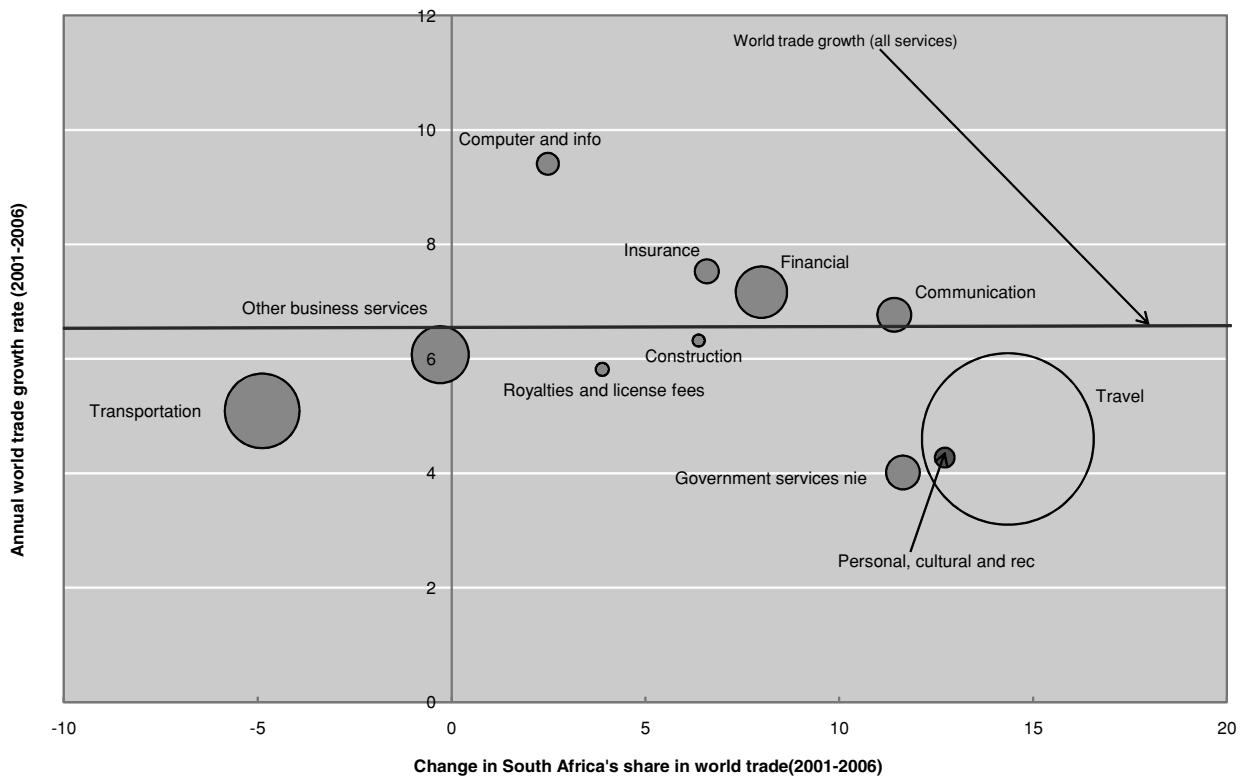
*Source*: IMF BOP (2008).

4.   Trade policy and developments

### *4.1   Overview of trade policy developments*

Up to the 1970s South Africa's trade policy was broadly geared towards import substitution with an aim to enhance growth, diversify economic activity and make it less dependent on gold and other natural resources (see *e.g.* Mabugu and Chitiga, 2007; Edwards, 2005). The import substitution policy and embargoes facilitated a development of domestically-oriented manufacturing sector under a highly protective structure of tariffs and quantitative restrictions. Figure 5.1 plots the evolution of export-output and import-domestic demand ratios across broad sectors and illustrates the progressive outward orientation of the mining and quarrying sector and the inward orientation of manufacturing and agriculture in 1970s and 1980s that was only reversed at the beginning of 1990s.

The failure of the import substitution policy to achieve the stated objectives became apparent in the late 1960s. The beginning of 1970s saw a gradual reorientation of policy towards freer trade, first through the stimulation of exports during the 1970s and 1980s and later through a broader approach to trade liberalisation (Thurlow, 2006). Notwithstanding the gradual opening up, the 1980s and early 1990s ended up being highly protective in part as a result of imposition of surcharges from 1985 in response to the debt crisis and increased calls for protection by the industry during the times of economic slowdown of the late 1980s (Bell, 1992). According to Belli et al. (1993) by the end of the 1980s South Africa had the highest tariff rates and the second highest level of tariff dispersion compared to a range of developing countries.

Figure 11.17.   Export-output ratio, by industry
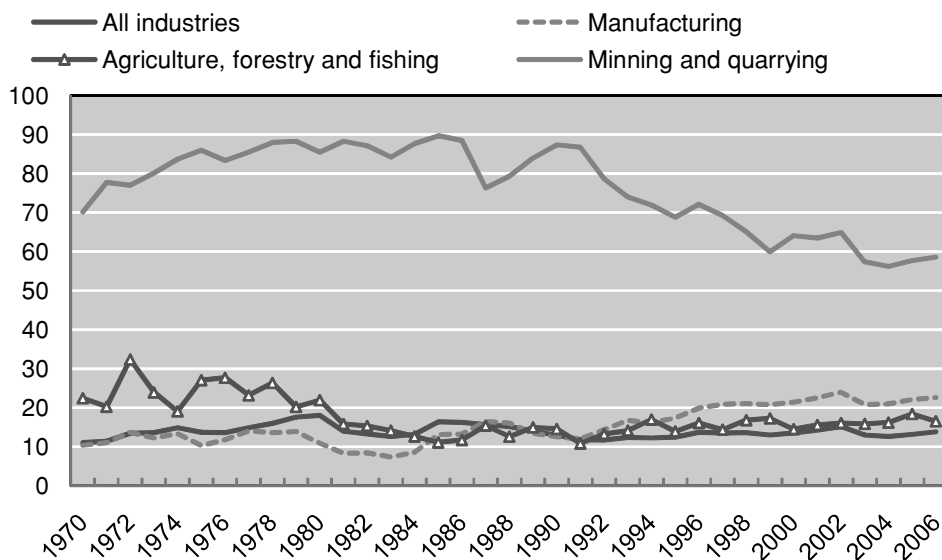
Source: Quantec database, authors' calculation.

Figure 11.18. Import-domestic demand ratio, by industry
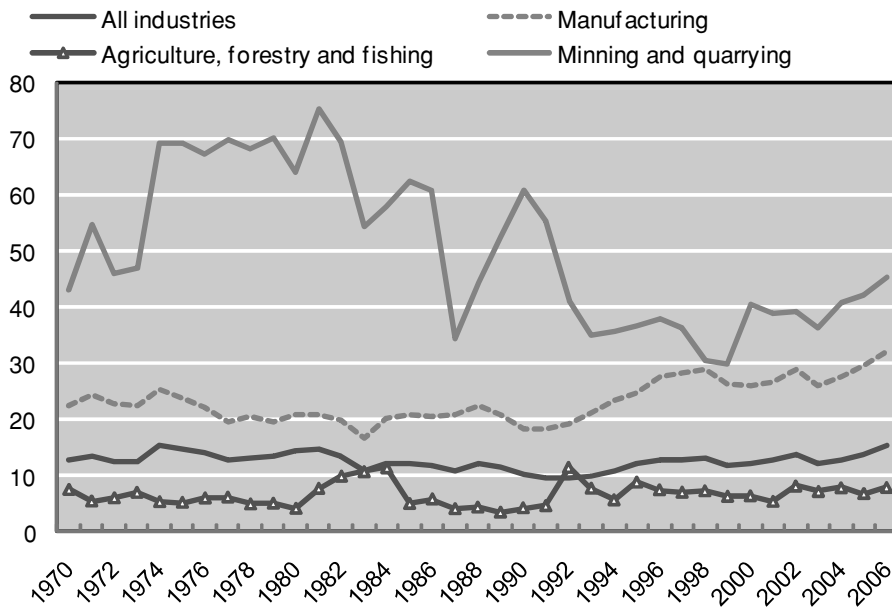
The embargoes that started in the 1960s, and tightened in the later part of the apartheid era, put additional constraints on South Africa's integration with the world markets. The embargoes did not apply with a uniform strength throughout the period or across economic sectors, nor where they uniformly imposed by all South Africa's trading partners. Typically they have been intensifying in the immediate aftermaths of the riots in black townships in 1970s and 1980s and relaxing in calmer times. The relatively toughest restrictions applied to South Africa's arms trade (exports and imports) but at times the embargoes have taken forms of broader restrictions on oil exports to South Africa, establishment, investment and export financing restrictions on foreign companies conducting business in or with South Africa, restrictions of banking services provision to South African companies and government and price limits on imports of South African gold etc.. Certain countries imposed complete embargoes on trade with South Africa while others applied only limited restrictions.

Overall, South Africa entered the post-apartheid era with a complex system of quantitative restrictions and relatively high tariffs (17% simple average tariff in 1993, Table 11.12), which were also highly dispersed (standard deviation of 22%). At that time, in contrast to most other developing countries, South Africa's tariff structure was characterised by relatively high tariffs on consumer products and lower tariffs on imported machinery and capital goods, resulting in relatively high effective rates of protection, Table 11.11. Such a protection pattern was also symptomatic of the country's established dependence on exports as a means of financing imported investment goods (Thurlow, 2006).

The year 1990 saw the release of Nelson Mandela and the beginning of a process of lifting of trade embargoes that was largely completed by the end of 1994. The same period brought about reviews of macroeconomic and industrial policies, including the introduction of export subsidies under the General Export Incentive Scheme (GEIS) in 1990, and an initiation of fully fledged trade liberalisation which involved such policy measures as tariff reductions, reduction of quantitative restrictions and, more broadly, simplification of the trade regime.

In 1994 South Africa signed the Marrakech Agreement under the Uruguay Round (UR) of the GATT where it committed to a significant liberalisation and simplification of its trade regime including a binding of 98% of tariff lines, reducing the number of tariff rates to six, rationalising the over 12 000 tariff lines and the replacement of quantitative restrictions on agriculture by tariff equivalents (see *e.g.* Edwards, 2005). Mabugu and Chitiga (2007) report that by 2004 significant progress on implementation of these commitments has been reported in that the number of tariff lines, the number of tariff lines with formula, specific and non-ad valorem duties had been reduced. Bell (1997) reports that South Africa's tariff reductions actually exceeded its UR commitments. Yet, several post 1994 assessments indicated that there was a need for further simplification of trade policy instruments (Mabugu and Chitiga, 2007; WTO, 1998; WTO, 2003). The 2003 Trade Policy Review of SACU (and South Africa as its core member) indicated that progress since 1994 on the application of formula duties, the imposition of non-ad valorem duties and the dispersion and escalation of applied MFN duties could hardly had ensured compliance with the WTO commitments.

4.2 *Merchandise trade liberalisation of the 1990s and current policy stance*

The extent of trade liberalisation in the 1990s and the scope for further liberalisation in South Africa have been fiercely debated since mid 1990s. Edwards (2005) summarised this debate and pointed to a number of methodological and data issues that underlined the differences in opinion. He also developed a coherent set of industry level tariff rates, including collection duty rates, scheduled rates and effective rates of protection, for the period 1988-2004.[6] Importantly, he accounted for the surcharges applied in various periods for the balance of payments reasons, which, as he demonstrates, had a marked effect on the levels of protection.

Table 11.11 reports the scheduled rates and the estimates of effective rates of protection by sector calculated by Edwards (2005) for 1994 and 2003. The time evolution of some of these ERPs are discussed in more details in Section 6 which deals with the impact of protection on labour and total factor productivity. The estimates suggest that effective protection has been reduced significantly over the 1990s, particularly when surcharges are taken into account. Edwards (2005) reports that the average rate of protection in manufacturing sector as a whole fell from 48% in 1993 to 12.7% in 2004 based on the scheduled rates and including surcharges and from 30.8% to 8% between 1993 and 2003 according to collection rates.

The highest rates of protection in 1994 were recorded for a number of traditionally labour-intensive manufacturing sectors such as *Textiles*, *Wearing apparel*, *Leather products*, *Footwear* and *Furniture* (though *Motor vehicles* and *Chemicals* also had high rates of protection). Low or negative rates were recorded in the *Primary sector* (agriculture and mining), *Machinery and equipment*, *Professional and scientific equipment* and *Other transport products*.

Over the 1994-2003 period protection inclusive of surcharges fell in all sectors.[7] The largest percentage reductions in ERPs were recorded in the initially highly protected manufacturing sectors such

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[6]   Effective rates of protection aim to capture the extent of protection on value added as opposed to protection on final output. Effective rates of protection are calculated according to the following formula: $ERP_j = \frac{(V_j^* - V_j)}{V_j} = \frac{t_j - \sum_i a_{ij} t_i}{1 - \sum_i a_{ij}}$ where V_j^* is the domestic value added to final product j at tariff distorted prices, V_j is the value added under free trade, t_j is the tariff on outputs, t_i is the tariff on inputs and a_{ij} is the quantity of intermediate input *i* used in the production of one unit of *j*, Edwards (2005).

[7]   Positive percentage change is calculated for coal mining but that means only that the sector became less disadvantaged.

as *Textiles*, *Wearing apparel*, *Leather products* and *Footwear* but also for *Other manufacturing* and *Communication equipment*. Significant decreases of more than 10% were observed in a number of other sectors. In 2003, the last year for which the effective rates of protection data are available at this stage, the most protected sectors were *Tobacco* (ERP of 315%), *Textiles* (85%), *Wearing apparel* (97%), *Footwear* (51%), *Furniture* (46%), *Food* (26%), *Motor vehicles* (33%), *Rubber and plastic products* (33 and 20%, respectively), *Beverages* (25%) and *Leather products* (19%).

The outlined ERP structure may seem rational from the point of view of broadly protecting 'traditional' labour-intensive sectors. Indeed, the 2003 ERPs seem to be higher in sectors where the ratios of fixed capital to formal employment are quite low (see Figure 11.19). Yet, at the same time these are also the sectors with relatively low shares of unskilled employment (see Figure 11.20). The latter tendency may be seen as an unintended consequence since, as many recent assessments emphasise, unemployment is particularly severe in the unskilled segments of the labour force (Banerjee *et al.* 2006; OECD, 2008). Additionally, high TFP rates correlate negatively with firm concentration and levels of competition across industries (OECD, 2008) and with the productivity performance across these sectors discussed in Section 6 of this report.

Importantly, several indicators suggest that that the process of liberalisation has largely stalled in recent years. The decline in average tariff seems to have stopped or even have been reversed since 2000, Table 11.12. Similarly, tax revenue on international trade and transactions expressed as percentage of imports, revenue or GDP has increased noticeably over the period 2004-2007, Figure 11.21. Table 11.13 indicates that this was driven by increasing duties on consumer goods though, with respect to 1999, small increases have been recorded also in intermediate products and raw materials categories.

Table 11.11. Effective rates of protection and scheduled tariff rates in the manufacturing sector

Based on scheduled rates

	ERP based on collection rates				% change in ERP 94-03		Scheduled tariff rates				% change in scheduled tariff 94-03	
	Excluding surcharges		Including surcharges		Excluding Surcharges	Including Surcharges	Excluding surcharges		Including surcharges		Excluding Surcharges	Including Surcharges
	1994	2003	1994	2003			1994	2003	1994	2003		
Agriculture, forestry & fishing	1.8	5.4	7.3	5.4	3.5	-1.7	5.1	5.4	8.9	5.4	0.3	-3.2
Coal mining	-4.3	-2.4	-5.5	-2.4	2.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Gold & uranium mining	12.7	-2.2	11.4	-2.2	-13.3	-12.2	10.0	0.0	10.0	0.0	-9.1	-9.1
Other mining	2.4	0.4	1.7	0.4	-2.0	-1.3	2.8	1.0	2.9	1.0	-1.8	-1.8
Food	35.2	36.4	55.3	36.4	0.9	-12.2	11.9	11.8	18.8	11.8	-0.1	-5.9
Beverages	6.2	25.3	51.9	25.3	18.0	-17.5	6.5	14.3	29.3	14.3	7.3	-11.6
Tobacco	239.0	315.4	340.5	315.4	22.5	-5.7	29.2	36.0	41.7	36.0	5.3	-4.0
Textiles	140.9	85.3	149.7	85.3	-23.1	-25.8	38.1	22.6	41.3	22.6	-11.3	-13.2
Wearing apparel	176.2	96.7	218.4	96.7	-28.8	-38.2	62.5	35.0	75.1	35.0	-16.9	-22.9
Leather products	37.0	19.2	59.7	19.2	-13.0	-25.4	16.7	11.6	25.9	11.6	-4.4	-11.4
Footwear	82.8	50.7	106.0	50.7	-17.6	-26.9	36.8	22.7	48.0	22.7	-10.3	-17.1
Wood products	17.5	14.8	21.7	14.8	-2.3	-5.7	11.0	9.1	14.5	9.1	-1.7	-4.7
Paper products	14.7	10.1	15.8	10.1	-4.0	-4.9	9.8	6.2	11.3	6.2	-3.2	-4.6
Printing & publishing	10.5	4.7	22.2	4.7	-5.2	-14.3	9.5	4.8	16.1	4.8	-4.3	-9.8
Coke & petroleum	10.4	8.0	10.0	8.0	-2.2	-1.8	5.1	3.3	5.1	3.3	-1.7	-1.8
Basic chemicals	15.1	1.4	14.4	1.4	-11.9	-11.4	8.0	1.7	8.1	1.7	-5.9	-5.9
Other chemicals	21.3	7.4	32.3	7.4	-11.4	-18.8	11.6	4.5	16.2	4.5	-6.4	-10.1
Rubber products	42.4	33.3	46.6	33.3	-6.4	-9.1	16.5	11.4	18.6	11.4	-4.4	-6.0
Plastic products	31.7	20.2	36.2	20.2	-8.7	-11.7	17.5	9.8	19.8	9.8	-6.6	-8.4
Glass products	17.3	14.3	32.1	14.3	-2.5	-13.4	10.1	7.7	17.2	7.7	-2.2	-8.1
Non-metallic minerals	21.8	10.8	29.9	10.8	-9.0	-14.7	11.3	5.6	15.0	5.6	-5.1	-8.2
Basic iron & steel	19.9	11.0	20.1	11.0	-7.4	-7.5	8.2	4.3	8.8	4.3	-3.6	-4.1
Non-ferrous metals	17.4	3.1	17.9	3.1	-12.1	-12.5	10.4	2.2	10.8	2.2	-7.4	-7.7
Metal products	24.7	16.6	36.7	16.6	-6.5	-14.7	13.6	8.1	18.3	8.1	-4.8	-8.6
Machinery & equipment	6.6	3.0	11.9	3.0	-3.4	-8.0	7.4	3.7	10.4	3.7	-3.5	-6.1
Electrical machinery	21.6	15.2	33.0	15.2	-5.2	-13.4	13.5	7.7	18.3	7.7	-5.1	-8.9
Communication equipment	19.6	1.3	35.5	1.3	-15.4	-25.3	14.6	3.1	24.2	3.1	-10.1	-17.0
Professional & scientific	-0.4	-6.3	9.5	-6.3	-6.0	-14.5	5.7	0.3	12.2	0.3	-5.1	-10.6
Motor vehicles	45.9	32.7	45.1	32.7	-9.1	-8.6	24.1	15.7	25.9	15.7	-6.8	-8.1
Other transport	5.4	-3.3	14.9	-3.3	-8.2	-15.8	7.0	0.9	12.3	0.9	-5.7	-10.2
Furniture	49.6	46.3	82.6	46.3	-2.2	-19.9	21.5	17.7	32.1	17.7	-3.1	-10.9
Other manufacturing	45.8	17.3	96.5	17.3	-19.5	-40.3	15.1	6.0	26.5	6.0	-7.9	-16.2

Note: % change in ERP (or tariff rate) is calculated as $\Delta ERP/(1+ERP_0)$ (or $\Delta t/(1+t_0)$).
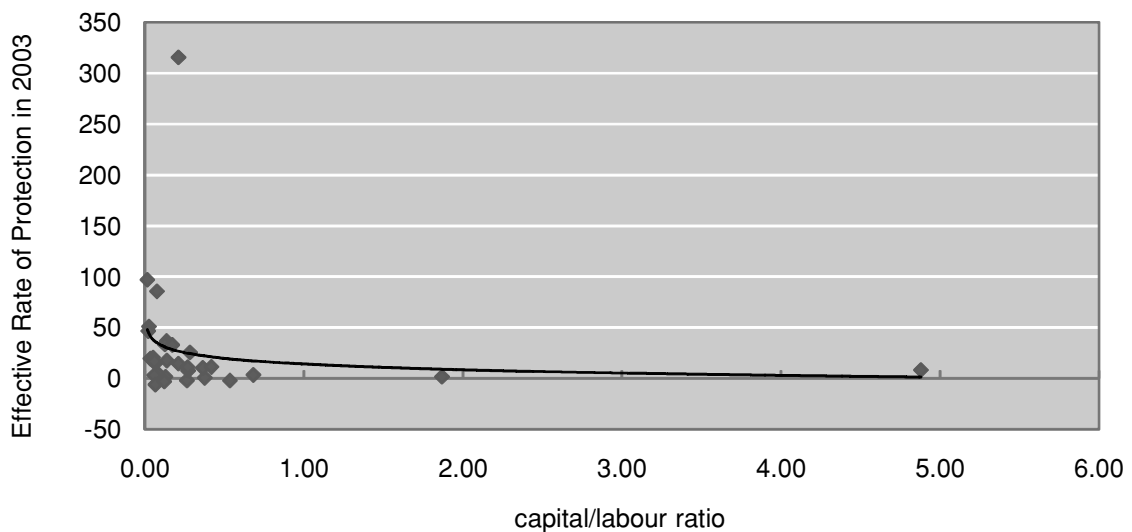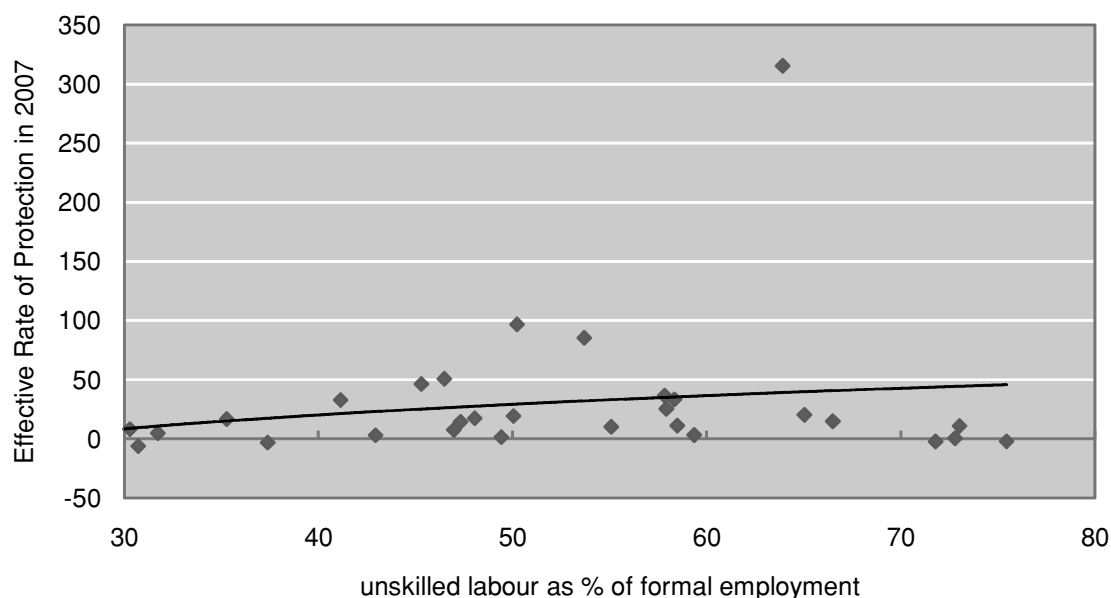*Source*: Edwards (2005).

Figure 11.19. Effective rates of protection and labour intensity by sector

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Figure 11.20. Effective rates of protection and labour intensity by sector

Source: Quantec database, author's calculations.

Annex Table 5.2 in Kowalski *et al.* (2008) provides yet more detailed information on the evolution of tariff protection by SIC sector in the years 2001-2007. Most products record small or insignificant decreases in average or maximum tariffs or their standard deviation. Exceptions are *Leather and leather products*, *Livestock and livestock products* and *Lumber and wood products* which record a small increase in tariff protection from 2001 to 2007. Some explanation of this tendency are provided by IMF (2007) who report on the consultations with South African government authorities who "saw some merit in further liberalisation, but argued that moves in this area needed to be informed by developments in ongoing multilateral and regional trade negotiations and the emerging industrial policy strategy, which seems to call for maintaining tariff protection on certain sectors, while reducing tariffs on selected inputs".

Doing business indicators compiled by the World Bank (Table 11.14) indicate also that while doing business in South Africa is generally relatively easy as compared to other BRIIC countries, in terms of trading across borders South African firms are more disadvantaged as compared to all BRIIC but Russian Federation. While to a large extent this is likely to do with South Africa's geographical location, improved customs procedures as well as other trade facilitation measures might have a large potential of improving South Africa's integration with the world markets.

Table 11.12. South Africa's tariff structure

|	Agricultural Products			Non Agricultural Products			Maximum Rate
	Simple Average	Weighted Average	Standard Deviation	Simple Average	Weighted Average	Standard Deviation	
1988	8.35	4.11	10.39	11.66	12.07	11.85	100
1990	7.61	3.42	10.14	10.59	10.77	11.31	110
1991	8.94	3.48	12.18	10.25	11.54	11.73	110
1993	9.82	6.93	12.37	16.80	13.76	22.33	100
1996	10.79	7.68	12.55	14.67	8.69	23.89	83
1997	8.95	6.30	12.17	6.85	5.14	10.67	78
1999	8.33	5.28	11.80	5.58	4.39	9.64	55
2001	8.82	7.13	11.68	7.77	4.90	11.57	60
2004	8.98	7.76	12.00	7.91	5.39	10.99	96
2005	7.35	7.27	10.03	7.86	5.90	10.88	55
2006	7.36	7.75	10.06	7.83	5.67	10.87	55
2007	9.00	7.70	11.61	7.69	5.78	10.92	60

Source: UN TRAINS.

Table 11.13. Simple average tariff by production stage

	Capital goods	Consumer goods	Intermediate goods	Raw materials
1988	5.85	18.11	10.74	3.80
1990	5.83	16.22	9.92	3.69
1991	6.02	15.85	9.59	4.34
1993	6.19	27.89	14.55	5.61
1996	2.83	27.15	11.80	6.28
1997	4.27	12.93	5.21	5.65
1999	2.35	11.34	4.49	4.47
2001	2.17	15.24	6.10	5.22
2004	2.05	15.18	6.18	4.09
2005	2.03	14.95	6.11	2.86
2006	2.01	14.93	6.08	2.86
2007	2.06	15.28	5.64	4.19

Source: UN TRAINS.

Figure 11.21. Taxes on international trade and transactions
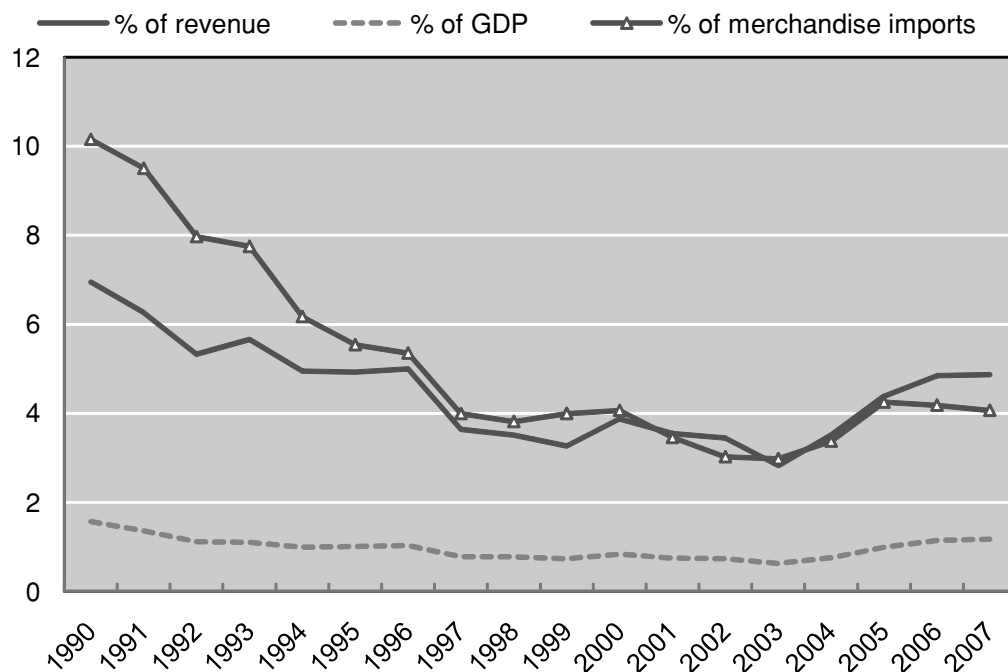
Source: SARB, authors' calculations

Table 11.14. Doing business, selected indicators, 2008

		South Africa	Brazil	China	India	Indonesia	Russia
Overall indicator		**35**	**122**	**83**	**120**	**123**	**106**
Starting a Business	Cost (% of income per capita)	7.1	10.4	8.4	74.6	12	3.7
Dealing with Licenses	Procedures (number)	17	18	37	20	19	54
	Time (days)	174	411	336	224	196	704
	Cost (% of income per capita)	30.4	59.4	840.2	519.4	286.8	3,788.4
Trading Across Borders	Time for export (days)	30	18	21	18	21	36
	Cost to export (US$ per container)	1,087	1,090	390	820	667	2,050
	Time for import (days)	35	22	24	21	27	36
	Cost to import (US$ per container)	1,195	1,240	430	910	623	2,050
Registering Property	Procedures (number)	6	14	4	6	7	6
	Time (days)	24	45	29	62	42	52
	Cost (% of property value)	8.8	2.8	3.6	7.7	10.5	0.3
Enforcing Contracts	Procedures (number)	30	45	35	46	39	37
	Time (days)	600	616	406	1,420	570	281
	Cost (% of debt)	33.2	16.5	8.8	39.6	122.7	13.4
Employing Workers	Difficulty of Hiring Index	56	78	11	0	72	33
	Difficulty of Firing Index	30	0	40	70	60	40
	Rigidity of Employment Index	42	46	24	30	44	44
	Nonwage labor cost (% of salary)	4	37	44	17	10	31
Closing a Business	Time (years)	2	4	1.7	10	5.5	3.8
	Cost (% of estate)	18	12	22	9	18	9
	Recovery rate (cents on the dollar)	33.2	14.6	35.9	11.6	12.6	29

Source: The World Bank Group, Doing business indicators.

4.3   *South Africa's preferential trade agreements*

In addition to pursuing trade liberalisation in the multilateral context, South Africa has been engaging in a number of important regional and bilateral initiatives. It is a core member of the South African Customs Union (SACU) between South Africa, Botswana, Lesotho, Namibia and Swaziland. It has two significant bilateral FTAs: Southern Africa Development Corporation (SADC)[8] (operational as of 1996) and the SA-EU Trade Development and Cooperation Agreement (TDCA) (entered into force in January 2000). As a member of SACU South Africa participates in SACU-EFTA FTA (entered into force in May 2008), SACU-Mercosur PTA (concluded in April 2008) and SACU-USA Trade, Investment and Development Cooperation Agreement with the United States (concluded in April 2008). Other bilateral preferential trade talks are also under way including the Economic Partnership Agreements initiative that has an objective of creating a free trade area between the European Union and the ACP countries and SACU-India PTA negotiations. The country is also a beneficiary of a number other preferential trading schemes such as the Generalized System of Preferences and the US's African Growth and Opportunity Act.

SACU was initially established in 1969 as a replacement of the Customs Union Agreement of 1910 but its roots go as far back as the establishment of the 1899 Customs Union Convention amongst a number of South African colonies, making it the oldest customs union in the world. The new 2002 SACU Agreement contains provisions that go beyond the original facilitation of intra-SACU trade and the application and revenue sharing of a common external tariff with the aim of encouraging greater regional economic integration among the SACU members. These include provisions for deeper integration such as creation of egalitarian SACU institutions to facilitate joint decision making process[9]; equitable trade benefits to members; promotion of fair competition in the common customs area; facilitation of investment in the common customs area; enhancement of economic development, diversification and competitiveness and an equitable revenue sharing formula as well as the development of common policies and strategies.

In practical terms, intra-SACU trade is free of duties and quantitative restrictions except in exceptional circumstances. SACU members apply customs, excise, sales and anti-dumping duties as well as rebates and duty drawbacks as decided by the SACU Council of Ministers. In this respect the process is more egalitarian than it was under the 1969 SACU Agreement where members followed South Africa's trade policy as now all participants to the agreement are suppose to take part in the decision making, which has the positive effect of minimising the potential for trade diversion in bilateral trade among SACU members. It is not clear whether the 2002 agreement is more constraining on South Africa with respect to any unilateral reform initiatives it might want to have, or in the WTO context. On the one hand, similarly to the earlier SACU Agreement, South Africa can negotiate and enter into new preferential trade agreements with third parties or amend existing agreements as long as it has the consent of other Member States. [10] On the other hand the country is no longer the sole decision making power over customs and excise policies of SACU and the new agreement makes provisions for

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[8]   SADC consists of: Angola, Botswana, Dem. Rep. of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

[9]   Prior to the 2002 SACU Agreement South Africa had the sole decision-making power over customs and excise policies in SACU. It was administered on a part-time basis by annual meetings of the Customs Union Commission and there were no effective procedures to ensure compliance or resolve disputes. The 2002 SACU Agreement established an independent SACU Secretariat and a number of key decision making institutions including a Council of Ministers, a Customs Union Commission, Technical Liaison Committees, a SACU Tribunal and a SACU Tariff Board. (Source: SACU Secretariat website www.sacu.int)

[10]   Art. 31 of 2002 SACU Agreement.

establishing a common negotiating mechanism for the purpose of undertaking negotiations with third parties.[11]

SACU is also known for its revenue sharing formula whereby all customs and excise duties collected by members are pooled in a common revenue fund and redistributed according to a formula that takes into account trade, economic size and development criteria.[12] The 2002 Agreement also established a dispute settlement mechanism for dealing with problems in the interpretation and application of the agreement. It called for the simplification and harmonisation of trade documentation and procedures across members, albeit only in general terms.

South Africa is also the core member of the Common Monetary Area (CMA) which provides for free flows of capital within the area and assures the stability of bilateral nominal exchange rates by pegging the national currencies of Lesotho, Swaziland and Namibia to the South African rand.

Membership of the Southern African Development Community includes the five SACU members as well as Angola, the Democratic Republic of Congo, Madagascar, Malawi, Mauritius, Mozambique, Seychelles, Tanzania, Zambia and Zimbabwe. The SADC Treaty provides a framework to coordinate and jointly develop policies aimed at sustainable development of the region. The Trade Protocol of SADC signed in 1996 and ratified in 2000 by eleven SADC members[13] is aimed at establishing a SADC free-trade area. In the Trade Protocol, SADC countries agreed on a classification of all traded products into three groups: one (consisting mostly of capital goods and equipment) that was liberalised in the first year of Treaty's existence; a second group to be liberalised gradually by 2008 and a third group of sensitive products (such as sugar, textiles and clothing but limited to 15% of each members total merchandise trade) are to be liberalised by 2012. Products not eligible for preferential treatment within the SADC are estimated to amount to approximately 2% of SADC merchandise trade by 2012. The Protocol identified also some non-tariff measures to be eliminated (*e.g.* import quotas, export subsidies) but excluded some other barriers such as local content requirements or import and export licensing. In the future, SADC intends to extend trade liberalisation to services.

South Africa is also a member of a yet more inclusive regional initiative, the African Union, launched in 2001. Its aim is to promote integration and harmonisation throughout the African continent[14] through, among other means, the establishment of a pan-African economic and monetary union over a period of 34 years.

The available trade data make it hard to judge how important SACU and SADC are for South Africa. For example the UN Comtrade database reports no data on South Africa's exports to any of the other SACU members (Table 11.15. Imports from SACU are reported but in 2006 they accounted for merely 1.2% of total South Africa's imports. Such a low number suggests that at least some trade flows

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[11]   This common negotiating mechanism has not yet been agreed although SACU Executive Secretary Ms. Tswelopele Moremi reported that drafting and consultations are under way. She also revealed that now the SACU Secretariat has a negotiating team that negotiates on behalf of SACU as a whole. This is reported to have been the case in the SACU-Mercosur negotiations. (Source: interview with SACU Executive Secretary Ms. Tswelopele Moremi accessed at http://www.sacu.int/docs/pr/2008/interview.pdf).

[12]   Customs duties are distributed proportionally to intra-SACU imports (customs component) and excise proportionally to the share of a member in total SACU GDP (excise component) and inversely proportionally to the GDP per capita (development component). For a precise explanation of how the share is calculated see Box II.1 in WTO (2003).

[13]   Exceptions are Angola, Democratic Republic of Congo and Seychelles.

[14]   All African countries except Morocco are members of the AU.

within SACU are not being reported. For other SACU members reporting seems better and the data indicate that the customs union accounts for 80% to 90% of their imports and for 7% to 75% of their exports. Data for SADC (Table 11.16) are also likely to suffer from the problem of no data on South Africa-SACU flows but it is clear that in terms of trade shares SADC is an important initiative for most other SADC members.

Table 11.15 Importance of SACU trade for South Africa and other SACU members, 2006

	Imports from SACU as % of total imports		Exports to SACU as % of total exports	
	Value	Share	Value	Share
South Africa	799.7	1.2	..	..
Botswana	2 640.4	86.5	301.5	6.7
Lesotho	1 094.4	78.2	173.9	18.0
Namibia	2 317.9	82.9	845.9	25.1
Swaziland	1 460.6	88.3	1 175.2	74.9

a) 2004 for Lesotho and Zimbabwe, 2005 for Swaziland
Source: UN ComTrade.

Table 11.16 Importance of SADC trade for South Africa and other SADC Trade Protocol members, 2006a

	Imports from SADC as % of total imports		Exports to SADC as % of total exports	
	Value (million USD)	Share (%)	Value (million USD)	Share (%)
South Africa	1 978.3	2.9	4 110.6	7.8
Botswana	2 710.0	88.8	575.7	12.8
Lesotho	1 095.3	78.3	174.5	18.0
Namibia	2 338.7	83.6	878.1	26.0
Swaziland	1 475.2	89.2	1 296.7	82.6
Malawi	720.8	59.6	208.8	31.2
Mauritius	298.6	8.2	53.0	2.4
Mozambique	1 167.3	40.7	453.8	19.1
Tanzania	666.1	13.6	290.2	17.2
Zambia	1 739.7	56.6	574.9	15.2
Zimbabwe	1 481.3	63.4	766.8	55.0

a) 2004 for Lesotho and Zimbabwe, 2005 for Swaziland
Source: UN ComTrade.

Bilateral agreements

South Africa is also a party to a number of bilateral agreements either as an individual country or as a member of SACU. The 1999 Trade, Development and Cooperation Agreement (TDCA) between South Africa and the EU, historically the most important trading partner of South Africa, provides for trade liberalisation to the form of a free trade area by 2012. It is projected that by this date the EU will have liberalised (fully or partially) approximately 95% (61.4% and 99.9% of agricultural and industrial products respectively) of its imports from South Africa while South Africa liberalises approximately 86% (83% in agriculture and 86.5% of industrial products). The liberalisation by the EU will be accomplished within the first 3-6 years (WTO, 2003). The TDCA gives South African firms a

competitive edge in access to EU markets as compared with its SACU or SADC partners but TDCA does not have discriminatory impact in terms of access to South Africa's market as, according to the SADC Agreement, South Africa had to extend all the concessions granted to the EU to all SADC members.

South Africa is also a negotiating party to the Economic Partnership Agreements initiative that has an objective of creating a free trade area between the European Union and the ACP countries. ACP countries are expected to enter the EPAs in regional groupings, in the case of South Africa the SADC which consists of all the members of SACU plus Angola, Mozambique and Tanzania. For South Africa the EPA negotiations are to be streamlined with the review of the existing TDCA which has been interpreted as an indication that the TDCA will be submerged in the EPA negotiations and that the eventual EPA will replace TDCA trade provisions at the date of its entry into force.[15] Towards the end of 2007 an Interim EPA (IEPA) was initialled by Botswana, Lesotho, Swaziland, Namibia and Mozambique to ensure that the SADC EPA member states did not lose preferential access to the EU market after expiry of the Cotonou agreement on 31 December 2007. South Africa and Angola have not yet initialled the agreement due to concerns with the Interim agreement text and the TDCA remains the legal framework for South Africa's trade with the EU. It is expected that negotiations towards a full EC and SADC EPA agreement will be concluded in December 2008.

The recently approved (June 2008) SACU-Mercosur Preferential Trade Agreement that replaces the earlier agreement signed in 2004 and specifies, among other provisions, tariff concessions covering around 1 000 products with preference margins between 10% and 100%. The SACU-EFTA Free Trade Area (signed in 2006 and entered into force in May 2008) and the three associated bilateral agreements between SACU and the three individual EFTA members covering agricultural trade offer SACU fully duty and quota free access for industrial products and a limited but enhanced access to the EFTA agricultural markets. SACU concessions to EFTA largely mimic those offered to the EU under the TDCA on both agriculture and industrial products.[16] Trade, Investment and Cooperation Agreement (TIDCA) between SACU and the US and the SACU concluded in April 2008 makes provisions for a consultative process aimed at dealing with any matter relating to trade and investment between the two sides and possibly leading to future enhancements of agreements between the two sides. Negotiations are currently being held on SACU-India Preferential Trade Agreement (PTA). Sources have also reported on considerations of a trilateral free trade agreement (T-FTA) between SACU, India and Mercosur and of a bilateral agreement with China.[17]

4.4 Services trade

As Section 2 of this report indicated, services seem to be the main driver of South Africa's recent economic growth and this sector is a very important and dynamically growing employer. This is especially the case for *Wholesale and retail trade* and *Communication* and *Business services*—these sectors were responsible for over 40% of final output growth over the 1994-2007 period and accounted for over 46% of employment. Other evidence presented in sections 2 and 3, however, indicates that trade in services may be seen as not as important as trade in goods. For example, in 2006 the value of total South African exports of services did not exceed one fifth of the value of exports of goods (a slightly larger ratio holds for services imports) and since early 1990s South Africa has consistently recorded a deficit on services trade that nonetheless never exceeded one percent of GDP.

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[15]   See discussion by Paul Kruger of TRALAC at http://epa.tralac.org/scripts/content.php?id=6241 .

[16]   Some adjustments were made taking into account BLNS sensitivities and errors made in the TDCA. This is based on information provided by the SACU Secretariat. Some adjustments were made taking into account BLNS sensitivities and errors made in the TDCA.

[17]   Source: www.bilaterals.org

However, there are also several reasons to think that trade in services does offer South Africa a considerable growth potential. First, the currently low current levels of services trade may quite simply indicate a large potential for the future. Second, exports of travel services are in fact an important source of export revenue that amounts to over 3% of South Africa GDP and imports of transports services seem indispensable reaching similar magnitudes. Third, existing balance of payments services trade data on which the analysis presented so far is based do not adequately account for the extent of services trade according to the current WTO typology as they merely capture two modes of services trade: cross-border trade (mode 1) and consumption abroad (mode 2). They do not, for example, account for sales of foreign affiliates in South Africa or sales of South African affiliates abroad (mode 3), nor do they account for services provided by temporary workers (mode 4). Fourth, the extent of services trade indicated by the currently available data is affected by existing services trade barriers, data on which is very elusive (see below). Finally, the effects of certain forms of services trade are different from those of merchandise trade. For example, a foreign company based in South Africa sells its output domestically and influences local market structure and competition. It may also be a source of technology or skill transfer. The difference with goods trade is that goods can be shipped from abroad without local presence.

Foreign direct investment performance of South Africa, which can be considered a proxy for mode 3 of services trade, is mixed. FDI inflows expressed as a percentage of GDP have grown considerably but are lower than in China, Brazil or the Russian Federation (Figure 11.22). When expressed as a share of total FDI into low and middle income economies grouping this share is growing very slowly and is currently smaller than in any other of the BRIICS apart from Indonesia. This mixed FDI performance is somewhat puzzling given the apparent relative openness of South Africa's services trade regime.

For the time being widely available indicators of restrictiveness of services trade with a broad sectoral coverage or with a broad coverage of different modes of services trade are scarce. Three pieces of currently available OECD research in this area include Dihel and Shepherd (2007), Koyama and Golub (2006) and certain components of the product market regulation indicators assembled by the OECD Economics Department (OECD, 2005).[18] The message of these pieces of analysis is quite similar: South Africa's services trade regime seems relatively liberal as compared to other emerging and developing economies as well as the OECD. In Dihel and Shepherd (2007), for example, South Africa is reported to have the least restrictive barriers to distribution trade (considering all modes of supply) across the sample of emerging countries covered in the analysis (see Figure 11.23 and Dihel and Shepherd, 2007). In Koyama and Golub (2006) the restrictiveness of South Africa foreign direct investment regime (mode 3) seems to be lower than those of China, India or the Russian Federation (see Figure 11.24). The analysis of Koyama and Golub (2006) indicates that barriers to actual operations of foreign companies have a disproportionately large contribution to the index as opposed to foreign equity or screening requirements. One component of the 2003 OECD product market regulation (PMR) indicators[19] indicates that restrictiveness of South African foreign ownership barriers (mode 3) is situated somewhere between the least and most open OECD economies. In the context of BRIICS foreign ownership restrictiveness is a little higher than Brazil's and a little lower than India's (see Table 2.1 in OECD, 2008).

It is worth pointing out that Dihel and Shepherd (2007) and OECD (2005) constructed their services trade restrictiveness indices on the basis of measures actually applied[20] while the FDI restrictiveness

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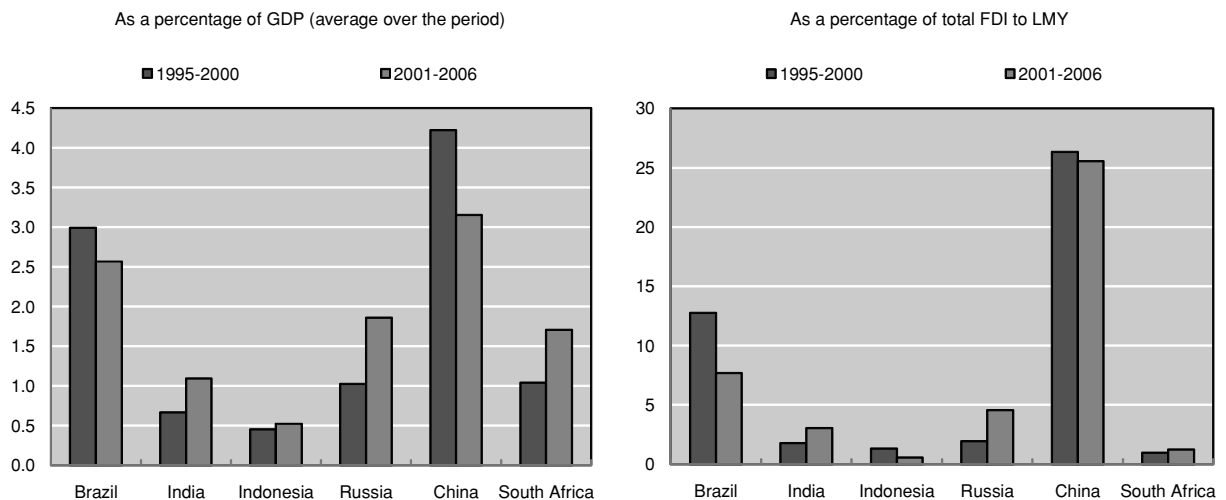| [18]	OECD Trade and Agriculture Directorate is currently working on methodology and collecting data to develop a comparable services trade restrictiveness index though the first stages of this work will concentrate on current OECD members.
[19]	These indicators are currently being updated.
[20]	GATS commitments were only used wherever the information on actually applied measures could not be obtained.

index of Koyama and Golub (2006) reflected de jure but not the facto situation. The approach of the World Bank World Trade Indicators database (WTI, 2008) is instead based on the GATS commitments. In fact, WTI (2008) contains the only currently available comparative database of trade restrictiveness indices based on a broad sectoral coverage of GATS commitments.[21] The overall GATS commitment indices presented in Figure 5.7 confirm the relatively open nature of South Africa's services commitments. In fact, South African index is higher (reflecting more liberal regime) than those of a number of OECD countries and other regions across a number of services sectors (see WTI, 2008 for details).

At this stage of work on South Africa's trade and growth the Secretariat has not been able to gather and analyse more data on the importance of services trade and services trade barriers for South Africa's economy although the structure of recent economic growth suggests that they may be of key importance. It is therefore suggested that this theme be taken up as a priority in future work on South Africa and on services trade.
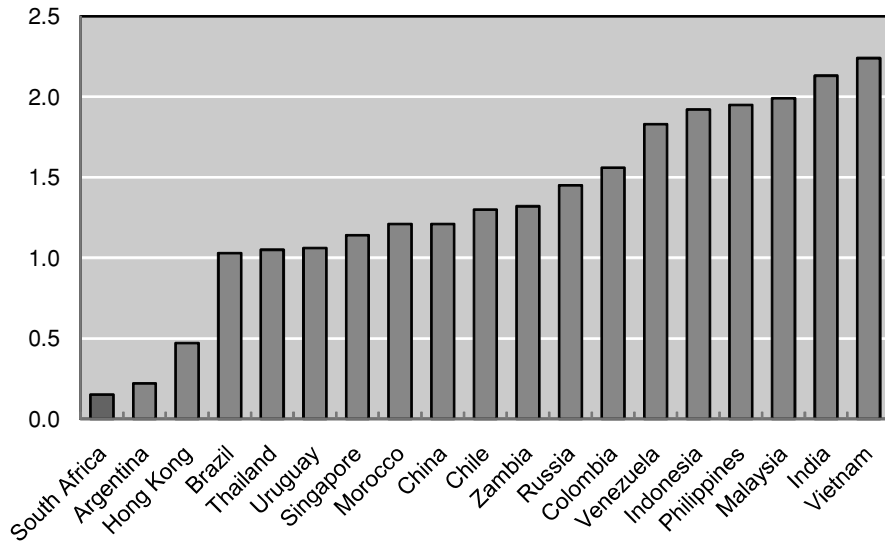
Figure 11.22 FDI inflows into BRIICS

As a percentage of GDP (average over the period)

■1995-2000   ■2001-2006

As a percentage of total FDI to LMY

■1995-2000   ■2001-2006

Source: WTI.

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[21]   This approach is reported to follow the methodology of Hoekaman (1997) and Hoekman and Eschenbach (2006).
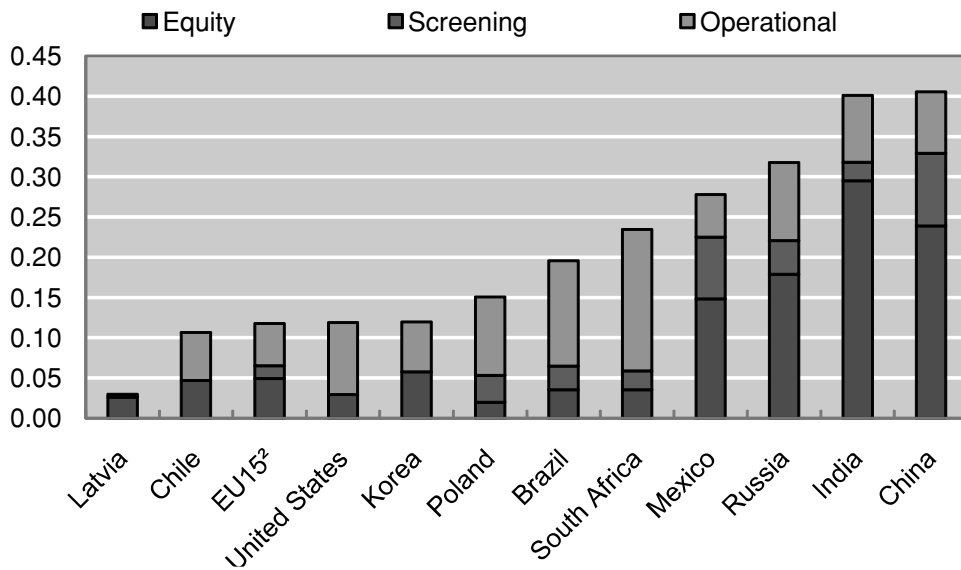
Figure 11.23 Services Trade Restrictiveness Index in Distribution Services[1]

1) The index encompasses all modes of services trade

Source: Dihel and Shepherd (2007)

Figure 11.24 Figure FDI restrictiveness index[1]

1) This aggregated Index covers the following sectors and sub-sectors: Business (legal, accounting, architectural, and engineering services), Telecommunications (fixed line telephony and mobile telephony), Construction, Distribution, Finance (insurance and banking), Tourism, Transport (air transport, maritime transport and road transport), Electricity and Manufacturing.

2) Except Luxembourg.

Source: Koyama T. and S. Golub (2006).

Figure 11.25 South Africa's overall GATS commitment index compared with other countries and regions
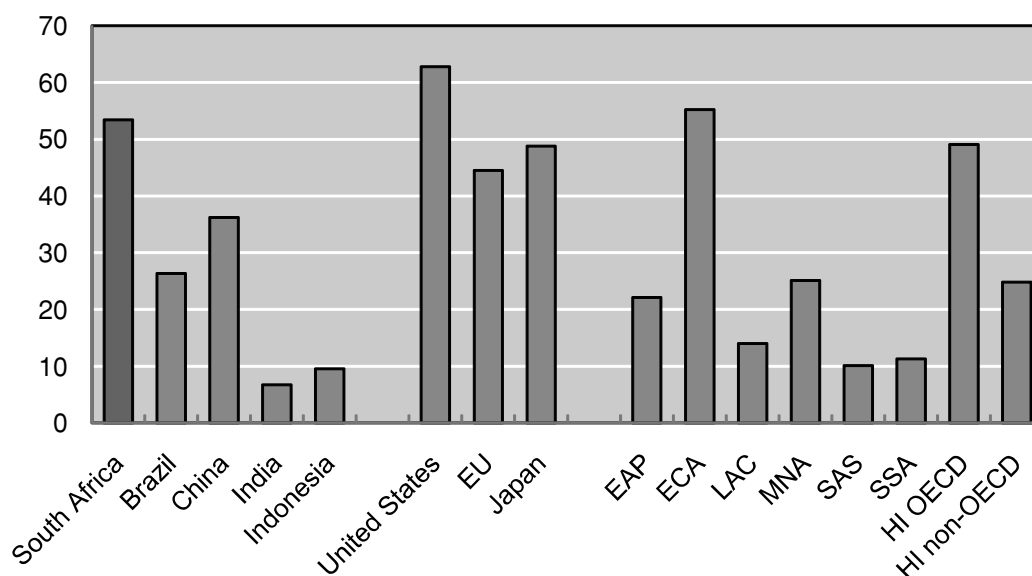
Note: This index encompasses all services sectors

Source: WTI (2008)

5. Did trade liberalisation affect productivity growth in South Africa's manufacturing?

5.1 Openness and productivity growth debate

The last decade witnessed an intense debate on to what extent trade liberalisation impacts upon economic growth. A recent OECD study (Nordas *et al*., 2006) analysed and summarised the various arguments of the debate. The analysis of the trade/openness-growth link essentially boils down to the analysis of trade/openness-productivity link as productivity growth is the only long term source of growth in the neo-classical growth framework. This is due to the fact that under the assumption of diminishing marginal returns, an increase in capital while holding labour input constant increases output, but at a diminishing rate as the stock of capital per worker increases. Eventually the capital stock reaches a level where investors will only replace depreciating capital in the absence of technological progress.

There are many channels through which openness could affect either the level or the rate of change of productivity. The two are often distinguished because the economic theory seems clearer about how openness could affect productivity levels than about how it could affect productivity growth rates. Also, econometric modelling of productivity and its determinants necessarily makes a distinction between the two concepts. The level and growth rate concepts, however, admittedly are less distinguishable in day-to-day economic reality since a one-off step upgrade of productivity will imply a change in productivity growth rate over the transitional period. Similarly, a change in productivity growth rate is presumably composed of a number of step changes in productivity levels.

Keeping this distinction in mind, Nordas *et al.* (2006), argue that from a theoretical point of view openness could cause shifts in the average productivity level (or its growth rate) for the economy as a whole when it leads to a shift of labour and capital towards the sectors with the highest productivity levels (or growth rates). In such a case the productivity level (or growth rates) of individual sectors need not even be affected. Alternatively, liberalisation could result in a shift in the productivity level (or

growth rates) in individual sectors, especially when it leads to deeper specialisation, capital deepening, improved scale economies or faster innovation. In such a case, the least protected or most rapidly liberalising sectors would normally be expected to have highest productivity growth rates, although the proponents of infant industry arguments could argue the opposite.

Even though the theoretical possibilities of a positive impact of liberalisation on growth are numerous the empirical support for them is rather mixed. A review of existing literature by Nordas *et al.* (2006) makes a distinction between openness and trade liberalisation[22] and concludes that a consensus seems to have emerged that openness, income and levels of productivity are positively and strongly correlated and that the direction of causality most likely goes from trade to income levels. The same literature furnished no conclusive evidence of a positive and causal link between trade liberalisation and productivity levels or productivity growth. Similarly, there is no evidence of a positive link between protection and productivity growth or productivity levels.

Nordas *et al.* (2006) argue that the lack of evidence of a link between trade liberalisation and productivity growth boils down to the sheer complexity of the growth process which makes it difficult to pin down a robust and causal relationship between any single policy variable and aggregate productivity growth. Indeed, many of the empirical studies that formed an integral part of the liberalisation-growth debate were conducted as large cross-country or as panel data studies (*e.g.* Dollar, 1992; Sachs and Warner, 1995) which prevented any analysis of the link at an adequate level of product disaggregation or in a specific country and institutional context.

5.2 *Openness and productivity growth in South Africa*

The remainder of this section follows the body of country-specific studies and attempts to shed light on whether the merchandise trade liberalisation observed in South Africa since early 1990s affected productivity growth across its industrial sectors. South Africa's manufacturing sector is an interesting case study as it experienced a varied pattern of liberalisation over the 1988-2003 period as well as a varied pattern in TFP growth rates. In initial years (88-93) average protection across manufacturing sectors actually increased somewhat. This was followed by a period of liberalisation (94-99) and period of continued, but much slower, liberalisation over the period 00-03.

TFP was on average declining over the 88-93 period, growing moderately over the 94-99 period and accelerating remarkably faster over the 00-03 period. This broad pattern does not provide a crystal clear picture of the correlation between liberalisation periods and periods of faster TFP growth, though a positive link could certainly be argued if one assumes time lags between policy reforms and industry responses. However, a casual analysis of this type does not control for any of the possible confounding factors and cannot shed light on the actual causality between protection and TFP growth. Also, the information on heterogeneity in trends across individual sectors is not exploited. An econometric analysis of the relationship between protection and TFP growth by industrial sector and year presented in the reminder of this section attempts to overcome these shortcomings and to estimate the magnitude and statistical significance of this relationship.

An early (and to our knowledge the only existing) assessment of the effects of South Africa's liberalisation on total factor productivity over the period was conducted by Jonsson and Subramanian (2000) for the period 1990-1998. Their cross-section analysis was based on the pooled data for the years 1990-94 and 1994-98 for 24 manufacturing industries at the ISIC 3-digit level and tariff rates for 1990,

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[22]   Trade policies and thus trade liberalisation are but one factor determining the degree of a country's openness.

1994 and 1998, inclusive of surcharges. Their results indicated that there was a significant negative relationship between changes in tariffs and TFP growth across manufacturing sectors and that the result was robust to the inclusion of other determinants of TFP growth (in particular indicators of openness and R&D investment). They have also confirmed their cross-section result with a time series study of determinants of aggregate TFP growth.

The current assessment extends the existing evidence by employing a more comprehensive dataset on changes in tariffs, effective rates of protection, TFP growth, labour productivity, employment by skill, capital stock and openness by sector and over a longer and more recent period 1988-2003. One major improvement is the use of effective rates of protection calculated by Edwards (2005)[23] that account for protection of final output as well as intermediate inputs. The importance of effective rates of protection boils down to the fact that South Africa's tariff structure has traditionally been, and still is, characterised by relatively high tariffs on final products and lower tariffs on intermediate inputs and capital goods (Table 11.13), resulting in relatively high effective rates of protection, Table 11.11. For this reason the analysis in the reminder of this section and the results of econometric modelling focus on this policy variable, instead of simple tariff rates.

Three digit SIC data used in the assessment come from the Quantec Standardised Industry Indicators data set[24] which assembles information from a number of national data sources such as the Department of Labour (manpower surveys), the South African Reserve Bank (national accounts, balance of payments and public sector), The South African Revenue Service (international trade data, etc.), the National Treasury (government expenditures/revenue) and Statistics South Africa (sectoral value added, input-output tables, detailed sectoral remuneration and gross operating surplus, price and output, gross domestic fixed investment, employment).

Two measures of productivity growth that are available in the Quantec Standardised Industry Indicators data set are considered. Labour productivity is calculated as the ratio between output and total number of workers employed, inclusive of the informal sector. TFP is a measure of the growth in output that is not explained by the growth in the quantity of inputs. It includes technical progress, improvements in the workforce, improvements in management practices, and economies of scale.[25]

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[23]   See Section 5 for more details.

[24]   www.quantec.co.za

[25]   It is calculated on the basis of the following formula:

$$A(t) = \frac{Q(t)}{[(WL(t) \cdot L(t)) + (WK(t) \cdot K(t))]}$$

where: Q(t) is the real output at time t; WL(t) is the labour's income share at time t calculated as the remuneration of employees divided by total income at time t; L(t) is the real labour input at time t; WK(t) is the capital's income share at time t calculated as the gross operating surplus divided by total income at time t; K(t) is the real capital input at time t.

Our assessment follows the growth accounting approach to measurement of TFP. The alternative econometric approach, that is often used as a complimentary method, specifies a stochastic production function and involves estimating its parameters, such as for example labour's and capital's shares. The econometric approach has some advantages such as greater flexibility and, possibly, greater accuracy of estimates of TFP but it comes as a cost of dealing with estimation issues that may themselves call into question the robustness of results. In this iteration of work on South African TFP we stick to the growth accounting approach because of its simplicity. Extension to complimentary measures could be implemented in future revisions of the report.

Liberalisation of manufacturing trade

As already discussed in more detail in Section 5 of this report, South Africa intensified the trade-liberalisation process during the 1990s after decades of protectionist trade policy and import controls that characterised the apartheid era. The programme of simplifying the complex and distorted tariff regime was a part of the government's national development strategy and the process was boosted by the conclusion of Uruguay Round of trade negotiation and accession to the World Trade Organisation (WTO) in January 1995.

Table 11.17 reports average sectoral effective rates of protection from Edwards (2005) at the end of each of the sub periods 1988 -1993, 1994-1999 and 2000-2003 and their average annual rates of change over those sub-periods. Data reveal that on average effective protection actually went up over 1988-1993 (average annual growth rate of 0.8% across all sectors) and then was significantly reduced over the period 1994-1999 (average annual growth rate of -2.9%) and to a much lesser extent over the period 2000-2003 (average annual growth rate of -0.4%). At the end of 2003 the average effective rate of protection was 32% though there was a good deal of variation across individual sectors.

Tobacco was, and remains, the most protected sector followed by such traditional sectors as *Textiles*, *Wearing apparel*, *Footwear*, *Furniture* or *Other manufacturing.* Interestingly, the extent of liberalisation in these highly protected sectors over the period 1988-2003 has generally been much less than average (average annual growth rate over the period lower than -1%), with the exception of *Furniture* (-1.4%). *Other manufacturing* (-2.9%), *Leather and leather products* (-1.5%)*, Rubber products* (-1.5%)*, Plastic products* (-1.5)*, Glass and glass products* (-1.3%) were initially relatively highly protected but also experienced significant liberalisation. Yet, there is also considerable variation over time with certain sectors initially experiencing increasing protection over the 1988-1993 period and then liberalisation over the two next sub-periods. A number of sectors experienced liberalisation throughout all three sub periods.

Output and TFP developments

Table 11.18 presents the developments in output and TFP over the investigated period. TFP is clearly a major determinant of output developments. Averaging across sectors, annual TFP growth rates were negative in the pre-liberalisation 1988-1993 period (average annual rate of change -1.45%). Over the same period output grew on average by a mere 1.3% per year. Beginning in 1994 and coinciding with an intensification of the trade liberalisation process, productivity growth rates turned positive (average annual rate of change 0.9%) and output growth accelerated to 3.4% per year. This was still, however, a period when the TFP growth rates remained low and unstable. Finally, during the early 2000s productivity started increasing at a faster pace (average annual rate of growth of 4.3%) and this coincided with a much stronger output growth (average annual rate of growth of 7%). Not unusually for an economy undergoing a major structural change, the employment growth rates have been consistently negative throughout the 1988-2003 period (especially after 1996). This, however, contributed to the current labour market difficulties. Across manufacturing there were some exceptions to these general trends. High TFP growth rates coincided with positive employment growth rates in, for example, *Furniture*, *Other manufacturing* and *Professional and scientific equipment,* Table 11.19.

Table 11.17. Evolution of effective rates or protection

	Effective Rate of Protection (%)			Average annual growth rate over the period				Δ%
	1988	1994	2003	1988-1993	1994-1999	2000-2003	1988-2003	1988-2003
Food	51.4	55.3	36.4	1.1	-2.4	-0.1	-0.6	-9.9
Beverages	43.1	52.0	25.3	1.9	-3.8	1.4	-0.5	-12.4
Tobacco	410.9	340.5	315.4	5.4	-5.4	2.3	0.3	-18.7
Textiles	95.3	149.7	85.3	8.3	-4.1	-3.5	0.2	-5.1
Wearing apparel	101.9	218.4	96.7	11.5	-4.4	-6.0	0.5	-2.6
Leather and leather products	52.4	59.7	19.2	0.2	-3.2	-1.1	-1.5	-21.8
Footwear	77.3	106.0	50.7	2.8	-4.0	-0.9	-0.9	-15.0
Wood and wood products	25.9	21.7	14.8	0.3	-1.8	0.2	-0.6	-8.9
Paper and paper products	12.4	15.8	10.1	0.8	-0.7	-0.4	-0.1	-2.0
Printing, publishing and recorded media	28.7	22.2	4.7	-0.7	-2.8	0.1	-1.3	-18.7
Coke and refined petroleum products	10.5	10.0	8.0	0.0	0.2	-0.9	-0.1	-2.2
Basic chemicals	15.6	14.4	1.4	-0.3	-1.9	0.0	-0.9	-12.3
Other chemicals and man-made fibers	33.6	32.3	7.5	0.0	-3.3	-0.2	-1.4	-19.6
Rubber products	68.0	46.6	33.3	-1.9	-1.9	-0.5	-1.5	-20.7
Plastic products	51.0	36.2	20.2	-1.1	-2.1	-1.0	-1.5	-20.4
Glass and glass products	40.7	32.1	14.3	-0.7	-2.9	0.1	-1.3	-18.7
Non-metallic minerals	34.6	29.9	10.8	-0.4	-3.0	0.2	-1.3	-17.7
Basic iron and steel	24.6	20.1	11.1	-0.4	-1.5	0.0	-0.7	-10.9
Basic non-ferrous metals	16.4	17.9	3.1	-0.2	-1.7	-0.1	-0.8	-11.4
Metal products excluding machinery	46.4	36.7	16.6	-0.6	-3.2	0.1	-1.5	-20.3
Machinery and equipment	22.0	11.9	3.0	-0.8	-2.0	-0.1	-1.1	-15.6
Television, radio and communication equipment	33.6	35.5	1.3	0.3	-4.4	-0.1	-1.7	-24.2
Professional and scientific equipment	13.3	9.5	-6.3	-0.4	-2.9	0.2	-1.2	-17.3
Motor vehicles, parts and accessories	58.1	45.1	32.7	-1.4	-0.9	-1.0	-1.1	-16.1
Other transport equipment	21.3	14.9	-3.3	-1.0	-2.7	-0.2	-1.5	-20.2
Furniture	83.8	82.6	46.3	-0.6	-3.2	0.4	-1.4	-20.4
Other manufacturing	95.8	96.5	17.3	0.4	-7.6	-0.1	-2.9	-40.1
Average across sectors	58.1	59.8	32.4	0.8	-2.9	-0.4	-1.0	-15.7

Note: % change in ERP (or tariff rate) is calculated as $(\Delta ERP/(100+ERP_0))*100$, where ERP is expressed as a % rate (*e.g.* 20%).

Source: Edwards (2005), authors' calculation.

Table 11.18. Evolution of output and TFP

	Average annual output growth rate				Annual average TFP growth rate			
	1988-1993	1994-1999	2000-2003	1988-2003	1988-1993	1994-1999	2000-2003	1988-2003
Food	2.83	0.41	5.51	2.59	1.27	-1.90	5.88	1.23
Beverages	0.26	1.39	2.86	1.33	-3.89	-0.29	2.37	-0.97
Tobacco	0.36	-0.08	1.17	0.40	-7.86	4.41	3.46	-0.43
Textiles	-1.81	1.67	6.72	1.63	-3.40	-0.15	2.80	-0.63
Wearing apparel	1.44	1.00	2.43	1.52	2.45	-1.92	3.36	1.04
Leather and leather products	1.53	5.76	12.17	5.78	-1.14	1.30	12.73	3.24
Footwear	1.07	-1.67	0.14	-0.19	-2.65	-1.30	7.02	0.27
Wood and wood products	0.54	4.80	7.50	3.88	0.96	0.70	1.63	1.03
Paper and paper products	-0.39	4.42	5.98	3.00	-0.88	0.68	2.82	0.63
Printing, publishing and recorded media	2.24	-0.69	-0.36	0.49	-0.34	-3.52	-1.22	-1.75
Coke and refined petroleum products	3.11	11.19	7.13	7.15	-8.94	9.78	1.75	0.75
Basic chemicals	0.86	8.74	8.74	5.78	3.75	4.14	3.80	3.91
Other chemicals and man-made fibers	2.91	8.02	7.28	5.92	3.95	7.54	4.43	5.42
Rubber products	2.77	3.63	4.44	3.51	-3.76	0.29	3.54	-0.42
Plastic products	4.65	4.43	8.07	5.42	3.19	-0.50	7.57	2.90
Glass and glass products	-0.69	2.81	10.79	3.49	1.88	1.15	9.72	3.56
Non-metallic minerals	0.05	0.14	6.62	1.72	-0.09	0.36	5.23	1.41
Basic iron and steel	0.19	5.82	12.72	5.44	0.31	5.05	13.67	5.43
Basic non-ferrous metals	0.65	13.23	3.77	6.15	-3.96	6.16	1.70	1.25
Metal products excluding machinery	-0.21	2.21	3.15	1.54	-4.95	0.00	4.19	-0.81
Machinery and equipment	2.25	2.18	5.09	2.93	-1.81	-1.50	2.64	-0.58
Television, radio and communication equipment	-5.06	1.48	4.24	-0.28	2.44	-0.84	4.53	1.73
Professional and scientific equipment	1.83	-4.84	17.62	3.28	-7.42	-8.46	1.40	-5.61
Motor vehicles, parts and accessories	4.32	9.33	12.92	8.35	2.82	1.38	2.07	2.09
Other transport equipment	-5.44	-0.88	22.94	3.37	-6.78	-0.98	0.75	-2.72
Furniture	3.77	5.85	5.84	5.07	-0.89	4.94	13.48	4.89
Other manufacturing	11.97	1.08	4.57	6.03	-3.43	-1.88	-5.98	-3.49
Average across sectors	1.33	3.39	7.04	3.53	-1.45	0.91	4.27	0.87

Source: Quantec database and author's calculations.

Table 11.19 Evolution of employment

	average annual growth rate over the period		
	1988-1993	1994-1999	2000-2003
Food	0.55	-1.52	-2.61
Beverages	-0.16	-1.59	-2.04
Tobacco	-1.98	-0.03	-1.45
Textiles	-3.89	-1.69	-0.87
Wearing apparel	-1.09	2.28	-2.35
Leather and leather products	0.69	1.69	-7.03
Footwear	-2.12	-3.29	-11.30
Wood and wood products	-0.61	2.36	0.51
Paper and paper products	2.49	-1.74	-1.25
Printing, publishing and recorded media	1.43	0.87	0.83
Coke and refined petroleum products	-2.08	-5.65	1.65
Basic chemicals	-1.34	-0.94	-3.80
Other chemicals and man-made fibers	-1.01	-2.13	-0.07
Rubber products	1.09	-0.16	-1.72
Plastic products	2.64	1.76	-0.51
Glass and glass products	1.13	-3.26	-1.76
Non-metallic minerals	2.74	-3.50	-5.88
Basic iron and steel	-3.56	-6.93	-1.29
Basic non-ferrous metals	-2.27	-3.53	-2.46
Metal products excluding machinery	-0.16	0.32	-0.69
Machinery and equipment	-2.76	2.56	1.55
Television, radio and communication equipm	4.18	0.92	-9.94
Professional and scientific equipment	4.46	0.15	4.38
Motor vehicles, parts and accessories	-0.63	2.39	0.93
Other transport equipment	-3.05	-5.54	3.94
Furniture	1.36	0.33	0.30
Other manufacturing	8.80	4.80	3.89
Average across sectors	0.18	-0.78	-1.45

Source: Quantec database and author's calculations.

5.3   Methodology and results

The previous section highlights a broadly positive correlation of trade liberalisation efforts and productivity developments. However, as already foreshadowed, the descriptive analysis of trends does not fully use the information on variation in the trends by sector and time, nor does it control for any of the possible confounding factors such as other structural and macroeconomic policies or institutional changes over the 1988-2003 period. For example the progressive transition towards democratic governance and the end of the apartheid regime that are briefly covered in Section 5 could have been important determinants of productivity growth. At the same time the productivity improvements could have been linked to sector-specific features that are less well discernible in the context of broad policy developments described in this report.

In order to examine all these possibilities, we study the relationship between trade liberalisation and productivity growth using econometric techniques. Indeed, this approach allows us to capture the impact of decline in effective rates of protection on productivity growth while controlling for other variables that

could have impacted on the sectors' performance. In line with the literature, we estimate the following model:

$$dprod_{it} = \alpha_i + \sigma_t + \beta Z_{it} + \gamma C_{it} + \epsilon_{it} \qquad i = 1…..27 \text{ and } t = 1988….2003$$

where $dprod_{it}$ is the growth of productivity (either labour productivity or TFP) in sector i and year t, α_i is the industry-specific fixed effect, Z_{it} are variables used as proxies for trade liberalisation, σ_t is a vector of time dummies, C_{it} is a set of control variables and ϵ_{it} is the error term.

Terms α_i and σ_t capture, respectively, the unobserved time-invariant sector specific features and the macroeconomic-institutional changes common to all sectors but evolving in time. The term Z_{it} represents a set of trade liberalisation proxies. It includes the effective rate of protection inclusive of surcharges (*ERP_incl_s$_{it}$*, see Kowalski *et al.*, 2008). *import_share$_{it}$* is the imports/output ratio, *intermediate_imports_share$_{it}$* is the share of imported intermediate inputs and *import_final_g$_{it}$* and *import_interm_g$_{it}$* are, respectively, measures of final and intermediate imports growth. As suggested by Coe *et al.* (1997), all these indicators may be considered as distinct measures of trade openness as well as indirect measures of technology adoption. Importing intermediates, for example, may enhance productivity by providing firms with better inputs. This indicator is also often used also as a proxy for 'inshoring' (Feenstra and Hanson, 1995) or technological change (Ekholm and Hakkala, 2006).

Overall, while we would expect a positive impact of intermediate imports on productivity, the effect of imports of final goods on productivity is less clear. In the latter case a positive effect would be expected on the basis of 'pro-competitive' and innovation-stimulating effects of imports, especially if the local industry remains competitive and is not driven out of the market.

The term C_{it} is a set of control variables that capture time-evolving sector characteristics. First of all we control for a sectors' export orientation, using the export/output ratio (*exp_share$_{it}$*) and the export growth rate (*export_g$_{it}$*). The literature suggests that export orientation might boost productivity and favour knowledge spillovers (Bernard and Jensen, 1999; Wagner, 2002; and Girma *et al.*, 2003). Secondly, we control for capital intensity and labour force composition impact on productivity growth. Capital intensity[26] (*K_labour_ratio$_{it}$*) is computed as the share of capital per worker. The investment rate (*investment$_{it}$*) is computed as the growth rate of the fixed capital stock at constant prices. The labour force composition[27] is measured as the ratio of skilled to unskilled workers (*skill_unskill$_{it}$*). We would expect a positive link between capital intensity, investment, skill intensity and productivity growth.

Inflation is another control in our regressions. The negative impact of inflation on growth is well documented in the literature (Fisher, 1993). It increases uncertainty and can discourage investment with a concomitant negative effect on productivity. We control for both local inflation (*local_π_{it}*) -computed as the rate of change in the final goods price for the sector and for imported-inflation (*import_π_{it}*), computed as the rate of change in import price.

Finally, we control for the market structure, labour costs and the sector dimension. As a proxy for the type of market structure (*markup$_{it}$*), we use mark-up computed as the net operating surplus of an industry as a percentage of total intermediate inputs plus labour remuneration and the consumption of capital for that industry, excluding all net indirect taxes. As the literature suggest, more competitive sectors (with lower mark-ups) present higher productivity growth, and hence we would expect a negative

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[26]   See Abramovitz, 1979; Solow, 1988 and Wolff, 1991 for a review of the impact of capital intensity on productivity.

[27]   See Acemoglu, 1996; Hellrstein, 1999 and Moretti, 2004 for a review on the impact of skill on productivity.

coefficient in our regressions on the mark-up variable. At the same time, higher mark-up could be associated with a better exploitation of economies of scale or higher R&D investment rates, making the overall influence of mark-up on productivity growth uncertain.

As a proxy for wages, we adopt the growth in unit labour costs (*unit_labour_cost$_{it}$*) and we expect that an increase in labour costs impacts negatively on productivity at least in the short run. Sector size is measured as the share of total employment in sector *i* in total manufacturing employment (*empl_share$_{it}$*). One would expect that larger sectors have more inertia, grow slower, innovate less frequently and consequently present lower TFP growth rate (Pavit, 1984).

The literature has highlighted that the type of analysis being suggested here may suffer from endogeneity problems. Indeed, the political economy literature suggest that a less productive industry might be more likely to receive protection, biasing the estimated productivity impact of trade liberalisation. However, the preceding analysis broadly suggests that a number of sectors that were relatively highly protected in South Africa in 1988 often experienced deeper than average reductions in ERPs over the 1988-2003 period. We interpret this as evidence against the existence of endogeneity in our sample.

Table 11.20 presents the results of the estimation using TFP growth as dependent variable.[28] As far as the control indicators are concerned, the results suggest that while the outward trade orientation does not significantly impact on productivity growth, the use of imported intermediates does. There is also some evidence that an increase in imports of final goods has a negative productivity impact. Higher capital intensity seems to be positively associated with TFP growth but, contrary to our expectations, an increase in investment has a negative impact on productivity. Skill intensity does not seem to be an important determinant of productivity growth. In line with our expectations, an increase in inflation, both domestic and imported, reduces TFP growth, though the impact of domestic inflation is larger. Labour costs are significant only when we control for export and import growth and thus we conclude they cannot be classified as a significant determinant of TFP growth on the basis of these estimates. The positive coefficients on the mark-up variable support the hypothesis of pro-competitive effects on TFP growth but their statistical significance is not robust to alternative specifications. Finally, as expected, larger sectors tend to have lower TFP growth rates.[29]

Turning to the effects of trade liberalisation, the estimated effect of the effective rate of protection on total factor productivity is negative, significant and consistently robust with respect to the different sets of control variables.[30] It means that, after controlling for sector-specific features and time-evolving effects, trade liberalisation exerts a positive impact on productivity. In particular, it can be calculated that if effective rate of protection decreases by 1%, the TFP growth increases by 1.50-2.20%. Alternatively, it can be estimated that the decrease in the effective rate of protection observed over the whole period implies an increase of the annual TFP growth rate by up to 1 percentage point. This is equivalent to more than the average annual TFP growth rate observed over the 1994-1999 sub period, 23% of the annual TFP growth rate observed over the high growth sub period of 2000-2003 and more than 100% of average

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[28] The results don't change significantly if we use labour productivity instead of TFP as a dependent variable Regression results available upon request.

[29] However, the sector size and mark-up turn out to be insignificant if added contemporaneously in the same specification. Indeed, the correlation analysis suggests that larger sectors present also higher mark-ups and the results on these variables may suffer from multicollinearity.

[30] However, if we use change in ERP instead of level, the coefficient is almost never significant, suggesting that what matters for performance is the liberalisation process and not its acceleration. This result can also be associated with the time lags with which the industry reacts to liberalisation.

annual TFP growth rate observed over the whole 1988-2003 period, Table 11.18. These results suggest that trade liberalisation was indeed an important contributor to TFP growth and to general output growth across South African manufacturing sectors.

Table 11.20. TFP regression results

Dependent variable *dprod$_{it}$*

	Specification									
	1	2	3	4	5	6	7	8	9	10
erp_incl_s	-0.027	-0.028	-0.028	-0.027	-0.027	-0.028	-0.03	-0.027	-0.036	-0.038
	(4.33)***	(7.04)***	(6.34)***	(5.19)***	(4.83)***	(4.84)***	(5.44)***	(5.19)***	(7.13)***	(7.23)***
import_share	-0.092	-0.059	-0.097							
	-0.66	-0.45	-0.76							
intermediate imports share				0.912	0.755	3.765	3.85	5.326		
				-0.19	-0.15	-0.76	-0.83	-1.02		
export_share	-0.049	-0.039	-0.036	-0.046	-0.044	-0.028	-0.025	-0.028		
	-1.21	-0.97	-0.89	-1.54	-1.41	-0.82	-0.78	-0.85		
empl_share	-1.38	-8.345	-8.106	-8.515	-7.869		-5.988		-7.106	
	-1.21	(2.17)**	(1.96)*	(2.24)**	(1.92)*		-1.31		(2.21)**	
cap_lab_ratio	3.402	3.295	3.054	3.248	3.684	3.387	3.2	3.307	3.68	3.658
	(4.82)***	(5.90)***	(5.24)***	(3.82)***	(3.37)***	(3.05)***	(2.95)***	(2.90)***	(5.80)***	(5.43)***
investment		-0.161	-0.17	-0.161	-0.163	-0.181	-0.17	-0.183	-0.195	-0.207
		(1.84)*	(1.99)*	(1.89)*	(1.89)*	(2.12)**	(2.01)*	(2.22)**	(2.55)**	(2.68)**
local_π		-0.329		-0.33	-0.327	-0.308	-0.309	-0.281	-0.274	-0.259
		(2.82)***		(2.84)***	(2.82)***	(2.73)**	(2.75)**	(2.50)**	(2.61)**	(2.59)**
imported_π			-0.191							
			(2.05)**							
skill_unskill					-3.146	-3.775	-2.933	-4.182	-1.805	-2.431
					-0.74	-0.86	-0.67	-0.96	-0.48	-0.62
markup						0.213	0.186	0.218		0.161
						(1.84)*	-1.6	(1.96)*		-1.4
unit labour cost							-0.058	-0.073	-0.068
							-1.48	(2.12)**	(2.10)**
import final g									-0.001	-0.001
									(3.56)***	(5.41)***
import interm g									0.19	0.186
									(4.06)***	(4.11)***
export_g									0.02	0.012
									-0.43	-0.22
year	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	2.837	5.658	5.362	4.755	7.663	0.587	3.14	8.737	12.945	6.072
	-1.53	(2.46)**	(2.13)**	(1.73)*	-1.63	-0.1	-0.57	-1.59	(3.45)***	-1.37
Observations	432	432	432	432	432	432	432	432	432	432
Number of sector	27	27	27	27	27	27	27	27	27	27
R-squared	0.22	0.28	0.27	0.28	0.28	0.29	0.29	0.29	0.37	0.37
F_test: Prob>F	6.24	7.43	6.86	7.42	7.13	7.28	7.08	6.94	9.5	9.57
F_test: all ui=0	2.36	2.48	2.62	2.06	2.04	2.12	2.05	2.13	2.75	2.6
WaldTest:heterog:chi2	0	0	0	0	0	0	0	0	0	0

Note: * significant at 10%; ** significant at 5%; *** significant at 1%.
Robust t statistics in parentheses
Absolute value of t statistics in parentheses

6.   Conclusions

South Africa has succeeded in reinserting its economy back into world trade in the mid 1990s following a long period of internal political difficulties and international reactions to the apartheid regime. Since the early 1990s successive South African governments have faced major economic policy challenges to change the institutional structure of the economy and adapt the trade policy regime to the

new agenda and structures. Since the mid 1990s, the trade sector has not been able to keep up with developments in world markets – especially in raw materials and intermediate goods. Indeed, South Africa's position in the global trade architecture has remained constant or even deteriorated slightly since 1995. This flat trend contrasts with the performance of China, Russia and India who continued to deepen their integration into world trade supply chains after 1995.

Indicators of trade performance and trade policy suggest that this may be related to the process of trade liberalisation. That process appears to have stalled or even slightly reversed in recent years. The decline in average tariffs and duties collected, for example, has been interrupted and in some cases even reversed direction since 2000 as a result of increasing duties on consumer and, to a lesser extent, intermediate products and raw materials. There are some signs suggesting that this may be related to the slow progress in the current multilateral negotiations, growing numbers of preferential trading agreements and the emerging industrial policy strategy, all of which call for maintaining relatively high effective rates of protection on certain sectors.

Trade reforms had already started to be implemented in the period preceding 1994. This was reflected in robust rates of export and import volume growth in the 1988-1993 period. Indeed, in the first years (1994-1999) of majority rule the average growth rates of exports were actually slightly lower as compared to the preceding period, probably reflecting the restructuring of the economy, while import volume growth rates picked up more quickly post 1994 and stayed above those of exports until very recently. These developments contributed to the worsening of South Africa's current account since 2003 which, up until then, was either in moderate surplus or an insignificant deficit. What drove these current account developments was a deteriorating balance on the trade in goods side which became negative in 2004 for the first time since the early 1980s. Balances on services, income and current transfers have not undergone significant changes, although the balance on services in 2006 has reached its lowest position in the 1994-2006 period. As far as financing of these deficits is concerned, portfolio investment regained its position on the financial account reaching almost 8% of GDP in 2006 and outperforming the levels from before 2001. Somewhat worryingly, direct investment inflows have been much weaker raising questions about the sustainability of the current account position.

The current financial market turmoil is likely to have a negative impact on international financial flows and thus can negatively impact the financing of South Africa's deepening current account deficit. Another aspect of the current global financial and economic turmoil are the worsening terms of trade for commodity producers, including South Africa. These recent unexpected events have added to already existing economic (electricity shortages and inflation), social (health and crime) and political (unexpected resignation of President Thabo Mbeki in September 2008) problems of the country. All these factors reduce somewhat the confidence with respect to South Africa's future growth and commercial performance.

The expansion of South Africa's share of world GDP over the period 2003-2006, if sustained, could mark a break from a downward trend that has been observed since the beginning of the 1980s. Interestingly, this coincided with an increase in South Africa's share of the value of world exports of goods and services, and services in particular. This signals that there may be more to the pick-up in South Africa's trade since 2003 than the rising precious metals prices.

South Africa has been gaining market shares in a number of dynamic products that have been growing in world markets at a rate faster than average as well as in a number of less dynamic products. This reflects South Africa's broad-based comparative advantage across a range of products. However, an overall feature of South Africa's trade is the increase in export and import concentration to levels that are higher than those observed in OECD economies. The Top 25 HS6 (6 digit) products are dominated by

the valuable mineral products South Africa is noted for. However, their composition changed significantly over the decade. In 1996, they included diamonds, chromium, gold, nickel, manganese, zirconium and copper. In 2006, platinum replaced diamonds at the top and rhodium and palladium replaced titanium, manganese and zirconium.

There are also major differences to the order in which individual products appear in the revealed comparative advantage index list and the top export list. If resources in the tradable sector were allocated most efficiently, these two lists would be consistent with one another. This points to trade and industry policy distortions. For example, South Africa reveals a moderate comparative advantage in machinery and equipment items. These products are, however, towards the top of the major export list suggesting an element of implicit export subsidisation. On the other hand, the situation for some agricultural products appears to be the reverse—there are fewer agricultural products in the major export list than one might expect from the revealed comparative advantage data. This suggests that industry and trade policy in South Africa is implicitly taxing the agricultural sector through negative relative rates of trade protection. This is consistent with some independent evidence that policy assistance to non-agricultural tradable sectors has increased relative to South African agricultural sectors. Furthermore, this implicit export tax on agricultural products has grown in recent years – from a relatively neutral position prior to 2000.

Another notable feature of South Africa's trade performance is the decline in the proportion of low-skill manufactures in the mix since 1996. If this decline is an accurate depiction of a rising skill intensity in the export mix then it shows a lack of congruence with the low-skill endowment of the workforce as a whole and the slow progress in raising skill levels over the last decade.

South African services exports represent around 18% of current account credits. Services exports are heavily concentrated in travel services (65.6% in 2006) and their importance has risen 50%[31] since the trade embargos were lifted. In absolute terms, the rise is more dramatic—exports of travel services rose from USD 2.1 billion in 1995 to USD 7.9 billion in 2006. This points to the important endowments the country has in tourist attractions. This is a valuable set of resources in balance of payments terms because the provision of tourism services is usually very intensive in its employment of low-skilled labour.

South Africa entered the post-apartheid era with a complex system of quantitative restrictions and relatively high tariffs, which were also highly dispersed. At that time, in contrast to most other developing countries, South Africa's tariff structure was characterised by relatively high tariffs on consumer products and lower tariffs on imported machinery and capital goods, resulting in relatively high effective rates of protection (ERPs). Such an ERP structure may seem rational from the point of view of broadly protecting 'traditional' labour-intensive sectors. Indeed, the 2003 ERPs seem to be higher in sectors where the ratios of fixed capital to formal employment are quite low. Yet, at the same time these sectors that are intensive in their use of labour overall are also the sectors with relatively low shares of unskilled employment. The latter tendency may be seen as an unintended consequence since, as many recent assessments emphasise, unemployment is particularly severe in the unskilled segments of the labour force. Additionally, high ERPs correlate negatively with firm concentration and levels of competition across industries and with the productivity performance across these sectors.

The estimates suggest that effective protection has been reduced significantly over the 1990s and that the process of liberalisation has largely stalled in recent years. The decline in average tariff seems to have stopped or even have been reversed since 2000. Similarly, tax revenue on international trade and transactions expressed as percentage of imports, revenue or GDP has increased noticeably in 2004-2007.

Our analysis indicates that this was driven by increasing duties on consumer goods though, with respect to 1999, small increases have been recorded also in intermediate products and the raw materials category.

Our econometric assessment of productivity determinants in South Africa's manufacturing sector suggests that the levels of effective rates of protection have significantly affected TFP growth rates over the 1988-2003 period. It is estimated that the effect of effective rate of protection on total factor productivity is negative, significant and consistently robust with respect to various control variables. It is estimated that the decrease in the effective rate of protection observed over the whole period implies an increase of annual TFP growth rate by approximately 1 percentage point. This is equivalent to more than 100% of the actual average TFP growth rate over the period. These results suggest that trade liberalisation was indeed an important contributor to TFP growth, and in general to output growth, across South African manufacturing sectors.

There are signs that South African authorities continue to see merit in further liberalisation but remain vigilant in the context of the protracted multilateral trade negotiations in the WTO and the current environment of proliferating regional trade agreements. In the WTO context a strategy of retaining 'negotiating currency' and not taking unilateral liberalisation actions is not an isolated case. All this may make South Africa's policy makers reluctant to unilaterally continue trade reforms but the political benefits of such a strategy should be considered in the context of the ongoing costs of protection for the economy. Each year protection costs are incurred, the economy as a whole performs at a slower pace.

Because of its regional position and commodity orientation, South Africa may be seen as an attractive preferential trade agreement partner, though preferential trade always bears the risk of discrimination and associated economic costs. As such, preferential trade is a second best option as compared to broad based multilateral liberalisation.

The OECD Economic Review of South Africa (OECD, 2008) emphasised the need for South Africa to address major labour market issues relating to low-skilled employment and the equity and other gains that would ensue. This report has shown that while South African trade performance has been good in recent years there is significant room to liberalise further as an adjunct to labour market reforms. Further trade policy liberalisation would, of course, result in efficiency and real income gains as well. These equity and efficiency gains are important to South Africa irrespective of the outcome of the Doha Round. Multilateral trade liberalisation has the potential to ease the transition to freer trade for South Africa but there are other options. The objective is to reduce unemployed resources and to get resources into their most valuable use.

References

Abramovitz, M. (1979), "Rapid Growth Potential and its Realisation: The Experience of Capitalist Economies," in Edmond Malinvaud, (ed.), Economic Growth and Resources, Proceedings of the Fifth World Congress of the International Economic Association, Vol. 1, London: Macmillan, 1979, pp. 1-30.

Anderson, K., F. de Nicola, E. Jara, M. Kurzweil, D. Sandri and E. Valenzuela (2007), "Distortions in farmer prices since the 1950s: South Africa in international perspective". Agrekon: South African Journal of Agricultural Economics 46(4) 427-59.

Banerjee, A. V., S. Galiani, J. A. Levinsohn, Z. McLaren and I. Woolard (2007), "Why Has Unemployment Risen in the New South Africa" NBER Working Paper No. W13167.

Bell, T. (1992), "Should South Africa further liberalise its foreign trade?", Working Paper. No. 16, Economic Trends Research Group, Cape Town.

Bell, T. (1992), "Trade Policy" in Michie. J. and V. Padayachee, V., (eds.), *The political Economy of South Africa's Transition*, Dryden Press, London.

Belli, P., M. Finger and A. Ballivian (1993), "South Africa: A review of trade policies", World Bank Informal Discussion Papers on Aspects of South African Economy, No. 4, the World Bank.

Bernard, A. and J.B. Jensen (1999), Exceptional exporters performance: cause, effect or both? Journal of International Economics 47, pp. 1–25.

Dihel, N. and B. Shepherd (2007), Modal Estimates of Services Barriers, OECD Trade Policy Working Paper No. 51, OECD.

Edwards, L. (2005), "Has South Africa Liberalised its Trade?", *South African Journal of Economics*, Vol. 73:4, December 2005.

Eschenbach, F. and B. Hoekaman (2006), Services Policies in Transition Economies: On the EU and WTO as Commitments Mechanisms, Centre for Economic Policy Research Discussion Paper, No. 5624, April.

Moretti, E. (2004), "Workers' Education, Spillovers, and Productivity: Evidence from Plant-Level Production Functions," American Economic Review, American Economic Association, vol. 94(3), pages 656-690, June.

Girma, G. S., D. Greenaway and R. Kneller (2003), Export market exit and performance dynamics. Economics Letters 80, pp. 181–187

Hausmann, R. and D. Rodrik (2003), "Economic Development as Self-discovery". J. Development Economics 72 pp. 603-633.

Hellerstein, J. K., D. Neumark and K. R. Troske (1999), "Wages, Productivity and Worker Characteristics: Evidence From Plant-Level Production Functions and Wage Equations." Journal of Labor Economics, July 1999, 17(3), pp. 409-47.

Hoekman, B. (1995), Tentative First Steps; An Assessment of the Uruguay Round Agreements on Services, Policy Research Working Paper No. WPS 1455, May, World Bank, Washington, DC.

Leamer, E. E. (2007), "A Flat World, a Level Playing Field, a Small World After All, or None of the Above? A Review of Thomas L. Friedman's The World is Flat". J. Econ. Lit. March 83-126.

Lederman, D. and W. F. Maloney (2007), "Natural Resources: Neither Curse nor Destiny". Washington D.C. The World Bank and Stanford University Press.

Mabugu, R. and M. Chitiga (2007), "South Africa Trade Liberalization and Poverty in Dynamic Microsimulation CGE Model", No 200718, Working Papers from University of Pretoria, Department of Economics.

OECD (2008), Economic Assessment of South Africa, Economics Department, OECD.

OECD (2009), forthcoming, Agricultural Policies in Emerging Economies: Monitoring and Evaluation", OECD.

Pavitt, K. (1984), Patterns of technical change: towards a taxonomy and a theory. Research Policy, vol. 13, n. 6, pp: 343-73.

Reyes, J., M. Garcia and R. Lattimore (2008), "Accession, Enhanced Engagement and Changes in Global Trade Architecture: A Network Analysis". Working paper TAD/TD, OECD, Paris.

Solow, R. M. (1956), "Contribution to the Theory of Economic Growth," Quarterly Journal of Economics, February, 70, 65-94.

Solow, R. M. (1988), "Growth Theory and After," American Economic Review, June, 78, 307-17.

Thurlow, J. (2006), "Trade Liberalisation and Pro-Poor Growth in South Africa, Conference Proceedings of Accelerated and Shared Growth in South Africa: Determinants, Constraints and Opportunities, 18-20 October.

WTO (1998), Trade Policy Review: South Africa, World Trade Organisation, Geneva.

WTO (2003), Trade Policy Review: South Africa, World Trade Organisation, Geneva.