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Trade Liberalization And South Africa's Export Performance

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ABSTRACT

This paper examines the impact of trade liberalization on export performance in South Africa during the 1980s and 1990s. It employs a time series regression analysis in which export performance is assumed to be determined by external market conditions, the ability to compete in the world markets, and the extent of diversification of the commodity composition of the country's exports. The results indicate that, external market conditions were the important determinant of export performance across all sectors during the sample period. While competitiveness contributed to the increased performance of manufacturing and mining exports, diversification into new export lines faltered in all sectors, pointing to a greater sensitivity of exports to demand conditions than to supply factors.

EXECUTIVE SUMMARY

Context

The last few decades have witnessed an increased global integration and the opportunities and challenges it presents to the economies of the world. This period of increased globalization has also been associated with dramatic expansion of world production and trade, and a generally rising standard of living. The globalization process has been driven by a powerful confluence of forces, reflecting liberalization of economic policies and technological advancements in transport and communication networks.

The Problem

To share in the benefits of globalization, South Africa has been pursuing a strategy of trade liberalization since the early 1980s. The trade liberalization, however, gained momentum in the 1990s, during which period the country adopted a two-pronged approach to the policy, viz. a multilateral trade liberalization in the context of the Uruguay Round of trade negotiations and a unilateral trade liberalization. The result was that by the end of the 1990s, virtually all restrictions of trade had been eliminated, the tariff regime had been rationalized and simplified, and the tariff rates drastically reduced for many sub-sectors. All other trade-related measures that contravened the WTO rules had also been abolished. From a policy perspective, an evaluation of the impact of the trade reforms on growth becomes very important as the country continues to liberalize the economy with the view to boosting the underlying supply capacity. This paper therefore examines the impact of the trade liberalization on export performance during the 1980s and 1990s.

Methodology

The study employs a time series regression analysis in which export performance is assumed to be determined by world market (demand) conditions, the ability to compete in world markets, and the extent of diversification of the commodity composition of exports. Indices for these three determinants of exports are constructed and used as explanatory variables in a time series regression model to explain changes in real total exports, manufacturing exports, mining (non-gold) exports, and agricultural exports. The model is estimated using annual time series data covering the period 1976-1999.

Results and Discussion

The results indicate that external demand conditions were important in determining export performance across all sectors during the sample period, although the elasticity coefficients are very low. The coefficients range from a high of 0.8 for manufacturing exports to 0.5 for agricultural exports and total exports. Competitiveness was also found to have contributed to increased export performance. However, the elasticity coefficients for competitiveness are not only very low, but are also much smaller in magnitude than the coefficients for the world demand conditions. Diversification was found not to be an important determinant of export performance during the period.

Underlying the poor export performance through the supply factors i.e., competitiveness and diversification, are a number of factors. First, the trade liberalization did not affect the largest sectors of the economy, such as finance and insurance, agriculture, gold and uranium. All these sectors experience increased protection during the period. Second, the growth of manufacturing exports was driven by exports from sectors for which the levels of protection were already low prior to the introduction of the trade reforms. Third, the sub-sectors that led manufacturing export growth consisted of heavy industries associated with mineral processing, and where exporting may have been the result of company decision-making in an oligopolistic market and/or a reflection of transnational global sourcing strategy. Finally, many of the sectors that increased export performance were in fact associated with contraction.

Implications for policy

The findings point to the lack of a clear relationship between trade reforms and improved export performance. To understand the outcome of trade policy reforms and the link with trade performance would require an examination of the factors that influence the development of export production capabilities. To also have the maximum impact, trade reforms have to have a wide coverage. Selective liberalization may not be sufficient to harness, for instance, the benefits from technology absorption. By the same token, an open environment needs to be complemented by appropriate avenues for the creation and absorption of technology as well as for the development of new product lines. The problems of complexity of the tariff regime, the continuing high protection of selected sectors, and the enduring problem of discretionary tariff changes need to be addressed. Addressing these issues could raise the efficiency gains that can be reaped from greater openness.

1. INTRODUCTION

Globalization is a phenomenon whose economic dimension involves increases in the flows of trade, capital, and information, as well as the mobility of people across borders. The last five decades have witnessed an intensification of global economic integration and the opportunities and challenges it presents to both developed and developing countries. This period of increased globalization has also been associated with dramatic expansion in world production and trade, and a generally rising standard of living. The globalization process has been driven by a powerful confluence of forces, reflecting liberalization of economic policies and technological advancements in transport and communication networks.

The evidence is strong that openness to international trade is a key ingredient of more rapid growth. According to the World Bank classification of countries, based on the extent to which they increased trade relative to income in the post-1980 period, the top third of developing countries - classified as the "new globalizers" - lowered average import tariffs by 34 percentage points and increased trade relative to income by 104 percent. In these countries, per capita income grew by 3.5 percent per annum in the 1980s and 5 percent in the 1990s. In contrast, the remaining developing countries - termed the "marginalized countries" - lowered tariffs by only 11 percentage points and experienced little or no growth in GDP per capita in the post 1980 period (World Bank, 2001).

While increased international trade and capital flows associated with globalization have been the source of the unprecedented rise in living standards around the world, neither the process of globalization nor the gains are guaranteed or automatic. In addition, not all countries have benefited from the gains of globalization, nor have all citizens of a given globalizing country prospered. Countries that have shared in the gains of globalization are those that have pursued outward oriented policies rather than a policy of import substitution, and have put in place structural reforms to develop the institutions necessary for good governance and economic growth and to increase the flexibility of their economies (Masson, 2001).

To share in the gains of globalization, South Africa has been pursing a strategy of trade liberalization since the early 1980's. However, the impetus for liberalization gained momentum in the first half of the 1990s, during which period comprehensive reforms in trade policy were introduced. During this period, virtually all restrictions on trade were eliminated, the tariff regime was rationalized and simplified, and the tariff rates were drastically reduced. In addition, all other trade-related measures that contravened the WTO rules, such as local content requirements and export incentives, were abolished.

From a policy perspective, an evaluation of the impact of the trade reforms on growth is very important as liberalization constitutes a critical element in the government's efforts to boost the underlying supply capacity of the economy. This paper therefore seeks to examine the impact of South Africa's trade liberalization on export performance during the 1976-1999 period. The period 1976-1999 offers a rich case study on account of the significant shifts in the trade regime that took place and the degree of openness during the period.

The rest of the paper is organized as follows. Section II reviews some literature on trade liberalization and growth, while section III discusses the country's trade policy development since the 1960s. Section IV discusses the country's export trends and the framework for analysing the export performance. The results of our estimations and discussions on them are also presented in this section. Section V provides some concluding remarks.

2. TRADE LIBERALIZATION AND GROWTH

By trade liberalization, we mean the relaxation or elimination of tariffs and removal of duties and/or quotas on exports; alteration in non-tariff barriers such as import quotas and quantitative restrictions; changes in licensing and direct allocation of foreign exchange and in specific regulations for products; and removal or relaxation of export subsidies (Bienen, 1990).

Theoretically, the impact of trade liberalization on economic growth is ambiguous. In a conventional neoclassical growth model, trade does not affect the equilibrium or steady state rate of output growth because by assumption, growth is determined by an exogenously given technological progress. In two-sector models of this kind, trade policy affects the allocation of resources between sectors and, thus, the steady state level of savings and capital accumulation. This can have a one-off effect on the steady state level of output (which can be positive or negative depending on how savings and capital accumulation are affected by trade policy) but not on the rate of growth (Jonsson and Subramanian, 2000).

In endogenous growth models, however, the impact of trade liberalization on output growth can be positive or negative, depending on model-specific assumptions. Increased trade pe se can have a number of generalized impacts. For example, trade enables a country (i) to employ a larger variety of intermediate goods and capital equipment which could enhance productivity of other resources; (ii) to acquire technology developed worldwide; (iii) to increase the variety of products produced and consumed; and (iv) to improve efficiency with which resources are used. However, as emphasized by Rodriguez and Rodrik (2000), the impact of trade policy changes cannot be unambiguously signed. If the resource allocation effect of trade policy promote sectors or activities that generate more long run growth, the impact is positive, and negative otherwise.

Empirical evidence on trade policy and growth shows differences in growth performance associated with liberalization and protection. The empirical evidence, however, suggests that promoting openness, and supporting it with sound domestic policies, leads to faster growth. The earlier strategy of attempting to grow through import substitution has been conclusively shown to have failed, as there are no successful cases of fast-growing countries that followed this strategy in the recent past (see Krueger, 1978: 1980; Srinivasan and Bhagwati, 1999; Linder and Williamson, 2001).

Studies of the effects of the most recent global trade liberalization have also found that openness is associated with more rapid growth. Reducing tariff and non-tariff

barriers is estimated to have produced annual increases in global GDP of between $100-$300 billion, which is 1½to5 times the total aid flows to developing countries. Moreover, most of the gains accrue to countries (including especially advanced countries) that offered the most reductions in tariff and non-tariff barriers (Harrison et al, 1997; Whalley, 2000). As with technological change, however, not everyone gains from trade liberalization: as countries better exploit their comparative advantage, formerly protected sectors may shrink and their workers suffer. However, detailed studies of trade liberalization suggest that the benefits are far more than the costs (Edwards, 1989; Matusz and Tarr, 1999).

Thomas and Nash (1992) study of 40 countries receiving trade policy related World Bank loans during 1980-87 found small gains from liberalization (based on the link between exports and growth), although the study included maintenance of a stable competitive real exchange rate as a component of trade liberalization.

The study by Roberts (2000) found that liberalization of trade in South Africa did not yield the expected gains from incentives to export during 1992-1997 period. Instead, while manufacturing exports and imports increased, output growth faltered in most sub-sectors and there were major reductions in employment. In many sub-sectors, improved trade performance was associated with contractions in production and employment, while trade performance deteriorated in sub-sectors with increasing employment.

Fedderke and Vaze (2001) investigate the impact of the new trade regime on the capacity of South Africa firms to penetrate world markets. The study found that, while there is evidence to suggest that trade liberalization emerged for some economic sectors, effective protection remained constant or increased in others. Thus trade liberalization, as measured by effective protection rates, could be described as partial or incomplete during the 1994-1998 period.

On the export orientation of the economic sectors, the findings of Fedderke and Vaze (2001) study contrast sharply with that of Roberts (2000). Fedderke and Vaze found that , trade liberalization appeared to have improved export performance in many sectors of the South African economy. Little evidence of harmful import penetration was also found to have emerged in sectors that experienced a lowering of effective rates of protection. This emerges from the fact that the period of strongest trade liberalization was not associated with the period of strongest import penetration, since the growth rate in import penetration was positive both for sectors that experienced increased trade protection, as well as for sectors that experienced trade liberalization.

Rodriguez and Rodrik (2000) have called into question those studies that have produced a broad conclusion that increased trade has a positive impact on growth. First, they argue that the really meaningful question to ask is not whether openness, defined in terms of outcomes, promotes trade but whether more liberal trade supports trade. In this context, the trade outcome approach suffers from conceptual and empirical shortcomings. Second, some of these studies do not incontrovertibly support a positive relationship between trade policy and growth either because they mis-measure trade policy (Dollar, 1992), or that the trade policy variable they employ actually capture other effects such as macroeconomic stability or regional dummies

(Sachs and Warner, 1995), or because their results are not robust to alternative specifications (Edwards, 1992).

3. TRADE POLICY IN SOUTH AFRICA

3.1 Trade Policy Prior to the 1990s

South Africa's trade regime in the 1960s and 1970s was out of line with both the changed external economic circumstances and the new domestic consensus on the appropriate role of trade in growth and development. During that period, the country's trade regime was characterized by excessive protection built around high tariffs, formula duties, import surcharges and direct controls. The system of tariff protection was put in place during the 1960s, but direct import controls remained the main protective mechanism through to the mid-1980s.

In response to the perception that growth through import substitution was being exhausted and in the wake of declining manufacturing production and trade, attempts were made to mitigate the anti-export bias of the system. The focus, however, was on export promotion measures rather than on liberalization of the import regime. It was only in 1983, when about 77 percent of imports were subject to direct import controls, that the first systematic attempt was made to dismantle the controls. In 1985, the country switched from a positive list of permitted imports to a negative list of prohibited imports covering about 23 percent of imports (GATT, 1993).

With the imposition of financial sanction and debt standstill in 1985, the balance of payments pressures halted, and even reversed, progress on trade liberalization. An import surcharge of 10 percent was introduced in September 1985 as part of the response to the emerging balance of payments disequilibrium. In August 1988, the surcharge was raised to 60 percent on some items in a bid to contain imports, but in May 1989, the surcharge on capital goods was eased from 20 percent to 15 percent. In March 1990, the surcharge on a range of imports was cut by one third, and in 1991, further reductions were made, except on luxury consumer. By the end-1993, there were three rates: 5 percent on intermediate and capital goods, 15 percent on motor vehicles, and 40 percent on home electronics and luxury products.

In terms of import controls, 15 percent of tariff lines were affected by them by the end of the 1980s, with greater sectoral variation. While most sectors were relatively free of controls, some sectors were highly restricted, including agriculture (74 percent of tariff lines), food, beverages, tobacco, and rubber (about 90 percent), and clothing (59 percent) (GATT, 1993). By the end of 1989, the country had the most tariff lines (greater than 13,000). Including the import surcharges and ad valorem equivalent of formula duties, the nominal tariff protection of the manufacturing sector in 1989 averaged about 28 percent (IDC, 1996). While this average level of protection was not seriously out of line with many other developing countries, the tariff structure was extraordinarily complex. It had more tariff rates than any country (about 200 ad valorem equivalent of formula duties); the widest range of tariffs (rates exceeding 100 percent for 5 percent of the tariff lines and very much higher rates for some products); and the second highest level of dispersion (as measured by the coefficient of

variation) among developing countries (Belli, et al, 1993). The formula duties were intended to forestall dumping by adding floor prices to the tariff schedules of certain products, effectively setting lower thresholds to their import prices[1]. By 1990, formula and specific duties covered about one third of the tariff lines.

Although quantitative import control was gradually replaced by tariffs, licensing remained the main instrument of control in agriculture, forestry and fishing, covering some three quarters of the tariff lines. Among the manufactured products, import licensing applied largely to processed food, clothing, and rubber products. Overall, import licensing was required in about 15 percent of the tariff lines or about 10 percent of the total import value. It is estimated that import licensing added some 10 percent to the rate of protection (GATT, 1993).

The effective protection was augmented in a number of circumstances by the existence of customs duty drawbacks and exemptions for machinery and inputs, and the use of such schemes was widespread among the protected import substitution industries. In addition, excise duties levied in inverse proportion to domestic value added, were imposed on motor vehicles, textiles and clothing, and television industries to promote local content in the manufacturing of these products.

Beginning in the early 1970s, and in line with the recommendations of the Reynders Commission[2], export incentives were introduced to compensate for the anti-export bias implicit in the import restrictions. By 1980, a full range of incentives was in place, including direct cash grants, tax concessions on export turnover and on profits from exports, rebates and drawbacks of custom duties on imported inputs, and rail freight concessions. The rebates and drawback provisions were applied to customs duties imposed on imported materials used in manufacturing, processing, or packaging of exported goods. By 1990, there were four types of export subsidy: (i) an input compensation, whereby exporters could receive half the cost of protection afforded to imported inputs; (ii) a value-added compensation, whereby exporters could receive 10 percent of the value added of export sales; (iii) a marketing development scheme; and (iv) a marketing allowance provided under the Income Tax Act. The last two subsidy schemes were introduced to partly compensate costs incurred in the development of new export markets for the country's products.

In April 1990, the General Export Incentive Scheme (GEIS) was introduced to help firms offset the price disadvantage that the country's exporters faced in the international markets, including that arising from the anti-export bias inherent in the import protection system. Belli *et al* (1993) quotes a study by the South African Chamber of Business (SACOB) in 1991 which showed that manufacturing costs in South Africa was 15 percent higher than the OECD average because South African manufacturing firms paid 24 percent more than their OECD counterparts for their inputs, and their capital and productivity-adjusted labour costs were higher as well. The GEIS, which replaced the input and value added compensations to exporters,

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[1] A formula duty is normally defined as the higher between (i) the specified ad valorem, and (ii) the reference price minus the inverse of the ad valorem duty. Thus, defined, the cost to the importer inclusive of duty was at least equal to the reference price, and the ad valorem equivalent of the duty could be extremely high.

[2] The Reynders Commission's report on export trade from South Africa was published in 1972.

provided tax-free subsidies to exporters based on the value of exports, the degree of processing of the exported product, the extent of local content embodied in exports, and the degree of overvaluation of the exchange rate.

3.2 Trade Policy in the 1990s

The impetus for liberalization gained momentum in the early 1990s when the country adopted a two-pronged approach to the trade reforms. These included (i) multilateral trade liberalization in the context of the Uruguay Round of trade negotiations, and (ii) unilateral trade liberalization.

3.1.1 Multilateral trade liberalization

In the context of the Uruguay Round, South Africa offered a 5-year phased-in tariff reduction with effect from January 1995 (except in the case of three sectors where reductions were phased over a longer period). The offer aimed to:
- Reduce the number of tariff lines (from over 13,000) at the six-digit harmonized code level by 15 percent in the first year and by 30 percent or higher by 1999;
- Convert all quantitative restrictions (QRs) on agricultural imports to bound ad valorem rates; lower all bound agricultural tariffs by 21 percent on average; and reduce export subsidies by 36 percent;
- Increase the number of bindings[3] on industrial products from 55 percent to 98 percent by 1999; replace all QRs and formula duties with tariffs; and reduce the number of tariff rates to six (0 percent, 5 percent, 10 percent, 15 percent, 20 percent, and 30 percent) with the exception of the "sensitive" (textiles, clothing, and motor vehicles) industries;
- Liberalize the sensitive industries over an 8-year period; and
- Phase out the GEIS by 1997.

3.1.2 Unilateral trade liberalization

South Africa also announced in 1994 a schedule of unilateral tariff liberalization expiring in 1999 that went beyond the Uruguay Round commitments. In June 1994, the Government began the dismantling of the system of import surcharges by removing the 5 percent surcharge on intermediate and capital goods. This was followed in September 1995 with the removal of the 15 percent surcharge on motor vehicles. In October 1995, the 40 percent surcharge on home electronics and luxury products was abolished, completing the dismantling of the system of import surcharges.

A large number of changes to the tariffs on non-agricultural commodities took place between 1994 and 1996. For intermediate goods, the import weighted average tariff rates, excluding zero-rated tariffs, were cut from 16 percent in 1994 to 15 percent in 1996. For this group of goods, the weighted average tariff rates exceeding zero dropped in 9 out of 30 categories between 1994 and 1996. The rates for 5 categories increased during the period, while the rates remained unchanged for 16 categories.

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[3] A binding represents a legal commitment to not raise tariffs beyond the level embodied in the binding

The share of intermediate goods with zero tariff rates increased from 46 percent in 1994 to 67 percent in 1996.

For capital goods, the import weighted average tariff rate fell from 27 percent in 1994 to 21 percent in 1996. Four out of the six capital goods categories witnessed a drop in their tariffs rates over the period, while the share of capital goods with zero rates increased from 46 percent to 60 percent.
For final manufacturing goods, the import weighted average tariff rates dropped from 22 percent in 1994 to 20 percent in 1996, while the share of zero-rated final goods increased from 29 percent to 34 percent over the period. The import tariff rates for 14 out of the 34 final goods categories increased between 1994 and 1996, while the rates for 13 categories dropped.

Overall, the import weighted average tariffs for the whole manufacturing sector declined from 15.8 percent in 1994 to 10.3 percent in 1998. In 1990, the average unweighted tariff was about 30 percent, while the average weighted tariff, including import surcharges, was 36 percent.

A striking feature of the tariff reforms is that, tariffs in 25 intermediate goods categories, all but one of the capital goods categories, and 25 final goods categories were in 1995 below the WTO commitments for 2004. Although some individual lines within each of these categories still had to fall to meet the WTO commitments, this was not necessary in a large number of cases. The Government own targets for 2004 were much more lower than those bound under the commitments to the WTO, and they were often below the tariff rates applied in 1995. In fact, by the end of 2000, the average import-weighted tariff was below that bound in the WTO in 2004 by more than 5 percentage points[4], although the "water in the tariff" varied considerably between sectors.

By the end of 1999, virtually all the import restrictions have been eliminated, including those operating through the agricultural marketing boards; the tariff regime has been rationalized, with the number of lines reduced from over 13,000 in 1990 to about 7,900 in 1998, and the number of tariff bands reduced from over 200 to about 72. The tariff regime was also simplified, as the number of lines carrying formula duties (which acted like variable import levies) was reduced from 1,900 in 1993 to 28 in 1997, and the number of lines facing specific tariffs was also reduced from 500 to 227.

3.1.3 Sensitive industries

Within the confines of the offer to the WTO, the Government developed a program for restructuring the textile and clothing industries in 1995. The program specified progressive tariff reductions over a 8-year period from 90 percent to 40 percent for clothing, from 55 percent to 30 percent for household textiles, from 42 percent to 22 percent for fabrics, from 30 percent to 15 percent for yarn, and from 24 percent to 7½ percent for polyester fibre. As with the other nonagricultural tariff lines, the weighted average tariffs for some groups of textile and textile related items rose between 1994 and 1996, but a number of tariff reductions were also implemented. Specific duties

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[4] The average bound tariff in the WTO in 2004 will be about 16 percent.

were abolished in 1998, with an extension of one year for some exceptional items, and all duty drawbacks and rebates were to be phased out by the end of 2004.

Trade reform in the motor vehicle industry commenced in 1995 under two separate programs: one for medium and heavy commercial vehicles, and the other for motor cars and light commercial vehicles. In September 1995, the two programs eliminated the previous local content regulations aimed at protecting local component manufacturers, and reduced import duties on completely built-up vehicles (CBUs) and components. The Government, however, introduced an import-export balance rebate system to promote domestic production of parts in the motor vehicle industry. The rebate allowed duty-free importation of vehicles and components equal to the local content value of motor vehicles and components exported.

In the case of cars and light commercial vehicles, the tariff rates for CBUs were reduced from 115 percent in September 1994 to 65 percent in September 1995, and further to 61 percent in January 1996. These tariffs were to be lowered to 40 percent by January 2002. Over the same period, tariff rates for components were reduced from 50 percent to 49 percent, and then to 46 percent. The rates were to be lowered to 30 percent by January 2002. In addition, the duty-free allowance granted to motor vehicle manufacturers on import components was reduced from 35 percent of wholesale turnover to 27 percent in 1995.

For medium and heavy commercial vehicles, the tariff rates on CBUs were reduced from 75 percent in September 1994 to 40 percent in September 1995, and to 36 percent in January 196. The rates were lowered gradually to reach 20 percent in January 2000. The tariff rates on components (e.g., engines, transmissions, drive axles, and tyres) were also reduced from 30 percent in September 1995 to 27½ percent in January 1996, and gradually to 15 percent in 2000. Other components were made duty-free in 2000.

3.1.4 Agricultural trade reforms

Reforms in agricultural marketing centred on the shifting from systems of surplus removal at floor prices to complete domestic deregulation. In addition, steps were taken to transform the 15 agricultural control boards, and six of them were abolished in 1993-1994. The Banana Board was abolished in March 1993; the Chicory, Dried Beans, and Rooibos Tea Board in September 1993; the Potato Board in December 1993; and the Mohair Board in January 1994. A large-scale conversion of import controls to ad valorem duties was also launched in 1994, and the process was completed in 1996.

The Meat Board deregulated auctions and allowed new entry of abattoir firms in 1992. In 1994, the surplus removal operations were stopped, which paved the way for the development of private meat markets. In addition, the centralized auction system was privatized which allowed farmers to bring their cattle to the auction of their choice as well as on a private contract basis with dealers. In 1994, quantitative restrictions were replaced by tariffs.

The liberalization of the marketing system for maize began in May 1995. Before then, the Maize Board had the sole marketing right over maize products, and maintained

prices significantly above world levels. Exporters were subsidized with the funds obtained from the difference between domestic consumer and producer prices. The new marketing scheme is based on free market determination of domestic prices, while the surplus removal scheme continued to be operated by the Maize Board as the buyer of last resort. Under the new system, quantitative import controls were removed and the imports of maize products were freed.

3.1.5 Export subsidies

In 1995, the Government initiated a three-year program to eliminate the GEIS, as envisaged under the commitments to the WTO. In June 1995, the GEIS benefits became taxable and the number of export categories eligible for the subsidy was reduced, and the level of subsidy was also cut. In March 1996, a program to accelerate the phasing out of the GEIS was announced: the GEIS subsidy for processed products was cut from 14 percent of the export value to 12 percent in April, and was scheduled to decline further to 6 percent in July; the GEIS subsidy for raw materials was cut from 3 percent of the export value to 2 percent in April, and was phased out July, effectively limiting the GEIS to fully manufactured products. In July 1997, the GEIS was abolished.

4. EXPORT PERFORMANCE

4.1 Trends in Exports

In nominal terms, exports increased steadily throughout the 1980s and 1990s. From a total of R20 billion in 1976, exports increased to some R61billion in 1990, and again to R175 billion in 1999. As a share of nominal GDP, however, exports declined from a peak of 33 percent in 1980 to 22 percent in 1990. Thereafter, it increased steadily, reaching 25 percent in 2000 (SARB, 2001; 2002). As percentage of world's exports, exports from South Africa experienced a steady decline throughout the 1980s and 1990s. Exports declined from 1.3 percent of world's total exports in 1980 to 0.5 percent in 1999 (UNCTAD, 2001).

Gold was by far the country's largest export commodity up to the 1990s, and export proceeds were subject to large swings as the gold price moves. The volume of gold produced and exported fell from 1970 until the early 1980s. The drop in output was halted as a number of new shafts and some dump reprocessing schemes came on stream. Labour problems also contributed to the decline in output in the mid-1980s. As a share of total export earnings, gold exports increased from 33 percent in the late 1970s to 43 percent in the 1980s, with a peak of 51 percent in 1980. Gold exports share in total export earnings, however, witnessed a precipitous decline in the 1990s, reaching 14 percent in 1999 (SARB, 2001).

Non-gold export volumes boomed in the 1970s following a deliberate gearing up of export potential through the development of new harbours facilities and railway lines and mines. Export volumes were, however, hit in the early 1980s by the general decline in commodity demand and slower growth in world trade. The volume index (1995=100) fell from 56 in 1980 to 51 in 1984. Thereafter, export volumes recovered,

reaching 66 in 1988 (EIU, 1992). The growth in non-gold export volumes during the 1986-1990 period was much more higher than the growth in GDP. As a result, the ratio of real exports to GDP increased from 18 percent in 1987 to 23 percent in 1990 (EIU, 1992). The strong recovery in the second half of the 1980s reflected the recovery in Western industrial economies that began in 1983. The sanctions of the second half of 1980s did not appear to have had a significant impact on total export volumes, although individual companies and sub-sectors were hard hit.

Another remarkable feature of the country's exports is the sharp rise in manufacturing exports in the 1980s and its predominance in the 1990s. Manufacturing exports accounted, on average, for 32 percent of total exports in each year of the 1980s, rising to an average of 49 percent in the 1990s. Together with gold, the two export commodities accounted for over 75 percent of total exports in the 1980s and 73 percent in the 1990s (SARB, 2001). The growth in manufacturing exports in the 1980s was underpinned by the increased exports of non-ferrous metals, iron and steel, and food products, and in the 1990s by iron and steel, chemicals, machinery, motor vehicle parts and accessories, non-ferrous metals and food products.

The share of non-gold mining exports in total export generally experienced an increase during the period under review. The share in total exports averaged 15 percent in the 1980s, increased to 22 percent in the first half of the 1990s, and then fell to 19 percent in the late 1990s. The share of agriculture, forestry and fishing exports steadily declined throughout the 1980s and 1990s. Exports fell from 5 percent in the 1980s to 4 percent in the 1990s.

4.2 Methodology and Data

The conventional approach to the examination of the impact of the factors influencing trade performance is to apply the constant market share analysis (CMSA). The CMSA, despite its greater attraction to researchers because of its less-demanding data requirements, has at least two major limitations. Firstly, the results are sensitive to the choice of the base year. Secondly, only the demand influence is directly calculated while the supply influences are estimated as residuals. Given the limitations of the CMSA, the approach is not adopted in this study.

Under given world market conditions, an individual country can achieve higher export growth relative to other countries by improving upon its market share in these exports (competitiveness factor) and /or by diversifying its commodity mix into new product lines (diversification factor). This study therefore assumes that export performance is determined by external market conditions, the country's ability to compete in world markets, and the extent to which the country succeeds in diversifying the commodity composition of its exports. Indices for these three determinants of export performance are constructed and used as explanatory variables in a time series regression model to explain changes in real exports. This approach was pioneered by Kravis (1970) and Love (1984), and has also been used by Athukorala (1991). The methodologies for the construction of the indices for the export determinants are discussed below.

4.2.1 External market conditions

World market conditions for a particular commodity are determined by the interaction of aggregate demand and aggregate supply. With the exception of few countries, individual developing countries have little influence over events in world markets. The value of world trade in a particular commodity may therefore be taken as an indicator of external market conditions for that commodity. For the set of commodities a country traditionally exports, an index of market conditions (*M*) in year *t* may be constructed as:

$$C_t = \sum_{i=1}^{j} w_{it} (m_{it} / s_{it})$$ (1)

where,

w_i represents the share of commodity *i* in the country's earnings from traditional exports[5];
V_t, is an index of the value of world trade in commodity *i*, with V_t=100 for *t*=1;
j is the number of the country's traditional exports; and
t=1....n,

4.2.2 Competitiveness

Domestic factors influence export performance through their impact on the country's market shares. In the face of deteriorating external market conditions, for example, a country may offset, wholly or partially, any resulting decline in earnings and may even raise earnings if improvements in its competitive standing enable it to raise its market shares. The effect of 'competitiveness' will be reflected in the difference between actual market share and some established market share norm. The definition of a country's share norm is largely arbitrary. In the decomposition analysis by Kravis (1970), for example, a norm is established in terms of a country's actual market shares in the initial period. Love (1984) defines a country's share norm for a given commodity as the average of the observed market shares in the preceding four years. Given that trading patterns in world markets for a given commodity adjust over time, what is regarded as a country's 'normal' share of the market is likely to change. In this study, the country's share norm for a given commodity is defined as the average of the actual market shares of the initial five years. A measure of the country's overall competitiveness (*C*) for year *t* may therefore be defined as:

$$M_t = \sum_{i=1}^{j} w_{it} V_{it}$$ (2)

where

w_{it} represents the share of commodity *i* in the country's earnings from traditional exports;

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[5] Traditional exports are defined to include all export commodities that accounted for at least 1% of total export earnings during 1976-1980.

m_{it} represents the ith commodity's actual market share;

s_{it} represents its market share norm; and

m_i/s_i is set equal to 100 for $t=1$.

Higher values of the coefficient imply high competitiveness, and low values otherwise.

4.2.3 Diversification

The success in reducing a country's dependence on a narrow range of export products may be judged by the extent to which an index of concentration is reduced. Export diversification is therefore measured using the Gini-Hirschman coefficient[6].

$$G_t = \sqrt{\sum_{i=1}^{k} x_{it}^2} \qquad (3)$$

(3)

where

G_t is an indirect (direct) measure of diversification (concentration);

k is the number of commodities the country exports;

x_i is the share of commodity i in total export earnings, and

G_t is set to 100 for $t=1$.

Lower values of the coefficient indicate a greater diversification of exports.

The export performance model is specified as:

$$X_t = á_0 + á_1M_t + á_2C_t + á_3G_t + å_t \qquad (4)$$

where

X_t is an index of real export earnings;

M is an index of external market (demand) conditions;

C is an index of competitiveness

G is an index of concentration

$t=1.....n,$; and

å   is an error term; and

$á_1>0$, $á_2>0$, and $á_3<0$

Equations (4) was estimated for manufacturing, mining, and agricultural exports, as well as for total exports using annual time series data covering the period 1976-1999. The export data used in the analysis were in 1995 constant prices. For the purposes of constructing the C series, all commodities that accounted for 1% of more of the total exports during the first five years of 1976-1980 were selected to constitute traditional exports. The G series for mining and agricultural exports were also constructed using the Herfindahl index of concentration[7] due to the lack of disaggregated data at the 3-digit level of ISIC for the period 1995-1999. The 3-digit level of ISIC was used for constructing the G series.

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[6] See MacBean and Nguyen (1980) for a discussion of the coefficient.

[7] The Herfindahl index of concentration is the sum of the squares of the export shares of the sub-sector

In terms of sources, annual data for total and manufactured exports were obtained from the various issues of the "*South Africa Statistics*" published by the South Africa Statistical Service (SASS). These were complemented by data obtained from the "*Trade and Production Database*" of the World Bank. The World Bank database contains trade, production and tariff data dis-aggregated at 3-digit level of ISIC for 67 developing and developed countries for the period 1976-1999. Data for export volume and export price indices were obtained from "*Quarterly Bulletin of Economics*", published by the Reserve Bank of South Africa. Data on world total and manufactured exports were obtained from the UNCTAD *Statistical Handbook*, 2001, and various issues of the WTO *International Trade Statistics*.

5. RESULTS AND DISCUSSION

Prior to estimation, we tested for non-stationary (presence of a unit root) of each of the data series (in log form) employing the Dickey-Fuller test. The results are reported in Table 1. The test suggested that, for all the commodity groups, the violation of the assumption of stationarity in the data series was sufficiently important to impart bias to the regression estimates. Guided by this finding, we used data in first differences for the estimation. The first differences produced stationarity for all the variables, except the G variable for total and manufactured exports and the C variable for the agricultural exports.

Table 1: Unit Root Tests for Variables Used in the Analysis

Commodity Group	Variable	DF (Original data)	DF (First difference)
Total Exports	X	-0.81	-4.39*
	M	-2.45	-3.22*
	C	-4.46*	-7.48*
	G	-2.55	-2.05
Manufactured Exports	X	-1.13	-3.92*
	M	-2.19	-3.21*
	C	-1.99	-3.35*
	G	-3.64*	-2.12
Agricultural Exports	X	−1.97	-3.79*
	M	-1.66	-4.24*
	C	-1.29	−2.88
	G	-3.12	−3.28*
Mining Exports[1]	X	-4.51*	-5.07*
	M	-2.84	-4.31*
	C	-3.25*	-5.30*
	G	-3.20*	-4.69*

[1] excluding gold
* significant at 10% level

The regression results (with and without the stationary variables), together with the relevant test statistics, are reported in Table 2. All the variables, except for agriculture exports, were used in their logarithmic form. The estimated coefficients can therefore be interpreted as elasticities. For the agriculture variables, stationarity was produced in their non-logarithmic form. The coefficients of the variables therefore imply normal changes. The discussions that follow are based on the results of the estimations without the non-stationary variables, i.e. the second equation in each case.

From the results presented in Table 2, it is seen that the coefficients of world demand variable, M, are statistically significant at the 95 percent level of confidence or better, and with the expected signs for exports from all sectors. The elasticity of real manufactured exports with respect to changes in world demand conditions is given as 0.8, and for mining, the elasticity is 0.6. For agricultural exports, a one percent change in world demand conditions will cause a 0.5 change in real exports from the sector. For total real exports, the elasticity is 0.5. These results suggest that external demand conditions were important in determining export performance across all sectors during the sample period, although the elasticity coefficients are very low.

Table 2: Trade Liberalization and Export Performance: Time Series Regression Results, 1976-1999[1]

Dependent Variable	Constant	Independent Variables			R^2	DW
		M	C	G		
Total Real Exports	0.045 (2.272)	0.084 (0.427)	0.241 (1.955)		0.91	1.80
	0.020 (1.017)	0.508 (4.556)	0.451 (4.422)	0.667 (2.514)	0.93	1.71
Manufactured Exports	-0.027 (-1.226)	0.760 (5.970)	0.152 (1.987)		0.98	2.24
	-0.032 (-1.600)	0.814 (11.110)	0.169 (2.512)	0.076 (0.529)	0.99	2.01
Mining Exports[2]	0.008 (0.505)	0.668 (10.930)	0.516 (4.084)		0.97	1.83
	0.010 (0.631	0.619 (11.48)	0.334 (7.250)	-0.246 (-1.540)	0.99	1.89
Agricultural Exports	0.165 (0.121)	0.426 (3.977)	0.184 (1.295)	0.027 (0.153)	0.73	2.04
	0.542 (0.390)	0.486 (4.885)		0.142 (0.885)	0.72	2.03

[1] figures in parentheses represent t-values
[2] excluding gold

The results for the competitiveness variable, C, suggest that the supply side-factors were also important in explaining changes in real exports. The coefficients of the competitiveness variable have the right signs and are statistically significant at 95

percent level of confidence. The highest elasticity coefficient of 0.4 is estimated for total exports, followed by an elasticity of 0.3 for mining exports. The elasticity of real manufactured exports with respect to changes in competitiveness is 0.2. Not only are the coefficients for competitiveness very low, but they are also much smaller in magnitude than the elasticities of the world demand conditions. This points to a greater sensitivity of exports to world demand conditions than to competitiveness.

The performance of the other supply-side variable, G, was not encouraging. The variable was excluded in the final estimations for all but agricultural exports, for reasons of non-stationarity. The coefficient of G for agricultural exports was not significant and also had the wrong positive sign. The positive sign, although not significant, suggests the absence of favourable internal factors influencing mobility of resources to the sector to support diversification.

On the whole, the results provide support for the view that while competitiveness did influence real exports in general, sectors that achieved high export performance did so through active world demand conditions. Diversification was not an important determinant of export performance.

That diversification played no role in the export performance is not surprising because little diversification took place during the liberalization period. Evidence provided in Table 3 shows that, in the 1976-1980 period, only 8 manufacturing sub-sectors - food products, textiles, paper and paper products, chemicals, petroleum refineries, iron and steel, non-ferrous metals and machinery - contributed one or more percent to total exports. The number fell to 7 in 1981-1984 when petroleum products dropped out, but rose again to eight in 1985-1989 with the re-joining of petroleum products. During the 1990-1994 period, the number of sub-sectors increased to 10, including all the previous 8 plus two new sectors, viz. fabricated metal products and motor vehicle, parts and accessories. In the 1995-1999 period, beverages and wearing apparel (non-footwear) emerged to increase the number to 12. Thus, between 1976 and 1999, the number of sub-sectors that contributed one or more percent to total exports increased from 8 to 12.

Table 3: Exports of Manufactured Products[1] (period average in percentage)

1976-1980	1981-1984	1985-1989
Food products (6.0)	Food products (3.8)	Food products (3.1)
Textiles (1.2)	Textiles (1.2)	Textiles (1.6)
Paper and paper products (1.2)	Paper and paper products (1.3)	Paper and paper products (2.3)
Chemicals (3.1)	Chemicals (2.6)	Chemicals (3.4)
Petroleum refineries (2.4[a])	Iron and steel (5.9)	Petroleum refineries (1.7[b])
Iron and steel (6.4)	Non-ferrous metals (9.0)	Iron and steel (8.4)
Non-ferrous metals (8.1)	Machinery (1.4)	Non-ferrous metals (9.3)
Machinery (1.7)		Machinery (1.6)
Share in total exports : 30.1	*Share in total exports: 25.2*	*Share in total exports: 31.4*
Share in manuf. exports: 91.0	*Share in manuf. exports: 84.6*	*Share in manuf. exports: 86.8*

1990-1994	**1995-1999**
Food products (3.8)	Food products (4.1)
Textiles (1.0)	Beverages (1.2)
Paper and paper products (2.5)	Textiles (1.2)
Chemicals (4.8)	Wearing apparel (non-footwear (1.4)
Petroleum refineries (2.2)	Paper and paper products (2.7)
Iron and steel (9.0)	Chemicals (6.8)
Non-ferrous metals (2.9)	Petroleum refineries (2.0)
Fabricated metal products (1.2)	Iron and steel (6.9)
Machinery (3.1)	Non-ferrous metals (4.3)
Motor vehicle, parts, etc., (1.2)	Fabricated metal products (2.1)
	Machinery (5.7)
	Motor vehicle, parts, etc., (4.9)
Share in total exports: 31.7	*Share in total exports: 43.3*
Share in manuf. exports: 88.6	*Share in manuf. exports: 75.2*

[1] Products with shares in total exports of one or more percent
[a] Average for 1976-1978
[b] Figure for 1989

The country's inability to achieve significant diversification to support export growth is attributable to a number of factors. First, trade liberalization during the 1990s did not affect the largest sectors of the economy. Table 4 shows that the three largest sectors of the economy - finance and insurance, agriculture, and gold and uranium - accounting for almost 40 percent of GDP, experienced increased protection throughout the 1980s and 1990s. As a result, the proportion of GDP that enjoyed protection rose to almost 50 percent by 1998. Of the remaining 50 percent of GDP, the liberalized sectors accounted for only 15 percent, while the remaining 35 percent was accounted for by the sectors where there was little or no change in protection (Fedderke, 2001). Furthermore, of the 10 sub-sectors that significantly enhanced their relative export shares in the 1990-1994 period (Table 3), five faced extensive trade liberalization, two enjoyed trade protection, and the remaining three experienced little or no change in protection.

During the 1995-1999 period, seven of the 12 sub-sectors that increased their export performance were largely liberalized; three experienced no changes in protection, and two-faced protection. Thus, not only was the number of sectors that experienced significant trade liberalization appears impressive, their contribution to GDP was also very small. In addition, the sectors that generated the large proportion of GDP appeared to have experienced significant liberalization of inputs into production, than on their output.

Table 4: Trade Liberalization by Sector

More protected	Little or no change	Liberalized
Finance and insurance	Machinery and equipment	Basic iron & steel
Agriculture, forestry & fishing	Wholesale and retail trade	Motor vehicles, parts & accessories
Gold and uranium ore mining	Electricity, gas and steam	Paper and paper products
Other mining	Metal products, excluding machinery	Basic chemicals
Food	Other chemical & man-made fibres	basic non-ferrous metals
Textiles	Coal mining	Electrical machinery
Tobacco	Transport and storage	Wearing apparel
Leather and leather products	Beverages	Plastic products
	Non-metallic minerals	Other industries
	Coke & refined petroleum products	Television, radio & communication equipment
	Printing, publishing & recorded media	Furniture
	medical, dental & other health & veterinary services	Glass & glass products
	Wood and wood products	Footwear
	Rubber products	Professional & scientific equipment
	Building and construction	
	Other transport equipment	

Source: Fedderke and Vaze (2001), Table 3

Second, the growth of manufacturing exports during the liberalization period was driven by exports from four sub-sectors: iron and steel, non-ferrous metals, chemicals, and machinery. Incidentally, these sub-sectors were those for which the levels of protection were already relatively low before the trade reforms were introduced. The average tariff rate for these sub-sectors was less than 15 percent in 1994-1996. Although the protection of these sub-sectors was reduced further during the liberalization period as the average tariff rates were cut, the cuts were relatively small. The tariff for iron and steel was cut by 2.1 percent; non-electrical machinery by 4.5 percent; electrical machinery by 4.4 percent; and other chemicals by 3.5 percent. The tariff for industrial chemicals was not cut (Fedderke and Vaze, 2001). Hence, the expectation that the tariff reductions would stimulate export growth and diversification by reducing the anti-export bias (i.e., the price incentive to produce for the domestic market) could not have materialized.

Third, the manufacturing sub-sectors - iron and steel, non-ferrous metals, chemicals and machinery - which experienced increased export performance consisted of heavy industries that are associated with mineral processing, and whose productive capacity was enhanced through significant government intervention. The intervention ranged from ownership and the provision of subsidized financing to planning transport and provision of electricity. For these sub-sectors, growth in exports may have been the result of company decision-making in an oligopoly context. Exports growth may also

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have been affected by international agreements which link market-sharing to the licensing of technology from large transnational corporations, i.e., increased exports could been a part of transnational global sourcing strategy.

Finally, many of the manufacturing sub-sectors which increased export performance, and where trade reform was thought to be the stimulant for growth, were in fact associated with contraction. Real output contracted in the transport, machinery, rubber products, tobacco products, footwear, and non-metallic minerals sub-sectors. Although the increased trade in these sub-sectors did not appear to have stimulated output growth (sometimes it appeared only to have ameliorated decline) and diversification, it increased the export shares in output (Roberts, 2000).

An increase in the export performance of a number of sub-sectors, however, took place during the 1990s. Six sectors (motor vehicles and parts, paper and paper products, wearing apparel, television, radio and communication equipment, and furniture) improved export performance due to increased liberalization. Only 2 sectors with increased trade protection (textiles and leather) showed improved export performance, and 4 sectors with unchanged trade protection (rubber, metal products, beverages, machinery, and equipment) improved their export orientation. Thus of the sectors which experienced strong improvement in export orientation, some faced effective trade liberalization, suggesting that the liberalization may have forced efficiency gains on those sectors as a precursor to improved performance world demand conditions.

6. CONCLUSION

The liberalization of trade in South Africa did not produce the expected gains from incentives to export during the 1990s. The sub-sectors, which increased their export performance, did so due mainly to positive changes in world demand conditions, although the demand elasticities were very low. While competitiveness contributed to the performance of manufactured and mining exports, diversification into new export lines faltered in all the sectors. Even then, the responsiveness of changes in real exports to changes in competitiveness was very low for both the manufacturing and mining sectors.

Underlying, the poor export performance through supply factors (competitiveness and diversification) are a number of factors. First, the trade liberalization did not affect the largest sectors of the economy. The finance and insurance, agriculture, gold and uranium sectors all experienced increased protection. Secondly, the growth of manufacturing exports was driven by exports from sectors for which the levels of protection were already relatively low. Liberalization can therefore not be considered as the stimulating factor for those sectors export growth. In addition, the sub-sectors that led the manufacturing export growth consisted of heavy industries associated with mineral processing, and whose productivity was enhanced through significant government intervention. Exports from these sectors may have been the result of company decision-making in an oligopoly context and/or a reflection of a transnational global sourcing strategy. Finally, many of the sectors that increased export performance were associated with contraction.

The above findings point to the lack of clear relationship between trade reforms and improved export performance. To understand the outcome of trade policy reforms and the link with trade performance would require an assessment of the factors that influence the development of export production capabilities.

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