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**South Africa's Seaborne Commerce:
Trade Flows, Transport Costs and the
Maritime Transport Policy
Environment**

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ABSTRACT

South Africa is a major sea trading nation with a relatively open economy that accounts for approximately six per cent of real world seatriade. This performance places South Africa within the top 12 international maritime trading nations. The literature reviewed clearly shows the importance of maritime transport costs and their ability to significantly impede international trade. South Africa's atypical increasing transport cost rate on imports is identified, along with some of the potential determinants. South African shipping policy is shown to be one of the most liberal maritime policy regimes in the world. Regulatory intervention is all but absent, although maritime fiscal policy is less favourable as the international policy environment has evolved to a point where South African shipowners and operators now compete internationally on an inequitable fiscal basis. South African ports policy is investigated with the focus on the changing tariff environment. In addition, some of the benefits and costs of the new tariff structure on cargo owners and ports are revealed.

1. INTRODUCTION AND CONTEXT

South Africa is a major sea trading nation with a relatively open economy of about 45 to 48 per cent of gross domestic product generated from aggregate import-export trade in non-gold products [Jones, 1999 and Floor Report, 1993: Summary pg. 3]. With more than 90 per cent of world trade seaborne, and approximately 98 per cent of South Africa's exports conveyed by sea, a study in 1991 showed South Africa to be ranked 21st - in terms of trade volumes - out of 100 countries [Stopford, 1997: 250-251]¹. Since then South Africa's trade volumes have continued to increase from the 114 million tons of cargo shown in the 1991 study to more than 186 million tons (including oil and petroleum products) in 2000. This represents approximately 3,5 per cent of world seatriade in tonnage terms [Jones, 2001]. From a transport perspective, however, to compare a nation's share of world seatriade purely in terms of tons handled is misleading. A more accurate measure of seatriade is in terms of ton-miles². Due to South Africa's geographical location, substantial transport hauls are required to link this country to its major international markets and suppliers. This generates approximately 1 310 billion ton-miles of seatriade activity [Jones, 1999]. With a global seatriade of approximately 22 940 billion ton-miles [Review of Maritime Transport, 2001], this means South Africa accounts for approximately six per cent of world seatriade, a performance that would place South Africa within the top 12 international maritime trading nations [Jones, 1999].

Even though South Africa is clearly a maritime trading nation, it is not, however, a significant shipowning or ship operating nation. The South African merchant marine is a small one [Working Group, 1995: 7]; in February 2000, there were 959 vessels, comprising 552 742 gross tons on the South African register [Staniland, 2000: 11].³ Only six of these ships - owned by Safmarine - with a combined net registered tonnage of 87 140 could be considered South Africa's deepsea merchant marine, on the basis of flag or formal registration. Numerous factors had led to this phenomenon, not least of which was Apartheid and the restrictions placed upon South African vessels through sanctions. This historical fact has led to more than sixty South African beneficially owned ships being registered off-shore [van Niekerk, 1997: 6]. This meant that South Africa had a ratio of trade share to tonnage flag share of about 150 to 1 [Jones, 1999]. Even if we include the beneficially owned fleet, Jones [1999] calculated that there was still a large imbalance of trade share to fleet share of greater than 20 to 1. Since then, Safmarine, South Africa's principal carrier has "unbundled" and sold its principal liner, bulk and specialised division's to foreign owners. Consequently, South Africa's present deep-sea shipping industry is limited to the Grindcor / IVS (Island View Shipping) stable, whose activities centre around product tanker and bulk activities. Thus there is clearly an imbalance which if addressed, could create opportunities for South Africa and the South African shipping industry. [For more information, see Chasomeris, 2000 for a study entitled: "The Potential Benefits of a Tonnage-Based Corporate Tax to South Africa and the South African Shipping Industry"].

¹ With 98 per cent of exports seaborne, South Africa is very similar to most developing countries. Sachs and Warner (1997:339) in Naude (1999) note that "...only certain goods can be economically shipped by air, and most countries still import and export the majority of goods by the sea".

² The tonnage of cargo shipped, multiplied by the average distance over which it is transported (Stopford, 1997).

³ Gross registered tonnage (grt): The gross tonnage is calculated from the total volume of all enclosed spaces, measured in cubic meters, using a standard formula. The gross registered tonnage is expressed in units of 100 cubic feet (Stopford, 1997).

Adam Smith, in his discussion of specialisation and the size of the market, stresses the relationship between wealth and trade between nations. Despite the theoretical effort devoted to this issue since then, there is still no consensus on the effect of openness on growth. [see Micco and Perez (2001) for an international perspective on this issue and Naude (1999), for the South African case].

This lack of consensus among researchers on the relationship between trade and growth has been mirrored by differences in the actual trade strategies of developing countries. During the 1960s and into the 1970s, many countries adopted import substitution policies to protect their infant industries, though a few economies in East Asia took a different approach. By the 1990s many developing countries, including most of the large ones, had shifted to an outward-oriented strategy and had seen accelerations in their growth rates [Dollar and Kraay, 2001]. There is however a weakness in the export-led growth theory which was exposed in the economic geography literature [Krugman, 1991; 1993; 1995, 1996; Porter, 1994; 1996; Martin & Sunley, 1996; Martin, 1999, Limão and Venables, 2000]. The weakness is that the export-led growth theory fundamentally ignores, in line with the main models in the international trade literature, the role and impact of geography (through for example, transport costs) on exports and growth.

South Africa is an example of a country where trade liberalisation, with the aim of raising economic growth and job creation through improving the country's international competitiveness, has been adopted as official policy [Coetzee, *et al*, 1997 in Naude, 1999: 2]. The vision of the South African government to integrate the South African economy into global markets and promote exports, is set out in its official macro-economic strategy, the "Growth, Employment and Redistribution (GEAR)" strategy [Department of Finance, 1996]. South Africa's pursuit of trade liberalisation is in line with that of many developed and developing countries. Indeed, these liberalisations have reduced both tariff and non-tariff barriers, which means that the effective rate of protection provided by transport costs is, for many countries, considerably higher than that provided by tariffs⁴.

South Africa has experienced a large reduction in her weighted mean tariff for all products which was 12% in 1988, and had been reduced to 4,4% by 1999 [World Development Indicators, 2001]⁵. This reduction in South Africa's mean tariff is expected to continue as South Africa furthers her integration into the world economy (see Absa, 2001 on securing preferential market access for South Africa's exports). In turn, this reduction in artificial trade barriers has implied that transport costs have become an increasingly important determinant of trade. Therefore, any additional effort to further integrate South Africa into the world economy needs to understand the maritime transport policy environment, the determinants of maritime transport costs, and the magnitude of the barriers to trade that these create.

This paper considers South Africa's seaborne commerce: trade flows, transport costs, and the maritime transport policy environment. This section briefly introduces the reader to the topic and provides a background and context. Section one provides a theoretical background and

⁴ Micco and Perez (2001) show that in the cases of Chile and Ecuador, transport costs are more than twenty times greater than average tariffs.

⁵ Weighted mean tariff is the average of effectively applied rates weighted by the product import shares corresponding to each partner country.

literature review of studies on the determinants, magnitude and impact of maritime transport costs. Section two then briefly investigates South Africa's international transport cost rate on imports. Section three reveals South Africa's rather liberal shipping policy before shifting the focus to her maritime fiscal policy. South African port policy is reviewed in section four with particular emphasis on the changing tariff environment with its resulting impact on both ports and cargo owners. Finally, section 5 sets out the conclusions and identifies areas for future research.

2. THEORETICAL BACKGROUND AND TRANSPORT COSTS

A kingdom, that has a large import and export, must abound more with industry, and that employed upon delicacies and luxuries, than a kingdom that rests content with its native commodities. It is therefore, more powerful as well as richer and happier.

(David Hume, Essay of Commerce, 1752)

Transport overcomes the obstacle of distance. The effectiveness of this process can broadly be assessed by examining the costs incurred. Low transport costs are indicative of an effective system. High costs are indicative of an inefficient one. It follows that transport costs are an element in the costs of production and, in a similar way to other costs of production, are substitutable. If transport costs are low, it makes it possible for domestic goods to be substituted with the less expensive foreign goods. Conversely, if transport costs are high, it offers some protection to local producers, and makes foreign goods relatively more expensive than domestic commodities. In either case, transport costs, like all costs of production, are paid by the final consumer [McConville, 1999: 175].

Maritime transport costs have been shown to significantly impede international trade, and therefore a country's ability to participate fully in the world economy [Stopford, 1997; Naude, 1999; Fink, Mattoo, and Neagu, 2000; Limão and Venables, 2000; Micco and Perez, 2001]. High international transport costs will adversely affect South Africa's competitiveness in international markets through the following channels [as identified in Naude, 1999: 21]. Firstly, for a small country, like South Africa, that exerts little impact on world prices, the higher international transport costs, the more firms will have to pay for imported intermediate goods, and the less they will receive for their exports, *ceteris paribus*. Secondly, countries with higher international transport costs would be less likely to attract foreign investment in export activities. Thirdly, for exporters of primary products, such as South Africa, higher international transport costs would reduce the rents earned from natural resources thereby lowering aggregate investment and thus growth. Fourthly, relatively higher international transport costs would increase the price of all imported capital goods, which would reduce investment, the rate of technological transfer and thus reduce economic growth.

In the above discussion "transport cost" has assumed two meanings. From the transport supplier's point of view, it is the cost of the factors of production required to produce the transport service. From the consumers of transport's perspective, it is the cost of utilising the service. It is also useful to examine who is the hirer of transport services, and at which point during the transit process certain decisions are made about who bears the costs.

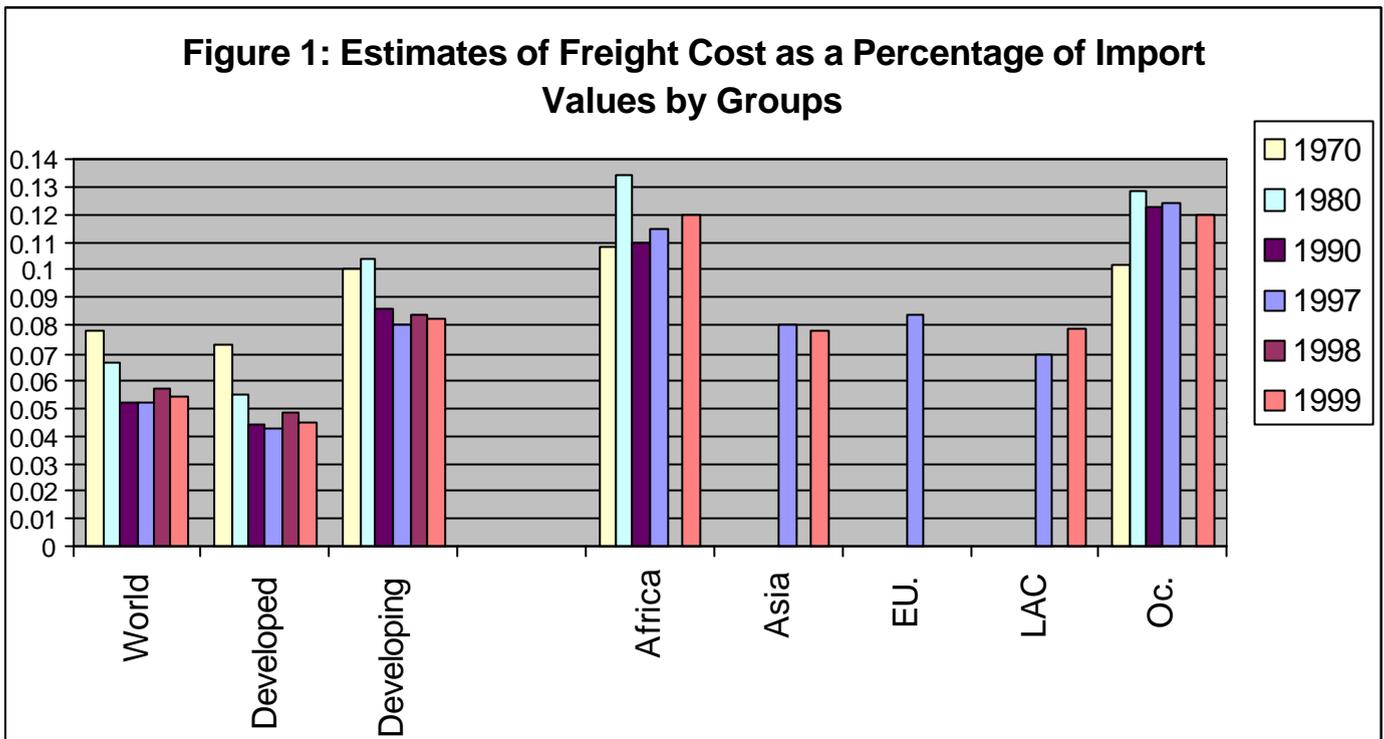
There are two general cases in point. Firstly, the "Free on Board" (FOB) term means that the seller delivers when the goods pass the ship's rail at the named port of shipment. This means that the buyer has to bear all the costs and risks of loss of or damage to the goods from that point. Consequently the choice of vessel is left to the buyer, generally the importer. The other general method, known as "Cost, Insurance and Freight" (CIF) means that the seller delivers when the goods pass the ship's rail in the port of destination. Here the seller must pay the cost and freight necessary to bring the goods to the named port of destination but the risk of loss of or damage to the goods as well as any additional costs due to events occurring after the time of delivery, are the responsibility of the buyer. The seller therefore normally nominates the vessel to be used [see Appendix II, table 3 for a visual aid in understanding these terms, the International Chamber of Commerce, 1999 for a more in-depth look at these terms, and Jones and Kennedy, 1991 for an analysis of the terms of shipment in South Africa]. The difference between FOB and CIF constitutes a measure of transport cost and usually implies a considerable influence on the choice of vessel to be nominated and other services to be used. The measure CIF/FOB-1 represents an aggregated transport cost *rate*. Due to data constraints, this measure has been used primarily in analysing international trends of the transport cost rate on imports [see Section 2 on South Africa's international transport costs for a fuller explanation on the use of this method].

The level of sea transport costs have also been measured in part by freight rates, the relation or proportion of liner freight rates to export price. In a number of developing countries, a larger part of the non-bulk exports and imports are moved by liner services⁶. Liner services play a central part in the global trading network, carrying about 60 per cent of the value of goods shipped by sea [Stopford, 1997: 338]⁷. They provide fast, frequent and reliable transport for almost any cargo to almost any foreign destination at a predictable charge. Containerisation of these liner trades took about 20 years, by which time all of the major liner routes and most of the minor ones had been containerised. The long-term trends in the freight ratios [shown in figure 1] are determined on the one hand by the development of liner freight rates and the on other by the unit value of the commodity traded. Broadly, the evidence appears to be that the transport costs for primary commodities, despite fluctuations, are in a long run downward trend. Hence, for developing countries, liner freight rates can have a significance for *national income* and the *balance of payments*. [McConville, 1999: 176-177; also see Jones and Kennedy, 1991 for a discussion of the terms of shipment and its effect on South Africa's BOP]. Figure 1 shows estimates of freight cost as a percentage of import values by groups.

⁶ Generally, bulk cargo may be defined as any individual cargo consignment sufficiently large to fill a whole ship or hold, and general cargo defined as any individual cargo consignment too small to fill a whole ship or hold (Stopford, 1997: 16).

⁷ "A liner service is a fleet of ships, with a common ownership or management, which provide a fixed service, at regular intervals, between named ports, and offer transport to any goods in the catchment area served by those ports and ready for transit by their sailing dates." The liner services have "a fixed itinerary, inclusion in a regular service, and the obligation to accept cargo from all comers and to sail, whether filled or not, on the date fixed by a published schedule" (Stopford, 1997: 343).

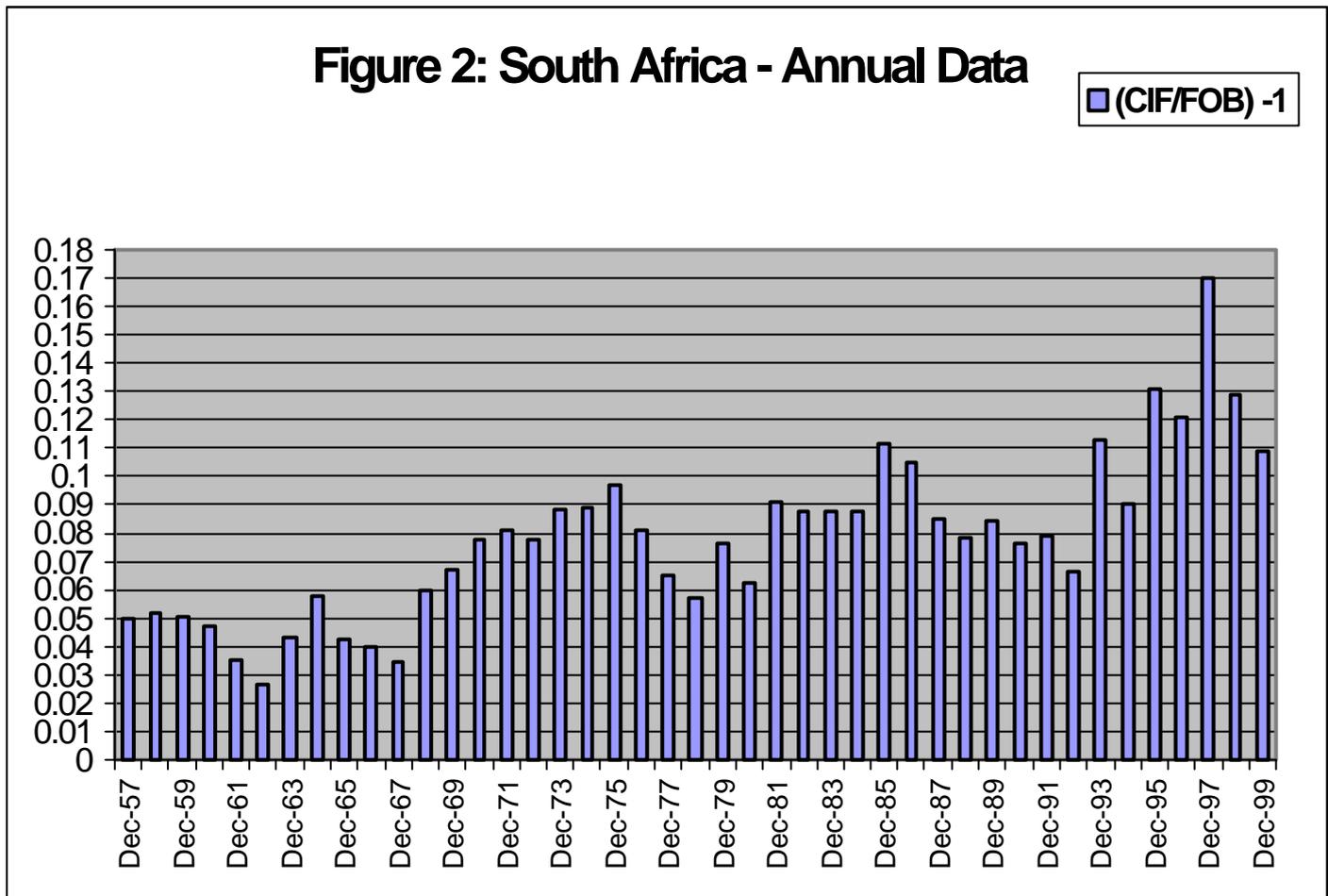
Figure 1: Estimates of freight costs



Source: Review of Maritime Transport 1999; 2000; 2001; McConville, 1999: 177

The typical development during the 1970s and 1980s was a general contraction in the ratio of freight rates to import prices, although the annual picture is less consistent, especially during the late 1980s. To generalise, as the value of international trade has increased, there has been a consequent contraction in the proportion of freight rates to import values. The contraction in world freight costs and those of developing market economies has been substantial. As seen in figure 1, in 1999, import freight costs represented 5.39 percent of world imports (FOB). This percentage is mainly driven by developed countries, which represent more than 70 percent of total imports and have relatively low transport costs (4.5%) [Micco and Perez, 2001]. The impressive cost performance of the shipping industry, as shown figure 1, was achieved by a combination of economies of scale, new technology, better ports and more efficient cargo handling [see Section 4 for a summary of the latest South African port tariff developments and resulting impact].

Figure 2: Cost performance of the shipping industry



In the developing countries on the other hand, contraction has been much slower, and at times even experienced some increase. The developing countries' costs are consistently and substantially higher. In terms of transport costs per region, Africa and Oceania have the highest percentage of freight costs to import value (12% for 1999). These sub-groups have been consistently and significantly higher than both the developed and world market economy by two or three times in percentage terms.

In 1997, however, Latin America had the lowest transport costs relative to other developing countries (7.02 percent, compared to 8.04 percent for Asia and 11.5 percent for Africa). These low average transport costs are led by Mexico, which is close to its main trading partner (the United States). Excluding Mexico, Latin American average transport costs rise to 8.3 percent, more similar to the rest of developing countries [Micco and Perez, 2001: 4].

Naude [1999] established that international transport costs, rather than domestic transport costs, are an obstacle to South African exports, and notes that South Africa's CIF-FOB band on imports has been on average 0.07 (7%) over the period 1988-1991. This compared very unfavourably with the world average of 0.03, and even the average for developing countries of 0.05. He also notes how international transport costs to and from South Africa are almost 50% higher than the average for developing countries. My updated review of the CIF-FOB

band on imports for South Africa (see figure 2) shows that the average cost has further increased to 0.109 (10.9%) for the period 1990 to 1999 (inclusive) [International Financial Statistics, CD].

The substantial differences in transport costs (as seen in figure 1) by different groups of countries can be partly explained by the following factors outlined in McConville [1999: 178-179]. From the developed market economies' point of view, their imports consist of a large proportion of bulk cargo commodities whose freight rates are relatively low. They can exercise control over or influence over the level of conference or other liner rates presumably more than developing countries. Developing countries lack influence and have a number of other factors which work against them. The generally higher rates are attributed to the greater distances which commodities are transported. The freight rate also increases as the per unit value of the good increases. These increases occur at different stages of the production process, because of increased care needed in handling high value goods. Much of the developing countries imports are in the category of high-value manufactures. The escalating structure of freight rates because of "what the traffic will bear" in liners also works against developing economies exporting manufacturing products rather than basic raw material. This is because the higher level of the productive process commands a higher value of freight rate. McConville [1999:179] also believes that there is a tendency for trade routes to be traditional ones, geared to a previous imperial system, which makes it cheaper to trade in transport terms with developed countries than with developing countries in the same region. A problem heightened by the neglect or lack of transport infrastructures within developing economies and regions⁸. McConvilles [1999:179] point that there seems to be "a tendency for trade routes to be traditional ones, geared to a previous imperial system," is debatable as the largest volume of trade is on the East-West routes. These trades dominate the liner business. Over the last 20 years they have grown enormously, underpinning the rapidly expanding trade links between these areas [Stopford, 1997: 366]. All of these factors relate to the utilisation by developing countries of liner services which are relatively more expensive.

Naude [1999] presented a paper at TIPS [1999] entitled, "The Impact of International Transport Costs on the Exports of a Developing Country: The Case Study of South Africa." The purpose of the paper was to determine the possible extent to which international transport costs (shipping costs) may be adversely impacting on developing countries' exports, by taking South Africa as a case study. The transport system and transport costs in South Africa were discussed, and it was established that apart from high ad valorem wharfage and weak logistical management at South African ports, domestic transport costs could not be claimed to be high in comparison to other countries (see Section 4 below for discussion of ad valorem wharfage). However, it was established that international transport costs (shipping costs), as proxied by the import CIF import FOB band, is significantly higher in South Africa's case than the world average. Time series econometric modelling of South Africa's export supply with incorporation of international transport costs using quarterly data over the period 1975 to 1998 indicated that the significant determinants of export supply for South Africa are the

⁸ For example, Limao and Venables (2000: 6) show that shipping from Baltimore to Durban costs \$2,500, and shipping the 1,600 further Kms to Lusaka an additional \$2,500, whereas the 347 Kms from Durban to Maseru (Lesotho) cost an additional \$7,500. They note that "this points to the importance of the fine details of geography, market structure and size in addition to the broader picture painted by the econometrics."

real exchange rate, the value of imports (fob) and international transport costs (CIF-FOB band). The changes of the coefficients for the real exchange rate and international transport costs were of the right sign (negative) – indicating that an appreciation of the real exchange rate and an increase in international transport costs to South Africa will have a significant negative effect on South African exports. Although international transport costs are statistically significant in reducing South African exports, the magnitude of the effect was found to be relatively small (the elasticity of changes in exports with respect to changes in international transport costs was around 0.08%). Changes in exports reacted more substantially to changes in the real exchange rate (-0.76% elasticity) and imports (-0.34% elasticity). Thus whilst international transport costs do have a significantly negative effect on exports, the effect is relatively small and overshadowed by the effect of the real exchange rate.

The paper by Fink, Mattoo, and Neagu [2000], examines why maritime transport costs are so high in some countries, and quantifies the importance of two explanations: restrictive trade policies and private anti-competitive practices. They find that both matter but the latter has a greater impact. Trade liberalisation and the break-up of private carrier agreements would lead to an average reduction in liner transport prices by one-third and to cost savings of up to \$3 billion on goods carried to the US alone. The policy implications are clear: not only is there a need for further liberalisation of government policy in America, but also for strengthened international disciplines on restrictive business practices. Furthermore they propose an approach to developing such disciplines in the current round of services negotiations at the WTO.

Limão and Venables [2000] study the determinants of transport costs, and show how they depend both on a country's geography, and on their levels of infrastructure (measured by an index combining road, rail and telecommunications density). Their research used three data sets. The first was shipping company quotes for the cost of transporting a standard container from Baltimore to selected destinations. The second data set used the CIF/FOB ratios reported for each country by the IMF, and the third piece of analysis used bilateral trade data in a gravity modelling exercise, adding to the standard independent variables their measures of geography and infrastructure.

The main results were, firstly, that infrastructure - both own infrastructure and that of landlocked countries' transit routes - is a significant and quantitatively important determinant of transport costs and of bilateral trade flows. For example, improving destination infrastructure by one standard deviation reduces transport costs by an amount equivalent to a reduction of 6,500 sea km or 1,000km of overland travel. Secondly, being landlocked raises transport costs by around 50% (for the median landlocked country compared to the median coastal economy). However, improving the infrastructure of the landlocked economy from the median for landlocked economies to the 25th percentile reduces this disadvantage by 12 percentage points, and improving the infrastructure of the transit economy by the same amount reduces the disadvantage by a further 7 percentage points. Thirdly, combining estimates from transport cost data with the trade data they were able to compute the elasticity of trade with respect to transport costs; it was shown to be high, at around -2.5. This means that the median landlocked country only has 30% of the trade volume of the median coastal economy. Improving infrastructure to the 25th percentiles raises this to over 40%. Finally, they used their results to study Sub-Saharan African trade. While a basic gravity model

suggests that African trade, both internally and with the rest of the world, is lower than would be predicted, augmenting the model to include infrastructure moved the predicted values much closer to the actual. Most of Africa's poor trade performance can be accounted for by poor infrastructure.

Redding and Venables [2000 in Micco and Perez, 2001] claim that more than 70 percent of cross-country variation in per capita income and more than 50 percent of the variation in manufacturing wages can be explained by transport costs. Radelet and Sachs [1998] show that shipping costs reduce the rate of growth of both manufactured exports and GDP per capita. These authors claim "doubling the shipping cost (e.g., from an 8% to 16% cost, insurance and freight, or CIF, band) is associated with slower annual growth of slightly more than half of one percent point." Finally, the International Development Bank [2000 in Micco and Perez, 2001] claims that access to markets is an important determinant of growth for countries that have an assembly manufacturing sector.

Using US import data, disaggregated at the six-digit level of the Harmonized System, Micco and Perez [2001] show that, besides distance and other standard variables, an important determinant of maritime transport costs is seaport efficiency. In fact, an improvement in port efficiency from the 25th to the 75th percentiles reduces shipping costs by more than 12%. This result is robust to different definitions of port efficiency as well as to different years. In addition, inefficient ports increase handling costs. Contrary to Fink, Mattoo and Neagu [2000], this paper also concluded that maritime conferences have been exerting only mild - if any - monopoly power. Using cross-country data for 1998, this paper then analysed the determinants of seaport efficiency. Besides infrastructure, the paper shows that policy variables affect port efficiency in a non-linear way. This result suggests that having some level of regulation increases port efficiency; however, an excess of regulation can start to reverse these gains. In addition, their cross-country analysis shows that the level of "organised crime" reduces port efficiency. In terms of their sample, an increase in *organised crime* from the 25th to the 75th percentile implies a reduction in port efficiency from the 50th to the 25th percentile. Finally, using a qualitative approach, the paper analyses the effect of private involvement on seaport efficiency. Even though it is too soon for a final judgement, the Latin American experience seems to show that private involvement increases port efficiency whenever private involvement comes with a labour reform and seaport monopoly power is either regulated - but not in excess - or reduced by competition.

In spite of the importance of transport costs to trade and growth shown by the studies above, there are not many other studies on transport costs [as confirmed by Micco and Perez, 2001]. The importance of maritime transport costs, and their ability to significantly impede international trade is clearly shown in the above literature review. Thus any additional effort to further integrate South Africa into the world economy needs to understand the determinants of maritime transport costs. Section two begins to investigate some of the potential determinants of South Africa's international transport costs.

3. SOUTH AFRICA'S INTERNATIONAL TRANSPORT COSTS

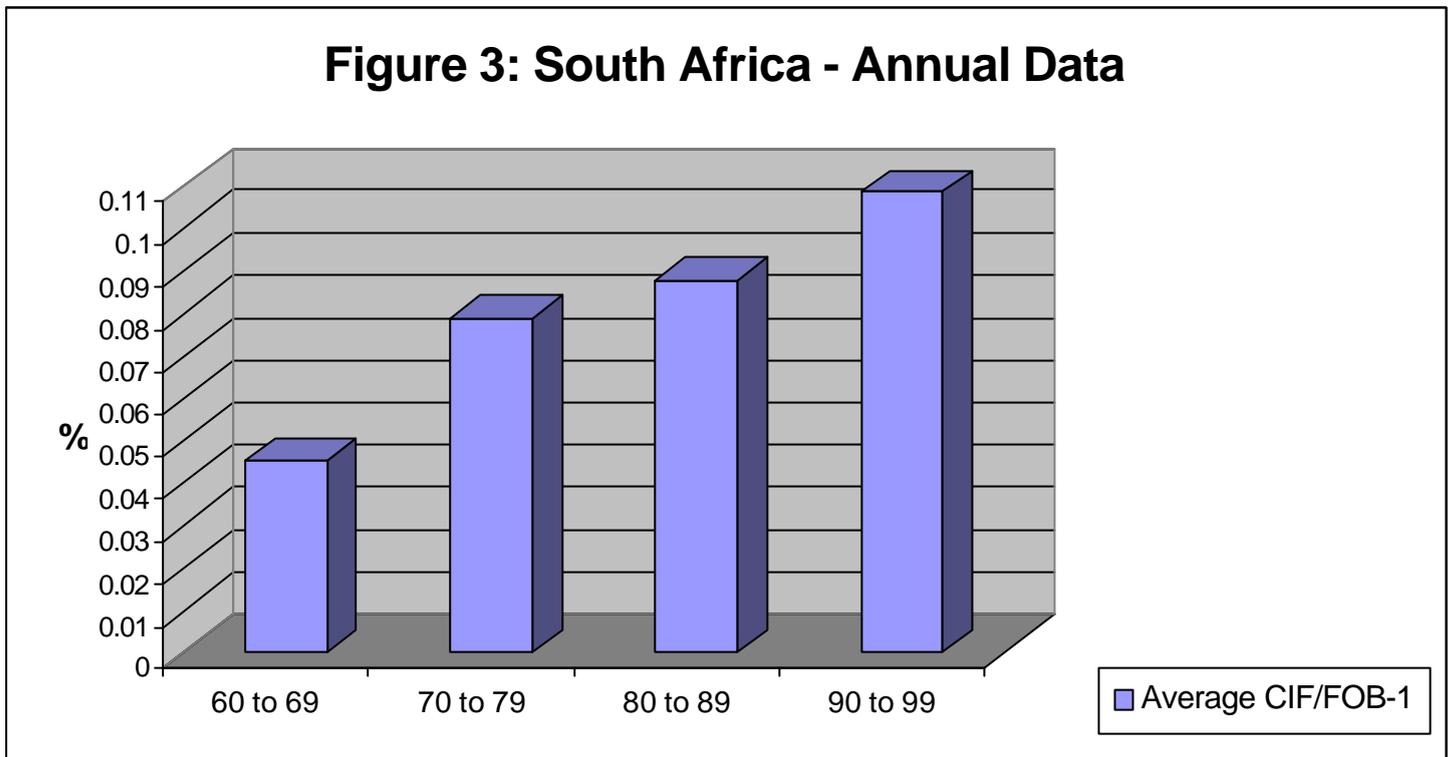
If a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties.

[Francis Bacon (1561-1626), *Advancement of Learning*, I.v.8, in Stopford, 1997]

The importance of maritime transport costs, and their ability to significantly impede international trade, has been highlighted in the literature above. The analysis of international transport costs, both developed and developing, showed that generally maritime transport costs have been decreasing (see figure 1). South Africa, on the other hand, has generally seen a reversed trend, with an increase in transport costs as calculated by the CIF-FOB band on imports (see figure 2). Using annual data, the author has calculated the average transport cost *rate* on imports for the last four decades (see Figure 4). This clearly shows that South Africa's transport cost *rate* on imports have been on the increase, contrary to international trends. As explained in the literature review above [by Naude, 1999], the higher international transport costs, the more firms will have to pay for imported intermediate goods, and the less they will receive for their exports. In addition to this, the higher transport costs would increase the price of all imported capital goods, which would reduce investment, the rate of technological transfer and thus reduce South Africa's economic growth.

So why is South Africa's transport cost rate on imports continuing to increase when the international trend is showing a decrease? What could be the possible causes of this phenomenon, and is it healthy for the South African economy? Can we expect South Africa's increasing trend of transport cost rate on imports to continue, and should anything be done to change this? These are some of the questions that this paper begins to investigate through the CIF/FOB analysis, as explained below.

Figure 3: Average transport cost rate on imports



3.1 CIF-FOB analysis

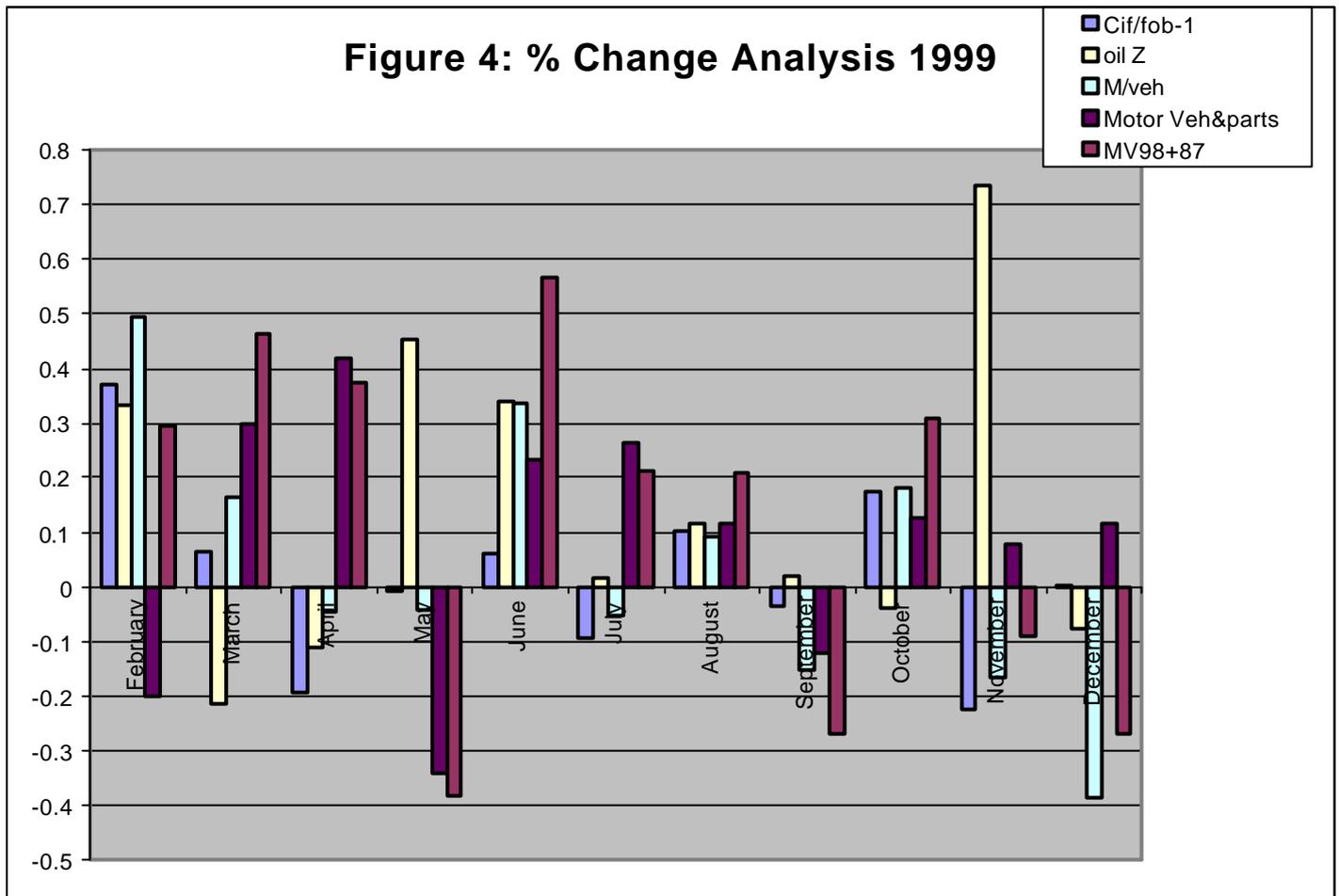
The analysis of the transport cost *rate* on imports will use the CIF-FOB band (or ratio) as calculated from the International Financial Statistics [2000]. The ratio gives, for each country, the value of imports inclusive of carriage, insurance and freight, relative to their free on board value, the cost of the imports and all charges incurred in placing the merchandise aboard a carrier in the exporting port. The ratio $\text{CIF/FOB} - 1$ represents the ratio of unit transport costs to the FOB price and thus provides a simple summary statistic of the transport cost *rate* on imports. One advantage of the CIF/FOB measure is that there is data available for many countries that aids in international comparisons. However, it has several drawbacks. The first is measurement error; the CIF/FOB factor is calculated for those countries that report the total value of imports at CIF and FOB values, both of which involve some measurement error. The second concern is that the measure aggregates over all commodities imported, so it is biased if high transport cost countries systematically import lower transport cost goods. This would be particularly important if we were using exports, which tend to be concentrated in a few specific goods. It is less so for imports that are generally more diversified and vary less in composition across countries. Finally, the measure aggregates over the different sources of supply, so for each importer there is a single CIF/FOB measure, not a full set of CIF/FOB measures for imports from each supplying country.

In trying to identify the causes of the rise in transport cost rate on imports, the literature points to the commodity base as a major explanatory factor. Thus, it is hoped, that using the harmonized system at the two-digit level will reveal a pattern of trade that could explain the increasing trend in the transport cost rate. An overview of South Africa's trading patterns for

the past decade (1991 to 2000) ensued, with a particular focus on the composition of imports at the two-digit level of the harmonised system (HS2) [see Appendix III for the percentage growth, and the changes in the relative weighting of each HS2 classification]. This decomposition analysis, although in its infancy, has begun. Although there is much work to be done, the analysis has begun to reveal some rather interesting results.

Briefly, some of the preliminary results of this ongoing investigation into the determinants of our transport cost rate $[(Cif/fob) - 1]$, can be seen in figure 4 below. Figure 4 shows the percentage change analysis of South Africa's transport cost, our crude oil (Chapter 27, HS2), and our imports of motor vehicle parts (Chapters 98 and 87). With the use of correlation analysis, it became clear that there was a weak negative correlation (0,098) between South Africa's crude oil imports and our transport cost. This can clearly be seen in Figure 4 for the month of November where we see a very large increase in our crude oil imports whilst at the same time experiencing a decrease in our transport cost rate. There is, however, a very strong positive correlation (0,729) between our transport cost rate and our imports of motor vehicle parts (M/veh, Chapter 98). That means, as can be clearly seen in figure 4, when our imports of motor vehicle parts (Chapter 98) increases, our transport costs were also showing an increase.

Figure 4: Analysis of South Africa's transport costs



Source: Compiled statistics from IMF, 2001, and DTI, 2002

Whilst one should always remember that correlation does not necessarily mean that there is a significant relationship between two variables, it a useful starting point for identifying potentially significant relationships in the data.

One would expect that our transport cost rate would not only be affected by the commodity base, but also by the freight rate required to transport these commodities. Investigation into this aspect of the analysis revealed for 1999 that although the container freight rate index showed a negative correlation of 0,42 to transport costs, when the index was multiplied by our motor vehicle imports (Chapter 98), a strong positive correlation of 0,72 still resulted. Chapter 98 is a special classifications provision for vehicle parts, and only came into existence in 1995. Since then, table 1 below shows the percentage of total imports (in terms of value) that it has held over the period. With the exception of 1998 where the correlation is negative - but chapter 98 imports are also at their relative lowest – it would seem that the correlation between these two variables is increasing over time. The motor vehicle industry is an interesting case study on its own, and its increasing value to the South African economy has been identified and promoted by the government.

Table 1: Motor Vehicle Imports (Chapter 98)

IMPORTS	1996	1997	1998	1999	2000
<i>JAN</i>	666,485	694,254	569,098	568,697	1,053,203
<i>FEB</i>	731,409	810,429	658,480	850,003	1,159,080
<i>MAR</i>	895,873	706,749	758,719	990,826	1,306,303
<i>APR</i>	741,091	1,025,710	797,252	947,202	1,027,190
<i>MAY</i>	839,496	634,643	740,865	908,192	1,254,495
<i>JUN</i>	815,717	713,555	735,041	1,212,062	1,258,212
<i>JUL</i>	903,472	964,594	881,268	1,150,829	1,477,789
<i>AUG</i>	1,048,998	762,715	1,086,378	1,257,875	1,592,489
<i>SEP</i>	894,197	733,123	889,766	1,067,969	1,364,776
<i>OCT</i>	1,029,665	831,537	1,043,731	1,262,815	1,594,272
<i>NOV</i>	733,179	634,258	819,454	1,052,248	1,346,615
<i>DEC</i>	654,187	382,112	435,404	647,965	573,119
ANNUAL TOTAL	9,953,760	8,893,672	9,415,450	11,916,675	15,007,536
% of total imports	8,52%	6,95%	6,52%	8,05%	7,92%
Correlation To T. Cost:	0.076736565	0.33965783	-0.2141168	0.46509216	0.659139159

These interesting trends, along with South Africa's commodity base, freight rates and numerous other determinants of transport costs identified in the literature review, need to be investigated further and applied to the South African trade context and maritime transport policy environment.

Statistics are like bikinis – they reveal a lot of what is interesting and instructive, but they conceal what is really vital.

[Harry Henry, in Haydam,1997].

4. SOUTH AFRICA'S SHIPPING POLICY

The shipping policy of South Africa is currently more liberal than protectionistic.

[Mr Bernal Floor, in Floor, 1993]

The importance of South Africa's sea trade and associated maritime policy has long been recognised, and has evolved through the centuries. Historical, socio-economic and political factors unique to South Africa, as well as the international shipping environment, have helped to mould South Africa's present shipping policy.

The commercial shipping policy of a state is reflected in the legislative, administrative and economic measures which the state adopts towards shipowning and operation in the national economy and international markets for sea transport. While these measures may concern its

own merchant fleet or be directed at foreign shipping, the effect will invariably have both domestic and international repercussions. For that reason, national shipping policies are not only domestic matters, but also matters of international concern [Floor, 1993: 5.1.1].

Jones [1987] produced a study entitled "The international shipping industry and South Africa's seaborne trade." The document analysed the South African shipping industry and governing maritime policy within the context of the international shipping arena at that time. A number of major shipping policy recommendations were proposed. Briefly, the potential regulatory measures which appeared to be impracticable or unnecessary at the time included: multi-lateral cargo sharing; direct cargo reservation; direct flag preference; direct subsidisation and the pursuit of discriminatory port tariffs [Jones, 1987: ix-xii]. The study recognised the benefits of the freest possible trade environment, but also recognised that "second best" interventions might at times be appropriate in an imperfect trading world where many trading nations practice unilateral maritime protectionism. Those "second best" policy avenues identified as more fruitful candidates at the time included: the pursuit of bilateral agreements with those of our trading partners who might otherwise practise unilateral cargo reservation; the placing on the statute books of potentially retaliatory measures aimed at those states that discriminate against our carriers; greater support for local carriers in respect of government cargoes; the pursuit of 'package' deals between landside transport operators and sea carriers; attempts to secure the shipment of a higher proportion of exports on a cif basis; and a change in the attitude of government towards the domestic shipping industry as a strategic asset whose reinforcement would be in the national interest [Jones, xii-xvi]. Since then, the international shipping industry has evolved, and with it, much of the shipping protectionism has evaporated.

The 1993 Report of the Committee of Enquiry into a National Maritime Policy for South Africa (the so-called Floor Report) states [para 5.1.19] that "the shipping policy of South Africa is currently more liberal than protectionistic". A better statement would be one that sees the attitude of the state towards the maritime industry as one of hands-off *laissez-faire*. This is based on the notion that the maritime transport industry is a self-regulating transport mode that has historically produced services of sufficient quantity and quality to service the seaborne commerce needs of southern Africa [Jones, 2002a].

On the regulatory front, South Africa maintains one of the most liberal maritime policy regimes in the world. In brief, Jones [2002a] notes that South Africa applies:

- no Cabotage rules. The coastal trades are open to all flags and carriers, without this "open ports" policy in any way threatening our domestic carriers.
- no multilateral, bilateral or unilateral cargo reservation. South Africa never acceded to the UNCTAD cargo-sharing formula, nor will it do so. No cargoes are reserved for national ships.
- no flag preference or flag discrimination. In this regard, an "open ports" policy is practised; all vessels receive equal treatment in our ports, subject only to a "first planned, first served or first come, first served" approach.
- no attempt is made to influence the terms of shipment of exports and imports.

The only area of formal state involvement with deepsea shipping is found in the area of Conference Liner shipping in the form of the so-called Ocean Freight Agreement (OFA), a

long-standing tripartite agreement between the SAECS (South Africa Europe Container Service) carriers, the Government and the PPECB (Perishable Products Exports Control Board). In terms of this agreement:

- the Conference carriers agree to provide a certain quality of service (vessels and vessel space - reefer);
- the PPECB agrees to support the conference via citrus and deciduous fruit exports;
- the government agrees to ship public sector cargoes on conference vessels and use moral suasion to generate support for the conference from private shippers (observed in the breach);
- floor and ceiling freight rates are re-negotiated annually.

The OFA is unique to the South Africa/Europe conference trade, and it is emphatically not an example of flag preference: preference for certain cargoes is given to conference carriers of several nationalities (including South Africa), but there is no provision specifying shipment by any particular line, flag or vessel. At worst, it represents cargo preference for conference as opposed to non-conference carriers. The OFA has, however, been weakened by the partial withdrawal of the fruit export lobby (PPECB) which is securing its own independent transport arrangements to an increasing degree. Jones [2002a] notes that there are no other maritime regulatory interventions in South Africa, other than the maintenance of safety standards.

4.1 Maritime fiscal policy in South Africa

Aside from the potential regulatory measure identified by Jones [1987], the then current fiscal policy environment facing shipowners was found to be a supportive one, “broadly comparable with the tax and incentives parameters facing western shipowners” [Jones, 1987: viii]. Consequently, no major policy changes were recommended. The sole suggested addition was to make tax allowances available where attempts to camouflage *de facto* South African vessel ownership (due to sanctions resulting from Apartheid) imposed higher costs on the shipowner [Jones, 1987: viii].

Since the paper by Jones [1987], the fiscal environment facing the international shipping industry has changed dramatically. In particular, the fiscal policy environment facing South African shipowners is no longer as supportive as it once was [see Chasomeris, 2000, Section 5.1]. At present more than 70 per cent of the international shipping industry operates without paying normal income tax, and in addition, the shipping industry is considered more sensitive to the level of taxation than others owing to the enormous cost of ship replacement. There was a time in the 1980's when the South African fiscal policy environment was considered supportive and broadly comparable with the tax and incentives facing western shipowners, but the international shipping arena has moved on, leaving South African shipowners and operators to compete internationally on an inequitable fiscal basis. Chasomeris [2000, Section 4], gave a critical review of the South African tax environment, and argued that the present tax structure in the context of the international shipping arena is unsatisfactory. Accelerated depreciation provisions embody an element of subsidy, yield comparatively little

tax, and in traditional policy frameworks offers little to attract companies or investors.⁹ South Africa's re-entry into the international mainstream trading community has the potential to create opportunities for a strengthening and expansion of the country's maritime community and the related benefits, but these opportunities need to be facilitated, most importantly through a levelling of the playing field. One way of helping to achieve this could be through the introduction of a tonnage tax that has been accepted and adopted internationally.

The Ship Registration Act of 1998 enhanced the eligibility of shipowners to register their ships in South Africa without the loss of the "genuine link" required under the 1982 Law of the Sea Convention. The Ship Registration Act, however, is only the first step in making the South African register attractive enough to bring its own prodigal owners back onto the flag, and possibly even lure foreign owners into the environment of a low-valued rand. Whilst these legislative measures are most certainly a step in the right direction, it is the fiscal measures, which include the creation of a competitive tax environment, that will have a greater impact on the success of South Africa's maritime policy initiatives. It is this context which lead Hare, the chairman of the Maritime Transport Policy Working Group [in Lloyd's List Africa Weekly, 1998: 4] to state:

...negotiating a competitive tax regime for ship operation will be one of the greatest challenges yet to come before the distinctive South African flag is seen fluttering from too many more taffrails.

To date, there is still no flow of foreign ships onto the South African register. Safmarine are in the process of re-flagging their container vessels to off-shore registers. Thus it is clearly visible that the South African flagged fleet is in the process of shrinking.

In light of this dynamic background, it is clear that in the 1980's the fiscal policy environment facing South African shipowners was considered supportive and broadly comparable with the tax and incentives facing western shipowners [Jones, 1987: iii]. At that point, foreign regulatory shipping interventions were the main source of concern. Since then, direct regulatory protectionism has all but disappeared, but more supportive fiscal policy measures have evolved to a point where South African shipowners and operators now compete internationally on an inequitable fiscal basis. South Africa's re-entry into the international mainstream trading community has the potential to create opportunities for a strengthening and expansion of the country's maritime community and the related benefits, but these opportunities need to be facilitated, most importantly through a levelling of this playing field. One way of helping to achieve this could be through the introduction of a tonnage tax that has been internationally accepted.

Chasomeris [2000] concluded that the evidence suggests that without seriously addressing the South African fiscal shipping environment, there is little prospect of creating a level playing field which is necessary for South African shipowners and operators to compete internationally on a more equitable basis. In order for the fiscal reform to be successfully achieved, a comprehensive package of policy measures needs to be put in place with the

⁹ For ships acquired before 1 April 1995 the accelerated depreciation allowed was 40 per cent in the first year, and 10 per cent thereafter. Ships acquired on or after 1 April 1995 face a new set of depreciation laws that allow for 20 per cent straight line depreciation [Meyerowitz, 1999: 24.4].

option of a tonnage tax as a key policy. A tonnage tax can be implemented at minimal cost to the government. With an improved fiscal environment, a more cohesive set of partnerships between traders, carriers, the financial sector and the state should result, and these in turn are likely to confer significant benefits on the wider South African economy.

5. SOUTH AFRICAN PORTS POLICY

The South African ports, and indeed the transport sector as a whole, have a long history of getting prices wrong. Consequently it is little surprise that they also have a history of misallocating resources across and within modes.

[Jones, 2002]

The current port administrators inherited a port tariff structure that was literally awash with distortions. The essence of these old tariff distortions [paraphrasing from Jones, 2002] was that the South African ports set prices below (at times radically below) costs for a number of port functions, including most marine functions. Port dues – payment by vessels for the use of marine infra-structural assets such as dredged approach channels, fairways and turning basins; berth dues; tug charges and pilotage charges generated revenues below associated costs. Cargo handling charges were closer to related costs, but fell short of full cost coverage. All of these activities were then “loss leaders” for the ports, so how then did the ports as a whole, and Durban in particular, manage to record sustained levels of significant profits for decades?

The answer: Ad Valorem Wharfage.

5.1 Ad Valorem Wharfage

Ad Valorem Wharfage has long been the most controversial and the most bitterly resented item in the old tariff book [see Jones 2002, and Naude, 1999]. As the main source of harbour revenue, wharfage was levied on the value of imports and exports, and was intended to finance the ports' cargo-working infrastructure. Ad Valorem Wharfage expressly excluded such tangible items of superstructure as terminals, gantries, wharf-cranes or cargo handling equipment for which explicit charges were raised. Wharfage was then presumable to finance the costs of the provision of general rail and road access to berths, cargo handling aprons and other general cargo infrastructure.

Wharfage, thus generated revenues that dwarfed associated costs by a factor of 300% to 400%. Losses associated with other functions were expunged, and the South African ports emerged as profitable entities with aggregate waterfront charges (for ships and their cargoes) that were high by world standards, particularly when viewed against productivity levels that were low by those same standards. Hence the new administration inherited ports that were artificially cheap for vessels and artificially expensive for their cargoes, on the basis of tariffs that made sense for neither.

The new tariff arrangement that came into effect from May 1, 2002, is the first full tariff regime to emerge after the recent dismemberment of the old Portnet into a landlord port authority (National Port Authority - NPA) responsible for port infrastructure and marine

services, and a port operator (S A Port Operations - Sapo), responsible for terminal operations. This functional split required that the old tariff set up be unbundled and repackaged to fit the new bipolar port structures.

The new tariff structure [see Port Tariffs, 2002 and Jones, 2002] shows that port dues are up with pilotage charges increasing more than 100% over 2001/2 levels (in part justified by the operation of an expensive helicopter that sometimes flies but always charges), as are tug charges. Sapo's cargo handling tariff hikes are more difficult to unravel, with initial statements suggesting increases of a little more than 20%, an announcement that was greeted with dismay by users already reeling from container-terminal congestion and mediocre handling rates. Sapo has not issued a formal tariff book, but is calling for users to negotiate on a commodity-by-commodity basis. These and other tariff changes have taken effect [see Port Tariffs, 2002 and Jones, 2002], but as in the past, the heart of the tariff matter lies in the cargo terrain, and hinges around the successor to the infamous Ad Valorem Wharfage charges.

Wharfage is now replaced by Cargo Dues, which are levied ostensibly on a volume (per ton of break-bulk or bulk cargo or per container) rather than a value basis. The new tariff also embodies a degree of rate flexibility, with preferential rates for break-bulk and neo-bulk cargoes on a commodity – and volume – driven basis [Port Tariffs, 2002 and Jones, 2002].

The adjustments to the tariff structure aim to introduce a more fair and competitive system, in line with long established international practice. This means, however that there will clearly be gainers and losers from the new dispensation. According to the NPA's CEO Siyabonga Gama [Rodrigues, 2002], Cargo importers and exporters will be the main beneficiaries of the reduced wharfage rates. The introduction of cargo dues will remove any exchange rate fluctuations and stabilise the port cost environment for cargo owners, which is seen as a positive contribution to stimulate trade growth through ports. Gama did concede, however, that some of the high-volume, low-value cargoes would have been affected detrimentally by the introduction of cargo dues, but indicated that this was necessary to ensure that they paid for their fair share of port infrastructure. Appendix II shows the changing tariff structure, associated import costs, and the impact of these changes on both high and low value cargo importers.

The NPA has not turned a blind eye to this impact. While using a value-based approach in the past may have been less than perfect, interaction with various importers and exporters confirmed that some form of differentiation must be retained between different commodities, based on their ability to absorb costs within the import/export market. This is more commonly referred to as "what the cargo/market can bear" [Rodrigues, 2002b]. Concerns have already been recorded by charcoal exporters from the Natal Midlands, who fear that the new dues will kill off their export business. Such special interests can hopefully be resolved by negotiation, but the nub remains the level of cargo dues, on an aggregated basis. If the revenue reductions from the replacement of wharfage with cargo dues substantially outweigh the additional expenditure on marine infra-structural and specific service charges, then the generalised cost of transport through the South African ports will fall and trade should be stimulated. If increased expenditure commitments by users exceed real wharfage gains then seatriade will be stifled [Jones, 2002]. Despite the very high volume of commodities traded most cargoes will pay less because of their value. Thus there is an overall net reduction in

port costs and over 90% of commodities will benefit from the scrapping of wharfage [Rodrigues, 2002].

5.2 Implications of tariff reform

“Tariff reform to lose ports R900m a year” was the headline in the Business Day [2002]. The National Ports Authority expects to lose as much as R900 million in revenue a year as a result of the new tariff structure being implemented for wharfage charges. The implementation of the new tariff structure is the culmination of a process that began almost two years ago. As an initial step, the NPA reduced the *ad valorem* percentages with effect from April 2001. The projected reduction of NPA revenue as a result of this first reduction amounted to R250 million [Chalmers, 2002].

The National Ports Authority, to which wharfage fees accrue, is one of the state-owned transport utility Transnet's most profitable businesses. It posted a net profit of R2,2bn after finance costs on turnover of R3,7bn in 2001-02. National Ports Authority CEO Siyabonga Gama said the organisation expected to see about R896m coming off the top line, or revenue, during the current year. The organisation would, however, strive to reduce the effect of this on net profit by focusing on cost reduction. Although the NPA will remain state owned, its sister company, SA Port Operations is an important part of government's privatisation program, and reported a net profit of R67m on turnover of R1,9bn [Chalmers, 2002].

Mafika Mkwanazi, CEO of Transnet, which owns the National Ports Authority, said the reform process would lead to Transnet losing as much as R400m in revenue this year. This is the first time that the two companies have reported separate results, so there are no comparable figures. They were previously merged under a single entity, Portnet, which posted a net profit of R1,9bn on turnover R5bn for 2000-2001 [Chalmers, 2002].

The National Ports Authority recorded increases in both the value and volume of cargo handled during the review period, which countered the impact of limited tariff increases. The total amount of cargo handled in the ports rose slightly to 194 million tons, the majority of which was made up of exports.

SA Port Operations CEO Tau Morwe said that while the organisation met a challenging budget in difficult trading conditions during 2000-01, the outlook for the year was good. “During the first three months of this year, we have already made half of the operating profit we are supposed to make for the full year. We are likely to post an operating profit of close to R500m this year,” said Morwe. Sapu has come under much criticism in the past year, particularly from its core customers – shipping lines – which have complained of congestion and poor turnaround times at ports. Morwe said, however, that the organisation was implementing a range of measures in an attempt to make it more responsive to customer demands and changing market conditions [Chalmers, 2002].

Public Enterprises Minister Jeff Radebe announced plans to fast-track the granting of a concession to operate Durban harbour in an address to parliament in May this year. NPA senior manager: planning and development Chris Matchett believes that, in the long run, a privately-run terminal is likely to be more efficient than a state run one. Matchett's understanding is that Sapu will eventually cease to exist once the concession process at all

South Africa's harbours is complete. However he believes certain business units at the ports will not be concessioned as they are not viable and will, therefore, not attract private investment. Matchett foresees the NPA being responsible for these services and probably charging a sub-economic rate to the client and then contacting Sapo to do the work [Rodrigues, 2002a]. Table 2 summarises the changing port tariff environment, as discussed above, with some of the projected impacts on both South African ports and cargo owners.

Table 2: Port Tariffs and the Impact on Ports and Cargo Owners.

	Import	Exports	Impact
Wharfage	1,78%	0,89%	<p>Ports: Inflated port profits, cross subsidisation from ports to other government ventures. Revenues highly vulnerable to exchange rate fluctuations</p> <p>Cargo owners: exploited and burdened. Uncertainty, as port costs were highly vulnerable to exchange rate fluctuations.</p> <p>* Wharfage calculation capped: 9000</p>
Wharfage (2001/2002)	1,70%	0,85%	<p>Ports: Projected reduction of NPA revenue as a result of this first reduction: R250 million.</p> <p>Cargo owners: Decrease MTC, still value based tariff Port authority edges closer to ensuring globally competitive port rates.</p> <p>* Wharfage calculation capped: 9423</p>
<p>Cargo Dues (2002/2003)</p> <p>Per Container: 6m / 20 foot</p> <p>12m / 40 foot</p>	<p>R 1 480,00</p> <p>R 2 960,00</p>	<p>R 735,00</p> <p>R 1 470,00</p>	<p>Ports: Anticipated reduction in NPA's cargo dues revenue in the order of 400million. NPA's CEO Siyabonga Gama said the organisation expected to see about R896m coming off the top line, or revenue, during the current year. Port will reduce the effect of this reduction on net profit by focusing on cost reduction.</p> <p>Cargo owners: High value cargo benefit through lower costs. Low value cargo owners experience rise in costs(see Appendix II)</p>

Table created from various sources which include: Port Tariffs, 2002, Jones, 2002, Rodrigues, (2002b) and Chalmers, R., (2002)

6. CONCLUSIONS

God must have been a shipowner. He placed the raw materials far from where they were needed and covered two thirds of the earth with water.

[Erling Naess, in Stopford, 1997: 291]

South Africa is a major sea trading nation with a relatively open economy that accounts for approximately six per cent of real world seatriade. This performance places South Africa within the top 12 international maritime trading nations. Even though South Africa is clearly a maritime trading nation, it is not, however, a significant shipowning or ship operating nation. This meant that South Africa had a ratio of trade share to tonnage flag share of about 150 to 1 in 1999. Thus there is clearly an imbalance which if addressed, could create opportunities for South Africa and the South African shipping industry.

South Africa has experienced a large reduction in her weighted mean tariff for all products which was 12% in 1988, and had been reduced to 4,4% by 1999. This reduction in South Africa's mean tariff is expected to continue as South Africa furthers her integration into the world economy. In turn, this reduction in artificial trade barriers has implied that transport costs have become an increasingly important determinant of trade.

The importance of maritime transport costs, and their ability to significantly impede international trade is clearly shown in the above literature review. Therefore, any additional effort to further integrate South Africa into the world economy needs to understand the maritime transport policy environment, the determinants of maritime transport costs, and the magnitude of the barriers to trade that these create.

South Africa's increasing transport cost rate on imports is contrary to the international trend which is showing a decrease. Research into what could be the possible causes of this phenomenon, and whether it is healthy for the economy has begun with the CIF/FOB analysis. With the use of correlation analysis, some of the preliminary results of this ongoing investigation into the determinants of our transport cost rate were that there is a weak negative correlation (0,098) between South Africa's crude oil imports and our transport cost. On the other hand, there is a very strong positive correlation (0,729) between our transport cost rate and our imports of motor vehicle parts (Chapter 98). That means when our import of motor vehicle parts (Chapter 98) increases, our transport cost rate also showed an increase.

The new tariff arrangement that came into effect from May 1, 2002, is the first full tariff regime to emerge after the recent dismemberment of the old Portnet into a landlord port authority (National Port Authority - NPA) responsible for port infrastructure and marine services, and a port operator (S A Port Operations - Sapo), responsible for terminal operations. This functional split required that the old tariff set up be unbundled and repackaged to fit the new bipolar port structures. The adjustments to the tariff structure aim to introduce a more fair and competitive system, in line with long established international practice.

This means, however, that there will clearly be gainers and losers from the new dispensation. Cargo importers and exporters will be the main beneficiaries of the reduced wharfage rates, and it was shown that the new tariff structure will reduce port import costs for high valued containerised cargo, but increase costs for importers of low value, high volume, containerised cargo. The introduction of cargo dues will remove any exchange rate fluctuations and stabilise the port cost environment for cargo owners, which is seen as a positive contribution to stimulate trade growth through ports.

On the regulatory front, South Africa maintains one of the most liberal maritime policy regimes in the world with: no Cabotage rules; no multilateral, bilateral or unilateral cargo reservation; no flag preference or flag discrimination and; no attempt is made to influence the terms of shipment of exports and imports. The only area of formal state involvement with deepsea shipping was found in the area of Conference Liner shipping in the form of the so-called Ocean Freight Agreement. Jones [2002a] notes that there are no other maritime regulatory interventions in South Africa, other than the maintenance of safety standards.

There was a time in the 1980's when the South African fiscal policy environment was considered supportive and broadly comparable with the tax and incentives facing western shipowners, but the international shipping arena has moved on, leaving South African shipowners and operators to compete internationally on an inequitable fiscal basis. South Africa's re-entry into the international mainstream trading community has the potential to create opportunities for a strengthening and expansion of the country's maritime community and the related benefits, but these opportunities need to be facilitated, most importantly through a levelling of the playing field. One way of helping to achieve this could be through the introduction of a tonnage tax that has been accepted and adopted internationally.

The Ship Registration Act 1998 has not resulted in a flow of foreign ships onto the South African register. Safmarine are in the process of re-flagging their container vessels to off-shore registers, and it is clearly visible that the South African flagged fleet is in the process of shrinking.

In order for the fiscal reform to be successfully achieved, a comprehensive package of policy measures needs to be put in place with the option of a tonnage tax as a key policy. A tonnage tax can be implemented at minimal cost to the government. With an improved fiscal environment, a more cohesive set of partnerships between traders, carriers, the financial sector and the state should result. This, in turn, is likely to confer significant benefits on the wider South African economy.

APPENDIX I

The maritime economy is enormously complex, so the first task is to simplify the model by singling out those factors that are most important

Demand	Supply
1. The world economy	1. World fleet
2. Seaborne commodity trades	2. Fleet productivity
3. Average haul	3. Shipbuilding production
4. Political events	4. Scrapping and losses
5. Transport costs	5. Freight rates

Briefly, this model has three components, demand, supply and the freight market which links the two by regulating the cashflow from one sector to another. Any imbalance between demand and supply feeds through into the freight market [see Stopford, 1997: 114-149].

APPENDIX II

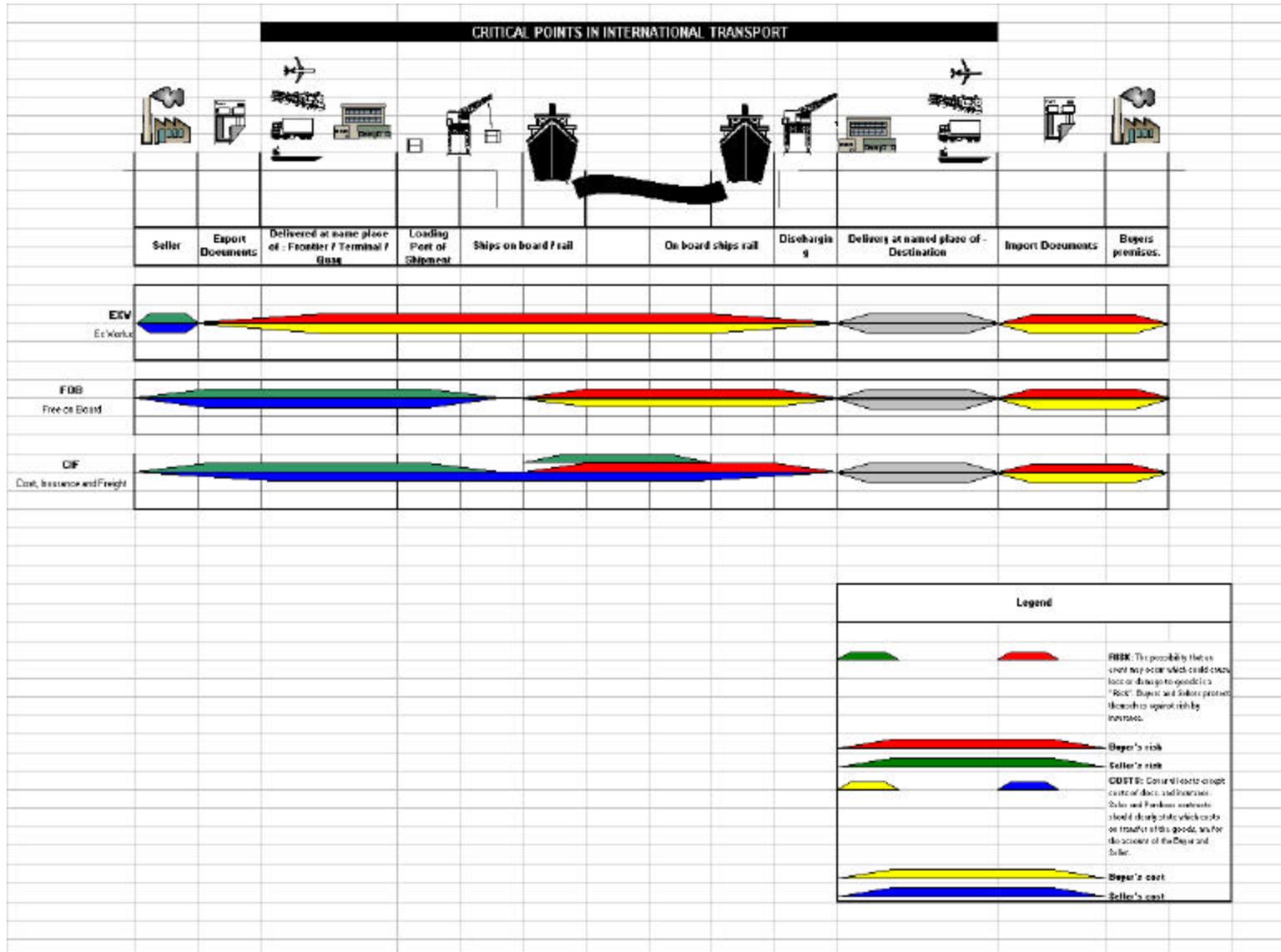
**Appendix - Table 1: Tariff Structure, Import Costs, and the Impact on Cargo Owners:
High vs Low Value Cargo Imports, Example 1.**

Commodity	Ad Valorem Wharfage	Ad Valorem Wharfage 2001/2002	Box Rate 2002/2003
High value cargo One 6m container Cargo value: R700 000	R4 485	R4 485	R1 480
Low value cargo One 6m container Cargo value: R70 000	R1 246	R1 190	R1 480
Calculation:	28M3 * 9000 * 1,78%	28M3 * 9423 * 1,7%	Set Box Rate

**Appendix - Table 2: Tariff Structure, Import Costs, and the Impact on Cargo Owners:
High vs Low Value Cargo Imports, Example 2.**

Commodity	Ad Valorem Wharfage	Ad Valorem Wharfage 2001/2002	Box Rate 2002/2003
High value cargo One 12m container Cargo value: R700 000	R8 971	R8 970	R2 960
Low value cargo One 12m container Cargo value: R70 000	R1 246	R1 190	R2 960
Calculation:	56M3 * 9000 * 1,78%	56M3 * 9423 * 1,7%	Set Box Rate

Appendix - Table 3: Understanding CIF and FOB.



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