Endogenous Protection in a Trade Liberalising Economy: The Case of South Africa

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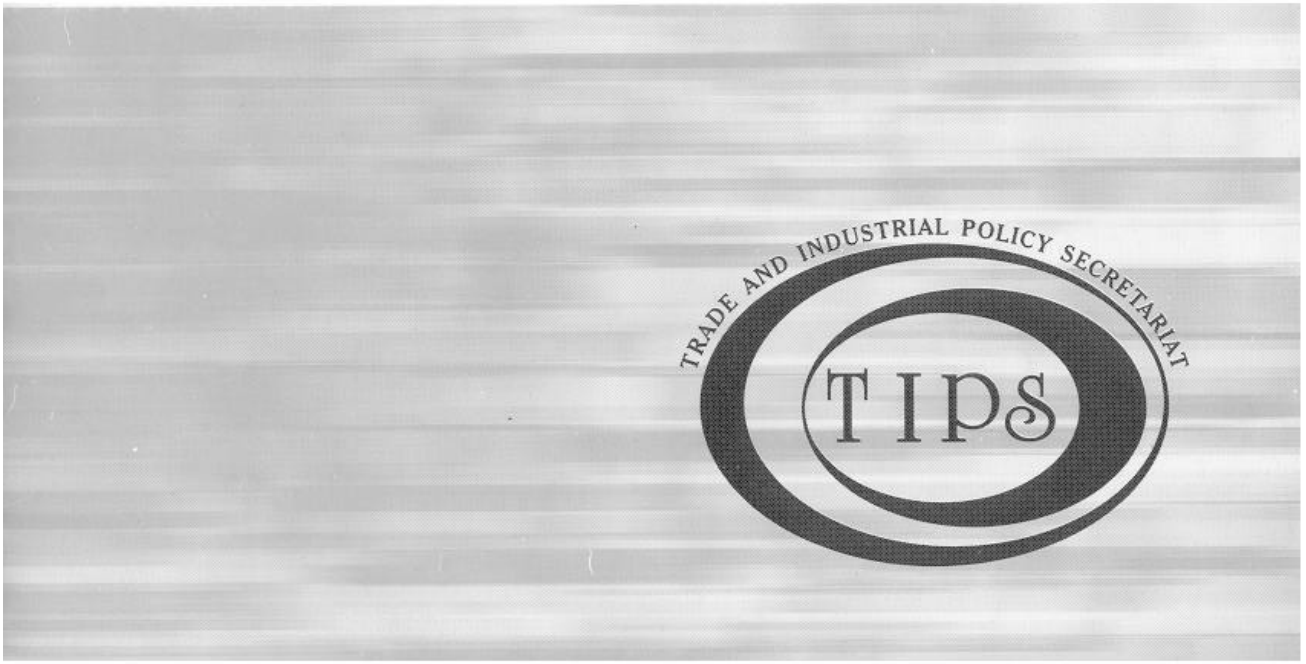

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Merle Holden and Daniela Casale

School of Economics and Management
University of Natal
Durban

Abstract

The paper aimed to establish the changes that had occurred in the institutional structures governing trade policy in South Africa during the period 1990 –1998. It also examined the forces that had influenced the application of tariff policy by the major tariff setting bodies by applying various theories of endogenous protection to their decisions. Using firm level data on applications made to the Board on Tariffs and Trade, the study found that when estimating a Probit model, employment considerations rather than capital invested had influenced the Board's decisions to grant protection. In addition, the Board was found to have granted protection even in the face of tariff lines having been bound under the Uruguay Round. The paper argues that this should not be interpreted as a reversal of the trade liberalisation, but rather as an attempt by the Board to cushion firms from the acceleration in the tariff rationalisation process that had occurred after the GATT offer. Finally, it is suggested that the Board's response to changes in import penetration ratios between industries that were considered organised provided *prima facie* evidence of the superior lobbying ability of such industries.

1. INTRODUCTION

Trade and industrial policy in South Africa initially followed the orthodox route of developing the economy through import substituting measures. These policies were in large part driven by the reaction of the world to the policies of the apartheid state and its need to establish strategic industries. However, with the transition to democracy in 1994, liberalisation measures were adopted, firstly under the aegis of the Uruguay Round negotiations, and subsequently with the introduction of a five - year trade liberalisation programme in 1996 that consisted of a Tariff Rationalisation Process. This process included a complete restructuring of the incentives given to trade, industry and agriculture. It was recognised by the democratically elected government that South Africa should actively seek to benefit from the growth in world trade by stimulating exports and integrating into the world economy.

This paper has several aims. Firstly, it seeks to establish whether any changes have occurred in the institutional structures governing trade policy in the period of democracy and liberalisation. Secondly, it examines the forces that have influenced the application of tariff policy on the part of the major tariff setting bodies in the country during the period 1990-1998. The paper therefore seeks to explain how trade policy has been determined in South Africa and applies the various theories of endogenous protection to the decisions that have been made.

This research is unique in the sense that a study has not been made at the firm level of aggregation for South Africa. The interest in the study also lies in whether multilateral commitments on trade policy have acted as a disciplining force once South Africa democratised. In particular it examines whether the adjustment costs arising out of the liberalisation were of concern to policy makers.

2. INSTITUTIONAL STRUCTURES

Past development of the manufacturing sector in South Africa had been spearheaded by policies of import substitution for infant industries. This policy was reinforced by the need to achieve independence from the rest of the world for strategic reasons. Although the limitations of this approach had been recognised by government, the ability to encourage exports was always constrained by the political reality of sanctions. Despite these constraints since the early eighties the trade regime was gradually liberalised with the tarrification of quantitative restrictions, the adoption of a more flexible exchange rate and the provision of general incentives to exports.

However, it was only with the move to democracy in 1994 that significant trade reform actually occurred. The offer made by South Africa under the Marrakesh Agreement of the GATT has been viewed as remarkable in that it was negotiated before the elections that took place in April 1994 (ILO, 1999) by the National Economic Forum, a tripartite body consisting of government, labour and business. This agreement took effect in January 1995.

Since 1988 the tariff structure has been based on the Harmonised System. At the end of June 1997 the tariff had 7814 lines at the eight digit HS level (WTO, 1998) consisting of *ad valorem*, specific, mixed, compound and formula duties. Seventy – five per cent of the tariff lines bore *ad valorem* duties in the range between zero and 57.5 per cent. Half of these were duty free. The percentage of lines with zero rates rose from 20 per cent in 1993 to 44 per cent in 1997, and under the Tariff Rationalisation Process (TRP) the tariff was simplified further by a reduction in the number of lines, tiers and tariff peaks. The TRP aimed at achieving *ad valorem* rates of 30 per cent on final products, 20 per cent on intermediate goods and 10 per cent on primary goods (WTO, 1998).

All quantitative restrictions have been tariffied and 98 per cent of tariff lines bound at the HS eight-digit level at the end of the Uruguay Round. Prior to the Uruguay Round, only 18 per cent of tariff lines were bound. After the Round, the simple average bound rate was 19.8 per cent. By the end of June 1997, the simple average

MFN import tariff was estimated by the WTO to be at 15.1 per cent with a standard deviation of 17.8 per cent (WTO, 1998). These estimates provide *prima facie* evidence of rates being applied below the bound rate. It would seem that under the TRP a faster phase- in of the agreed trade liberalisation within the Uruguay Round has been adopted. This has raised concerns of a possible reversal of the trade liberalisation that has actually occurred without violating the commitments made to the international community (Jenkins et al, 1999). This issue is addressed further in the analytical work that follows.

Although trade and industrial policies in South Africa are formulated and coordinated by the Department of Trade and Industry (DTI), changes in policy can also be initiated from other government departments including the SA Reserve Bank and the Department of Finance. The Board on Tariffs and Trade (BTT) and the Industrial Development Corporation (IDC) perform advisory and investigative roles in the formulation of trade policy. The BTT is appointed by the President, and the IDC is a parastatal investment corporation that has developed some considerable expertise in trade analysis. The role of the BTT is to promote growth in industry; investigate at the request of the private sector the imposition of additional protection to aid the development of the economy; investigate cases of dumping and disruptive competition and advise the Minister of Trade and Industry accordingly (BTT, Annual Reports).

While in the past South Africa had used tariffs selectively to encourage industry, there is the view that this selectivity may have been curbed by the accession to the GATT agreement. Certainly this selectivity contributed to the view held by the World Bank that prior to the liberalisation effort, the protective structure ranked amongst the most complex in the world (Belli et al, 1993). The Tariff Rationalisation Process aims to simplify the tariff and suggests that increases in customs duties should not be used if anti-dumping or countervailing duties can be used.

The BTT considers applications for protection on the basis of their contribution to the economy, their export potential, local content, value- added and growth in the industry. With applications for anti-dumping duties on the other hand, the dumping margins, increased import volumes and their impact on the domestic industry

including a variety of economic factors and calculations of firm specific indices, have to be established. Assessment of applications for protection and the implementation of the WTO Anti-Dumping Agreement on the part of the BTT has required intensive use of the available limited resources[1]. It is also clear from a perusal of the applications for protection and anti-dumping duties that the latter are more data intensive, suggesting that if indeed the BTT follows the Tariff Rationalisation Process that requests for this form of protection are likely to be less successful.

This study covers the period 1990 to 1998 examining the applications that have been made to the Board of Tariffs and Trade. These include applications for increases in tariff duties, reductions in duty, drawback of duty, a revision of excise duties and reviews of the tariff structure. Table 1.0 shows that the total number of applications increased markedly up until 1994. In 1995 the GATT agreement was implemented into law and applications declined thereafter. What is of interest however, is that after 1994 the proportion of applications supported by the Board rose.

Table 1.0: Total Applications to the Board of Tariffs and Trade 1990 – 1998

Year	*Brought forward from previous year*	*Received in current year*	*Total*	*Supported*	*Rejected*	*Total*	*% of Total Supported*
1990	97	418	515	155	198	353	43.9
1991	96	474	570	174	172	346	50.3
1992	140	455	595	130	220	350	37.1
1993	145	466	611	140	321	461	30.4
1994	69	612	681	187	264	451	41.5
1995	171	345	516	157	184	341	46.0
1996	89	254	343	101	90	191	52.9
1997	123	258	381	94	73	167	56.3
1998*	160	231	391	105	96	201	52.2

Source: BTT, Annual Reports

[1] The Trade and Industry Policy Secretariat has attempted to aid the BTT in developing a manual to simplify the assessment of the applications. See the TIPS Web page.

*Applications for 1998 do not include anti-dumping

As the focus of this study is the requests by firms for protection, these were isolated in Table 2.0. The data show that there is some support for the view that the number of applications for increased protection declined after 1994 and that initially in the years 1995 and 1996 requests for anti -dumping duties rose. This tendency was obviously in accordance with the TRP recommendations.

Table 2.0 Applications for Increases in Protection

Year	***Total Applications***	***Increase in Duty (% of total)***	***Antidumping (% of total)***	***Other (% of total)***
1990	106	58	18	24
1991	164	51	18	31
1992	130	61	18	21
1993	73	66	15	19
1994	71	69	16	15
1995	51	67	24	9
1996	58	52	35	13
1997	93	53	8	39
1998	77	29	21	50

Source:BTT, Annual Reports

*The category "Other" consisted mainly of applications for withdrawal of rebates.

Table 3.0 analyses these applications in more detail showing the measure of success of the applications in the categories of requests for increases in tariff duties, and anti-dumping duties.

Table 3.0 Applications for Increases in Tariff Duties and Anti-dumping Duties

Year	*Brought forward from previous yr*	*Received in current yr*	*Total*	*Supported*	*Rejected*	*Total*	*% of Total Supported*
Increase in Duty							
1990	39	61	100	27	35	62	43.5
1991	20	83	103	41	22	63	65.1
1992	28	79	107	17	31	48	35.4
1993	37	48	85	18	43	61	29.5
1994	6	49	55	11	18	29	37.9
1995	25	34	59	20	11	31	64.5
1996	16	30	46	10	10	20	50
1997	22	49	71	19	6	25	76
1998	35	22	57	20	9	29	69
Anti-Dumping							
1990	5	19	24	7	9	16	43.8
1991	6	29	35	8	12	20	40
1992	8	23	31	2	7	9	22.2
1993	12	11	23	5	4	9	55.6
1994	7	11	18	5	3	8	62.5
1995	9	12	21	4	3	7	57.1
1996	10	20	30	6	1	7	85.7
1997	23	7	30	11	3	14	78.6
1998	8	16	24	-	-	-	-

Source: BTT, Annual Reports

The proportion of applications that were supported in both categories is shown to have risen. Applications for increases in tariff duties that were reviewed by the Board in that particular year enjoyed an increased level of support that rose from an average of 42 per cent in the period 1990 to 1994 to 65 per cent in the period 1995 to 1998. Contrary to our initial expectations, the anti-dumping applications also enjoyed increased support, rising from 45 per cent to 74 per cent on average over the same periods.

It should be noted that the change in government to reflect the political reform of 1994 led to a change in the composition of the Board of Tariffs and Trade. In 1995 four new members were introduced onto the Board, with two members including the chair remaining from the old dispensation. These two members retired in 1997 changing the face of the Board.

3. REVIEW AND METHODOLOGY

The discussion thus far has focussed on the institutional structures that have been responsible for the formulation of trade policy in South Africa. Within these structures, the Board on Tariffs and Trade plays a unique role in terms of responding to and investigating requests for protection primarily from firms in the private sector. The research that follows attempts to ascertain the driving factors behind the decisions reached by the Board in either accepting or rejecting these applications.

The model that follows incorporates variables derived from the theory of endogenous protection and such public interest factors for which the data was available, that the Board has been directed to take into account in its decision making. The theory of endogenous protection states that supply and demand factors determine the equilibrium level of protection. It suggests that interest groups, after assessing the costs and benefits of lobbying, demand protection. On the other hand, protection is supplied by politicians acting in their own self-interest.

In addition, this paper attempts to test elements of the Grossman-Helpman (1994) model of protection for sale. Grossman and Helpman specifically model differences in protection in terms of import elasticity, import-penetration ratios and whether the industry is politically organised. The model has been distilled into a Ramsey type rule whereby the amount of protection given to a sector is expressed in terms of the output – import ratio and the import elasticity defined in absolute terms:

$$\frac{t_i}{1+t_i} = \frac{I_i - \alpha_l}{\frac{\beta}{1-\beta} + \alpha_l} \cdot \frac{Z_i}{\varepsilon_i} \qquad (1)$$

Where Z is the ratio of output to imports, t is the *ad valorem* tariff, ε the elasticity of import demand and I a parameter to determine whether the sector is organised or not. For example, if the sector is organised I takes the value of one.

Equation 1 can be rearranged to the following:

$$\frac{t_i}{1+t_i} = \gamma \frac{X_i}{M_i} + \delta I_i \frac{X_i}{M_i} \qquad (2)$$

Where

$$\gamma = [-\alpha_l / (\beta / (1-\beta) + \alpha_l] / \varepsilon_i$$

And

$$\delta = [1 / (\beta / (1-\beta) + \alpha_l] / \varepsilon_i$$

β, which ranges between zero and one, is the weight of welfare in the government's objective function, and α represents the share of the population that owns a particular specific factor.

Notice that the model predicts that if a sector is organised, the level of protection should rise with an increase in the ratio of domestic output to imports, i.e. a decline in the import penetration ratio. This result is rationalised by the observation that larger increases in domestic output benefit the specific factor owners more than the economy loses from protection. Furthermore, the model predicts that in the unorganised sectors, a rise in the output-import ratio would decrease the likelihood that sectors would be granted protection, as the economy would have more to lose

from protection than the owners of the specific factors would have to gain (see Goldberg and Maggi, 1999).

The Grossman-Helpman model can be inserted into a more general framework that incorporates the determinants of protection in terms of a political market in trade policies. This approach views the import competing industries as demanding protection and government as the supplier of such protection (Anderson, 1980; Anderson and Baldwin, 1981). The firms or industries weigh up the costs and benefits of seeking protection, while government maximises its own self- interests that may or may not coincide with the public interest. The empirical literature has therefore incorporated a range of variables that attempt to measure the factors underlying the market.

The theory and empirical work within endogenous protection has mainly been applied to developed countries where it was found that protection was more likely to be given to labour intensive, low wage- lower skill intensive industries (Anderson and Baldwin, 1981; Trefler, 1993). Typically these industries have suffered import competition from developing countries where comparative advantage lies in these labour intensive industries. Rodrik (1995) observes that this empirical regularity is at variance with the theoretical literature. The theory does not provide a robust explanation as to why governments in developed countries may seek to protect sectors of comparative disadvantage argues Rodrik. However, Anderson and Baldwin (1981) find that where industry employment was high, protection was also high and could be used to rescue the predictions of endogenous protection because of the impact of unemployment on political support for the government.

Interestingly, the empirical literature has failed to establish unambiguously the expected positive relationship between protection and the number of firms in the industry, the concentration of economic power on the part of firms and geographic concentration of industry (Anderson and Baldwin, 1981; Rodrik, 1995; Trefler, 1993).

There is also a difference of opinion on the relationship between protection and the import penetration ratio. Leamer (1988) and Trefler (1993) find a positive relationship, whereas Goldberg and Maggi (1999) find a positive relationship only

within the group of non-organised sectors, and weak support for a negative relationship within the group of organised sectors. Goldberg and Maggi (1999), using the Grossman-Helpman (1994) model, suggest a possible reconciliation in the manner in which the political variables and the import penetration ratios are entered into the estimating equations. This point will be returned to in the empirical work that follows in this paper.

4. EMPIRICAL MODEL

One of the aims of this paper is to establish the influence of certain variables on the decisions that were reached by the Board on Tariffs and Trade. Drawing on theory and within the constraints of available data for South Africa, several models are specified. The models consist of reduced form equations in which a number of independent variables are regressed on a dichotomous dependent variable. This variable equals one if the applicant's request was supported by the Board, and zero if it was rejected. The regressors in the equations were drawn largely from the theoretical and empirical literature. The number of regressors was limited to no more than nine in order to preserve the degrees of freedom in the estimating equation and to ensure consistency in the data set.

4.1 Description of Variables Used

The variables used in the equations now follow. The primary source of data for this study was obtained through the reports published by the Board on Tariffs and Trade of their decisions on requests for protection and the Board's annual reports. Ninety-four useable reports were processed covering the period 1990 to 1998.

Status of Application (PROTECT)

As was discussed earlier the status of each firm's application for protection was classified either as supported or rejected by the Board, in some cases the Board was found to partially support applications. For example, the Board has agreed to grant protection for a limited period, or has limited the tariff increase requested by firms. Therefore, initially an ordered probit model was specified with a third category of

partial support. However, the resulting estimating equations were found to be insignificant as indicated by a likelihood ratio test that all the coefficients were equal to zero.[2] As this finding could be explained by the small number of observations in the third category of partial support,[3] it was therefore decided to retain the variable in its simple dichotomous form of support and reject[4].

The treatment of the dependent variable in this study of protection is unique in the sense that other studies have focussed on existing levels of protection. As these levels may reflect more than the ability of firms to lobby for support, or the government's desire to maximise its political support within the demand and supply framework, the models may well have been misspecified. This study is able to marry those tariff changes directly sought by firms with the decision by the Board to support or reject their requests, clarifying the institutional channels through which decisions are reached.

An additional benefit that can be derived from the disaggregated approach is that we are able to identify the actual year in which the process took place. This eliminated the problem of endogeneity found in other studies[5].

While use of the individual reports brought many benefits of disaggregation, unfortunately it also suffered the disadvantage that information contained in the reports was not always consistently reported. For that reason it became necessary to supplement the data at the 3 or 4 digit SIC industry level.

Imports and Output-Import Ratios (IMP and ZIMP)

Two approaches were used in modeling the influence of import competition. Firstly, a dummy variable (IMP) was set to one to capture whether the applying firms had experienced an increase in imports prior to applying for protection. These data were found in the reports. Secondly, output-import ratios and their changes in the previous

[2] The likelihood-ratio chi-square statistic was only significant at the 10 per cent level.
[3] In the sample 35 applications were supported, 46 applications rejected and 13 partially supported.
[4] The Board also follows the same categorisation in its annual reports.
[5] See Trefler (1993) and Goldberg and Maggi (1999) for their treatment of the endogeneity problem.

year of the applications were calculated at the 3 digit SIC level (ZIMP). By using data from the previous year the problems arising from endogeneity were avoided.

Capital Stock (CAP)

On the demand side it would be reasonable to expect that firms with large fixed assets would be more likely to lobby for protection. On the supply side governments might be more likely to grant protection to firms highly invested in capital stock (Trefler, 1993: 141). Unfortunately, not all the reports contained such information so capital stocks at the 3 digit level were used.

Employment (EMP)

Similarly, theory predicts a positive relationship between employment size and protection (Trefler, 1993). In order to ensure comparability between the capital stock data used and employment, industry data at the three digit level was again used. Further justification for the use of industry level data can be found in the proposition that the Board is more likely to take the industry reaction into account as the protection granted is industry applicable and not just firm specific.

Industry Growth (INDGROW)

The theory also suggests that failing industries are more likely to obtain support. On the demand side, the expected benefits of lobbying are greater, and on the supply side, the government can justify protection in social welfare terms. Industry growth was obtained at the 3 digit level for the year previous to the application to avoid problems of endogeneity.

Industry Concentration (CR4)

It is more likely that industries consisting of many small firms will be less successful in obtaining protection for the reason that even though the applications are made by individual firms the Board does take into account the reactions of interested parties.

In addition, the smaller the number of firms, or the more concentrated the industry, so the free rider problems that arise in lobbying are lessened. Furthermore, in the past the Board has tended to support firms that supply a substantial share of the market (GATT, 1993: 44). Nevertheless, there has been some ambiguity in the empirical work as to the effect of this particular variable. For example it could be argued that if government is perceived to be supporting monopolised industry at the consumers' expense the political costs could be high and this effect may outweigh the increased effectiveness of firms' lobbying. The four-firm concentration ratios were computed at the 4 digit level.

GATT Dummy (GATT) and 1995 Dummy

Finally, a dummy variable which was set to one if the product line was bound in terms of GATT/WTO agreements, was included. As was noted earlier after 1995 the majority of tariff lines were bound. We would expect that if the tariff was bound that firms would be less likely to receive an increase in protection. Given the government's declared commitment to credible trade liberalisation and to the international community it would not be unreasonable to expect a negative sign on this dummy. Bearing in mind that as this dummy is more likely to appear in the post liberalisation period of the sample it could also capture effects such as the changing composition of the Board of Tariffs and Trade. Therefore, in addition to the GATT dummy, in some of the regressions that were run, a dummy variable equal to one from the year 1995 onwards was also included.

Real Exchange Rate (REER)

The change in the real effective exchange rate compared to the year preceding that in which the application was lodged, was also included. The inclusion of this variable can be justified in terms of its ability to measure competitiveness, and it is therefore hypothesised that if firms have experienced an appreciation of the currency they would be anxious to seek further protection and government more likely to grant this protection. On the other hand government and the Board are fully aware of the benefits of a real depreciation to import competing firms and hence should be less likely to grant protection if firms have benefited from exchange rate protection.

Before concluding the discussion of the variables used in the study, those variables possibly omitted from the study should be mentioned. For example the firm's inherent lobbying skills could not be measured, nor could certain economic factors such as export potential be adequately ascertained. Therefore, the potential biases arising from omitted variables must be borne in mind.

Variable	Obs	Mean	Std. Dev.	Min	Max
PROTECT	94	0.628	0.486	0	1
GATT	94	.426	0.497	0	1
CR4	94	.587	0.218	0.164	0.984
CAP	94	5225.883	4028.148	110	19632
EMP	94	80351.03	62096.74	4099	198395
INDGROW	94	1.18	9.955	-13.093	40.878
REER	94	1.68	4.083	-9.25	6.44
IMP	94	0.681	0.469	0	1
1995	94	0.309	0.464	0	1
ZIMP	94	-0.087	0.134	-0.400	0.380
ZIMORG	94	-0.046	0.113	-0.400	0.380

An analysis of the country source of imports from which protection was being sought, showed that for those 24 applications where the source was identified, 13 applications (56 per cent) identified Far Eastern suppliers. The countries that were mentioned included China, Hong Kong, Philippines, Singapore, Taiwan, Korea, Malaysia and Indonesia. Western European suppliers were identified in five applications; Latin America in three and one each in Africa and the United States of America. As there was no conformity in all the applications it was decided that allowance in the regressions could not be made for the country of origin of imports without drastically reducing the sample size.

4.2 Empirical Results

A maximum-likelihood probit model was used in the estimations the results of which are reported in Table 4.0. The likelihood-ratio chi-square statistics indicate that the explanatory power of the regressions is highly significant, at better than the one per cent level. Although the pseudo-R squared values are low this is consistent with other

empirical work (Anderson, 1980: 138). The Henriksson and Merton measure showed values greater than one in support of the chi-square measure that the regressions were of value in predicting the outcome of each application made to the Board.

Two versions of the model were run. Equation 1 includes the 1995 dummy, whereas Equation 2 omits the dummy. The results for the two equations were not substantially different however. The coefficient on the import variable was of the expected sign and was found to be significant at the 4 per cent level. Increased import competition in the period previous to the application had driven firms to lobby for protection, and hence these firms had been more successful in their applications.

Table 4.0: Regression Results

	Dependent Variable: PROTECT	
Independent Variables	1	2
IMP	0.707	0.66
	(2.021)***	(1.981)***
CAP	-.000	-.000
	(-0.465)	(-0.665)
EMP	0.00001	0.00001
	(2.461)*	(2.126)**
INDGROW	0.20	0.03
	(1.340)	(2.025)***
CR4	-.50	-0.494
	(-0.659)	(-0.494)
REER	0.114	0.077
	(2.322)**	(1.971)***
GATT	0.733	0.968
	(2.007)***	(2.997)*
1995	1.177	-
	(2.596)*	
constant	-1.026	-0.737
	(-1.611)	(-1.249)
LR chi-square (8)	34.30	26.25
Pseudo R2	0.28	0.21
No of Observations	94	94
t-statistics are shown in parentheses		
*significance at the 1 per cent level		
** significance at the 2 per cent level		
***significance at the 4 per cent level		

The coefficient on the industry capital stock variable although negative and very low in absolute value was also insignificant. The industry employment variable on the other hand, while being highly significant, was also estimated to have a very low positive coefficient. Nevertheless, the results suggest that the Board appeared to be more concerned with the support of labour interests than those of capital. Given that during the period of this study unemployment rates have been steadily rising in South Africa this result is not unreasonable. In addition, the trade union movement has become increasingly more vocal in its opposition to the trade liberalisation process. This opposition was recently expressed with the calling of a general strike in May 2000 and the picketing of particular low cost retailers who rely heavily on cheap imports.

In the first version of the equation the industry growth variable failed to be a significant determinant for the Board. Once the 1995 dummy was omitted however, industry growth was found to be positively correlated with the protection granted. This result can be directly contrasted with the experience in developed economies where failing industries have been granted relief suggesting that the Board has not been captured by the interests of a particular industry. The Board is also required to promote growth in industry and within the context of the infant industry - economies of scale argument may well be taking the view that support of particular firms within a growing industry who are suffering from import competition will be deserving of support over the longer haul.

A high degree of concentration of firms in the industry failed to influence the decisions reached by the Board as evidenced by the low *t* –statistic. However, the literature has shown that the sign on this variable is likely to be ambiguous. We are of the view that the Board may find it politically costly to support firms that have a degree of monopoly power despite the increase in lobbying effectiveness arising from the smaller number of firms in the industry. Hence these competing effects may have outweighed each other as suggested by Saunders (1980:346).

The coefficient in the real exchange rate was significant in the regressions at the 2 and 4 per cent levels. Bearing in mind that the REER measures a real depreciation in the previous period as a fall in the index, the positive coefficient indicates that the Board

is less willing to consider additional protection when firms have had the benefit of a real depreciation. This finding agrees in part with the observation by the World Bank (Belli *et al*, 1993: 3) that the Board entertains tariff revisions in the event of exchange rate and domestic price instability.

Lastly, the coefficient on the GATT dummy was found to be significant and positive. The rationale behind this surprising result became apparent with closer scrutiny of the Board reports. It was clear that firms whose products had experienced cuts in their tariffs subsequent to the GATT agreement were being granted increases in protection but to levels below the GATT bindings. Although the government had committed itself to a predetermined phase –in of the GATT offer, an offer that had been gazetted and bound, there was the view that the tariff rationalisation process had hurried the process beyond the bound rates. Pressure from firms had then resulted in protection being granted to them as long as the increased tariffs remained below their bound levels. These increases in tariffs have provided fuel for the fears that the trade liberalisation process may have been reversed (Cassim, 1998).

As a result it was decided to test for the assumption that radical change in the institutional structure had taken place. Unfortunately Chow tests could not be used due to the resulting small sample size once the sample was split. Therefore a dummy for the period starting from 1995 was inserted and Equation 2 estimated. The positive and significant coefficient on the dummy indicates that in the latter part of the period the Board had been more lenient in the granting of protection. While the Board's intentions under the tariff rationalisation process had been published in the *Government Gazette* in order to ascertain whether certain products continued to be produced in South Africa, and were therefore in need of protection, many firms claimed not to have seen the notice. This could explain the positive sign on the dummy. Despite fears of a reversal of the trade liberalisation these increases in protection should not be viewed as such, but rather as requests for a reinstatement of tariffs which had been removed as part of the tariff rationalisation process. Whether the changing composition of the Board could also have played a role here is debatable since the *old guard* on the Board are viewed by the business community as more supportive of a protectionist state than the trade liberalising newer members.

It must be emphasised that up to now this research has not attempted a systematic test of the theory of endogenous protection. Trefler (1993:142) supports this approach by stating that as " no alternative hypothesis is offered and since there is ambiquity about the signing of some of the regression coefficients ….the theory is being used to suggest an a priori reasonable list of regressors ."

Nevertheless, the last part of the paper attempts a partial test of the Grossman-Helpman model in the form of relating changes in protection to changes in the output-import ratios. The approach used followed the Grossman - Helpman model and its adaptation by Goldberg and Maggi (1999). The dichotomous dependent variable was regressed on the change of the output-import ratio in the previous period namely ZIMP, and a new variable ZIMORG. ZIMORG measures the changes in the output-import ratio if the concentration ratio in the industry was greater than 50 per cent. The concentration ratio was used as a proxy for the level of organisation in the industry. The other regressors were also included in the regression, as initial regressions excluding them failed to produce significant results. The results are produced in Table 5.

This more parsimonious model produced results very similar to that obtained by Goldberg and Maggi (1999). Within the non-organised sectors (represented by ZIMP) an increase in the output-import ratio led to a refusal on the part of the Board to grant additional protection to firms. Whereas within organised industries (represented by ZIMORG) there was support (albeit at the 7 per cent level) that an increase in the output-import ratio had led to greater success on the part of firms lobbying for protection. These results integrate and explain why there has been such ambiguity in the results in the literature, firstly on the import penetration ratios and secondly on the concentration ratios. The imposition of restrictions on the output-import ratios and the concentration ratios were tantamount to assuming that the reaction in both the organised and nonorganised sectors was the same.[6]

The other results in the regression mirror the results in the earlier work with the addition however of an increase in the significance of the industry growth variable.

[6] See Goldberg and Maggi (1990: 1146) for the derivation.

Table 5.0: Regression Results

Independent Variables	Dependent Variable: PROTECT 1	 2
ZIMP	-4.811	-6.285
	(-2.007)**	(-2.776)*
ZIMORG	3.757	3.722
	(1.797)***	(1.789)***
EMP	0.00001	0.00001
	(3.008)*	(2.954)*
CAP	-0.00004	-0.00004
	(-0.994)	(-1.059)
INDGROW	4.454	6.427
	(1.917)**	(3.062)*
REER	0.115	0.107
	(2.351)*	(2.386)*
GATT	0.875	1.066
	(2.357)*	(3.125)*
1995	0.873	-
	(1.907)**	
constant	-1.107	-1.096
	(-2.669)*	(-2.684)*
LR chi-square (8)	33.99	30.11
Pseudo R2	0.27	0.24
No of Observations	94	94

Notes: t-statistics are shown in parentheses
* significance at the 1 per cent or better level
**significance at the 5 per cent level
***significance at the 7 per cent level

5. CONCLUSION

Due to the use of data at such a disaggregated level and despite the possible limitations on piecing together a consistent data set, the results that were obtained in this study provide an interesting picture of the forces that have driven the Board's decision making processes.

Employment considerations rather than capital invested had a higher weight in the Board's preference function. This result provides evidence of the importance of the voting populace to the present democratically elected government in a period of rising unemployment.

Of interest in the study was the Board's reaction to firms' requests where the product was bound by the GATT offer. We have argued in the paper that this response should not be interpreted as a reversal of the trade liberalisation that was embarked upon within the multilateral forum of the WTO. It should rather be viewed as action taken on the part of the Board to cushion firms from the acceleration in the tariff rationalisation process that occurred after the GATT offer. As many firms were granted a temporary reprieve in order to adjust, the Board was found to be attempting to deal with their immediate problems.

Finally, evidence was presented suggesting that recognition should be paid to the difference in response made by the Board to changes in the import penetration ratios between industries that are considered to be organised or not. This result provided *prima facie* evidence of the superior lobbying ability of such industries and provided support for certain elements of the theory of endogenous protection.

While South Africa has embarked on what appears to be a considerable liberalisation of trade it should be remembered that there is evidence in recent years of increasing importance being placed by the Board of Tariffs and Trade on anti-dumping and countervailing measures. As is evidenced by the increase in applications for anti-dumping duties, firms now appear to perceive these measures as one of the few WTO permissible remedies open to them. Whether the Board is softening on this front is still an open research question.

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