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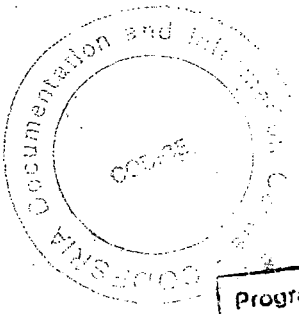
# An Economic Analysis of the Domestic Resource Cost and Effective Protection in Selected Nigerian Manufacturing Industries : 1970-1985

1992

# AN ECONOMIC ANALYSIS OF THE DOMESTIC RESOURCE COST AND EFFECTIVE PROTECTION IN SELECTED NIGERIAN MANUFACTURING INDUSTRIES: 1970-1985





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## ABSTRACT

The study set out to appraise the foreign exchange saving or earning of import substituting industrialization with particular reference to the Nigerian manufacturing industries; examine the extent to which the tariff structure has affected industrialization; and examine whether there was any bias in the manipulation of the tariff structure against or in favour of any group of industries.

Two basic approaches were adopted in the area of methodology. The first dealt mainly with the evaluation of domestic resource cost and the various measures of tariff protection in the Nigerian manufacturing industries for selected years. The second approach formulated models to examine the relationship between tariff structure and industrial development, employing the Ordinary Least Squares (OLS) regression technique.

The study revealed that activities in the capital goods sector with the lowest protective measures had the lowest domestic resource cost in terms of foreign exchange saving or earning while those activities in the consumer goods sector with the highest protective measures recorded the highest domestic cost of foreign exchange. The bias of the tariff structure was clearly in favour of the consumer goods sector and against the intermediate and capital goods sectors. In addition, the discriminations against exports as expressed by negative net effective protection were more pronounced in the intermediate and capital goods sectors. The statistical methods employed revealed that, there were statistically significant relationships between the measures of tariff protection and industrial development in some versions of the models

## CERTIFICATION

This is to certify that this study was conducted under my supervision by Mr. S. O. Uniamikogbo, in the Department of Economics, Obafemi Awolowo University, Ile-Ife.

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DEDICATION

This work is dedicated to my father Mr. Uniamikogbo Ibitoye Esho and wife Mrs Sarah Obhajajemen Uniamikogbo, for their unflinching and unalloyed support and most especially for the deprivations they suffered during the course of this programme.

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## ABBREVIATIONS

| | | |
|---|---|---|
| AGRDP | = | Average Growth Rate of Domestic Production. |
| AVWR | = | Average Wage Rate. |
| CBN | = | Central Bank of Nigeria. |
| DRC | = | Domestic Resource Cost. |
| ERP | = | Effective Rate of Protection. |
| FOS | = | Federal Office of Statistics. |
| GDP | = | Gross Domestic Product. |
| IS | = | Import Substitution. |
| ISIC | = | International Standard Industrial Classification. |
| NERP | = | Net Effective Rate of Protection. |
| NNRP | = | Net Nominal Rate of Protection. |
| NRP | = | Nominal Rate of Protection. |
| SITC | = | Standard International Trade Classification. |
| TDOP | = | The Degree of Openness of the Economy. |
| TSDM | = | The Size of the Domestic Market. |
| TSTP | = | The Size of the Plant. |
| UNIDO | = | United Nations Industrial Development Organisation. |
| VAPE | = | Value Added Per Employee. |

ABSTRACT

The study set out to appraise the foreign exchange saving or earning of import substituting industrialization with particular reference to the Nigerian manufacturing industries; examine the extent to which the tariff structure has affected industrialization; and examine whether there was any bias in the manipulation of the tariff structure against or in favour of any group of industries and its implications.

To achieve the above stated goals, two basic approaches were adopted in the area of methodology. The first dealt mainly with the evaluation of domestic resource cost and the various measures of tariff protection in the Nigerian manufacturing industries for 1970, 1978 and 1985. The second approach formulated models to examine the relationship between tariff structure and industrial development, and the extent to which the variations in industrial development have been affected by changes in the tariff structure (net effective rate of protection), employing the Ordinary Least Squares (OLS) regression technique. The data used were obtained from the publications of the Federal Government of Nigeria, the Central Bank of Nigeria, the International Monetary Fund and the Federal Office of Statistics.

The study revealed that activities in the capital goods sector with the lowest protective measures had the lowest domestic resource cost in terms of foreign exchange saving or earning while those activities in the consumer

goods sector with the highest protective measures recorded the highest domestic cost of foreign exchange. Though the study also showed that the protection afforded the capital goods sector was higher than that of intermediate goods sector in 1978 and 1985, the bias of the tariff structure was clearly in favour of the consumer goods sector and against the intermediate and capital goods sectors. In addition, the discriminations against exports as expressed by negative net effective protection were more pronounced in the intermediate and capital goods sectors. These have retarded the pace of industrial development. The statistical methods employed in this study revealed that, there were statistically significant relationships between the measures of tariff protection and Import Substitution and Average Growth Rate of Domestic Production in some versions of the models. Furthermore, the unique number of years for adequate effectiveness of the measures of tariff could not be determined.

For meaningful industrial development to be achieved, both the tariff rates on material inputs of some of the industries and the excise duties on some of the locally produced goods should either be reduced to the barest minimum or abolished. To avoid the discrimination against export industries usually arising from an over-valued domestic currency, there is the need for an appropriate exchange rate for the domestic currency.

# CHAPTER ONE

# INTRODUCTION

## 1.1 The Central Issue of the Study

Nigeria is a developing country and the need to increase her level of industrialization for rapid economic growth and development has for long been felt. A number of reasons have been advanced for this.

The first of these is the marked instability of output and prices of primary products and consequently the disruptive instability of the export earnings of primary producers. This to an extent is due to the high degree of concentration of exports of developing countries. According to Pearson[1], the major export items of Nigeria and other developing countries of Africa are preponderantly made up of primary goods.

Furthermore, the level of income and consequently the import capacity of developing countries are largely determined by their export earnings. Hence they can only maintain balance of payments equilibrium if their income elasticity of demand for imports is not greater than unity. Experience has shown however, that this is generally not the case because the general level of income in developing country presupposes an elasticity of demand for manufactured goods which is greater than unity.[2]

Another reason for Nigeria's pursuance of industrialization policy is that the long-term demand conditions for

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1. D. S. Pearson, Industrial Development in East Africa, Nairobi, Oxford University Press, 1969, p. 44.

2. D. S. Pearson, op. cit., p. 48.

primary commodities are quite different from and are usually not as favourable as those for manufactures. This is mainly attributable to the development of synthetic substitutes, technical progress which tends to be raw material saving and certain policy measures such as the subsidization of domestic production which hinder the exports of primary products. The relative inelasticity of demand for primary products (excluding petroleum and other minerals) and the relative elasticity of demand for manufactured commodities mean that exports of manufactured goods usually grow faster than those of primary products.

The proponents of industrialization in developing nations also contend that it would expand employment opportunities outside agriculture. Evidences abound in the literature that some developing nations have the expansion of employment opportunities as one of the national objectives specified in their development plans to which specific projects are directed. In Nigeria for instance, about 2.17 million additional jobs were expected to be created during the Second National Development Plan period.[3] As one of the policy measures to meet the employment target, the Federal Government's Budget of 1972 had the protection of local industries with a view to inducing a rapid increase in the employment level.

There is also the undisputed fact that the industrial sector tends to have more linkage effects with or growth-



3. See Federal Republic of Nigeria, Second National Development Plan, 1970-1974, p. 327.

promoting impact on the general economy than any other sector.

Specifically, we can then say that industrialization is expected to generate employment, help to ensure a favourable balance of payment position, satisfy demand for certain goods by the populace, increase value added, and indeed help to raise the general living standards. The manufacturing section of the industrial sector is expected to play the most significant role in this direction, hence the usual emphasis on it. Consequently, efforts have been geared towards this by way of diversifying the economy - that is, by moving from a large subsistence sector with primary export dominated growth to a situation where the modern industrial sector becomes much more important in employment generation and contribution to the Gross Domestic Product.

Generally, three basic approaches to economic development can be identified. The first of these is the export of primary products. Nigeria like many developing countries does not see an exclusive reliance on this approach as a long-run viable strategy of economic development. The second approach is the domestic production of manufactured goods for the domestic market, generally referred to as import substituting industrialization strategy. This has been the major approach being practised in Nigeria. The advantage of this approach is that it is tailored to the known as well as the potential requirements of ready-made markets. All that is necessary is the reservation of the domestic market for the products of domestic industries.

The third approach is the domestic production of manufactured goods for exports. This approach is more difficult because it often requires export subsidies and favourable commercial policies from the advanced countries.

In recognition of the fundamental role of industrialization in the process of economic development, the government of Nigeria has not left the initiatives for growth inducing activities to the slow and uncertain action of individuals. Instead she has been taking the initiatives upon herself by way of directing investment resources in all sectors with particular reference to the industrial sector and also setting growth priorities and targets.

The two broad categories of instruments of industrial policy that the government has been applying to encourage the establishment and growth of manufacturing industries in Nigeria are industrial incentives and protection. While industrial incentives are used to encourage the establishment of industries, protection is used either to prevent foreign competition in its entirety or to give domestic producers great cost advantage over foreign producers. Industrial incentives are usually made up of the grant of accelerated depreciation allowances, favourable credit policies, tax holidays or the exemption of corporate income from taxes for a specified period of time, the government's patronage of locally produced goods, etc. Among measures of protection are the "price" and "non price" measures. The former consists of ad valorem and specific tariffs and the latter, import quotas, import licensing, exchange controls etc.

Industrial incentives generally operate on the supply side and cost structure of domestic products without involving a reduction in the size of the domestic market. On the other hand, though protection tends to reduce the size of the domestic market in the sense that it leads to higher domestic prices, it allows domestic industries to earn profits in excess of those they would have earned under free trade.

There have been extensive discussions in economic literature for or against the protection of "young" industries in a developing economy like that of Nigeria. The case for protection is now said to include: the infant industry argument, the need for revenue, the key development role of the industrial sector vis-a-vis other sectors, the correction of factor and/or product market imperfections, foreign exchange saving, domestic employment and inducement for foreign investment.

But after three decades of the application of the instruments of industrial policy by the government, can we correctly say that government policies on the direction of resources in the manufacturing industries have been effective? Hence the central issue of this study is the determination of the extent to which Nigeria's industrial policies have affected resource allocation and growth in the manufacturing industries. The questions that readily come to mind from this central issue are:

(i) could the benefits of import substituting manufacturing industries in Nigeria have been increased and the costs reduced?

(ii) can the increasing or decreasing contribution of these manufacturing industries to Nigeria's economic growth be attributed to industrial policies?

These questions are necessary not only to analyse and explain the benefits and costs of import substituting manufacturing industries, but also to consider how these industries could become a more effective vehicle of economic growth in Nigeria.

In an ideal situation, a general equilibrium framework would have been appropriate since many combinations of policies are usually applied together for the same basic objective. But this would not be possible because of the problem of limited data in most of the variables involved. Since protection has been a major instrument of industrial policies being employed by the government, our analysis will be limited to the effectiveness of government policies with particular reference to the use of tariff protection and domestic resources in selected Nigerian manufacturing industries. The investment criteria to be used are the Domestic Resource Cost and Effective Rate of Protection.

The importance of this study lies in the fact that while previous studies have either exclusively dwelt on effective rate of protection or domestic cost of foreign exchange in the Nigerian manufacturing industries, the analysis of this study will be based on both. Its importance is further increased when one realises that one of the most

current studies in this area had 1974 as the terminal year of its period of analysis. Hence there is equally the need for this study to fill this existing time gap. Furthermore, most of the existing studies on the Nigerian manufacturing industries failed to recognize the fact that previous values of variables are important explanatory factors in most economic relationships. The present study in realisation of the fact that economic behaviour in any one period, can to a great extent be determined by past experiences and past patterns of behaviour, intends to build into its models previous values of the exogenous variables.

1.2: Objectives of the Study

Based on the central issue earlier mentioned, the objectives of this study are as follows:

(i) to appraise the foreign exchange saving or earning of the import substituting industrialization with particular reference to the Nigerian manufacturing industries. That is to estimate the domestic cost of foreign exchange of activities in the manufacturing industries and rank these industries according to the degree of the estimated domestic cost of foreign exchange earned or saved.

(ii) to examine the extent to which the tariff structure has affected industrialization. That is to find out whether measures of tariff protection have moved the economy towards the expected level of industrialization as measured by import substitution and average growth rate of domestic production.

(iii) to examine whether there was any bias in the manipulation of the tariff structure against or in favour of any group of industries and its implications. That is whether the tariff structure was used to favour any group of industries or not for either part or the whole period of analysis.

1.3: Hypotheses

The analysis of the effectiveness of tariff protection will be based on the following hypotheses:

(i) that import substitution is positively related to the net effective rate of protection.

(ii) that there is a positive and significant relationship between import substitution and the previous net effective rate of protection.

(iii) that average growth rate of domestic production is positively related to a changed net effective rate of protection.



1.4: Choice of Industries and Period of Analysis

The industries to be covered in this study are those manufacturing food, beverages, textiles, leather and leather products, wood and wood products, paper and paper products, industrial chemicals, other chemical products, rubber products, non-metal mineral products, other non-metal mineral products, basic metal and fabricated metal products. These industries will further be disaggregated into forty-five. The choice of these industries does not only lie in the fact that they cut across the three industry groups -

consumer, intermediate and capital goods industries - their products have been subjected to varying tariff rates over the years. This range of industries coupled with the varying tariff rates will not only allow for a comprehensive time-series and cross-sectional analyses of the domestic cost of foreign exchange and effective rate of protection among the disaggregated industries, they will also permit a comparative analysis among the industry groups. Perhaps, it is pertinent to equally mention that the choice of industries to a large extent was determined by the available data.

The period of analysis as indicated in the title of the study is, 1970-1985. This period does not only represent Nigeria's post-civil war period, but also falls within that of the implementation of the Second (1970-1974), Third (1975-1980) and Fourth (1981-1985) National Development Plans during which the government made concerted efforts to put the country on the path of industrialization. The considerable economic growth of the economy and the significant expansion in the manufacturing and construction industries during the period notwithstanding, the economy witnessed such problems as balance of payments deficit, inflation and unemployment. This culminated into changes of industrial policies, the effects of which form the core of this study.

## 1.5: Organisation of the Study

This study is divided into a total of seven chapters. After introduction which is Chapter One, literature review forms Chapter Two. Chapter Three is the theoretical

and methodological aspects of effective protection and domestic resource cost. The structure of the Nigerian manufacturing industries forms Chapter Four. While Chapter Five is the structure of domestic cost and effective protection in selected Nigerian manufacturing industries, Chapter Six is the effectiveness of the tariff structure. Summary, conclusion and policy implications is Chapter Seven.

# CHAPTER TWO

## LITERATURE REVIEW

### 2.1: Introduction

The need for a review of literature before the analysis of a research work is undertaken cannot be overemphasised. Apart from drawing out the relationship between the present study and earlier works on the subject, it will also provide the necessary guidelines for a systematic investigation and analysis of the present study. For the purpose of clarity, this chapter will be divided into two main sections. These sections are:

(1) the literature review on effective protection; and

(2) the literature review on domestic resource cost.

### 2.2: Literature Review on Effective Protection

Various measures of the level and structure of protection, both in principle and empirically, abound in economic literature.

Bergsman and Malan[1] in their study of the structure of protection in Brazil for 1966 and 1967 used 1959 Input-Output table of twenty-four industries. In the estimation of the nominal and effective rates of protection for these years, they used both the "Balassa" method (i.e. nontradeable inputs treated as tradeable with zero effective protection) and the "Corden" method (i.e. the value-added part of non-tradeable inputs treated as value added by the using sector, and the tradeable part treated as tradeable inputs with the

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1. J. Bergsman and P. Malan, "The Structure of Protection in Brazil" in B. Balassa and Associates (eds), The Structure of Protection in Developing Countries, Baltimore, John Hopkins, 1971, pp. 103-136.

relevant tariffs). Their study revealed that there was a high degree of correlation between the ranking of industries by nominal and by effective rates. Furthermore, that there was a considerable escalation of the tariff structure with effective rates exceeding nominal rates by a wide margin in both 1966 and 1967. These differences were largest for perfumes and soaps, beverages, textiles and furniture where tariffs on inputs were relatively low. Among the individual industries, reductions in nominal rates were largest for primary, animal and vegetable products, beverages, tobacco and manufactured consumer goods in general, and were smallest for pharmaceuticals and rubber products. Nominal and effective rates of protection were found to be highest on consumer goods (nondurable as well as durable) and lowest on agricultural, mining and energy and transport equipment. The construction materials, intermediate products, processed food and machinery were between these two groups.

Using the domestic input-output coefficients they observed that among industry groups, apart from alcoholic beverages and tobacco, non-durable consumer goods and durable consumer goods were the most highly protected. Their net effective rates in 1967 averaged 76 percent, with 46 percent on intermediate products, 40 percent on machinery and slightly over 20 percent on processed food and construction materials. According to them this range would have further widened if free trade coefficients were used.

Generally the study showed that the structure of protection in Brazil strongly favoured production for the

domestic market and discriminated against exports during the post war period. In the evaluation of the system of protection, they were struck by the fact that the greatest protection was provided for the established, mature industries where infant industry argument did not apply. Furthermore, that protection appeared to have been excessive in a number of industries producing intermediate products and capital goods.

In the study of the structure of protection in Chile for 1961, Jeanneret[2] used the Chilean Input-Output table of 54 sectors (28 of which produced goods that can be traded internationally and 26 of which produced non-tradeable goods). After classifying the sectors which produced goods that can be traded into export industries, import competing industries and non-import competing industries, effective rates of protection were estimated using both Balassa and Corden methods. With the necessary adjustments in prices and the classification of the items and also taxes, the results obtained under the two methods showed small differences.

The range of variation in nominal and effective rates, as well as the escalation of the structure of protection were generally greater for non-import-competing industries than for those competing with imports, though with few instances of low protection and reverse escalation within this group. Furthermore, the averages of nominal protection in both import-competing industries and non-import competing

2. T. Jeanneret, "The Structure of Protection in Chile", in B. Balassa and Associates (eds.), op. cit., pp. 137-168.

industries were lower than the averages of effective protection.

According to Jeanneret, the adjustment for overvaluation altered the results for Chile to a considerable extent. Thus the average net effective rate of protection was highest for the non-import competing industries and lowest for the export industries, with the import competing industries between. From the study, it became apparent that the structure of protection in Chile entailed a substantial degree of discrimination among economic activities, against exporting as well as against imports. Among manufacturing industries, the protective measures applied favoured import substitution against potential new exports. And within the limits of the small domestic market, import substitution had become increasingly difficult as Chile moved from non-durable consumer goods to durable goods and to intermediate products. In addition, discrimination against exports had not allowed rapid growth of export earnings, thereby limiting the expansion of import capacity - which in turn had led to recurrent balance of payments crises, increased import restrictions and slow growth of the Chilean economy. Thus improvements in Chile's growth performance would require radical changes in the structure of protection such as reduction in the discrimination among economic activities, improve the relative position of manufactured exports and greater competition in manufacturing industries.

Bueno[3] in the study of the structure of protection in

3. G. Bueno, "The Structure of Protection in Mexico". in B. Balassa and Associates (ed.) op. cit., pp. 169-202.

Mexico for 1960, used the input-output table of Mexico for 1960. Realising the fact that the assumption, of domestic prices equal the sum of world market prices and the tariff, cannot be made in a country like Mexico because of other quantitative measures, a new dimension was introduced to the measurement of effective protection. This was the estimation of nominal implicit protection, which is a measure of effective protection from direct price observations.

The findings of the study were that:

(i) there was relatively small correspondence between the levels of nominal and effective protection irrespective of whether calculations were made from tariff observations or from price comparisons. In general, implicit protection was greater than tariff protection for import competing industries but less for non-import competing and export industries;

(ii) whether we considered tariff or implicit protection, there was a large diversity of both nominal and effective rate of protection, which could be greater with the use of tariffs, because of the lack of a consistent set of criteria in setting tariff rates;

(iii) nominal rates of protection were lower than effective rates of protection on manufactured goods but higher on primary products. These results reflected the effects of escalation in nominal tariffs from lower to higher degree of fabrication. However, in the manufacturing section, effective

rates of protection did not rise with the degree of fabrication except for consumer durables;

(iv) the estimates of net nominal and net effective protection indicated that there was a slight discrimination against primary commodities. Among manufacturing activities, export industries seemed to have a small net protection. The net effective protection of import-competing goods greatly exceeded that of non-import competing goods; and

(v) net effective protection is on the average lower than that in most other countries.

For a successful growth of Mexico's economy, Bueno advocated for both short-term and long-term policy changes.

Power[4] analysed the structure of protection for 45 Malaysian industries for the years 1963 and 1965 using the data of the census of manufacturing. Like the studies on Brazil and Chile reviewed above, the differences in the results of the estimates of effective protection using both Balassa and Corden methods were small. The range of nominal and effective rates were equally wide.

Apart from beverages and tobacco, there appeared to have been little changes in the average rates of protection-nominal and effective - for the major product categories between 1963 and 1965. When the average protection of the principal sectors were considered, little evidence of bias in the structure of protection in favour of manufacturing

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4. J. H. Power, "The Structure of Protection in West Malaysia" in B. Balassa and Associates (eds.) op. cit., pp. 203-222.

industries was found. This picture according to the study changed when estimates were made by the use of free trade coefficients. These differences were explained by the large weight given to export industries in calculations made by domestic coefficients.

In summary, Power stated that though it appeared the system of protection in Malaysia discriminated against primary, as well as against manufactured exports and favoured import substitution in manufacturing, the biases were of lesser magnitude than those of most developing countries. Furthermore that the import substitution had not yet began to approach the limits of the domestic market in consumer goods.

In another study by Power[5] on Philippine, using the input-output data for manufacturing got from 1965 survey of manufacturing in Philippine, findings similar to those of Malaysia were arrived at. Concluding, Power, recommended that the bias against backward integration should be removed by moving the tariff system towards general uniformity of rates. Furthermore, that the bias against exports should be made to disappear through the provision of subsidies to exports to match the uniform tariff.

Lewis and Guisinger[6] in a study on Pakistan used 32 industries for the fiscal year 1963/64. Also using Balassa and Corden approaches, they arrived at the following major conclusions:

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5. J. H. Power, "The Structure of Protection in Phillipines" in B. Balassa and Associates, (eds.) op. cit., pp. 261-287.

6. S. R. Lewis and S. E. Guisinger, "The Structure of Protection in Pakistan" in B. Balassa and Associates, (eds.) op. cit., pp. 223-260.

(i) in the presence of import licensing or qualitative restrictions tariffs were a poor guide to the relative price structure;

(ii) the ranking of industry by nominal implicit protection, defined as the percentage difference between domestic and world market prices, differs considerably from ranking by effective rates of protection. The differences were greater for intermediate products at lower, as well as at higher levels of fabrication and also for consumer goods;

(iii) the effective rate of protection to export industries in the manufacturing sector was generally quite high in Pakistan;

(iv) the ranking of major industry groups by effective rates of protection were much the same irrespective of whether estimates were made by the use of domestic or free trade coefficients;

(v) the distortions in domestic relative prices introduced by multiple exchange rate systems and quantitative import restrictions, could become so severe as to make processes of production privately profitable in the country when they would not be adopted by a firm facing world market prices; and like some studies reviewed above;

(vi) there was a considerable degree of discrimination in favour of manufactured goods and against agriculture; and

(vii) manufacturing, food processing and consumer durables were the most highly protected, followed by intermediate products at higher levels of fabrication and beverages and tobacco.

The study when closely observed could be seen to have concentrated mainly on Pakistan's manufacturing sector which was heavily subsidized relative to the agriculture.

As for why Pakistan did not run into serious trouble from her protectionist policies by the mid-sixties, they advanced the following reasons:

(i) the available potential for import substitution due to rising incomes;

(ii) the shifting of subsidies from import substitutes to exports; and

(iii) an accelerated inflow of foreign aid at the time when the problems associated with import substitution were about to set in.

Balassa and Munthe[7] in their study of the structure of protection in Norway estimated the nominal and effective rates of protection for 52 Norwegian industries, of which seven were in the primary and the remaining 45 in the manufacturing category. While implicit tariffs were calculated for the major agricultural products, nominal tariffs were utilized for all other products. Most of their findings were similar to those of the studies reviewed above. Apart from this, they observed that the liberal trade policy adopted by Norway had beneficial effects on the

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7. B. Balassa and P. Munthe, "The Structure of Protection in Norway" in B. Balassa and Associates, (eds.) op. cit., pp. 289-312.

development of an efficient manufacturing sector. The result of this was the rapid growth of manufacturing industries characterised by an export orientation coupled with a shift towards industries with a high skilled-labour requirements as well as a higher level of processing. Thus, the Norwegian economy testified to the possibilities of expanding manufacturing industries behind low trade barriers in semi-industrial countries. This according to them has implications for developing countries that have already built a manufacturing base.

Oyejide[8] in his study of the protectiveness of the tariff structure and the effectiveness of tariff protection on the Nigerian economy used the input-output structure of 1959/60. Thirteen sectors which relate to manufacturing industries out of the twenty sectors contained in the original table formed the basis of the estimation of measures of protection for 1957, 1962 and 1967. To give further details, these thirteen sectors were broken down into forty-two.

According to Oyejide, the distinctive characteristic of the tariff in 1957 was the low level of nominal rates on most imported commodities. At that time, the aim of tariff policy was primarily to increase Federal Revenue. By 1962, nominal rates on most commodities had started rising. This rising trend was confirmed in 1967. The schedules of effective rates of protection for 1957, 1962 and 1967, generally showed wider variations than those of the nominal rates. Like the nominal rates, they equally exhibited a rising trend from

8. T. A. Oyejide, Tariff Policy and Industrialisation in Nigeria, Ibadan, Ibadan University, press, 1975.

1957 to 1967. Negative effect rates of protection were estimated with respect to fourteen commodities in only 1957.

In the estimation of net nominal and net effective rates of protection for the period, he observed that the range for the nominal and net nominal rates of protection remained the same, with the estimates of the net nominal rates of protection reflecting a downward adjustment. In the same way, that the estimates of net effective rates of protection paralleled those of effective rates of protection for the three years by a factor adjustment.

In his study, the highest degrees of escalation were estimated for five commodities - wood products, furniture, tyres and tubes and non-electrical machinery in 1957, none in 1962 and only one - printing and publishing - in 1967. Negative degrees of escalation were estimated for 19 commodities in 1957, 26 commodities in 1962 and only one commodity in 1967. This pattern could be attributed to the haphazard manner in which the tariff structure was being transformed from the revenue generating function to that of infant-industry protection.

Like some of the studies reviewed above, the average nominal rate of protection for consumer goods industries was higher than those of intermediate goods industries and capital goods industries for the three years. This was equally the case with average effective rates of protection. The tariff structure in fact gave relatively more protection and encouragement to the domestic production of consumer goods. The bias was clearly in favour of consumer goods industries

and a few simple, assembly-type operations within the intermediate goods and the capital goods sectors.

In the aspect of the effectiveness of tariff protection, the study examined the relationship between changes in domestic production of manufactured goods and the policy changes that influence them. In other words, it related the changes in domestic industrial production to changes in some measures of tariff protection. The general results of the regression analysis indicated that tariff protection was a relatively more important factor that influenced the domestic production of manufactured goods in 1967 than in either 1957 or 1962. Depending on the index used for industrial development, the results showed that the measure of tariff protection could account for between 25 percent and 33 percent of the variation in the index over the period 1957-1967. Based on the value of the $R^2$, tariff protection was approximately twice as "effective" in 1962-1967 period as in 1957-62 period. The results of the regression analysis equally indicated that the bias of the tariff structure was in favour of consumer goods industries but with a declining trend from 1957 to 1967 as the use of tariff protection widened to cover more categories of manufactured products.

Another study on the Nigerian economy, of policy changes was carried out by Oyelabi.[9] Equally using the input-output table of the Nigerian economy for 1959/60, he estimated the measures of protection for 1963, 1965 and 1970, with most of

9. J. A. Oyelabi, Tariffs, Domestic Prices, Effective Protection and the Structure of Foreign Trade in Nigeria, Ibadan, N.I.S.E.R., 1979.

the findings similar to those of the study of Oyejide.[10] On the role of tariffs in stimulating industrial growth, his study showed that of effective rates generally higher than that of nominal rates. Furthermore, that the imposition of other indirect taxes on domestically produced goods reduced the effective protection enjoyed by the relevant industries. The nominal rates of tariff indicated a somewhat different industrial resource allocation from that of estimated effective rates. Using a non-parametric test, Oyelabi discovered that effective rates did not seem to be significantly correlated with certain possible policy criteria such as productivity, labour intensiveness and Nigerianisation. Finally, that the structure of effective rates did not show that a high premium was placed on potential foreign-exchange earning industries. He suggested that the lack of built-in incentives to export industries in the Nigerian tariff structure was a weakness that needed to be corrected if manufactured exports are to developed.

Alade[11] using the methodology of Corden[12] and Balassa[13] and other similar procedures in the literature derived the formula and estimated the effective rate of protection for the years 1957, 1965 and 1974. His study like others based on the Nigerian economy, used the 1959/60 input-output table in its estimation. The thirteen sectors which form the

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10. T. A. Oyejide, op. cit.

11. J. A. Alade, Trade, Industrial Protectionism, and Structure Change in Nigeria's Manufacturing Industry: 1957-1974. (Unpublished Doctor of Philosophy Dissertation, University of Utah), 1981.

12. W. M. Corden, The Theory of Protection, London, Oxford University Press, 1971.

13. B. Balássa and Associates, op. cit.

manufacturing section were broken down into 39. Examining the tariff structure within the framework of the input-output system, he arrived at a host of findings some of which are similar to those of earlier reviewed studies. Among these are:

(i) that the system of protection gave rise to differential rates of protection among manufacturing industries and that the structure of protection resulting from these differential rates was clearly biased more in favour of final consumer goods production for the home market as against intermediate and capital goods as well as export expansion;

(ii) that the system of protection has been found to encourage imports of intermediate inputs and capital goods and also the substitution for imports of products at the final stage of processing; and

(iii) that the contribution of protection to structural changes in the manufacturing sector in Nigeria was more apparent in the consumer goods sector and a few other intermediate products at higher levels fabrication.

Hitris[14] in her study tried to provide empirical evidence on the relationship between market structure and the degree of foreign competition as represented by effective protection and profit margins in the United Kingdom's



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14. T. Hitris, "Effective Protection and Economic Performance in U.K. Manufacturing Industry, 1963 and 1968", The Economic Journal, Vol. 88, March, 1978, pp. 107-120.

manufacturing industries. The novelty of her findings was the evidence of the influence of effective protection on profit margins. The result supported the hypothesis that effective protection from import competition allows domestic industries to earn profits in excess of those they would have earned under free trade. Consequently, that effective protection can be used successfully as an instrument for controlling the degree of foreign competition in the domestic market.

Krueger[15] evaluated the economic costs of the Turkish exchange control system. The empirical work was based on primary data gathered in 1965 for a relatively small sample of Turkish manufacturing firms. Her investigation revealed that there was little doubt that Turkish trade policies removed virtually all the incentives for the potential export firms, and that manufacturing firms with export potential find the home market considerably more profitable than exporting.

Grubel and Johnson[16] in an attempt to contribute to the stock of knowledge about effective protection examined the tariff structures of the individual common market countries in 1959, using input-output tables to estimate effective protection rates. The novelty of the study was a theoretical analysis and a set of empirical measurements of the influence



15. A. O. Krueger, "Some economic costs of exchange control: The Turkish case", Journal of Political Economy, Vol. LXXIV, October, 1966, pp. 466-480.

16. H. G. Grubel and H. G. Johnson, "Nominal Tariffs, Indirect Taxes and Effective Rates of Protection: The Common Market Countries: 1959". Economic Journal, Vol. 77, December, 1967, pp. 761-776.

of excise taxes on the protective structure. Their major finding was that, the interaction of excise taxes payable by domestic and foreign producers alike, with tariffs payable only by foreign producers, had a significant effect in reducing computed effective protection rates below what they would be, given the same nominal tariff rates, in the absence of excise taxes. This finding serves as a caution that, restraint should be exercised in the estimation of effective protection rates from input-output coefficients and nominal tariff rates alone. Furthermore, they presented some calculations on the sensitivity of their results to across-the-board changes in nominal tariff rates which suggest that:

(i) the inevitable errors associated with aggregation of industries and nominal tariff rates were likely to be much more serious for some countries than for others, in a manner associated with the structure of both tariff and excise taxes, but most importantly excise taxes; and

(ii) both theoretical and empirical analysis of protection and the negotiation of tariff changes had to take account of the interaction of excise tax systems with tariff structures.

Balassa[17] in an international comparison study, calculated the effective tariffs for the United States, the European Common Market, the United Kingdom, Sweden and Japan. His investigation was limited to manufactured products with

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17. B. Balassa, "Tariff Protection in Industrial Countries: An Evaluation", Journal of Political Economy, Vol. LXXIII, December, 1965, pp. 473-594.

raw materials being considered only as inputs. With few exceptions, he found that effective rates were higher than nominal rates. Among his countries of study, a broad similarity existed according to their effective duties. Furthermore, while effective duties were high on consumer goods, they were generally low on intermediate products that utilized specific inputs in their manufactures. A comparison of the tariff averages among the countries showed that the overall average of nominal as well as that of effective duties was highest in Japan and lowest in Sweden with the other countries occupying the middle ground.

## 2.3: Literature Review on Domestic Resource Cost

Studies on the theoretical and empirical aspect of Domestic Resource Cost are relatively very few. This has informed the brief nature of this section.

One of the earliest studies of the Domestic Resource Cost was that by Olopoenia.[18] In this study, he developed a rational criterion on the basis of economic efficiency for the selection of projects for inclusion in an industrialisation strategy for the developing countries. He showed that the criteria commonly used for the selection of industrial projects in the developing countries has failed to rank industries, the way they were ranked using the domestic resource cost criterion. Concluding, he stated that those "traditional" approaches to the ranking of projects were

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18. R. A. Olopoenia, "The Domestic Cost of Foreign Exchange as a criterion of selecting Projects for Industrialisation Programmes", Nigerian Journal of Economic and Social Studies, Vol. 18, No. 2, 1976, pp. 261-283.

likely to lead to resource misallocation and therefore retardation of the economies of developing countries.

Osagie and Oyelabi[19] in their study on the Nigerian economy explored the validity of the argument that import-substitution would result in net saving of foreign exchange. They developed a model which helped to measure the gross saving of foreign exchange resulting from domestic production, as well as increased expenditure of foreign exchange on the importation of machinery, industrial raw materials and other inputs necessitated by increased domestic manufacturing. In their calculation of the net foreign exchange saving or otherwise of import-substitution for the Nigerian economy in 1970, they identified the industries that were net users of foreign exchange. These industries, ten in number, were heavy users of exportable domestic inputs and intensive users of imported raw materials and components. In their conclusion, they remarked that the mere fact, of an industry being a net user of foreign exchange did not imply that it is socially undesirable. Likewise, that an industry which is a net saver of foreign exchange does not necessarily indicate that it is profitable to the society. That, it is only under conditions where an industry is both a saver of foreign exchange and the opportunity cost of domestic resources used up in the process of import substitution is lower than the social value of foreign exchange saved, can it rightly be said that an industry is socially beneficial.

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19. E. Osagie and J. A. Oyelabi, "Net Foreign Exchange Cost of Manufacturing Industries in Nigeria", The Economic Bulletin of Ghana, Vol. 4, No. 2, 1974, pp. 36-45.

# CHAPTER THREE

## THEORETICAL AND METHODOLOGICAL ASPECTS OF EFFECTIVE PROTECTION AND DOMESTIC RESOURCE COST

### 3.1: Introduction

The chapter starts with the definition of some key concepts in this study. The objective is to give some insight into the meaning of these concepts so as to enhance the easy comprehension of the work. Consequently, terms such as Protection and Domestic Resource Cost (DRC) have been briefly explained before delving into the theoretical and methodological issues of the study.

Perhaps it is worth mentioning that two basic approaches have been adopted in the area of methodology. The first of these deals mainly with the evaluation of Domestic Resource Cost of Foreign Exchange and Effective Protection in the Nigerian Manufacturing Industries. These evaluations have been based on the formulae of Domestic Resource Cost and Effective Protection respectively credited to Krueger and Corden and Balassa,[1] which are stated in this chapter. The second approach is the formulation and estimation of models on the hypotheses stated in chapter one, to analyse the effectiveness of the tariff structure.



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1. See A. O. Krueger, "Evaluating Restrictionist Trade Regimes: Theory and Measurement", Journal of Political Economy, Vol. LXXX, January/February, 1972, pp. 48-62; W. M. Corden, "The Structure of Tariff System and Effective Protective Rate", The Journal of Political Economy; Vol. LXIV, June 1966, pp. 221-237; B. Balassa and Associates, The Structure of Protection in Developing Countries, Baltimore, John Hopkins Press, 1971.

3.2: Definition of Concepts

Protection: By protection we mean those policies that create a divergence between the relative prices of commodities to domestic consumers and producers and their relative prices in the world market.[2] In other words, protection as generally used does not only refer to tariff on imports but also include policies such as import restriction, exchange controls and multiple exchange rates that raise the price received by domestic producers above world market price.

Four distinct variants of protection are discernable.[3] These are the Nominal Rate of Protection (NRP), Effective Rate of Protection (ERP), Net Effective Rate of Protection (NERP) and Total Protection (TP).

Nominal Rate of Protection (NRP): This is defined as the percentage excess of domestic price over the world market price resulting from the application of protective measures.[4] In other words, it is the percentage excess of the domestic price over the world market price that would have obtained if protective measures had not been applied.[5]

Effective Rate of Protection (ERP): Effective Rate of Protection which is a relatively new concept in economic

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2. See H. G. Johnson, Aspects of the Theory of Tariffs, London, George Allen and Unwin Ltd., 1971, p. 121.

3. W. M. Corden, op. cit., pp. 225-226.

4. B. Balassa and Associates, op. cit., p. 4.

5. J. A. Alade, Trade, Industrial Protectionism and Structural Change in Nigeria's Manufacturing Industries: 1957-1975, (Unpublished Ph.D. Dissertation, University of Utah), 1981, p. 170.

literature is defined as the percentage excess of domestic value added obtained by the imposition of tariffs and other protective measures on the product and its inputs over world market value added.[6] That is, the percentage increase in value added per unit in an economic activity made possible by the tariff structure relative to the situation in the absence of tariffs but with the same exchange rate.[7]

Effective Rate of Protection is quite distinct from Nominal Rate of Protection because while the latter pertains to the product and affects consumers decisions, the former indicates the joint effects on the processing activity of tariffs on the product and its inputs thereby influencing the producer's choice.

Net Effective Rate of Protection (NERP): This is that measure of Effective Rate of Protection that makes some adjustments for the extent of overvaluation of the domestic currency as compared to the free trade situation.

Total Protection (TP): Total Protection is said to have occurred if the net result of the protective structure combined with the appropriate exchange rate adjustment is to raise value added in that activity.

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6. B. Balassa and Associates, op. cit., p. 4.

7. W. M. Corden, op. cit. p. 222.

Domestic Resource Cost (DRC): Domestic Resource Cost relates to a measure of real opportunity cost in terms of total domestic resources, of producing (or saving) a net marginal unit of foreign exchange.[8] In other words, it is the domestic cost of producing exports and import substitutes per unit of foreign exchange respectively earned or saved, after correcting for all price distortions and netting out taxes and subsidies.[9]

## 3.3: Effective Protection

### 3.3.1: Theoretical Note

The justification for protection is associated with the now very familiar "infant industry" argument which rests on the fact that a new industry has a poor chance of surviving and growing to maturity because of its likely cost of production. Furthermore, that the well established and more matured foreign industries will use their cost advantage and undersell the infant industry in its home market. This culminated into the advocacy of temporary protection for the infant industry so as to be able to overcome these initial disadvantages, with the hope that in no distant future, it will be able to withstand exposure to competition without further assistance and reap economies



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8. M. Bruno, "Domestic Resource Costs and Effective Protection: Classification and Synthesis", The Journal of Political Economy, Vol.LXXX, January/February 1972, p. 16.

9. G. G. Johnson, Formulation of Exchange Rate Policies in Adjustment Programs, Washington, International Monetary Fund, August, 1985, Occasional Paper No. 36.

of scale. Hence, to the developing countries, especially those experiencing a saving-investment constraints, tariff protection was seen as an inevitable choice.

The concern of International Trade Specialists with the theoretical analysis and practical measurement of tariff protection gave birth to the development and application of new concept - the concept of effective protection or implicit protection or protection of value added.

This concept and its measurement often called "tariff structure" are primarily connected with the names of Barber, Corden, Johnson, Basevi and Balassa, among others.[10] The introduction of Effective Protection according to Johnson, is due to the recognition of the fact that an industrial society, is not only a complex of economic processes, each of which uses as inputs the products of other processes, but also produces outputs that in part serve as inputs into other processes.[11] The interest in this policy which at a point in time was at its



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10. See C. L. Barber, "Canadian Tariff Policy" Canadian Journal of Economics and Political Science, Vol. XXI, No. 4, November 1955, pp. 513-530; W. M. Corden, "The Tariff" in A. Hunter (ed.) The Economics of Australian Industry, Melbourne, Melbourne University Press, 1963, pp. 162-163; H. G. Johnson, op. cit., pp. 307-330; G. Basevi, "The United States Tariff Structure: Estimates of Effective Rates of Protection of United States' Industries and Industrial Labour", Review of Economics and Statistics, Vol. 48, 1966, pp. 147-160; B. Balassa, "Tariff Protection in Industrial Countries: An Evaluation", Journal of Political Economy, Vol. IXXIII, December, 1965, pp. 573-594.

11. H. G. Johnson, "The Theory of Effective Protection and Preferences", Economica, Vol. 36, 1969, p. 120.

lowest ebb was later revived due to some developments.[12]

The Theory of Protection has recently made considerable advances on both the welfare (normative) and the positive facets. While the welfare facet is concerned with the argument for protection and the desirability of a particular type of protective structure, the positive facet focusses its attention on the extent of trade intervention and the effects of the structure of protection upon the pattern of resource allocation.

Normative Facet: Contemporary arguments for tariff in developing countries can be categorised into two - i.e. the economic and the non-economic arguments.

The economic arguments for protection have been summarized into two main principles.[13] These arguments are those that recommend the tariff as a means of increasing real output or real income above what it otherwise would be. Among these are the traditional infant-industry argument, terms of trade (optimum tariff) argument and the "new argument". The "new arguments" are those derived from the assumed existence of external economies in manufacturing industry, and those derived from



12. For an elaboration of these developments, see H. G. Johnson, op. cit., p. 119.

13. For the statement and elaboration of these principles, see J. Bhagwati and V. K. Ramaswami, "Domestic Distortions, Tariffs and the Theory of Optimum Subsidy", Journal of Political Economy, Vol. LXXI, No. 1, February, 1963, pp. 44-50.

alleged distortions in the labour markets, which produce a disequilibrium, characterised by an excess of the marginal product of labour in industry over its marginal product in agriculture.[14]

Non-economic arguments see protection as a means of achieving objectives with respect to the structure and composition of output that are desired not as a means of increasing real income, but for their own sake. Two categories of these arguments are identifiable. These are those that identify economic development with industrialization and those that identify economic development with self sufficiency.[15]

The characteristic that makes non-economic arguments distinct from economic arguments is that they involve the preparedness to forego potential real income for other objectives of national policy.

The inherent danger in the pursuit of restrictive trade policy for the purpose of rapid industrialization in developing countries has received considerable attention in recent years.

It is a familiar proposition that the imposition of some level of tariff can raise a country's real income by

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14. This argument comes in two variants. For an explanation of the variants, see H. G. Johnson, Aspects of the Theory of Tariffs, London, George Allen and Unwin Ltd., 1971, pp. 87-88.

15. For an elaborate explanation, see H. G. Johnson, op. cit., pp. 93-95.

improving its terms of trade. This argument is usually demonstrated by the means of a two-product, two-factor and two-country model.[16] But Gruen and Corden using a three-product, three-factor and certain factor-intensity conditions for a particular world, demonstrated that a tariff may worsen the terms of trade by leading to increased production of one of the export products.[17]

The distortions created by protection in the exploitation of comparative advantage and hence, in the allocation of resources and pattern of trade, form the concern of the central argument against it.[18] Protection involves both the Static (Allocative) cost and Dynamic cost to the national economy. Distortions in the relative prices of inputs and outputs due to the imposition of protective measures result in inefficiencies of resource allocation which entails a static cost for the national economy. Protection obstructs intra-industry specialisation and participation in the international division of the production process. The emerging reduced extent of inter-



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16. See H. G. Johnson, International Trade and Economic Growth, London, George Allen and Unwin, 1958.

17. For further explanation, see F. H. Gruen and W. M. Corden, "A Tariff that worsens the Terms of Trade" in I. A. McDougall and R. H. Snape (eds.), Studies in International Economics, Amsterdam, North Holland, 1971, pp. 55-58.

18. See, for example, J. N. Bhagwati, "The Generalized Theory of Distortions and Welfare" in J. N. Bhagwati, R. W. Jones and R. A. Mundell (eds.), Trade, Balance of Payments and Growth: Papers in Honour of Charles P. Kindleberger, Amsterdam, North-Holland Publishing Company, 1971, pp. 69-90.

industry specialisation involves both a consumption and production cost.[19]

The Mill-Bastable test[20] of infant industry protection states that an industry should be protected if the cost of production can be recouped as a result of productivity improvements over time.[21] But the practice in the developing countries whereby there is continuous protection of high cost industries that cannot compete with imports is not only contrary to Mill-Bastable test, but is also an act of inefficient resource use. This involves a dynamic cost to the national economy in the form of opportunities foregone for improvements in productivity.

The high costs and prices of highly protected manufacturing industries tend to limit domestic markets. The implication of this is that opportunities for exploiting economies of scale in these industries are limited and consequently the potential for industrial growth by raising the costs of backward integration into inter-



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19. B. Balassa and Associates, op. cit., pp. 72-73.

20. M. C. Kemp, "The Mill-Bastable Infant Industry Dogma", Journal of Political Economy, Vol. LXVIII, February, 1960, pp. 65-67.

21. Productivity growth is defined here as the ratio of increases in output to increases in the combined inputs of the primary factors of production.

mediate and capital goods.[22] High levels of protection may adversely affect economic growth. Unless protection leads to increases in profits that are in turn reinvested, the static cost of protection due to inefficiencies in resource allocation reduces the amount available for investment.

As a result of criticisms levied against protectionist policy, there was the emergence of alternative theoretical propositions. One of these is the advocacy for a direct subsidy to labour training as a "first-best" alternative to tariff.[23] Similarly, Little, et al have also argued for the promotion of, rather than protection of industries in developing countries.[24]

However, due to the desire by the developing countries to get industrialised within the shortest possible time and the nature of international economy, some protective measures for the infant industry cannot but be seen as an inevitable choice. What is without dispute is that extreme caution is the watchword in the implementation of these measures if a healthy economy is to be sustained.



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22. J. A. Alade, op. cit., pp. 221-222.

23. See J. N. Bhagwati and V. K. Ramaswami, op. cit.; H. G. Johnson, "Optimal Trade Intervention" in R. E. Baldwin (ed.), Trade, Growth and Balance of Payment, New York, Rand McNally, 1965, pp. 3-34; H. G. Johnson, "A New View of the Infant Industry Argument", in I. A. McDougall and R. H. Snape (eds) op. cit.

24. I. M. D. Little, T. Scitovsky and M. Scott, Industry and Trade in some Developing Countries; London, Oxford University Press, 1970, pp. 132-134.

Positive Facet: There are a lot of controversies in economic literature on whether and how protection affects resource allocation and economic growth.

Corden[25] by using the model of two goods, two produced inputs, two value added inputs, two factors, fixed input-output coefficients and some other assumptions, did not only conclude that the degree of effective protection determines the extent of resource movement, but also pointed out that the calculation of effective rates is a necessary condition for determining the effects of a tariff structure on resource allocation. On a similar note, Ramaswami and Srinivasan[26] using a more complex multi-product model of the resource allocation effect of protection, pointed out that under certain assumptions, the transformation surface of the value added products is concave and the output mix and resource allocation depend on the effective tariff structure alone.

The use of effective tariff as an indicator of resource movement becomes problematic under the fixed input-output coefficients when the substitution elasticities



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25. For an explanation, See W. M. Corden, The Theory of Protection, London, Oxford University Press, 1971, pp. 73-81.

26. See V. K. Ramaswami and T. N. Srinivasan, "Tariff Structure and Resource Allocation in the Presence of Factor Substitution" in J. N. Bhagwati, R. W. Jones and R. A. Mundell (eds.), op. cit., p. 292.

in production are not normal and when the input-output coefficients are variable. When the production substitution elasticities are not normal and the input-output coefficients are variable, it becomes impossible to draw a conclusion about the resource allocation effects of the effective tariff structure.[27] Though substitution effects will always be significant thereby reducing effective protective rates to a poor guide to the movement of resources resulting from the levy of tariff, this invalidity of effective rates is of little practical consequence.[28]

### 3.3.2: The Algebra (derivation) of Effective Rate of Protection

Our main concern in this section is the derivation of Effective Rate of Protection which is one of the major tools of analysis in this study.

Like all other theoretical constructs, the concept is formulated on the basis of some fundamental assumptions. These assumptions are as follows:

(i) The production processes are subject to fixed input-output coefficients. That is, the production functions exhibit constant returns to scale.

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27. See for example, V. K. Ramaswami and T. N. Srinivasan, op. cit., pp. 291-299; R. W. Jones, "Effective Protection and Substitution", Journal of International Economics (1), 1971, pp. 59-82; C. Khang, "Factor Substitution in the Theory of Effective Protection: A General Analysis", Journal of International Economics, (111), 1973, pp. 227-244.

28. V. K. Ramaswami and T. N. Srinivasan, op. cit. p. 298.

(ii) Labour and capital used as inputs in production processes cannot be traded on the world market. This restricts the analysis to material inputs which are normally subjected to import charges.

(iii) The import supply functions are perfectly elastic. That is, the country in question can import as much as it wishes of any product from the rest of the world at a price which is not affected by how much the country buys.

(iv) There are no transportation costs or such costs are to be neglected for the purpose of this analysis.

Given these assumption, the following derivations as advanced by Balassa and Corden are made:[29]

Let

$V_j$ = value added in industry j per unit of output in the absence of import duties;

$a_{ij}$ = value of the inputs of good i per unit of the output of industry j in the absence of import duties.

Then, in a situation of n material inputs we have:

$$V_j = 1 - \sum_{i=1}^{n} a_{ij} \quad . \quad . \quad . \quad (3.1)$$

Alternatively,

$$1 = V_j + \sum_{i=i}^{n} a_{ij} \quad . \quad . \quad . \quad (3.2)$$

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29. B. Balassa and Associates, op. cit.; W. M. Corden, "The Structure of a Tariff System and Effective Protective Rate", Journal of Political Economy, Vol. LXIV, June, 1966, pp. 221-237.

If an import duty at rate $t_j$ is imposed on the finished product of industry j, equation (3.2) becomes:

$$1 + t_j = V'_j + \sum_{i=1}^{n} a_{ij} \quad . \quad . \quad . \quad (3.3)$$

where

$V'_j$ = Value added in industry j per unit value of output after the imposition of import duty on product j.

The effective rate of tariff protection which is the percentage by which domestic value added exceeds world-market value added, can now be defined as

$$E_j = \frac{V'_j - V_j}{V_j} \quad . \quad . \quad . \quad (3.4)$$

where $E_j$ = effective rate of tariff protection.

Substituting for $V_j$ and $V'_j$ from equations (3.1) and (3.3) we get:

$$E_j = \frac{(1 + t_j - \sum_{i=1}^{n} a_{ij}) - (1 - \sum_{i=1}^{n} a_{ij})}{1 - \sum_{i=1}^{n} a_{ij}} \quad . \quad . \quad . \quad (3.5)$$

i.e.

$$E_j = \frac{t_j}{1 - \sum_{i=1}^{n} a_{ij}} \quad \text{or} \quad \frac{t_j}{V_j} \quad . \quad . \quad . \quad (3.6)$$

Equation (3.6) does not take into account the import duties on material inputs used in the production process. Let the import duty be $t_i$ where i = 1, 2, . . ., n.

Therefore, from equation (3.3) we get:

$$\hat{V}'_j = 1 + t_j - \sum_{i=1}^{n} a_{ij} (1 + t_i) \quad . \quad . \quad . \quad (3.7)$$

i.e.

$$\hat{V}'_j = 1 - \sum_{i=1}^{n} a_{ij} + t_j - \sum_{i=1}^{n} a_{ij} t_i \quad . \quad . \quad . \quad (3.8)$$

where $\hat{V}'_j$ = Value added in in industry j per unit value of output after the imposition of import duty on both product j and material input i used in the production process.

Since $V_j = 1 - \sum_{i=1}^{n} a_{ij}$, from equation (3.1)

Then $\hat{V}'_j = V_j + t_j - \sum_{i=1}^{n} a_{ij}t_i$ . . . . (3.9)

From equations (3.1) and (3.9), the measure of effective protection can be expressed as:

$$\hat{E}_j = \frac{V_j + t_j - \sum_{i=1}^{n} a_{ij}t_i - V_j}{V_j} \quad . \quad . \quad . \quad (3.10)$$

Or

$$\hat{E}_j = \frac{t_j - \sum_{i=1}^{n} a_{ij}t_i}{V_j} \quad . \quad . \quad . \quad (3.11)$$

Equation (3.11) implies that $\hat{E}_j$ is positively related to the nominal tariff on imported finished good ($t_j$) and inversely related to the tariffs levied on inputs ($t_i$), under the assumptions of fixed factor proportions. If tariff on finished good ($t_j$) is equal to the weighted average tariff on inputs ($t_i$), then $\hat{E}_j$ is equal to $t_j$; if the $t_j$ is less than the $t_i$, then $\hat{E}_j$ will be less than $t_j$ and if the $t_j$ is greater than $t_i$, then $\hat{E}_j$ will be greater than $t_j$.

In the calculation of effective rate of protection, the country's input-output table is usually used. But the equations so far presented do not lend themselves to practical use in terms of calculating effective rates of protection. The available raw data which must form the basis of such calculations are usually expressed in domestic prices. If it is assumed that only import duties of finished goods and material inputs cause the

the divergence between the domestic and world market prices, then domestic value added figures can be adjusted to reflect "world-market" prices. This is done by deflating domestic value added figures with the appropriate nominal tariff rates. This works out as follows:

Let $$\bar{V}_j = \frac{1}{1 + t_j} - \sum_{i=1}^{n} \left( \frac{a'_{ij}}{1 + t_i} \right) \quad . \quad . \quad . \quad (3.12)$$

Where $\bar{V}_j$ = value added at world market prices

$a'_{ij}$ = the domestic value of imported inputs (including the duty)

Recall from equation (3.9) that

$$\hat{V}'_j = V_j + t_j - \sum_{i=1}^{n} a_{ij} t_i$$

Combining these equations, i.e. equations (3.9) and (3.12) we can derive our new measure of effective rate of protection as:

$$\hat{E}_j = \frac{\hat{V}'_j - \bar{V}_j}{\bar{V}_j} = \frac{\hat{V}'_j}{\bar{V}_j} = 1. \quad . \quad . \quad (3.13)$$

Equation (3.13) is always used in empirical studies of the tariff structure. But it has been recognized that $\hat{E}_j$ as a measure of effective tariff protection can give some absurd results. Soligo and Stern in their study got around this problem by defining a new variable which is the ratio of the difference between "world market"

value added and domestic value added to the domestic value added:[30]

$$\text{i.e. } S_j = \frac{\hat{V}'_j - \bar{V}_j}{\hat{V}'_j} \quad . \quad . \quad . \quad (3.14)$$

But this formula is not without its own problems for it is not able to readily establish any simple relation betwee $S_j$, $t_j$ and $t_i$ as was done above for $\hat{E}_j$, $t_j$ and $t_i$. Because of this, we shall use effective rate of protection measured as $\hat{E}_j$ in this study.

So far, our measure of effective protection does not take into consideration the existence of domestic indirect taxes such as excise taxes. If indirect taxes are levied on the domestically produced variety at the rate $td_j$, then the effective rate of protection will take the form:

$$E^*_j = \frac{\hat{V}''_j - \hat{\bar{V}}_j}{\hat{\bar{V}}_j} \quad . \quad . \quad . \quad (3.15)$$

where $\hat{V}''_j = 1 - td_j - \sum_{i=1}^{n} a'_{ij}$ . . . (3.16)

$$\hat{\bar{V}}_j = \frac{1 - td_j}{1+t_j} - \sum_{i=1}^{n}\left(\frac{a'_{ij}}{1 + t_i}\right) \quad . \quad . \quad . \quad (3.17)$$

and $td_j$ = Excise taxes on domestic products of industry j, expressed as a percentage of c.i.f. value.

$\hat{V}''_j$ = domestic value added

$\hat{\bar{V}}_j$ = world market value added.

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30. R. Soligo and J. Stern, "Tariff Protection, Import Substitution and Investment Efficiency", Pakistan Development Review, Vol. 5, No. 2, Summer, 1965, pp. 249-270.

Equations (3.15), (3.16), and (3.17) will be used for calculating the effective rate of protection that could result from the structure of tariffs and excise taxes.

It has been stated that one reason why tariff rates may increase is to ease pressures created on foreign exchange reserves by balance of payments problems. This means that an overvalued domestic currency can be sustained by high tariff rates. Therefore, a measure of net effective rate of protection should make some adjustment for the extent of over valuation of the domestic currency. The relevant comparison would then be between the actual ruling exchange rate which is thought to reflect the overvaluation of the domestic currency and the exchange rate which would prevail in a free trade situation where import duties, export duties and all other impediments on the way of free exchange of goods have been removed.

Estimation of the extent of overvaluation starts by first estimating the decrease in exports and the increase in imports that would follow from the elimination of import duties, export subsidies and similar protective measures, and then estimating the extent of devaluation of the domestic currency that would be required to restore equilibrium in the balance of payments.

The relevant formula for the estimation of the extent of overvaluation as derived by Balassa and Associates is as follows:[31]

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31. B. Balassa and Associates, op. cit., pp. 326-328.

Let M be the change in import due to the elimination of tariffs:

$$\text{Then } \Delta M = E^d_m \left(\frac{t}{1+t}\right) M \quad \ldots \quad (3.18)$$

Where M = Actual imports

$E^d_m$ = The elasticity of demand for imports

t = Average tariff

Also, if $\Delta X$ is the change in exports due to the elimination of export subsidies, then

$$\Delta X = - \frac{E^s_x (E^d_x - 1)}{E^s_x + E^d_x} \left(\frac{S}{1+S}\right) X \quad \ldots \quad (3.19)$$

Where

$E^s_x$ = The elasticity of supply of exports

$E^d_x$ = The elasticity of demand for exports

S = The rate of export subsidy

X = Original value of exports

If the elasticity of supply of foreign exchange

i.e. $E^s_f = \frac{E^s_x (E^d_x - 1)}{E^s_x + E^d_x}$, then equation (3.19) becomes

$$\Delta X = - E^s_f \left(\frac{S}{1+S}\right) X \quad \ldots \quad (3.20)$$

Next, we have to estimate the percentage devaluation $\left(\frac{R'}{R} - 1\right)$ necessary to remedy the deficit that would result from the elimination of protective measures in the case of initial balance of payments equilibrium. The formula is made up of the same elements as equations (3.18) and (3.19) except that the price change due to the elimination of protective measures is now replaced by that due to devaluation, i.e.

$$\Delta X - \Delta M = \left(\frac{R'}{R} - 1\right)\left[\frac{E^s_x\,(E^d_x - 1)}{E^s_x + E^d_x}X + E^d_m M\right]$$

$$= \left(\frac{R'}{R} - 1\right)\left(E^s_f X + E^d_m M\right) \quad \ldots \quad (3.21)$$

Where R = Actual exchange rate

R′ = Free trade exchange rate

The condition for balance of payments equilibrium after the elimination of tariffs and subsidies and the compensating devaluation is expressed as:

$$E^s_f\left[\frac{R'}{R(1+S)} - 1\right]X + E^d_m\left[\frac{R'}{R(1+t)} - 1\right]M = 0 \quad \ldots \quad (3.22)$$

Using equation (3.22), the ratio is expressed mathematically as:

$$\frac{R'}{R} = \frac{E^s_f X + E^d_m M}{\frac{E^s_f X}{1+S} + \frac{E^d_m M}{1+t}} \quad \ldots \quad (3.23)$$

Unlike the estimation of export supply and import demand elasticities, the estimation of export demand elasticity is complicated because it depends on the elasticity of supply by other countries producing the same commodity for the world market, and on elasticity of world demand for the commodity. This relationship has been put together by Linder as shown below:[32]

$$E^d_x = \frac{E^d_{xW} + (1-K)\,E^s_{xW}}{K} \quad \ldots \quad (3.24)$$

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32. S. B. Linder, Trade and Trade Policy for Development, New York, Praeger, 1967, p. 158.

Where $E^{d}_{xW}$ = The elasticity of world demand for exports

$E^{s}_{xW}$ = Supply elasticity of competing producers

K = The country's share in the world market.

Thus given the estimates of the various parts of equation (3.24), the extent of overvaluation can be derived.

Finally, the adjustment for currency overvaluation can be derived with the aid of a pair of equations relating domestic prices to world market price first under protection and secondly with free trade:

$$P_d = P_w R(1+t) \quad . \quad . \quad . \quad (3.25)$$

$$P'_d = P_w R' \quad . \quad . \quad . \quad (3.26)$$

Where $P_d$ = domestic price expressed in domestic currency

$P_w$ = world market price expressed in foreign currency

R, R′ and t are as defined above and primed Symbols referring to free trade situation.

The Net Nominal Rate of Protection (T′) is given by:

$$T' = \frac{Pd - P'_d}{P'_d}$$

Substituting equation (3.25) and (3.26) to T above, we get:

$$T' = \frac{P_w R(1+t) - P_w R'}{P_w R'}$$

$$= \frac{P_w R(1+t)}{P_w R'} - \frac{P_w R'}{P_w R'}$$

$$= (1+t)\frac{R}{R'} - 1 \quad . \quad . \quad . \quad (3.27)$$

In the same way, an adjustment can be made to derive Net Effective Rate of Protection from the calculated value of the effective rate of protection. That is

$$E^{**} = (1+E^*)(R-R')/R'$$

$$= (1+E^*)\frac{R}{R'} - 1 \quad \ldots \quad (3.28)$$

where $E^{**}$ = Net Effective Rate of Protection

$E^*$ = Effective Rate of Protection.

Neither the adjustment of equation (3.27) nor that of equation (3.28) changes the ranking of industries according to the rates of protection, but the level of protection changes as a result of the adjustment.

## 3.4: Domestic Resource Cost

The leading advocates of investment decision rule of the domestic resource cost per unit of foreign exchange earned or saved are Krueger and Bruno.[33]

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33. A. O. Krueger and M. Bruno are the leading theorists and practitioners of the Domestic Resource Cost criterion. See A. O. Krueger, "Some Economic Costs of Exchange Control: The Turkish Case", Journal of Political Economy, Vol. LXXIV, No. 5, October, 1966, pp. 466-480; "Evaluating Restrictionist Trade Regimes: Theory and Measurement", op. cit., Vol. LXXX, January/February, 1972, pp. 48-62; M. Bruno, "The optimal selection of export-promoting and import-substituting projects" in Planning the External Sector: Techniques, Problems and Policies - Report on the First Inter-regional Seminar on Development Planning, New York, United Nations, 1967, pp. 88-135; "Domestic Resource Costs and Effective Protection: Clarification and Synthesis" Journal of Political Economy, Vol. LXXX, January/February, 1972, pp. 16-33.

The concept of Domestic Resource cost is that measure of real opportunity cost in terms of total domestic resources, of producing or saving a net marginal unit of foreign exchange.[34] It can be used as ex ante or ex post measure. As an ex ante measure it is used as an investment criterion by comparing it with some measure of the economy's "real" exchange rate. On the other hand it can also be applied using the input-output analysis as ex post measure of the cost of a restrictive trade system.

In the words of Krueger,[35] the domestic resource cost of the $j$th activity, $DRC_j$, estimates the unit opportunity cost of the domestically owned factors of production employed directly in the $j$th industry, and indirectly in home goods industries, as a fraction of the net change in the country's trade balance that would occur were the level of output contracted (or expanded) by one unit:

$$DRC_j = \frac{DC_j}{NVA_j} = \frac{\sum_{i=1}^{n} V_{ij} S_i + \sum_{h=1}^{n} \sum_{i=1}^{n} d_{hj} V_{ih} S_i}{1 - \sum_{i=1}^{n} m_{ij} - \sum_{f=1}^{n} r_f V_{fj}} \quad \ldots (3.29)$$

where $DC_j$ = domestic opportunity cost of domestic resources employed in j per unit of output,

34. M. Bruno, op. cit., p. 16.

35. A. O. Krueger, op. cit., p. 52.

$NVA_j$ = international value added by domestically owned factors of production per unit of output;

$V_{ij}$ = amount of the ith domestic factor of production used in the jth value-adding process;

$S_i$ = the shadow price of the ith factor

$d_{hj}$ = amount of the hth home good used in the production of j.

$r_f$ = repatriated return to the fth foreign owned factor of production.

$V_{fj}$ = amount of the fth foreign factor of production per unit.

$m_{ij}$ = amount of the ith traded-good input employed in producing j, value at international prices normalized at unity.

The major weakness of this investment criterion is that it may break down if some projects have negative international value added which forms the denominator of the Domestic Resource Cost ratio.

Alternatively Krueger[36] has stated that Domestic Resource Cost of Foreign Exchange, under certain assumptions can be:

$$DRC_j = \frac{q_j - \sum_{i=1}^{n} q_i a_{ij}}{1 - \sum_{i=1}^{n} a_{ij}} \quad . \quad . \quad . \quad (3.30)$$

where $q_j$ = domestic price of the jth commodity output and equals the world price (normalised at

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36. A. O. Krueger, op. cit., p. 54.

unity) times 1 plus the tariff or tariff equivalent.

$q_j$ = domestic price of the ith input and equals the world price (normalised at unity) times 1 plus the tariff or tariff equivalent.

$a_{ij}$ = amount of the ith input employed in producing j value at international prices normalised at unity.

The use of equation (3.30) is based on the assumption that cost can be measured by value added. This use of value added of domestic resources as a measure of their costs to the economy implies that value added of domestic resources is the same in all employments. This is a heroic assumption. But in the absence of the knowledge of potential contribution of these resources in their best alternative employment, the assumption is made to hold.

## 3.5: Domestic Resource Cost and Effective Rate of Protection - A Comparative note

Most of the developing countries employ a large number of trade restricting policies at times with the avowed purpose of achieving economic growth through import substitution and reliance on international trade. Consequent upon this, efforts were geared towards devising frameworks which will be empirically implementable for assessing these policies. This culminated into the development of the concepts of Domestic Resource Cost (DRC) and Effective Rate of Protection (ERP). Although these concepts were developed independently, it has been

demonstrated that they are closely related to each other.

As a pre-requisite to the comparative analysis of these concepts, the statement of their definitions is in order. In equation (3.11) we defined Effective Rate of Protection as:

$$\hat{E}_j = \frac{t_j - \sum_{i=1}^{n} a_{ij} t_i}{V_j}$$

where $V_j = 1 - \sum_{i=1}^{n} a_{ij}$

A definition equivalent to the expression given above may also be given as follows:

$$\hat{E}_j = \frac{DVA_j}{IVA_j} - 1 \quad . \quad . \quad . \quad (3.31)$$

where $DVA_j$ = value added of activity j evaluated at domestic prices (domestic value added of activity j)

$IVA_j$ = value added of activity j evaluated at world prices (international value added of activity j).[37]

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37. This can easily be seen by recognising that domestic value added is the domestic value of output less the domestic value of purchased inputs, that is $\left[(1+t_j) - \sum_{i=1}^{n} (1+t_i) a_{ij}\right] X_j$, and international value added is the international value added in the output less the international value of the traded input, that is $\left[(1 - \sum_{i=1}^{n} a_{ij})\ X_j\right]$ where $X_j$ is the quantity of output and cancels out in expression (3.31).

Similarly, Domestic Resource Cost was defined as shown by equation (3.29) above as:

$$DRC_j = \frac{DC_j}{NVA_j} = \frac{\sum_{i=1}^{n} V_{ij}S_i + \sum_{h=1}^{n}\sum_{i=i}^{n} d_{hj} V_{ih}S_i}{1 - \sum_{i=1}^{n} m_{ij} - \sum_{f=1}^{n} r_f V_{fj}}$$

Controversies abound in the literature about their similarities and differences as measures designed for evaluating restrictive trade policies.[38]

The general conclusion from these controversies is explanatio that Effective Rate of Protection and Domestic Resource concepts can be equivalent under special assumptions. These assumptions as stated by Krueger[39] are:

(i) all goods are traded or tradable;

(ii) there are no transportation costs;

(iii) factors of production are perfectly mobile within the domestic economy but perfectly immobile internationally; and

(iv) all domestic markets are perfectly competitive.

The implications of these assumptions are that there are no domestic (non-traded) goods, factor prices reflect the opportunity cost of domestically owned factors of

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38. For an explanation of these controversies see, A. O. Krueger, op. cit.; M. Bruno, op. cit.; S. R. Pearson, "Net Social Profitability, Domestic Resource Cost and Effective Rate of Protection", Journal of Development Studies, Vol. 12, July, 1976, pp. 320-333; M. Michaely, The Theory of Commercial Policy: Trade and Protection, Oxford, Phillip Allan, 1971, pp. 137-142.

39. A. O. Krueger, op. cit., p. 54.

production, and there can be no foreign-owned factors of production employed within the domestic economy. Then, domestic prices of goods will equal factor prices times the amount of those factors employed plus payments for purchased inputs. Following Krueger, we can redefine Domestic Resource Cost by rewriting equation (3.29) as:

$$DRC_j = \frac{q_j - \sum_{i=1}^{n} q_i a_{ij}}{1 - \sum_{i=1}^{n} a_{ij}} = \frac{1 + t_j - \sum_{i=1}^{n} (1+t_i)a_{ij}}{1 - \sum_{i=1}^{n} a_{ij}}$$

$$= ERP_j + 1 \quad . \quad . \quad . \quad (3.32).$$

where $ERP_j$ = Effective Rate of Protection of jth commodity.

$q_j$ = domestic price of the jth commodity output and equals the world price (normalised at unity) times 1 plus the tariff or tariff equivalent.

As a consequence, under the stated assumptions, Effective Rate of Protection and Domestic Resource Cost measures will provide identical rankings of value adding activities. It may be objected that these assumptions on equivalence of these measures are unrealistic particularly in most developing countries.[40]

When these assumptions break down, the Domestic Resource Cost becomes the appropriate measure for estimating the losses/gains associated with restrictionist trade policies. On the other hand, Effective Rate of Protection

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40. For an explanation, see A. O. Krueger, op. cit., pp. 55-59.

becomes the appropriate measure for predicting the resource pulls resulting from trade barriers.

In a market economy where market incentives are of importance, actual prices rather than opportunity costs determine resource allocation. Hence according to Krueger,[41]

> Effective tariffs are probably the best measure of the incentives given by restrictionist trade regimes. In general, one would expect resources to be pulled toward those activities with the highest effective tariffs or tariff equivalents. For purposes of positive economics with the market-oriented sector of the economy, therefore, effective tariff measurement is undoubtedly important.

The conditions for equivalence of Effective Rate of Protection and Domestic Resource Costs suggest that while the former measure may be appropriate in countries where tariff is the major obstacle to free trade and where factor markets are fairly perfect, both measures are needed in developing countries where there are market imperfections.

There is the argument whether the practical advantages of Effective Protection outweighs that of Domestic Resource Cost or not. One of the criticisms levied against Effective Protection measure is that by using input-output table and tariff schedules, it uses tariff rates as estimates of domestic-foreign price

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41. See A. O. Krueger, op. cit., p. 60.

relationship. Since in developing countries, tariffs are not the major means of trade restriction, then this approach becomes questionable.[42] There is also the criticism that the estimation of effective tariffs from input-output tables will not be meaningful even if actual price observations are used, unless if constant costs are assumed or if adjustments are made so that the co-efficients reflect marginal costs. In most cases, evaluations of alternative investments' analysis are usually undertaken at the individual project level. But it has been observed that at such level, effective tariff measurement from input-output table cannot give guidance for allocating resources. Hence, the concensus that there is a more empirical flexibility in deriving domestic resource estimates.

3.6: The Formulation of Models

For a more specific and quantifiable evidence of the effectiveness of tariff protection as an instrument of industrial policy, simple and multiple regression models have been formulated in this section. These models whose parametric values will be estimated by the method of ordinary least squares (OLS) have been formulated putting into consideration the hypotheses stated in Chapter One.



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42. For comparison of effective tariff rates derived from tariff tables and actual price observations for Pakistan, See S. R. Lewis and S. E. Guisinger, "Measuring Protection in a Developing country: The case of Pakistan", Journal of Political Economy, Vol. LXXVI, December 1968, pp. 1170-1198; See also, J. Bhagwati and P. Desai, Planning for Industrialisation: A Study of India's Trade and Industrial Policies Since 1950, Oxford, Oxford University Press, 1970.

The basic model in a functional form is

$$IS = F(NERP) \quad . \quad . \quad . \quad (3.33)$$

Equation (3.33) states that Import substitution (IS) is a function of tariff protection, where tariff protection is measured by the net effective rate of protection.

Equation (3.33) can formally be represented linearly thus:

$$IS = bo + b_1 NERP_T + U \quad . \quad . \quad . \quad (3.34)$$

where U is a random error term.

Since resource allocation and consequently the rate of industrial development may be influenced by other factors in addition to tariff protection, the model has been expanded to include proxy measures of some variables as used in Alade's work.[43] Thus our basic model specification now becomes:

$$IS = F(NERP_{T1}, NERP_{T2}, NERP_{T3}, \Delta NERP, TDOP, TSDM, TSTP, AVWR, VAPE) \quad . \quad . \quad . \quad (3.35)$$

where $NERP_{T1}$, = NERP of the first year of analysis - 1970.

$NERP_{T2}$ = NERP of the second year of analysis- 1978.

$NERP_{T3}$ = NERP of the third year of analysis - 1985

$\Delta NERP$ = Change in NERP

TDOP = The degree of openness of the economy.

TSDM = The size of the domestic market.

TSTP = The size of the plant

AVWR = Average wage rate

VAPE = Value added per employee.

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43. J. A. Alade, op. cit., pp. 230-237.

The dependent variable has been defined in two ways. These are Import Substitution and Average Growth Rate of Domestic Production. The estimation technique is essentially the Ordinary Least Squares (OLS) with all its assumptions expected to hold.

The data for the independent and dependent variables used in the regression analysis have been derived from a number of sources and presented as Appendix I. Perhaps there is the need to explain the rationale behind the inclusion of some of these variables. Phillips[44] study which showed that market consideration was vital to foreign firms investing in the industrial sector motivated our inclusion of the market size variable in the model. In this study the percentage increase in domestic absorption of manufactured goods have been used as a proxy for the growth in the size of domestic market. As pointed out by Balassa,[45] domestic absorption will indicate the actual size, and not the potential future size of national markets. The inclusion of the degree of openness of the economy is based on the fact that it increases the effective size of home markets. Our measure of the degree of the openness of national economies as import-absorption ratio is credited to Balassa.[46] The size of the plant which is being used as a proxy for economies of scale has



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44. A. O. Phillips, "The Significance of Nigeria's Income Tax Relief Incentives", Nigerian Journal of Economic and Social Studies, Vol. 11, No. 2, July 1969, p. 152.

45. B. Balassa and Associates, op. cit., p. 28.

46. B. Balassa and Associates, op. cit., p. 31.

been measured by the average number of "operatives" per plant where as stated in Alade,[47] operatives is the sum of skilled and unskilled workers. The value added per employee has been employed in this study as a proxy measure of factor intensity. As pointed out in Alade,[48] value added per employee, though may be affected by various market imperfection, it has a significant advantage as a measure of factor intensity in manufacturing. This is so, since it may be taken to reflect the flows of services into the manufacturing process from both human capital and physical capital and also permits their treatment on a common basis.

Four basic models have been formulated in this study. Each of these models constitutes various versions of equation (3.35). The inclusion of a particular independent or explanatory variable in a version of the model is determined by the year or period. For instance, the inclusion of a previous measure of tariff policy in 1970 regression model is impossible since estimates of effective protection for the years before 1970 have not been computed. The specifications of the models are as follows:



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47. J. A. Alade, op. cit., p. 234.

48. Ibid.

Model 1: The model uses Import Substitution as an index of Industrial Development. The various version of the model are as follows:

1. $IS = b_o + b_1 NERP_{T1} + U$
2. $IS = b_o + b_1 NERP_{T1} + b_2 NERP_{T2} + U$
3. $IS = b_o + b_1 NERP_{T1} + b_2 NERP_{T2} + b_3 NERP_{T3} + U$
4. $IS = b_o + b_1 NERP_{T1} + b_2 NERP_{T2} + b_3 NERP_{T3} + b_4 TSDM + U$
5. $IS = b_o + b_1 NERP_{T1} + b_2 NERP_{T2} + b_3 NERP_{T3} + b_4 TDOP + U$
6. $IS = b_o + b_1 NERP_{T1} + b_2 NERP_{T2} + b_3 NERP_{T3} + b_4 VAPE + U$
7. $IS = b_o + b_1 NERP_{T1} + b_2 NERP_{T2} + b_3 NERP_{T3} + b_4 AVWR + U$
8. $IS = b_o + b_1 NERP_{T1} + b_2 NERP_{T2} + b_3 NERP_{T3} + b_4 TSTP + U$

This model will be estimated for the selected manufacturing industries for the years 1970, 1978 and 1985.

Model 11: This model is similar to Model 1. In this model, the dependent variable now becomes the Average Growth Rate of Domestic Production, with the explanatory variables and the years of analysis remaining the same.

Model 111: This model will use Import Substitution as an index of Industrial Development. The various forms of the model are as follows:

1. $IS = b_o + b_1 \Delta NERP + b_2 NERP_{T1} + U$
2. $IS = b_o + b_1 \Delta NERP + b_2 NERP_{T1} + b_3 TSDM + b_4 TDOP + b_5 VAPE + U$
3. $IS = b_o + b_1 \Delta NERP + b_2 NERP_{T1} + b_3 TSDM + b_4 AVWR + b_5 TSTP + U$
4. $IS = b_o + b_1 \Delta NERP + b_2 NERP_{T1} + b_3 TDOP + b_4 AVWR + b_5 TSTP + U$
5. $IS = b_o + b_1 \Delta NERP + b_2 NERP_{T1} + b_3 VAPE + b_4 TDOP + b_5 AVWR + U$
6. $IS = b_o + b_1 \Delta NERP + b_2 NERP_{T1} + b_3 VAPE + b_4 TSTP + b_5 TSDM + U$
7. $IS = b_o + b_1 \Delta NERP + b_2 NERP_{T1} + b_3 NERP_{T2} + b_4 TDOP + b_5 TSDM + U$

(iii) average of tariff rates weighted by the values of domestic production of each product in the group; and

(iv) average tariff rates weighted by the values of domestic demand for each product in the group.

In this study, average rate will be obtained either by method (i) or method (ii) mentioned above. Method (i) or (iii) will be used for excise rates. Furthermore, Nigeria's tariff schedules while given in specific terms for some products, they are given in ad valorem form for others. Since ad valorem tariff rate will readily lend itself to practical usage with reference to this study, ad valorem rate will be computed for the specific duties.

The treatment of non-traded commodities and services such as transport, domestic trade, construction, electricity, gas, water, communications and banking, is another controversial issue. In economic literature, three approaches have been discussed. These are the Corden, Balassa and Scott approaches. Corden's approach includes value added in the production of non-traded goods with value added in processing so that the extent of protection is calculated with respect to the sum of the two. In Balassa's approach, it is assumed that non-traded goods are supplied to the processing industry at constant costs and the protection of the value added in processing alone is measured. Balassa holds the view that while these two approaches would produce different estimates of effective rate of protection, their ranking of industries does not vary. The third approach is that by Scott which he called "Ideal" method.

This approach is based on the hypothesis that the proportionate differences between the domestic and free trade values of non-traded inputs equaled the weighted average of the nominal protection for practically all industries producing traded goods.[49] In this study, we shall adopt Balassa's approach.

The input-output table of the Nigerian economy used in this study is that credited to Carter.[50] We could not use the relatively recent input-output tables by Clark,[51] Aboyade,[52] or Olayide,[53] because the industry input-output accounts of these tables were not published along with their input coefficients. This made the disaggregation of these tables impossible. Since, without a disaggregated input-output table, a meaningful analysis of effective protection cannot be achieved, we were left with no other choice than to use Carter's input-output table of the Nigerian economy which is not lacking in this regard.

To facilitate the estimation of effective protection, Carter's input-output table of the Nigerian economy has



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49. For a detailed discussion of these approaches, see B. Balassa and Associates, op. cit., pp. 321-324.

50. N. G. Carter, An Input-Output Analysis of the Nigerian Economy 1959-1960, M.I.T. Cambridge, Mass, 1966.

51. P. B. Clark, Planning Import Substitution: Contribution to Economic Analysis, Amsterdam, North Holland, 1970.

52. O. Aboyade, The National Accounts of Nigeria, 1973-1975, Lagos, Federal Ministry of National Planning, 1978.

53. S. O. Olayide, S. O. Olofin, J. O. Iyaniwura and J. O. Adeniyi, An Input-Output Model of the Nigerian Economy, Ibadan, Ibadan University Press, 1981.

been modified in a number of ways. For instance, the thirteen sectors that constituted the manufacturing industries have been disaggregated using the approach of Clark,[54] into forty-five. The industrial classification scheme used in the construction of the input-output table differs from that used in the Customs Tariff List. These two schemes have been reconciled through the use of the United Nations' Standard International Trade Classification and International Standard Industrial Classification.

In the estimation of the domestic resource cost, there is the problem of which formula to be used. That is, whether the formula stated as equation (3.29) or equation (3.30). In this study, we intend to use the formula stated as equation (3.30), because of the detailed information of the cost structures of each of the firms in the various industries, with the associated large amount of data requirements of the other formula - that is, equation (3.29) which are not readily available.

3.8: Sources of Data

Our major sources of data will be publications of the Federal Office of Statistics, Central Bank of Nigeria, United Nations and International Monetary Fund. Specifically, data on Gross output, value added, material costs

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54. P. B. Clark, op. cit.

and so on will be obtained from the following Federal Office of Statistics publications: Industrial survey, Digest of Statistics, Annual Abstract of Statistics and Economic Indicators. For imports and exports, from various issues of the Central Bank of Nigeria's Annual Reports and Statement of Account; Federal office of statistics, Nigeria's Trade Summary; and International Monetary Fund's International Financial statistics. Nominal tariff rates and Excise tax rates will be obtained from the various issues of the supplements of the Federal Official Gazette, Customs and Excise department's Annual Reports, etc.

# CHAPTER FOUR

## THE STRUCTURE, GROWTH AND PERFORMANCE OF THE NIGERIAN MANUFACTURING INDUSTRIES

### 4.1: Introduction

This chapter sets out not only to state the government's industrial policy, but also to assess the structure, growth and performance of the Nigerian Manufacturing Industries over the years. For the purpose of clarity and comprehensive understanding of the work, the analysis is to be treated under six headings namely, Nigeria's Industrial Policy, Growth and Structural change in the Manufacturing Industries, Trade in Manufactures, Spatial Structure of Manufacturing, Investment and Ownership Structure and lastly Performance and Efficiency.

### 4.2: Nigeria's Industrial Policy

#### 4.2.1: Evolution of Nigeria's Industrial Policy

Prior to the late 1950's, only a small number of manufacturing industries existed. Most of these industries processed agricultural products for domestic and export markets. This low degree of manufacturing was not due to lack of raw materials, market or labour, but on institutional obstacles within the colonial economic structures and arrangements. With the attainment of political independence, there was a greater awareness of the role of government in industrial development. Consequently, the government did not only start to encourage the establishment of industries (mainly manufacturing) but also assumed an increasingly active role in the directly productive sector of the economy. This coupled with the realization that the domestic sources of capital, managerial

and technical skills were inadequate for the desired development objectives, the government adopted some policies to remove or compensate for the disadvantage in terms of attracting investment (from domestic and foreign sources) into the industrial sector. Government's active role in industrial development and the provision of various incentives to encourage the establishment of manufacturing industries especially in the late 1950's formed the watershed of the evolution of industrial development policy in Nigeria.

4.2.2: Instruments of Industrial Policy

Two broad groups of the instruments of industrial policy aimed towards the establishment of domestic manufacturing industries for industrial development are identifiable. These are industrial incentives and protection.

(a) Industrial Incentives: These incentives which can be classified into three are the fiscal, monetary and others. The fiscal incentives which are embodied in three policies of legislation have undergone some modifications with their substance remaining the same.[1]

One of the fiscal incentives is the Pioneer Status or Industrial Development (Income Tax Relief) Act of 1958, in which an industry can be declared a pioneer industry and a firm wishing to start activity in that particular field can obtain a pioneer certificate. This certificate will entitle the firm to a tax

1. For their detail description, see P. C. Asiodu, "Industrial Policy and Incentives in Nigeria", Nigerian Journal of Economics and Social Studies, July 1967, pp. 161-173; Federal Ministry of Industries, The Operation of Industrial Incentives in Nigeria, Lagos, November 1972.

holiday for a period extending from 2 to 5 years depending upon the amount of capital invested. This Act was amended in 1971 classifying industries into indigenously controlled and foreign controlled industries with different investment requirements for granting pioneer status.

Under the Import Duties Relief Act 1957, a firm, new or expanding can be granted concessionary rates of duty on raw materials imported for its manufactures. The firm may be given 100 percent relief on such duty. This was modified in 1964 thereby making a firm to only pay concessionary duty rate. In the case of Custom Duties (Dumped and Subsidized Goods) Act of 1958, the Government can charge additional duties on specific imported goods if there is clear evidence of dumping or government subsidy in the country of origin.

Added to the above fiscal incentives is the Accelerated Depreciation on capital investment in Nigeria. This takes the form of initial capital allowance which is combined with the normal annual capital allowances to complete the depreciation system. The allowances are available automatically to all companies liable to Company Income Tax. The rates of allowance vary with the type of capital expenditure incurred. This incentive enables companies to write off their capital investment within a few years thereby minimising the uncertainties and risks of investors.

The monetary incentives offered by the government are usually by way of establishment of credit institutions,

the prominent among which are the Nigerian Industrial Development Bank, Nigerian Bank for Commerce and Industry and the Federal Loans Board.

The Nigerian Industrial Development Bank (NIDB) was set up in 1964 to give assistance mainly to enterprises engaged in industry and exploitation of natural resources in Nigeria. It does not finance enterprises of rudimentary nature or small-scale industries.

The Nigerian Bank for Commerce and Industry (NBCI) in its own case was established in 1973 to finance industrial projects particularly within the framework of the Indigenisation Decree. Unlike the Nigerian Industrial Development Bank, the bank is more involved in the small-scale industry development programme of the country.

Other monetary incentives are the Federal Loans Board set up to provide modest loans for small scale industries, the Industrial Training Fund and Industrial Research Institutes respectively set up to finance industrial training of indigenous personnel and to conduct research which can be applied for industrial expansion in the country.

The other industrial incentives are the provision of infrastructural facilities ranging from efficient network of modern roads and railways to efficient system of postal and telephone services. Furthermore the post-1966 Nigerian Government has identified a number of industries which have been regarded as strategic to

the national economy in which they have been investing since these industries may not appeal to the profit motivated private investors. Even where private investors are willing to invest, the government has decided, partly for reasons of economic and nationalism, to pre-empt private initiative.

(b) Industrial Protection: This consists of Tariff and Non-tariff measures.

The tariff structure which has been changing over the years is one of the instruments of industrial policy being used by the government. The use of tariff is generally understood in terms of the reduction or complete elimination of competition between foreign and local producers of goods that enter a protected market through the reduction or prohibition of imports. The protection given to domestic producers through changes in tariff structure may either be absolute, that is, the importation of a given commodity may be banned outright or less than absolute, that is, mere imposition of import duty on a commodity.

The non-tariff measures which have been used by the government are the import quotas, import licensing, exchange control and recently exchange rates. These measures have been applied collectively over the years.

## 4.3: Growth and Structural Change in Nigeria's Manufacturing Industries

In spite of the recent rapid pace of modernisation in the Nigerian economy, it is still largely underdeveloped. A

major though diminishing part of the economic activity, is carried on within the framework of the traditional sector. A comparison of the components of Gross Domestic Product (GDP) for some years between 1960 and 1985 provides some useful information about the structure of and the important changes within the Nigerian economy. The most striking feature is the basic similarity in the industrial origins of the Gross Domestic Product (GDP), for some years and the marked dissimilarity in others. In 1960/61, the country's GDP was ₦2483.4 million. Of this total, agriculture accounted for ₦1597.8 million or 64.1 percent while distribution, the second largest sector accounted for ₦317.6 million or 12.7 percent. The share of manufacturing and craft was 4.8 percent, Building and Construction, 4.0 percent and General Government, 3.2 percent. The industrial sector[2] had a share of 10.3 percent. By 1965/66, the share of the agricultural sector declined to 55.4 percent while that of manufacturing and craft, Distribution, Mining, and Building and Construction increased to 7.2 percent, 13.3 percent, 4.8 percent and 5.2 percent respectively.[3] As shown in Table 4.1, the share of agriculture in the GDP which was 48.8 percent in 1970/71, declined to 20.2 percent in 1980 after which it rose to 37.2 percent in 1985. The share of manufacturing and craft in the GDP during this period fluctuated. From a share of 7.2 percent in 1970/71, it declined to 5.0 percent in 1975/76 probably due to the



2. By Industrial sector we mean the mining and quarrying, manufacturing and craft, electricity and water supply, building and construction subsectors.

3. The quoted figures are from F. A. Olaloku et al., Structure of the Nigerian Economy, London, Macmillan Press Ltd., 1979, pp. 5-7.

TABLE 4.1

GROSS DOMESTIC PRODUCT BY ACTIVITY SECTOR, SELECTED YEARS (AT CURRENT FACTOR COST)

| ACTIVITY SECTOR | ₦ MILLION | | | | PERCENTAGE | | | |
|---|---|---|---|---|---|---|---|---|
| | 1970/71 | 1975/76 | 1980 | 1985 | 1970/71 | 1975/76 | 1980 | 1985 |
| 1. Agriculture, Forestry and Fishing | 2,576.4 | 5,730.0 | 10,011.5 | 24,379.2 | 48.8 | 27.0 | 20.2 | 37.2 |
| 2. Mining and Quarrying | 534.1 | 4,668.4 | 15,012.4 | 13,026.2 | 10.1 | 22.0 | 30.2 | 19.9 |
| 3. Manufacturing and Craft | 378.4 | 1,054.3 | 5,162.2 | 4,216.2 | 7.2 | 5.0 | 10.4 | 6.4 |
| 4. Electricity and Water | 37.2 | 57.9 | 244.6 | 395.7 | 0.7 | 0.3 | 0.5 | 0.6 |
| 5. Building and Construction | 269.9 | 1,814.6 | 3,671.2 | 1,995.6 | 5.1 | 8.5 | 7.4 | 3.0 |
| 6. Distribution | 670.4 | 4,329.2 | 9,617.2 | 12,425.6 | 12.7 | 20.4 | 19.4 | 19.0 |
| 7. Transport and Communication | 148.9 | 673.6 | 1,705.7 | 1,880.7 | 2.8 | 3.2 | 3.4 | 3.0 |
| 8. General Government | 343.3 | 1,352.9 | 2,014.9 | 2,929.0 | 6.5 | 6.4 | 4.1 | 4.5 |
| 9. Education | 152.7 | N/A | N/A | N/A | 2.9 | - | - | - |
| 10. Health | 41.4 | N/A | N/A | N/A | 0.8 | - | - | - |
| 11. Other services | 128.4 | 1,529.9 | 2,192.6 | 4,218.9 | 2.4 | 7.2 | 4.4 | 6.4 |
| TOTAL | 5,281.4 | 21,210.8 | 49,632.3 | 65,467.0 | 100 | 100 | 100 | 100 |

Source: Federal Office of Statistics, Annual Abstract of Statistics, Various Issues.

Note: (1) "Other Services" include Hotels and Restaurants, Finance and Insurance, Real Estate and Business Service and Housing.

(2) Education and Health Sectors were not surveyed by FOS between 1975 and 1985.

TABLE 4.2

GROSS DOMESTIC PRODUCT BY ACTIVITY SECTOR
AT CURRENT FACTOR COST

| | ACTIVITY SECTOR | COMPOUNDED GROWTH RATE IN PERCENTAGE | | | |
|---|---|---|---|---|---|
| | | 1970/71-1975/76 | 1975/76-1980 | 1980-1985 | 1970/71-1985 |
| 1. | Agriculture, Forestry and Fishing | 17.3 | 11.8 | 19.5 | 16.2 |
| 2. | Mining and Quarrying | 54.3 | 26.3 | -2.8 | 23.7 |
| 3. | Manufacturing and Craft | 22.7 | 37.4 | -4.0 | 17.4 |
| 4. | Electricity and Water | 9.3 | 33.4 | 10.1 | 17.1 |
| 5. | Building and Construction | 46.4 | 15.1 | -11.5 | 14.3 |
| 6. | Distribution | 45.2 | 17.3 | 5.3 | 21.5 |
| 7. | Transport and Communication | 35.2 | 20.4 | 2.0 | 18.4 |
| 8. | General Government | 31.6 | 8.3 | 7.8 | 15.4 |
| 9. | Education | - | - | - | - |
| 10. | Health | - | - | - | - |
| 11. | Other Services | 64.1 | 7.5 | 14.0 | 26.2 |
| | TOTAL | 32.1 | 18.5 | 5.7 | 18.3 |

Source: Calculated from, Federal Office of Statistics, Annual Abstract of Statistics, Various Issues.

recession and probably government's policy.

In the assessment of an industry's performance, the measures easily used are the value added measured in monetary terms and/or the quantity of one of its inputs measured in physical terms.[4] Table 4.3 gives the sectoral structure of employment for Nigeria in selected years between 1975 and 1985. As shown in the Table, the manufacturing and processing sector absorbed 16.8 percent, 17.0 percent and 18.2 percent in 1975, 1980 and 1985 respectively. Though this appears impressive, it is misleadingly exaggerated since a substantial portion of this industrial labour is in the cottage and craft industry. Furthermore, members of this labour force are marginally employed in manufacturing and processing because they combine it with farming and retail trading.

Between 1960/61 and 1975/76 the value of manufacturing industry rose from ₦107.6 million to ₦1170.4 million, giving a compounded annual growth rate of 17.2 percent. The value added further increased to the highest value of ₦6129.2 million in 1982 after which it declined to ₦5016.7 million in 1984 (see Table 4.4). The low level of value added in manufacturing in 1960 may tend to exaggerate the growth rate during the period. For a realistic picture of the progress made, the whole period when broken down into shorter periods of 1960/61 - 1965/66, 1965/66 - 1970/71

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4. See P. J. Devine, R. M. Jones, N. Lee and W. J. Tyson, An Introduction to Industrial Economics, London, Allen and Unwin, 1974, p. 61.

TABLE 4.3

SECTORAL DISTRIBUTION OF LABOUR FORCE
1975, 1978, 1980, 1983, 1985
(Percentage, unless otherwise indicated)

| Sectors | 1975 | 1978 | 1980 | 1983 | 1985 |
|---|---|---|---|---|---|
| Total Labour Force (million) | 29.22 | 31.00 | 32.20 | 34.90 | 36.10 |
| Agriculture | 64.0 | 61.5 | 60.0 | 58.3 | 57.8 |
| Mining and quarrying | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Manufacturing and processing | 16.8 | 16.9 | 17.0 | 18.0 | 18.2 |
| Building and Construction | 0.9 | 1.0 | 1.1 | 1.2 | 1.2 |
| Electricity, gas and water | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Distribution | 12.2 | 14.1 | 15.2 | 15.7 | 16.0 |
| Transport and Communications | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Services | 5.0 | 5.4 | 5.5 | 5.6 | 5.6 |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: National Manpower Board, Federal Ministry of National Planning.

TABLE 4.4

THE CONTRIBUTION OF THE MANUFACTURING INDUSTRIES TO GROSS DOMESTIC PRODUCT AT CURRENT FACTOR COST: 1960 - 84

| YEAR | TOTAL GROSS DOMESTIC PRODUCT (₦ MILLION) | VALUE OF MANUFAC-TURING & CRAFT (₦ MILLION) | PERCENTAGE OF MANU-FACTURING IN GROSS DOMESTIC PRODUCT | GROWTH RATE OF MANUFACTURING IN PERCENTAGE |
|---|---|---|---|---|
| 1960/61 | 2,247.4 | 107.6 | 4.8 | |
| 1961/62 | 2,359.6 | 123.4 | 5.2 | 14.7 |
| 1962/63 | 2,597.6 | 146.4 | 5.6 | 18.6 |
| 1963/64 | 2,755.8 | 173.0 | 6.3 | 18.2 |
| 1964/65 | 2,894.4 | 173.6 | 6.0 | 0.4 |
| 1965/66 | 3,110.0 | 214.6 | 6.9 | 23.6 |
| 1966/67* | 3,374.8 | 233.0 | 6.9 | 8.6 |
| 1967/68* | 2,752.6 | 194.2 | 7.1 | -16.7 |
| 1968/69* | 2,656.2 | 198.6 | 7.5 | 2.3 |
| 1969/70* | 3,549.3 | 281.8 | 7.9 | 41.9 |
| 1970/71 | 5,281.1 | 378.4 | 7.2 | 34.3 |
| 1971/72 | 6,650.9 | 415.8 | 6.3 | 9.9 |
| 1972/73 | 7,187.5 | 511.1 | 7.1 | 22.9 |
| 1973/74 | 10.990.7 | 496.9 | 4.5 | -2.8 |
| 1974/75 | 18,298.3 | 661.2 | 3.6 | 33.1 |
| 1975/76 | 20,957.7 | 1,170.4 | 5.6 | 77.0 |
| 1976/77 | 26,655.6 | 1,464.3 | 5.5 | 25.1 |
| 1977/78 | 31,283.4 | 1,555.0 | 5.0 | 6.2 |
| 1978/79 | 34,002.2 | 2,377.9 | 7.0 | 52.9 |
| 1979/80 | 41,974.7 | 3,815.6 | 9.1 | 60.5 |
| 1980 | 48,538.6 | 4,068.4 | 8.3 | 6.6 |
| 1981 | 50,658.3 | 4,934.5 | 9.7 | 21.3 |
| 1982 | 53,859.4 | 6,129.2 | 11.4 | 24.2 |
| 1983 | 53,347.2 | 5,951.8 | 11.2 | -2.9 |
| 1984 | 55,249.2 | 5,016.7 | 9.1 | -15.7 |

*The then three Eastern States are not included in the estimates.

Source: Federal Office of Statistics, Annual Abstract of Statistics, Various Issues.

1970/71 - 1975/76, 1975/76 - 1980, 1980 - 1984 gave the compounded average annual growth of 14.8 percent, 12.0 percent, 25.3 percent, 28.3 percent and 4.3 percent respectively or an average annual growth rate of 15.1 percent, 14.1 percent, 28.0 percent, 30.3 percent and 6.7 percent respectively. The relatively small growth rates recorded during the 1965/66 - 1970/71 and 1980 - 1984 periods could respectively be attributed to the effects of the war which disrupted industrial productive capacity in war affected areas of the country and the current general economic recession. The compounded average annual growth rates however conceal a lot of variations that characterise the growth rates of manufacturing value added from year to year. For instance, while the highest growth rate of 77.0 percent was recorded for 1974/75 - 1975/76, a negative rate of -16.7 percent was recorded for 1966/67 - 1967/68.

The contribution of the manufacturing sector to GDP is minimal. Its share of ₦107.6 million (4.8 percent) in 1960/61 maintained an upward trend through ₦214.6 million (6.9 percent) in 1965/66 to ₦281.8 million (7.9 percent) in 1969/70 after which fluctuations set in. The lowest contribution of ₦661.2 million (3.6 percent) was recorded in 1974/75 while the highest contribution of ₦6,129.2 (11.4) was recorded in 1982. During the period 1960/61 - 1984, the share of manufacturing value added in the GDP was 7.0 percent, For the periods 1960/61 - 1964/65, 1965/66 - 1969/70, 1970/71 - 1974/75, 1975/76 - 1979/80, 1980 - 1984, the shares were respectively 5.6 percent, 7.3 percent, 5.7 percent, 6.4 percent and 9.9 percent. The share of 9.9 percent recorded

in 1980 - 1984 can be attributed to the high share of manufacturing in the GDP in 1982 and 1983. Available statistics show that there was a declining share of the manufacturing sector's value added in the GDP in the mid-1980s. The figures compare badly with many countries at a similar stage of economic development. For example, while in 1986 the manufacturing percent of GDP in Nigeria was 8.0 percent, Cote d'Ivorie recorded 16.0 percent while Ghana and Kenya recorded 12.0 percent each.[5]

The consumers goods subsector which consistently dominated industrial production in Nigeria started to decline after 1970. As can be seen in Table 4.5, the consumer goods subsector which increased its share of value added from 61.0 percent in 1965 to 66.0 percent in 1970, marginally fell to 65.0 percent in 1975 after which it drastically declined to 47.1 percent and 44.3 percent in 1980 and 1983 respectively. This same trend is observable in the case of the intermediate goods subsector up to 1980 with its share increasing from 27.0 percent in 1965 to 32.0 percent in 1970 and then declining from 28.6 percent in 1975 to 23.9 percent in 1980. By 1983, it has increased to 31.5 percent. On the other hand, the capital goods subsector's share of value added declined from 12.0 percent in 1965 to 2.0 percent in 1970 and then increased to 5.9 percent and

5. United Nations Industrial Development Organisation (UNIDO), Industrial Development Review Series; Nigeria, 1988, p. xi.

TABLE 4.5

VALUE ADDED AND EMPLOYMENT STRUCTURE IN NIGERIAN MANUFACTURING INDUSTRY GROUPS: 1965, 1970, 1975, 1980, 1983

| INDUSTRY GROUP | 1965 | | | | 1970 | | | | 1975 | | | | 1980 | | | | 1983 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Value Added | | Employment | | Value Added | | Employment | | Value Added | | Employment | | Value Added | | Employment | | Value Added | | Employment | |
| | Total (₦m) | % of Total | Total No Employed | % of Labour Force | Total (₦m) | % of Total | Total No Employed | % of Labour Force | Total (₦m) | % of Total | Total No Employed | % of Labour Force | Total (₦m) | % of Total | Total No Employed | % of Labour Force | Total (₦m) | % of Total | Total No Employed | % of Labour Force |
| Consumer Goods | 105.5 | 61 | 50675 | 0.2 | 261 | 66 | 92394 | 0.35 | 776 | 65.5 | 173639 | 0.59 | 2513 | 47.1 | 208585 | 0.65 | 2314 | 44.3 | 143020 | 0.41 |
| Intermediate Goods | 46 | 27 | 27822 | 0.1 | 126 | 32 | 34335 | 0.13 | 339 | 28.6 | 32835 | 0.11 | 1277 | 23.9 | 166802 | 0.52 | 1646 | 31.5 | 103061 | 0.30 |
| Capital Goods | 21 | 12 | 15730 | 0.1 | 7.2 | 2 | 2303 | 0.01 | 70 | 5.9 | 37769 | 0.13 | 1551 | 29 | 78245 | 0.24 | 1266 | 24.2 | 76315 | 0.22 |
| TOTAL | 172.5 | 100 | 94227 | 0.40 | 394.2 | 100 | 129032 | 0.49 | 1185 | 100 | 244243 | 0.83 | 5341 | 100 | 453632 | 1.41 | 5226 | 100 | 322396 | 0.93 |

Sources : Compiled from (1) Federal Office of Statistics, Industrial Survey, Various Issues

(2) Federal Republic of Nigeria, Second, Third and Fourth National Development Plan Documents

29.0 percent in 1975 and 1980 respectively. By 1983, this share declined to 24.2 percent. This shows that the increasing share of the value added of the capital goods subsector in the 1970s started to give way to the intermediate subsector by 1983.

The number of establishments employing ten or more persons increased from 590 in 1964[6] to 2315 in 1980 after which it declined to 2110 in 1983.

The number of industrial employees which was 94227 in 1965 increased to 453632 in 1980, an increase of 381.4 percent or compounded annual growth rate of 11.0 percent (see Table 4.5). The number which decreased to 322396 by 1983 could be attributed to the mass retrenchment of workers and the non-employment of people sequel to the ailing Nigerian economy. While the consumer goods subsector, increased its share of total industrial employees, from 53.8 percent in 1965 to 71.6 percent in 1970, and then declined to 46.0 percent and 44.3 percent in 1980 and 1983 respectively, the capital goods subsector's share, decreased from 16.7 percent in 1965 to 1.8 percent in 1970, and then increased to 17.2 percent and 23.7 percent in 1980 and 1983 respectively. The increase in the share of industrial employees in the consumer goods subsector up till 1970 can be explained by the relatively labour intensive method of production in the consumer goods subsector, while the decrease in the number of industrial

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6. See A. Adejugbe, "Manufacturing" in F. A. Olaloku et al (ed.), op. cit., p. 37.

employees after 1970 can be attributed to the increasing number of capital goods industries. Generally, industrial employment is only a small proportion of the active labour force in Nigeria. It represented 0.40 percent in 1965, 0.49 percent in 1970, 0.83 percent in 1975, 1.41 percent in 1980 and 0.93 percent in 1983. Out of a total of 1.385 million of those in wage employment in 1970, 2.18 million in 1975 and 3 million in 1980, those employed in the manufacturing industry represented 9.3 percent in 1970, 11.2 percent in 1975 and 15.1 percent in 1980.[7]

The industry groups with the highest number of establishments are those manufacturing food and wood and wood products (see Tables 4.6 and 4.7). These two groups had 279,533, 1061 and 990 establishments in 1970, 1975, 1980 and 1983 respectively. This represents 40 percent, 43.0 percent, 46.0 percent and 47.0 percent respectively. Out of these figures, food manufacturing alone accounted for 21.8 percent, 21.4 percent, 24.4 percent and 29.7 percent in the same years. The number of establishments in the food manufacturing group which was 154 in 1970 rose to 627 in 1983, an increase of 307 percent. The least number of establishments were recorded in the industrial chemicals group. These were 0.6 percent, 0.4 percent, 0.5 percent and 0.2 percent in 1970, 1975, 1980 and 1983 respectively. This analysis shows that in

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7. The figures of those in wage employment were collected from the Second, Third and Fourth National Development plan documents.

TABLE 4.6

STRUCTURE OF THE MANUFACTURING INDUSTRY BY EMPLOYMENT, VALUE ADDED AND ESTABLISHMENTS, 1970, 1975, 1980, 1983

| I.S.I.C CODE | INDUSTRY | NUMBER OF ESTABLISHMENTS | | | | EMPLOYMENT | | | | VALUE ADDED (₦Million) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1970 | 1975 | 1980 | 1983 | 1970 | 1975 | 1980 | 1983 | 1970 | 1975 | 1980 | 1983 |
| 3111-3122 | Food Manufacturing | 154 | 277 | 565 | 627 | 18,406 | 46,485 | 41,156 | 40,209 | 47.83 | 200.09 | 302.81 | 654.46 |
| 3131-3140 | Beverage Industries | 17 | 17 | 54 | 49 | 7,476 | 10,476 | 48,885 | 19,284 | 94.69 | 128.82 | 1172.23 | 768.16 |
| 3211-3220 | Textiles | 75 | 132 | 166 | 119 | 37,203 | 60,673 | 88,757 | 62,270 | 95.02 | 197.05 | 475.32 | 550.68 |
| 3231-3240 | Leather and Leather Products | 23 | 41 | 29 | 33 | 4,173 | 6,231 | 7,157 | 7,837 | 6.04 | 40.46 | 48.10 | 43.58 |
| 3311-3320 | Wood and Wood Products | 125 | 276 | 496 | 361 | 11,725 | 21,517 | 53,966 | 31,228 | 10.13 | 44.08 | 293.36 | 202.90 |
| 3411-3420 | Paper, Paper Products and Printing | 78 | 123 | 213 | 204 | 9,556 | 17,510 | 30,243 | 26,351 | 16.54 | 71.36 | 228.87 | 192.74 |
| 3511-3512 | Industrial Chemicals | 4 | 5 | 12 | 4 | 397 | 808 | 3,915 | 714 | 1.66 | 9.07 | 61.67 | 6.89 |
| 3521-3540 | Other Chemical Products | 42 | 51 | 74 | 70 | 6,483 | 12,047 | 28,821 | 22,735 | 54.92 | 171.84 | 697.28 | 1145.12 |
| 3551-3560 | Rubber Products | 48 | 66 | 95 | 96 | 10,729 | 16,513 | 44,896 | 15,184 | 20.83 | 59.33 | 252.05 | 161.65 |
| 3610-3620 | Non-metal Mineral products | 6 | 16 | 20 | 11 | 1,452 | 1,916 | 3,308 | 2,047 | 2.28 | 5.83 | 50.15 | 21.13 |
| 3691-3699 | Other non-metal mineral products | 20 | 95 | 280 | 261 | 4,066 | 12,947 | 19,541 | 16,760 | 9.50 | 41.15 | 175.59 | 206.59 |
| 3710 | Basic metal | - | 6 | - | 10 | - | 720 | - | 20,185 | - | 24.29 | - | -12.17 |
| 3811-3819 | Fabricated Metal Products | 64 | 116 | 199 | 177 | 12,852 | 26,964 | 45,023 | 31,727 | 25.94 | 100.63 | 351.19 | 369.42 |
| 3822-3829 | Agricultural and Industrial Machinery | 7 | 15 | 19 | 13 | 572 | 973 | 5,011 | 4,085 | 0.82 | 6.00 | 46.91 | 60.54 |
| 3832-3839 | Electrical and Electronic Equipment | 14 | 17 | 33 | 33 | 1,554 | 2,923 | 9,752 | 8,001 | 3.90 | 16.64 | 92.67 | 93.31 |
| 3841-3844 | Transport Equipment | 7 | 14 | 27 | 27 | 730 | 4,284 | 20,014 | 12,766 | 1.06 | 54.30 | 1065.80 | 754.17 |
| 3851-3909 | Miscellaneous Equipment | 20 | 23 | 33 | 15 | 1,145 | 1,265 | 3,179 | 1,013 | 2.89 | 5.29 | 26.74 | 7.30 |
| | TOTAL | 704 | 1,290 | 2,315 | 2,110 | 128,519 | 244,252 | 453,624 | 322,396 | 394.05 | 1176.23 | 5340.74 | 5226.47 |

Source: Calculated from, Federal Office of Statistics, Industrial Survey of Nigeria, Various Issues

TABLE 4.7

STRUCTURE OF THE MANUFACTURING INDUSTRY BY EMPLOYMENT, VALUE ADDED AND ESTABLISHMENTS (PERCENTAGE)

| I.S.I.C CODE | INDUSTRY | ESTABLISHMENT | | | | EMPLOYMENT | | | | VALUE ADDED | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1970 | 1975 | 1980 | 1983 | 1970 | 1975 | 1980 | 1983 | 1970 | 1975 | 1980 | 1983 |
| 3111-3122 | Food Manufacturing | 21.8 | 21.4 | 24.4 | 29.7 | 14.4 | 19.0 | 9.1 | 12.3 | 12.1 | 17.0 | 5.7 | 12.5 |
| 3131-3140 | Beverage Industries | 2.4 | 1.3 | 2.3 | 2.3 | 5.8 | 4.3 | 10.8 | 6.0 | 24.1 | 11.0 | 21.9 | 14.7 |
| 3211-3120 | Textiles | 10.6 | 10.2 | 7.2 | 5.6 | 29.0 | 24.8 | 19.5 | 19.4 | 24.1 | 16.8 | 6.9 | 10.5 |
| 3231-3240 | Leather and Leather Products | 3.3 | 3.2 | 1.3 | 1.6 | 3.2 | 2.6 | 1.6 | 2.4 | 1.5 | 3.4 | 0.9 | 0.8 |
| 3311-3320 | Wood and Wood Products | 17.8 | 21.4 | 21.4 | 17.1 | 9.1 | 8.8 | 11.9 | 9.7 | 2.6 | 3.7 | 5.5 | 3.9 |
| 3411-3420 | Paper, Paper Products and Printing | 11.1 | 9.5 | 9.2 | 9.7 | 7.4 | 7.2 | 6.7 | 8.2 | 4.2 | 6.1 | 4.3 | 3.7 |
| 3511-3512 | Industrial Chemicals | 0.6 | 0.4 | 0.5 | 0.2 | 0.3 | 0.3 | 0.9 | 0.2 | 0.4 | 0.8 | 1.2 | 0.1 |
| 3521-3540 | Other Chemical Products | 6.0 | 4.0 | 3.2 | 3.3 | 5.0 | 4.9 | 6.4 | 7.1 | 13.9 | 14.5 | 13.1 | 21.9 |
| 3551-3560 | Rubber Products | 6.8 | 5.1 | 4.1 | 4.5 | 8.3 | 6.8 | 9.9 | 4.7 | 5.3 | 5.0 | 4.7 | 3.1 |
| 3610-3620 | Non-Metal Mineral Products | 0.9 | 1.2 | 0.9 | 0.5 | 1.1 | 0.8 | 0.7 | 0.6 | 0.6 | 0.5 | 0.9 | 0.4 |
| 3691-3699 | Other non-metal mineral products | 2.8 | 7.4 | 12.1 | 12.4 | 3.2 | 5.3 | 4.3 | 5.2 | 2.4 | 3.5 | 3.3 | 4.0 |
| 3710 | Basic metal | - | 0.5 | - | 0.5 | - | 0.3 | - | 6.3 | - | 2.1 | - | -0.2 |
| 3811-3819 | Fabricated Metal Products | 9.1 | 9.0 | 8.6 | 8.4 | 10.1 | 11.0 | 9.9 | 9.8 | 6.6 | 8.6 | 6.6 | 7.1 |
| 3822-3829 | Agricultural and Industrial Machinery | 1.0 | 1.2 | 0.8 | 0.6 | 0.4 | 0.4 | 1.1 | 1.3 | 0.2 | 0.5 | 0.8 | 1.2 |
| 3832-3839 | Electrical and Electronic Equipment | 2.0 | 1.3 | 1.4 | 1.6 | 1.2 | 1.2 | 2.1 | 2.5 | 1.0 | 1.4 | 1.7 | 1.8 |
| 3841-3874 | Transport Equipment | 1.0 | 1.1 | 1.2 | 1.3 | 0.6 | 1.8 | 4.4 | 4.0 | 0.3 | 4.6 | 20.0 | 14.2 |
| 3851-3909 | Miscellaneous Equipment | 2.8 | 1.8 | 1.4 | 0.7 | 0.9 | 0.5 | 0.7 | 0.3 | 0.7 | 0.5 | 0.5 | 0.1 |
| | TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Calculated from, Federal Office of Statistics, Industrial Survey of Nigeria, Various Issues

Nigeria's import substitution strategy of industrialization efforts have been geared toward the manufacturing of food. A probable reason for this is the abundant availability of the raw materials needed and the low technology involved.

The industry groups absorbing the bulk of the manpower are those manufacturing food and textiles. The number of employees in the food manufacturing industry group increased from 18,406 in 1970 to 41,156 in 1980 while that of the textile group increased from 37,203 in 1970 to 88,757 in 1980. The combined percentage shares of these two groups for 1970 and 1975 were respectively 43.4 and 43.8. This fell to 28.6 percent in 1980. Other industry groups like beverages and wood and wood products increased their share of employment in the sector from 14.9 percent in 1970 to 22.7 percent in 1980. But by 1983, the share of the textile and food group of industries again increased to 31.7 percent. The implication of this is that the food and textile industries are more labour intensive than the other industries. The wood and wood products industry group which was second to the food manufacturing industry in terms of number of establishments could not maintain the same position in the case of the number of employees. Industrial chemicals group, like in the case of the number of establishments had the lowest percentage share of manufacturing employees. The percentage share which was 0.3 in 1970 and 1975, rose to 0.9 in 1980 and then declined to 0.2 in 1983.

In terms of contribution to GDP, no single industry group or a particular set of industry group can claim supremacy over others. In 1970, three industry groups - Beverage, Textile and Other Chemical Products - accounted for 62.1 percent of the contribution of the sector to GDP. Out of this figure, the beverage and textiles groups were each responsible for 24.1 percent. But by 1975, the three industry groups that accounted for 48.0 percent of the contribution to GDP are the food manufacturing, textiles and other chemical products. In 1980, the beverage, transport equipment and other chemical products contributed 55.0 percent with the beverage and transport equipment respectively contributing 21.9 percent and 20.0 percents while in 1983, the same group of industries accounted for 50.8 percent with other chemical products industry alone contributing 21.9 percent. This shows that the value added of other chemical products had marvellously increased.

Industries producing industrial chemicals, non-metal mineral products and basic metal products were relatively insignificant in terms of number of establishments. These industries had ten establishments in 1970 representing 1.5 percent of the total. This share declined to 1.2 percent in 1983. In the case of employment and value added, industries producing industrial chemicals, non-metal mineral products, basic metals, agricultural and industrial machinery and transport equipment contributed relatively insignificantly.

These industries unfortunately have not completely fulfilled the aspirations of the high national priority accorded them.

The analysis so far revealed that the manufacturing sector has been heavily biased in favour of low technology and light finished consumer goods. Hence the sector has been dominated by a handful of industrial groups namely food, beverages, beer, spirits, soft drinks, textiles and tobacco. These industries dominate the manufacturing set up in terms of the number of establishments, value added and employment. The manufacturing industries have been biased against intermediate and capital goods. Though the 1970s saw a rapid expansion of high technology durable consumer goods industries (e.g. radio, air-conditioning, refrigerators and television sets), the basic engineering industries such as those manufacturing agricultural and industrial machinery and equipment and transport equipment are still at a low level of development.

This has serious implications for the ability of the industrial sector to act as an "engine" of growth. The industrial sector is often regarded as a leading sector because it is considered to be dynamic and also involves greater backward and forward linkages as compared to agriculture. If then most of the industries are consumer goods industries, an obstacle is already put on the extent in which the benefits of forward and backward linkages can be reaped.

## 4.4: Trade in Manufactures

### 4.4.1: Import Analysis by Import Groups and Standard Industrial Trade Classification (SITC)

Remarkable changes have been effected in the content of imports since independence as can be seen in Tables 4.8 and 4.9. The share of consumer goods imports out of total import value which was 46.3 percent in 1964 got to its lowest level of 26.2 percent in 1976. It increased to ₦3239.0 million (32.1 percent) in 1982 after which it declined to 27.1 percent in 1986.

The share of capital goods imports out of total import value had a fluctuating upward trend up to 1976. The share which was ₦142.8 million (28.1 percent) in 1964 increased to ₦2684.4 million in 1976. By 1986, it became ₦2585.2 million (43.3 percent). Generally, while the share of consumer goods in the total import was decreasing in the mid-1970s and increasing in the late 70s and early 80s, the share of capital goods and raw material was increasing in the mid-70s and falling in the late 70s and early 80s. This trend changed by 1986 when, the share of consumer goods declined to 27.1 percent and that of capital goods and raw materials increased to 72.8 percent. The implication of the pattern up to the mid-70s is that while the country was trying to increase the level of self-reliance in the supply of consumer goods, it was decreasing in the level of self-reliance in the supply of capital goods. The change in government policy in the late 1970s and

TABLE 4.8

IMPORT ANALYSIS BY END-USE AT CURRENT PRICES (₦ MILLION)

| IMPORT GROUP | 1964 | 1966 | 1968 | 1970 | 1972 | 1974 | 1976 | 1978 | 1980 | 1982 | 1984 | 1986 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Goods | 234.6 | 180.8 | 142.4 | 218.2 | 356.7 | 506.5 | 1348.8 | 2548.3 | 2579.6 | 3239.0 | 1369.8 | 1620.0 |
| Durable | 195.6 | 146.0 | 17.2 | 44.4 | 94.8 | 134.9 | 289.5 | 569 | 490.7 | 539.2 | 102.1 | 130.8 |
| Non-durable | 39.0 | 34.8 | 125.2 | 173.8 | 261.9 | 371.6 | 1059.3 | 1979.3 | 2088.9 | 2699.8 | 1267.7 | 1489.2 |
| Capital Goods and Raw Materials | 267.4 | 326.6 | 230.6 | 519.6 | 626.4 | 1220.2 | 3784.3 | 5579.0 | 5624.8 | 6824.5 | 3103.2 | 4347.6 |
| Capital Goods | 142.8 | 184.6 | 124.4 | 285.2 | 366.7 | 646.5 | 2684.4 | 3772.7 | 3551.0 | 4527.5 | 1786.4 | 2585.2 |
| Raw Material | 124.6 | 142.0 | 106.2 | 234.4 | 259.7 | 573.7 | 1099.9 | 1806.3 | 2073.8 | 2297.0 | 1316.8 | 1762.4 |
| Miscellaneous | 5.4 | 5.4 | 22.2 | 14.7 | 3.1 | 10.6 | 15.3 | 13.5 | 12.7 | 36.6 | 11.5 | 7.2 |
| TOTAL | 507.4 | 512.8 | 385.2 | 752.5 | 986.2 | 1737.3 | 5148.4 | 8140.8 | 8217.1 | 10100.1 | 4484.5 | 5974.8 |

Sources: (1) Federal Office of Statistics, Review of External Trade, Various issues.
(2) Central Bank of Nigeria, Annual Reports and Statements of Accounts, Various Issues

TABLE 4.9

IMPORT ANALYSIS BY END-USE IN PERCENTAGE

| IMPORT GROUPS | 1964 | 1966 | 1968 | 1970 | 1972 | 1974 | 1976 | 1978 | 1980 | 1982 | 1984 | 1986 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Goods | 46.3 | 35.3 | 37.0 | 29.0 | 36.2 | 29.2 | 26.2 | 31.3 | 31.4 | 32.1 | 30.5 | 27.1 |
| Durable | 38.5 | 28.5 | 4.5 | 5.9 | 9.6 | 7.8 | 5.6 | 7.0 | 6.0 | 5.3 | 2.3 | 2.2 |
| Non-durable | 7.8 | 6.8 | 32.5 | 23.1 | 26.6 | 21.4 | 20.6 | 24.3 | 25.4 | 26.7 | 28.2 | 24.9 |
| Capital Goods and Raw Materials | 52.7 | 63.7 | 59.9 | 69.0 | 63.5 | 70.2 | 73.5 | 68.5 | 68.4 | 67.5 | 69.2 | 72.8 |
| Capital Goods | 28.1 | 36.0 | 32.3 | 37.9 | 37.2 | 37.2 | 52.1 | 46.3 | 43.2 | 44.8 | 39.8 | 43.3 |
| Raw Materials | 24.6 | 27.7 | 27.6 | 31.1 | 26.3 | 33.0 | 21.4 | 22.2 | 25.2 | 22.7 | 29.4 | 29.5 |
| Miscellaneous | 1.0 | 1.0 | 3.1 | 2.0 | 0.3 | 0.6 | 0.3 | 0.2 | 0.2 | 0.4 | 0.3 | 0.1 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Sources: (1) Federal Office of Statistics, Review of External Trade, Various issues.

(2) Central Bank of Nigeria, Annual Reports and Statements of Accounts, Various issues.

early 1980s with regard to mass importation of consumer goods led to the observed pattern of the period.

The changing pattern of imports is evident when one examines Tables 4.10 and 4.11 which show disaggregation of imports by Standard Industrial Trade Classification. The share of manufactured goods classified which was ₦162.3 million (37.6 percent) in 1960, declined to ₦109.4 million (28.4 percent) in 1968 and then increased to ₦523.4 million (30.1 percent) in 1974. This has since then been on the decline. The proportion of all imported manufactured goods[8] declined from 48.7 percent in 1960, through 35.2 percent in 1970 and 30.7 percent in 1980 to 24.8 percent in 1986. On the other hand, the share of machinery and transport equipment which has been on the increase, rose from ₦103.3 million (23.9 percent) in 1960 to ₦282.6 million (37.4 percent) in 1970, ₦3363.1 million (40.9 percent) in 1980 and then declined to ₦2277.8 million (38.1 percent) in 1986. The period witnessed a downward trend in the percentage of beverages and Tobacco in the total import value. The general decline is a reflection of the expansion of domestic production of these goods most especially beer, soft drinks and tobacco.

4.4.2: Export Analysis by Standard Industrial Trade Classification (SITC)

As can be seen in Tables 4.12 and 4.13, the share

8. The manufactured goods here include manufactured goods classified and miscellaneous manufactured goods.

TABLE 4.10

IMPORTS BY COMMODITY SECTIONS, S.I.T.C. (₦ MILLION)

| STANDARD INDUSTRIAL TRADE CLASSIFICATION (S.I.T.C) SECTIONS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Total all Sections | 0 Food and live Animals | 1 Beverages and Tobacco | 2 Crude Materials | 3 Mineral, fuel Lubricant and Related materials | 4 Animals and vegetable oil and Fat | 5 Chemicals | 6 Manufactured goods classified | 7 Machinery and Transport Equipment | 8 Miscellaneous Manufactured Articles | 9 Miscellaneous Transaction |
| 1960 | 431.8 | 47.8 | 12.3 | 4.3 | 22.7 | 0.1 | 24.5 | 162.3 | 103.3 | 47.8 | 6.7 |
| 1962 | 406.4 | 47.0 | 9.5 | 4.8 | 28.1 | 0.2 | 24.7 | 146.1 | 96.5 | 43.3 | 6.1 |
| 1964 | 507.4 | 41.2 | 5.8 | 7.4 | 39.0 | 0.2 | 34.2 | 179.2 | 149.8 | 45.0 | 5.6 |
| 1966 | 512.8 | 51.6 | 4.6 | 14.4 | 7.6 | 0.4 | 41.6 | 158.6 | 190.8 | 37.6 | 5.6 |
| 1968 | 385.2 | 28.4 | 2.3 | 10.5 | 29.1 | 0.6 | 44.9 | 109.4 | 119.7 | 28.0 | 12.2 |
| 1970 | 752.6 | 57.7 | 4.0 | 16.7 | 22.1 | 0.8 | 88.4 | 226.1 | 282.6 | 39.5 | 14.7 |
| 1972 | 986.2 | 95.1 | 4.3 | 20.7 | 9.8 | 1.1 | 102.6 | 267.9 | 398.5 | 83.1 | 3.1 |
| 1974 | 1737.3 | 154.8 | 9.0 | 63.7 | 55.4 | 3.6 | 191.0 | 523.4 | 611.8 | 114.0 | 10.6 |
| 1976 | 5148.5 | 440.9 | 64.0 | 78.9 | 175.0 | 24.7 | 397.0 | 1136.2 | 2444.7 | 371.8 | 15.3 |
| 1978 | 8140.8 | 1027.1 | 52.3 | 108.8 | 157.0 | 81.3 | 640.2 | 1873.6 | 3562.8 | 624.2 | 13.5 |
| 1980 | 8217.1 | 1049.0 | 12.8 | 164.1 | 118.8 | 96.4 | 881.0 | 1929.3 | 3363.1 | 589.9 | 12.7 |
| 1982 | 10100.1 | 1642.2 | 16.4 | 207.2 | 115.5 | 151.4 | 981.6 | 2137.1 | 4169.9 | 642.3 | 36.6 |
| 1984 | 4484.5 | 843.2 | 10.4 | 187.5 | 52.1 | 101.8 | 656.4 | 846.0 | 1604.4 | 171.2 | 11.5 |
| 1986 | 5974.7 | 802.0 | 14.5 | 193.9 | 32.0 | 124.8 | 1039.0 | 1237.1 | 2277.8 | 246.4 | 7.2 |

Sources: 1. Federal Office of Statistics, Review of External Trade, 1979, 1983, 1987

2. Federal Office of Statistics, Annual Abstract of Statistics, Various Issues

TABLE 4.11

IMPORTS BY COMMODITY SECTIONS, S.I.T.C.
(PERCENTAGE)

| Year | Total all Sections | STANDARD INDUSTRIAL TRADE CLASSIFICATION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1960 | 100.00 | 11.1 | 2.8 | 1.0 | 5.2 | 0.0 | 5.7 | 37.6 | 23.9 | 11.1 | 1.6 |
| 1962 | 100.00 | 11.6 | 2.3 | 1.2 | 6.9 | 0.0 | 6.0 | 36.0 | 23.8 | 10.7 | 1.5 |
| 1964 | 100.00 | 8.1 | 1.2 | 1.5 | 7.6 | 0.0 | 6.7 | 35.3 | 29.5 | 8.9 | 1.2 |
| 1966 | 100.00 | 10.1 | 0.9 | 2.8 | 1.5 | 0.1 | 8.1 | 30.9 | 37.2 | 7.3 | 1.1 |
| 1968 | 100.00 | 7.3 | 0.6 | 2.7 | 7.6 | 0.2 | 11.6 | 28.4 | 31.1 | 7.3 | 3.2 |
| 1970 | 100.00 | 7.7 | 0.5 | 2.2 | 2.9 | 0.1 | 11.7 | 30.0 | 37.4 | 5.2 | 1.9 |
| 1972 | 100.00 | 9.6 | 0.4 | 2.1 | 1.0 | 0.1 | 10.4 | 27.2 | 40.5 | 8.4 | 0.3 |
| 1974 | 100.00 | 8.9 | 0.5 | 3.7 | 3.2 | 0.2 | 11.0 | 30.1 | 35.2 | 6.6 | 0.6 |
| 1976 | 100.00 | 8.6 | 1.2 | 1.5 | 3.4 | 0.5 | 7.7 | 22.1 | 47.5 | 7.2 | 0.3 |
| 1978 | 100.00 | 12.6 | 0.6 | 1.3 | 1.9 | 1.0 | 7.9 | 23.0 | 43.8 | 7.7 | 0.2 |
| 1980 | 100.00 | 12.8 | 0.2 | 2.0 | 1.4 | 1.2 | 10.7 | 23.5 | 40.9 | 7.2 | 0.2 |
| 1982 | 100.00 | 16.3 | 0.2 | 2.1 | 1.1 | 1.5 | 9.7 | 21.2 | 41.3 | 6.2 | 0.4 |
| 1984 | 100.00 | 18.8 | 0.2 | 4.2 | 1.2 | 2.3 | 14.6 | 18.9 | 35.8 | 3.8 | 0.3 |
| 1986 | 100.00 | 13.4 | 0.2 | 3.2 | 0.5 | 2.1 | 17.4 | 20.7 | 38.1 | 4.1 | 0.1 |

Sources: (1) Federal Office of Statistics, Review of External Trade, 1979, 1983, 1987.

(2) Federal Office of Statistics, Annual Abstract of Statistics, Various issues.

Note 0 - Food and Live Animals
1 - Beverages and Tobacco
2 - Crude Materials
3 - Mineral, Fuel, Lubricant and Related Material
4 - Animals and Vegetable Oil and Fat
5 - Chemicals
6 - Manufactured Goods Classified
7 - Machinery and Transport equipment
8 - Miscellaneous manufactured articles
9 - Miscellaneous Transactions

TABLE 4.12

EXPORTS BY COMMODITY SECTIONS, S.I.T.C (₦ MILLION)

| Year | Total all Sections | STANDARD INDUSTRIAL TRADE CLASSIFICATION (S.I.T.C) SECTIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 Food and live Animals | 1 Beverage and Tobacco | 2 Crude Materials | 3 Mineral, fuel Lubricant and Related materials | 4 Animals and vegetable oil and Fat | 5 Chemicals | 6 Manufactured goods classified | 7 Machinery and Transport Equipment | 8 Miscellaneous Manufactured articles | 9 Miscellaneous Transactions |
| 1960 | 331.2 | 86.0 | 0.0 | 188.7 | 9.1 | 38.7 | 0.4 | 3.0 | - | 0.0 | 5.3 |
| 1962 | 328.0 | 74.8 | 0.2 | 164.4 | 33.8 | 30.3 | 0.5 | 17.7 | - | 0.1 | 6.2 |
| 1964 | 420.9 | 94.3 | 0.1 | 186.4 | 64.5 | 38.8 | 0.2 | 29.5 | - | 0.1 | 7.0 |
| 1966 | 557.4 | 75.1 | 0.2 | 200.8 | 186.3 | 49.0 | 0.1 | 38.0 | - | 0.1 | 7.8 |
| 1968 | 413.0 | 131.5 | 0.0 | 142.1 | 75.1 | 25.9 | 0.1 | 32.7 | - | 0.2 | 5.4 |
| 1970 | 887.1 | 167.7 | 0.0 | 122.8 | 520.0 | 32.9 | 0.3 | 39.1 | - | 0.2 | 4.1 |
| 1972 | 1421.8 | 125.0 | 0.0 | 63.5 | 1180.0 | 16.7 | 0.6 | 27.5 | - | 0.1 | 7.6 |
| 1974 | 5794.8 | 199.1 | 0.1 | 123.2 | 5386.7 | 33.5 | 1.5 | 37.6 | 2.5 | 0.4 | 10.2 |
| 1976 | 6751.1 | 261.5 | 0.0 | 58.4 | 6368.3 | 3.7 | 0.9 | 27.6 | 4.6 | 0.3 | 25.8 |
| 1978 | 6056.0 | 447.6 | 0.1 | 58.2 | 5473.2 | 3.9 | N/A | 31.6 | 4.2 | N/A | 37.4 |
| 1980 | 13687.4 | 221.1 | 0.0 | 44.0 | 13330.7 | 15.9 | 1.0 | 17.4 | 0.6 | 0.5 | 56.2 |
| 1982 | 9196.4 | 184.0 | 0.0 | 25.6 | 8929.6 | 2.5 | 0.1 | 14.3 | 0.0 | 0.1 | 40.2 |
| 1984 | 9127.8 | 234.7 | 0.0 | 15.4 | 8685.4 | 4.7 | 0.9 | 12.4 | 0.0 | 0.0 | 174.3 |
| 1986 | 9047.5 | 442.6 | 0.5 | 55.8 | 8425.7 | 1.0 | 1.6 | 1.9 | 0.0 | 0.0 | 118.4 |

Sources: (1) Federal Office of Statistics, Review of External Trade, 1979, 1983, 1987

(2) Federal Office of Statistics, Annual Abstract of Statistics, Various Issues

## TABLE 4.13

## EXPORTS BY COMMODITY SECTIONS, S.I.T.C. (PERCENTAGE)

| Year | Total all Sections | STANDARD INDUSTRIAL TRADE CLASSIFICATION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1960 | 100 | 26.0 | 0.0 | 57.0 | 2.7 | 11.7 | 0.1 | 0.9 | - | 0.0 | 1.6 |
| 1962 | 100 (1) | 22.8 | 0.1 | 50.1 | 10.3 | 9.2 | 0.2 | 5.4 | - | 0.0 | 1.9 |
| 1964 | 100 | 22.4 | 0.0 | 44.3 | 15.3 | 9.2 | 0.1 | 7.0 | - | 0.0 | 1.7 |
| 1966 | 100 (2) | 13.5 | 0.0 | 36.0 | 33.4 | 8.8 | 0.0 | 6.8 | - | 0.0 | 1.4 |
| 1968 | 100 | 31.8 | 0.0 | 34.4 | 18.2 | 6.3 | 0.0 | 7.9 | - | 0.1 | 1.3 |
| 1970 | 100 | 18.9 | 0.0 | 13.8 | 58.6 | 3.7 | 0.0 | 4.4 | - | 0.0 | 0.5 |
| 1972 | 100 | 8.8 | 0.0 | 4.5 | 83.0 | 1.2 | 0.0 | 1.6 | - | 0.0 | 0.5 |
| 1974 | 100 | 3.4 | 0.0 | 2.1 | 93.0 | 0.6 | 0.0 | 0.6 | 0.0 | 0.0 | 0.2 |
| 1976 | 100 | 3.9 | 0.0 | 0.9 | 94.3 | 0.1 | 0.0 | 0.4 | 0.1 | 0.0 | 0.4 |
| 1978 | 100 | 7.4 | 0.0 | 1.0 | 90.4 | 0.1 | N/A | 0.5 | 0.1 | N/A | 0.6 |
| 1980 | 100 | 1.6 | 0.0 | 0.3 | 97.4 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.4 |
| 1982 | 100 | 2.0 | 0.0 | 0.3 | 97.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.4 |
| 1984 | 100 | 2.6 | 0.0 | 0.2 | 95.2 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 1.9 |
| 1986 | 100 | 4.9 | 0.0 | 0.6 | 93.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 |

**Sources:** (1) Federal Office of Statistics, Review of External Trade, 1979, 1983, 1987.

(2) Federal Office of Statistics, Annual Abstract of Statistics, Various Issues.

**Note:**
0 - Food and Live Animals
1 - Beverages and Tobacco
2 - Crude Materials
3 - Mineral, Fuel, Lubricant and Related Material
4 - Animals and Vegetable Oil and Fat
5 - Chemicals
6 - Manufactured Goods Classified
7 - Machinery and Transport equipment
8 - Miscellaneous Manufactured articles
9 - Miscellaneous Transactions

of manufactured goods in total exports which stood at ₦3.0 million (0.9) percent) in 1960, got to its highest peak of ₦32.7 million (7.9 percent) in 1968. This was before the advent of Petroleum. With the advent of petroleum, the share of manufactured goods declined to 4.4 percent in 1970, 0.1 percent in 1980 and below 0.1 percent in 1986. Machinery and Transport equipment was not only exported between 1974 and 1978, its share was relatively very low. Equally low were the shares of Beverages and Tobacco and Miscellaneous manufactured articles. On the other hand, crude materials had the largest percentage share in the total value of exports between 1960 and 1968 after which the share of Petroleum became paramount. The share which was 57.0 percent in 1960 progressively declined to 34.4 percent in 1968. The share of Mineral, Fuel, Lubricant and Related materials which was 18.2 percent in 1968 increased to 58.6 percent in 1970. It got to the highest peak of 97.4 percent in 1980. By 1986, it has declined to 93.1 percent.

From the foregoing analysis, it can be concluded that not much has been achieved in terms of the export of manufactured goods.

### 4.4.3: Import Content of Apparent Consumption

Table 4.14 shows that the import content of apparent consumption in Nigeria remains very high as far as manufactured products are concerned despite more than two and a half decades of intensive pursuit of

TABLE 4.14

AVERAGE OF SELECTED INPUT COEFFICIENT IN THE MANUFACTURING SECTOR, 1973 - 75

| INDUSTRY GROUP | RAW MAT. IMPORT/ VALUE ADDED | IMPORT/ TOTAL SUPPLY | IMPORTED RAW MAT./ TOTAL RAW MATERIALS |
|---|---|---|---|
| Meat products | 0.508 | 0.382 | 0.701 |
| Dairy products | 0.465 | 0.631 | 0.907 |
| Fruit Canning and Processing | 0.361 | 0.657 | 0.741 |
| Vegetable oil milling | 0.122 | 0.103 | 0.074 |
| Grain mill products | 1.828 | 0.474 | 0.919 |
| Bakery Products | 0.029 | 0.328 | 0.092 |
| Sugar factory/Sugar and chocolate - confectionery | 0.644 | 0.509 | 0.527 |
| Miscellaneous food preparation | 0.251 | 0.856 | 0.223 |
| Animal feeds | 0.122 | 0.125 | 0.507 |
| Spirit Distillery | 0.112 | 0.437 | 0.209 |
| Beer Brewing, soft drinks. tobacco | | | |
| Spinning, weaving and finished textiles | 0.371 | 0.369 | 0.471 |
| Make up Textile goods (except weaving approved) | 2.333 | 0.500 | 0.746 |
| Wearing Apparel | 0.145 | 0.889 | 0.401 |
| Knitted goods | 1.346 | 0.365 | 0.987 |
| Tanning | 0.622 | 0.267 | 0.469 |
| Travel Goods | 0.646 | 0.399 | 0.699 |
| Leather Foot wear | 0.206 | 0.250 | 0.324 |
| Manufacture of carpets and rugs | 0.691 | 0.498 | 0.936 |
| Saw milling | 0.029 | 0.080 | 0.049 |
| Wooden Furniture and Fixtures | 0.166 | 0.360 | 0.349 |
| Paper containers, paper boxes, etc. | 0.848 | 0.685 | 0.761 |
| Paper and other Paper products | 0.391 | 0.778 | 0.702 |
| Printing | 0.341 | 0.350 | 0.731 |
| Basic Industrial Chemicals/Fertilisers and Pesticides | 0.317 | 0.992 | 0.824 |
| Paints | 0.471 | 0.583 | 0.678 |
| Drugs and medicines | 0.216 | 0.838 | 0.841 |
| Soaps, perfumes, cosmetics and others | 0.603 | 0.161 | 0.613 |
| Other chemical products | 0.139 | 0.659 | 0.839 |
| Products of Petroleum and Coal | 0.492 | 0.177 | 0.813 |
| Tyres and Tubes | 0.492 | 0.177 | 0.813 |
| Other rubber products | 0.207 | 0.508 | 0.278 |
| Plastic Products | 0.968 | 0.742 | 0.806 |
| Pottery Products | 0.300 | 0.815 | 0.769 |
| Glass products | - | - | - |
| Bricks and Tiles | 0.148 | 0.416 | 0.261 |
| Cement | 0.113 | 0.682 | 0.564 |
| Other concrete products | 3.200 | 0.829 | 0.459 |
| Basic metal | 0.274 | 0.705 | 0.258 |
| Cutlery, Hand tools and general hardware | | | |
| Metal Furniture and fixtures | 0.676 | 0.430 | 0.824 |
| Structural metal products | 0.655 | 0.363 | 0.655 |
| Fabricated metal products | 2.003 | 0.205 | 0.957 |
| Agricultural machinery | 0.104 | 0.939 | 0.501 |
| Industrial Machinery/Other machinery and equipments | 1.621 | 0.989 | 0.684 |
| Radio and T.V. Communication equipment | 0.879 | 0.875 | 0.799 |
| Household electrical apparatus/Other electrical supplies | 1.428 | 0.936 | 0.898 |
| Motor Body Building | 0.205 | 0.927 | 0.734 |
| Ship Building | 0.309 | 0.994 | 0.770 |
| Miscellaneous Products | 0.045 | 0.825 | 0.556 |

SOURCE: Federal Government of Nigeria, Fourth National Development Plan: 1981-1985, Vol.I, pp. 176-7, Table 12.6.

import-substitution policies. As can be seen in column 3 of table 4.14, there is no single industrial product in which Nigeria was self-sufficient in 1973-75. The worst industry groups are those of other machinery and equipment and agricultural machinery, where the degree of dependence were 98.9 percent and 93.9 percent respectively. Others are household electrical apparatus and other electrical supplies (93.6 percent), motor body building (92.7 percent), ship building (89.4 percent), basic industrial chemical, fertilizers and pesticides (89.2 percent), wearing apparels (88.9 percent), radio, television and communication equipment (87.5 percent), drugs and medicine (83.3 percent). From the same table, it can be seen that certain industry groups are capable of attaining self-sufficiency in the foreseable future if serious efforts are made to increase local production capacity. These industry groups are the saw milling in which Nigeria's level of depence on imports was 8 percent, vegetable oil milling (10.3 percent), spirit, distillery and beer brewing (12.5 percent), soaps, perfumes and other cleansing preparations (16.1 percent), tyres and tubes (17.7 percent), etc. A more recent picture of import to apparent consumption is as shown in Table 4.15. Even though the table is of course incomplete with the major omission being products in the ISIC category 38 (i.e. machinery and transport equipment), it is clear that the manufacturing sector has only made effective inroads into a very small number of product areas, mainly confined to the food manufacturing, footwear, wearing

TABLE 4.15

IMPORT TO APPARENT CONSUMPTION RATIO, 1979-1984
(PERCENTAGE)

| 0% - 9% | 10% - 29% | 30% - 49% | 50% - 90% | 100% |
|---|---|---|---|---|
| Cocoa butter, Cotton woven fabrics, Veneer sheets, Particle boards, Kerosene, Distillate fuel, Liquified petroleum gas. | Raw Sugar, Cocoa powder, Vegetable oils, Footwear, Residual fuel oils, Tin unwrought | Prepared animal feed, Non-cellulosic staple and tow, Motor gasoline, Lead refined | Cotton yarn, Lubricating oil, Glass bottles | Refined sugar, Wool yarn, Wollen woven fabrics, Wood pulp, Fibre pulp, Wood pulp dissolving, Wood pulp sulphates, Wood pulp sulphite, Wood pulp semi-chemical, Newsprint, Other printing paper, Kraft paper, Other paper, Methanol, Chlorine, Sulphuric acid, Nitric acid, Zinc oxide, Titanuin oxide, Lead oxide, Ammonia, Caustic soda, Dye stuffs, Nitrogenous fertilizers, Phospatic fertilizers, Poltaric fertilizers, Rubber synthetic, Regenerated cellulose, Plates and sheets, Railway tracks, Steel castings, copper refined, Copper bars, Copper tubes, Copper plates, Aluminuim unwrought, Aluminium bars, Aluminium plates, Aluminium tubes, Zinc unwrought, Zinc plates. |

Source: UNIDO, Industrial Review Series: Nigeria, December, 1988, p. 24

apparel and petroleum related branches.

Available statistics show that import to apparent consumption ratios approach 100 percent in the case of no less than 65 percent of the products. This is significantly above average when compared with similar data for other African countries.[9] It can equally be seen in the table, that significant scope for import substitution remains in the paper, chemical, petrochemical (particularly fertilizers and pesticides) and metal product industries. A viable industrialisation strategy therefore calls for a concentration on the opportunities available for efficient import substitution.

4.4.4: Share of Imports in Industrial Inputs

The import content of industrial inputs is highest in the intermediate and capital goods subsectors (see table 4.16). It stood at 80.7 percent for electrical machinery in mid-1987, followed by industrial plastic and rubber (79.4 percent), vehicles (78.2 percent), paper products (60.1 percent), chemicals and pharmaceuticals (55.8 percent) and basic metal and fabricated metal products (50.3 percent). As can equally be seen in column 4 of table 4.14, some industrial group are most heavily dependent on imported raw materials. These are

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9/ The average import-to-apparent consumption ratio for manufacturing products for 40 African countries approached 100 percent in 63 per cent of the cases for the 1981-1983 period. See UNIDO, "Industry and Debt in Africa", Industry and Development, No. 17, 1987, pp. 1-6.

TABLE 4.16

SHARE OF IMPORTS IN INDUSTRIAL INPUTS, MID-1987
(PERCENTAGE)

| Sub-sector of manufacturing | Imports as per cent of industrial inputs |
|---|---|
| Food, beverages, tobacco | 34.8 |
| Wood and wood products | 22.4 |
| Non-metallic minerals | 23.5 |
| Textile and wearing apparel | 47.6 |
| Chemicals and pharmaceuticals | 55.8 |
| Industrial plastic and rubber | 79.4 |
| Basic metal and fabricated metal products | 50.3 |
| Vehicles | 78.2 |
| Electrical machinery | 80.7 |
| Paper products | 60.1 |

Source: Manufacturers Association of Nigeria, Sample Survey of the Manufacturing Sector, June 1987.

knitted goods (98.7 percent), fabricated metal products (95.9 percent), Grain mill products (91.9 percent). A survey conducted by UNIDO found that in the early 1980s, 60 percent of the raw material consumed in the manufacturing sector was imported.[10] A sample conducted by MAN in mid-1987 found that the use of imported raw materials had declined significantly particularly in the consumer goods subsector.[11] The principal cause of this decline was the devaluation of the naira and the rapid increase in the cost of imported raw materials - on the average import costs rose by 47 percent faster than the cost of domestic raw material inputs in the period January - June 1987.[12] It must be stressed that because of the structure of output which is dominated by the food, textile, footwear and petroleum refining industries that are local resource based, the average share of local resource content in gross output is reasonably high. There is an urgent necessity to accelerate the use of domestic resource content of manufactured output. There is a need to increase the backward integration of the Nigerian manufacturing industry. This is of particular importance with respect to the agro-based industries



10. UNIDO, Industry Development Review Series: Nigeria, IS. 557, 1985, p. 27.

11. The sample contained responses from 222 manufacturing firms. The Survey does not state the share of the respondent firms in terms of manufacturing value added (MVA), gross output or manufacturing employment.

12. Manufacturers Association of Nigeria, Sample Survey of the manufacturing sector, June 1987, p. 7.

for which there exists enormous resource potential.

4.5: Spatial Structure of Manufacturing

With the number of establishments and employment as indicators and the States as units, the broad distributional pattern of Nigerian manufacturing industries in 1975 is as shown in Table 4.17. The overall State distribution which was rather uneven had the highest number of establishments located in Lagos. Out of a total number of 1290 establishments, Lagos State had 346 (26.8 percent) while Anambra, Bendel and Oyo States had 10.2 percent, 8.4 percent and 7.8 percent respectively. These four States accounted for 53.2 percent of the total number of establishments in Nigeria even though their population stood at 22.9 percent of the total for the country. There was a great disparity in industrial distribution between the Southern and the Northern parts of the country. By 1975, 75.1 percent of industrial establishments and 74.3 percent of industrial employment were concentrated in the South even though it accounted for 46.9 percent of Nigeria's population. Even when explicit allowance is made for the differences in the State distribution of population, and a more realistic basis of comparison obtained by computing

13. The figures on the population of states were collected from Manpower Board, Federal Ministry of National Planning Publications.

TABLE 4.17

DISTRIBUTION OF MANUFACTURING ESTABLISHMENTS AND EMPLOYMENT AMONG THE STATES: 1975

| States | No. of Establishments | % of Total | Number Employed | % of Total |
|---|---|---|---|---|
| Anambra | 131 | 10.2 | 11,023 | 4.5 |
| Bauchi | 8 | 0.6 | 465 | 0.2 |
| Bendel | 108 | 8.4 | 16,888 | 6.9 |
| Benue | 26 | 2.0 | 795 | 0.3 |
| Borno | 10 | 0.8 | 531 | 0.2 |
| Cross River | 66 | 5.1 | 23,521 | 9.6 |
| Gongola | 9 | 0.7 | 786 | 0.3 |
| Imo | 76 | 5.9 | 4,364 | 1.8 |
| Kaduna | 59 | 4.6 | 24,765 | 10.1 |
| Kano | 89 | 6.9 | 19,106 | 7.8 |
| Kwara | 28 | 2.2 | 7,590 | 3.1 |
| Lagos | 346 | 26.8 | 105,086 | 43.0 |
| Niger | 16 | 1.2 | 343 | 0.1 |
| Ogun | 53 | 4.1 | 1,890 | 0.8 |
| Ondo | 50 | 3.9 | 3,690 | 1.5 |
| Oyo | 100 | 7.8 | 7,474 | 3.1 |
| Plateau | 42 | 3.3 | 4,241 | 1.7 |
| Rivers | 37 | 2.9 | 7,629 | 3.1 |
| Sokoto | 36 | 2.8 | 4,056 | 1.7 |
| TOTAL | 1,290 | 100.2 | 244,243 | 99.8 |

**Source:** (1) Federal Office of Statistics, Industrial Survey, 1975-78.

**Note:** The Federal Office of Statistics has discontinued presenting figures on the State distribution of manufacturing establishments, value added or production in the surveys from 1976.

the industrial location quotient,[14] the disproportionate concentration is still noticeable. From the industrial location quotient for 1958-62, the predominance of the South-West part of the country (Lagos and the Old Western Region including Mid-West) in manufacturing activities was evident. During that period, Lagos had 1.4 while the West recorded 1.3. With the creation of more States in 1967, Nigeria's problem of spatial non-diversification of manufacturing industries became more obvious. Of all the twelve States in Nigeria in 1970, seven (North-Eastern, Benue-Plateau, North-Western, South-Eastern, Western, Kano and Kwara) States had location quotients of less than 1. This indicates that their share

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14. The computation of Industrial Location Quotient used the formula stated below which is credited to A. Adejugbe, in F. A. Olaluku et. al. op. cit., p. 43.

$$\frac{\text{Number employed in manufacturing in a state}}{\text{Number employed in manufacturing in Nigeria}} \div \frac{\text{State Population}}{\text{Population of Nigeria}}$$

Industrial Location Quotient is a measure of the degree of industrial concentration in a sub-area compared with the general concentration in the whole area. Either the labour or value added index can be employed. Its value ranges from zero to infinity. A unitary, less than one or more than one industrial location quotient indicates that the state's share of industry is proportional, less than proportional or more than proportional to its size respectively.

of manufacturing activities fell below what they should have been in view of their share of the total population of the country. Out of the five States with location quotient of 1 and above, Lagos State exhibited the highest industrial concentration with a location quotient of 13.50.[15] By 1973, there were not major changes in the distributional pattern even though the location quotient for Lagos had increased from 13.50 to 17.51, with that of Bendel declining from 2.53 to 1.37.[16] By 1975, Lagos State still had the highest industrial location quotient of 14.39, followed by Bendel (1.58), Cross River (1.56) and Kaduna (1.40) as shown in Table 4.18.

This distributional pattern is largely due to purely economic considerations such as nearness and easy accessibility to the market, sources of raw materials, labour and other cooperant factors. Since a large percentage of Nigeria's manufactures are consumer goods, the production of which are based largely on imported raw materials and capital goods, the industries are mainly market oriented. Consequently,



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15. O. Teriba, E. C. Edozien and M. O. Kayode, The Structure of Manufacturing Industry in Nigeria, Ibadan, Ibadan University Press, 1981, pp. 71-71.

16. O. A. Adejugbe, "Manufacturing" in F. A. Olaloku, et. al. op. cit. p. 43.

TABLE 4.18

NIGERIA: LOCATION QUOTIENT OF REGIONAL DISTRIBUTION OF MANUFACTURING ESTABLISHMENTS BY STATE (1975)

| State | Location Quotient* |
|---|---|
| Anambra | 0.71 |
| Bauchi | 0.04 |
| Bendel | 1.58 |
| Benue | 0.08 |
| Borno | 0.04 |
| Cross River | 1.56 |
| Gongola | 0.07 |
| Imo | 0.27 |
| Kaduna | 1.40 |
| Kano | 0.76 |
| Kwara | 0.95 |
| Lagos | 14.93 |
| Niger | 0.07 |
| Ogun | 0.24 |
| Ondo | 0.31 |
| Oyo | 0.33 |
| Plateau | 0.48 |
| Rivers | 0.95 |
| Sokoto | 0.21 |

Sources: Compiled from

(1) Federal Office of Statistics, Industrial Survey of Nigeria, 1975-1978.

(2) Federal Office of Statistics, Annual Abstract of Statistics, Various Issues.

Note: 1. *LQ = $\frac{\text{Number Employed in Manufacturing in a State}}{\text{Number Employed in Manufacturing in Nigeria}} \div \frac{\text{State Population}}{\text{Population of Nigeria}}$

2. The Federal Office of Statistics has discontinued presenting figures on the State distribution of manufacturing value added or production in the surveys from 1976.

they are located in the coastal areas with heavy urban concentration of population and the largest consuming areas of States offering all the local protection of distance from the coastal areas. The congestion in these areas is already serving as disincentives to further industrial concentration in these areas. This congestion points to the fact that there has been no marked or effective industrial policy on industrial dispersal in Nigeria. At the Federal level, the location policy was little more than a general process of persuasion addressed to foreign investors to invest in Nigeria. A more direct and more active industrial location policy is to be found at the level of the State governments. The active competitive inducement for particular private firms to be located in alternative areas of the country was more of an activity pursued at the level of State government.



## 4.6: Investment and Ownership Structure

Investment has declined significantly during the recession of the 1980s. The gross domestic investment to GDP ratio has declined from 19 percent in 1965 to 12 percent in 1986, though the Fourth National Development Plan expected a gross domestic investment ratio of 15.6 percent. Under the Structural Adjustment Programme,

total capital expenditure was planned to be of the order of ₦17.710 million (in current prices). Industry was to obtain ₦2,693 million (i.e. 15 percent) and oil and gas a total of ₦1,954 million (11 percent) of the total public investment. Only the agricultural sector's share of 18.7 percent of total planned investment expenditure was significantly higher.[17] This is a reflection of the relatively high priority the government places on investment in manufacturing industry.

Estimates of the inter-branch investment in Nigerian manufacturing over the period 1971-1985 are presented in Table 4.19. Though comparability in terms of sectoral shares, particularly over time is strictly limited, the estimates permit a few generalisation. The first of these is the importance of the public sector which clearly stands out. The public sector is responsible for the bulk of investment in the intermediate and capital goods industries. During the period 1971-78, about two-thirds of investments in the intermediate and capital goods industries originated from the public sector. Investment levels during the Fourth National Development Plan envisaged only a small reduction in the public sectors participation within the intermediate and capital goods sector.

Another discernible feature is the concentration of private investment in consumer goods industries. While the share of private investment in the consumer

17. UNIDO, Industrial Development Review Series: Nigeria, 1988, p. 29.

TABLE 4.19

DISTRIBUTION OF MANUFACTURING INVESTMENT, 1971 - 85 (VALUE IN ₦ MILLION)

| | PRIVATE | | | | | PUBLIC | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Consumer Goods | | Intermediate and capital Goods | | Total | Consumer Goods | | Intermediate and capital Goods | | Total |
| Year | Value | Percent | Value | Percent | Value | Value | Percent | Value | Percent | Value |
| 1971-1974 | 252.4 | 70.6 | 105.2 | 29.4 | 357.6 | 161.0* | 11.12* | 1,286.2* | 85.57* | 1,447.2 |
| 1975-1978 | 1,439.2 | 73.2 | 527.1 | 26.8 | 1,965.3 | | | | | |
| 1975-1981 | - | - | - | - | | 782.0 | 20.60 | 3,017.2 | 79.40 | 3,799.2 |
| 1981-1985** | - | - | - | - | 3,000 | 500.0 | 9.21 | 4,924.0 | 90.78 | 5,424.0 |

Source: Forrest, T. (1983), "Recent Nigerian Industrialization" in Fransman, M., Industry and Accumulation in Africa, London, Heinman, p. 335 and Federal Republic of Nigeria, Fourth National Development Plan,

* 1970 - 1978

* * Planned Investment in the Fourth National Development Plan

goods industries has risen, that of the public investment has declined at least uptill 1978. Furthermore, private sector investment has grown faster in the consumer goods industries than in the intermediate and capital goods industries.

Over the period 1970-78, investment in manufacturing industry grew rapidly. Gross investment which was estimated at ₦500-₦530 million during 1971-74 period rose to ₦3.6 billion during 1975-1978 period. Direct public investment contributed at least 60 percent of this amount. Private investment which grew rapidly during 1975-77 slowed down later following the indigenisation decree of 1977. After 1978, investment levels in the manufacturing sector became reduced, due to the government's decision in and after 1982 to restrict imports and to postpone and reschedule major industrial projects.[18]

Foreign investment also contracted during 1978-1984. Until 1975, foreign investment was the dominant factor in Nigerian manufacturing sector. In 1975, private non-Nigerians held 42 percent of the equity of large scale manufacturing enterprises.[19] Foreign manufacturing investment represented about 22 percent of total foreign investment in Nigeria during

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18. UNIDO, op. cit., p. 30.

19. T. Forrest, "Recent Nigerian Industrialization", in Fransman, M., Industry and Accumulation in Africa, London, Heinman, 1983, p. 335.

1965-1976.

While in the 1960s annual inflow of net direct private foreign investment on the average exceeded outflows in the form of profit, dividends and other service payments by about 18 percent, the outflows exceeded net direct, private foreign investment during the period 1970-1978. There has been relatively small new foreign investment during the 1980s. Unlike many other African countries this flow has not completely dried up. Thus during 1984-1986, net foreign investment equalled about ₦800 million.[20]

The government's privatisation programme has been designed to encourage the growth of direct foreign investment. If the programme is fully implemented, then it will be a significant policy departure from the emphasis previously laid on the indigenisation of the management and control of the large scale enterprises.

Nigeria's industrialization process initially promoted a high concentration of foreign ownership in the manufacturing sector. This was due to lack of dynamic indigenous entrepreneural or technical/managerial class with adequate indigenous resources. As a result foreign private capital became the major leading instrument in the manufacturing sector. Before the passing of the Nigerian Enterprises Promotion Act of

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20. UNIDO, op. cit., p. 32.

1972, foreigners owned about 61 percent of Nigeria's industrial investment in 1965. The public sector accounted for 27 percent and the Nigerian Private sector, 12 percent. As Table 4.20 indicates, the share of foreigners in the ownership of the manufacturing and processing enterprises declined from 57.3 percent in 1970 to 47.6 percent in 1980. On the other hand, the Nigerians' share increased from 42.7 percent in 1970 to 52.4 percent in 1980. But by 1982, the share of Nigerians in the ownership of the manufacturing enterprises declined to 49.3 percent. This could be attributed to the economic recession which has encouraged disinvestment in this sector.

In the area of the form of ownership, the Sole Proprietorship and Private and Public Companies have been the dominant forms. The Private and Public companies by 1972, accounted for 59.5 percent with the Sole Proprietorship recording 25.0 percent. Altogether, about 32 percent of the establishments in the same year were Sole Proprietorships and Partnerships. This was an improvement over 1966 share of 41 percent.[21]

## 4.7: Performance and Efficiency

The estimates of total factor productivity growth within the manufacturing sector for the period 1962-80

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21. See A. Adejugbe, op. cit., p. 45.

TABLE 4.20

OWNERSHIP STRUCTURE OF INDUSTRIAL SECTOR ENTERPRISES IN PERCENTAGES: 1970, 1975, 1980, 1982

| INDUSTRIAL SECTOR | 1970 | 1975 | 1980 | 1982 |
|---|---|---|---|---|
| Mining and Quarrying | | | | |
| Foreign | 100 | 37.6 | 24.6 | 21.1 |
| Nigerian | - | 62.4 | 75.4 | 78.9 |
| Manufacturing and Processing | | | | |
| Foreign | 57.3 | 52.7 | 47.6 | 50.7 |
| Nigerian | 42.7 | 47.3 | 52.4 | 49.3 |
| Building and Construction | | | | |
| Foreign | 91.3 | 61.3 | 52.2 | 59.5 |
| Nigerian | 8.7 | 38.7 | 43.8 | 40.5 |

Sources: (1) Nigeria, "Twenty Years of Independence" Financial Times, 1980.

(2) Central Bank of Nigeria, Economic and Financial Review, Various issues.

shows that it increased from an index of 100 in 1962 to an index value of 239.91 in 1970. This productivity growth was negative for most of the years in 1970s.[22] UNIDO estimates of total factor productivity growth in the Nigerian manufacturing sector during the 1980s show that it declined in the first half of the 1980s.

According to UNIDO study, positive labour productivity growth in real terms[23] was recorded for only 13 of the 26 branches for which data is available for the 1973-1983 period. Productivity growth in the electrical, machinery, other chemicals and leather products sectors was not significantly greater than zero. The productivity growth performance of the intermediate and capital goods industries was disappointingly low.[24]

Table 4.21 gives some indicators of the financial performance of the manufacturing sector. One easily noticeable feature is the relatively high level of gross profit to value added ratio in the pre-recession (1970-1978) period. The mean gross profit to value added ratio was as high as 80 percent during the period. This declined to 75 percent during the recession of the 1980s. There is equally no



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22. A. O. Olaloye, "Total Factor Productivity Trends in Nigerian Manufacturing", Nigerian Journal of Economic and Social Studies, Vol. 27, No. 3, 1985, p. 322.

23. Measured as VA/E at constant 1980 prices (VA = Value Added, E = Employment).

24. UNIDO, op. cit., p. 18.

TABLE 4.21

SELECTED INDICATORS OF THE FINANCIAL PERFORMANCE OF THE MANUFACTURING SECTOR, 1970-84

| Year | Gross Profit / Wages | Gross Profit / Value Added | Value Added / Output |
|---|---|---|---|
| 1970 | 3.41 | 0.82 | 0.46 |
| 1971 | 3.95 | 0.80 | 0.46 |
| 1972 | 3.64 | 0.78 | 0.47 |
| 1973 | 3.90 | 0.83 | 0.44 |
| 1974 | 3.98 | 0.80 | 0.46 |
| 1975 | 3.73 | 0.79 | 0.43 |
| 1976 | 3.96 | 0.80 | 0.38 |
| 1977 | 3.28 | 0.77 | 0.42 |
| 1978 | 3.48 | 0.78 | 0.45 |
| 1979 | - | - | - |
| 1980 | 3.57 | 0.78 | 0.51 |
| 1981 | 2.29 | 0.70 | 0.38 |
| 1982 | 2.69 | 0.73 | 0.46 |
| 1983 | 3.88 | 0.79 | 0.52 |
| 1984 | 2.91 | 0.74 | 0.43 |

**Source:** UNIDO, Industrial Development Review Series: Nigeria, IS. 557, 1985, p.20, UNIDO data base.

indication of rising industrial cost during the 1980-1984 period because the average value added to gross output ratio rose to 46 percent during this period from 44 percent in the pre-recession period.

It is worth mentioning that the healthy growth of the manufacturing sector does not solely depend on the generation of high profit rates but also on a sustained and rapid growth of self-financing ratios within the sector. This becomes important because of the high level of foreign participation in the Nigerian manufacturing sector, with the associated high level of transfer payments on Nigeria's account. Hence increasing industrial efficiency must involve a recognition of the need for an improvement of the terms on which Nigeria supplies exports and receives imports and capital from international markets.

CHAPTER FIVE

# THE STRUCTURE OF DOMESTIC RESOURCE COST AND EFFECTIVE PROTECTION IN THE NIGERIAN MANUFACTURING INDUSTRIES

## 5.1: Introduction

This chapter is concerned with the evaluation of the Domestic Resource Cost and Effective Protection in the Nigerian manufacturing industries. The estimates of Domestic Resource cost and the various measures of Protection for 1970, 1978 and 1985 that are presented in this chapter have been calculated on the basis of the methods of measurement discussed in chapter Three. Perhaps it should be mentioned that the basic data of analysis are generally imprecise. Even the Carter's[1] input-output table of the Nigerian economy on which the estimates are based, is not free from errors due mainly to scarcity and irregularity of primary data.

## 5.2: The Structure of Domestic Resource Cost in the Nigerian Manufacturing Industries

### 5.2.1: Industrial Project Selection in Nigeria

In Nigeria, a fundamental role is ascribed to industrialisation in the economic development process. Hence, economic policies are often designed, to promote the domestic production of manufactured goods either for exports, or in most cases to replace imports in domestic markets. These policies at times attempt at raising the domestic value added in the industrial sector and consequently

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1. N. G. Carter, An Input-Output Analysis of the Nigerian Economy 1959-60, M.I.T. Cambridge, Mass., 1966.

the level of employment of domestic resources. Policies are also formulated to achieve favourable balance of payment through either import-substituting industrialization strategy of foreign exchange saving or export-oriented industrialization strategy of foreign exchange earning or both. To achieve these and similar objectives, policies are usually designed to provide incentives which will encourage investors to establish industries in Nigeria. The decision making criteria often used in granting these incentives are usually based on the objective(s) of industrialization policy. For instance, if industrialization policy is aimed at increasing the industrial sector's domestic value-added, the domestic value added criterion is applied. In a similar manner, if the policy aims at favourable balance of payments, the import content criterion is often used to rank potential industrial activities. An examination of these criteria reveals their inappropriateness for the evaluation of potential industrial activities or projects because of their emphases on only the potential benefits of the projects. An efficient resource allocation decision making criterion must not only examine the potential benefits of an industrial project, it should equally put into consideration the cost to the economy of such benefits. It is only when the selection of industrial projects is based on such a criterion that the decision making process can lead to an optimal pattern of industrial development. The actualization of this optimal pattern of industrial development calls for the ranking of potential projects according to their domestic cost of foreign

exchange earned or saved, with only the 'least cost' set of projects being chosen.

5.2.2: Domestic Resource Cost: An Analysis

In this section, we present our estimates of the domestic cost of foreign exchange earned or saved in the production activities of forty-five commodities and eighteen industry groups for 1970, 1978 and 1985.

Perhaps it is necessary to mention that we have not developed any model on which the estimates presented in Tables 5.1 and 5.2 and the accompanying Tables 5.3 and 5.4 have been calculated. Rather, our study used one of the relevant and suitable existing formulae stated in Chapter Three (that is, equation 3.30). Our choice of this formula over the other, stated as equation 3.29, became inevitable because of the detailed information of the cost structures of each of the firms in the various industries, with the associated large amount of data requirement of the other formula, which inadvertly were not readily available.

The domestic cost criterion puts the least cost project at the top of the rank and the most expensive project at the bottom. This makes the policy making body to select projects in such a way that the desired goal can be reached within the minimum cost.

Table 5.1 shows the domestic resource cost of foreign exchange (that is, the marginal domestic value added per unit of foreign exchange saved or earned) for forty-five

TABLE 5.1

DOMESTIC RESOURCE COST FOR FORTY-FIVE COMMODITIES: 1970,1978,1985

| COMMODITIES | 1970 | 1978 | 1985 |
|---|---|---|---|
| CONSUMER | | | |
| Meat Products | 1.690 | 1.238 | 1.293 |
| Dairy Products | 1.200 | 1.100 | 1.450 |
| Bakery Products | 1.773 | 1.511 | 1.508 |
| Sugar and Sugar Confectionery Product | 1.751 | 1.249 | 1.600 |
| Miscellaneous Food Products | 1.667 | 1.500 | 1.400 |
| Alcoholic Drinks | 2.604 | 3.051 | 3.054 |
| Soft Drinks | 1.770 | 2.035 | 2.037 |
| Tobacco | 2.503 | 3.004 | 3.004 |
| Clothing and Made-up Textiles | 1.558 | 2.163 | 1.709 |
| Leather Footwear | 2.002 | 2.063 | 1.395 |
| Wood Products | 1.502 | 1.501 | 1.602 |
| Furniture Products | 2.031 | 2.031 | 1.392 |
| Printing and Publishing | 1.501 | 1.501 | 1.401 |
| Drugs and Medicines | 1.100 | 1.200 | 1.150 |
| Soap and Soap Products | 1.506 | 1.302 | 1.405 |
| Perfumes and Cosmetics | 2.013 | 3.032 | 2.014 |
| Matches | 1.667 | 1.500 | 1.400 |
| Radio and Television | 1.667 | 1.750 | 1.600 |
| Cameras and Projectors | 1.750 | 1.500 | 1.500 |
| Clocks and Watches | 1.500 | 1.500 | 1.300 |
| INTERMEDIATE | | | |
| Textiles | 1.334 | 1.503 | 1.251 |
| Cordage, Rope and Twine | 1.333 | 1.050 | 1.200 |
| Tanneries and Leather Products | 2.001 | 1.500 | 1.450 |
| Paper and Paper Products | 1.250 | 1.100 | 1.300 |
| Basic Industrial Chemicals | 1.320 | 1.014 | 1.085 |
| Fertilizers | 1.100 | 1.000 | 1.000 |
| Paints, Varnishes and Lacquers | 1.333 | 1.333 | 1.200 |
| Petroleum and Coal Products | 1.340 | 1.197 | 1.094 |
| Tyres and Tubes | 1.332 | 0.988 | 1.198 |
| Rubber Processing | 1.667 | 1.666 | 1.299 |
| Plasticware | 1.328 | 1.089 | 1.198 |
| Refrigeration and Household Equipment | 1.400 | 1.400 | 1.500 |
| CAPITAL | | | |
| Bricks and Tiles | 1.382 | 1.767 | 1.220 |
| Cement and Concrete Products | 1.244 | 1.528 | 1.316 |
| Glass Products | 1.333 | 1.100 | 1.150 |
| Iron and Steel Products | 1.333 | 1.300 | 1.300 |
| Non-ferrous Metal | 1.197 | 1.196 | 1.188 |
| Miscellaneous Metal Products | 1.149 | 1.149 | 1.150 |
| Metal wires | 1.098 | 1.201 | 1.201 |
| Office Machinery | 1.400 | 1.400 | 1.250 |
| Non-Electrical Machinery | 1.150 | 1.150 | 1.150 |
| Electrical Equipment | 1.150 | 1.150 | 1.150 |
| Boat Building and Repairing | 1.100 | 1.334 | 1.100 |
| Motor Vehicle Assembly | 1.780 | 2.059 | 1.493 |
| Bicycle and Cycle Assembly | 1.250 | 1.249 | 1.150 |

commodities in 1970, 1978 and 1985. The ranking of the production activities of these commodities using the domestic resource cost of foreign exchange is presented in Table 5.2. In 1970, out of the ten least expensive production activities, seven were in the capital goods sector. These included the activities of metal wires, miscellaneous metal products, electrical equipment, non-ferrous products among others. The only case in the intermediate goods sector was that of fertilizer production, while in the consumer goods sector were drugs and medicine and dairy products. Among the ten most expensive activities, eight were from the consumer goods sector, with the capital and intermediate goods sectors each having one. The most expensive production activities in the consumer goods sector were in alcoholic drinks, tobacco, furniture, perfumes and cosmetics, leather footwear, among others. Within this category from the intermediate and capital goods sectors were tanneries and leather products and motor vehicle assembly respectively.

Unlike 1970, a higher proportion among the eleven least expensive production activities in 1978 came from the intermediate goods sector. While intermediate goods sector had six of these activities, the capital goods and consumer goods sectors respectively had four and one. In the intermediate goods sector, these activities were in the tyres and tubes, fertilizers, basic industrial chemicals, cordage, and twine, among others. The only activity from the consumer goods sector was again the production of dairy

TABLE 5.2

RANKING OF COMMODITIES BY DOMESTIC RESOURCE COST : 1970, 1978, 1985

| COMMODITIES | 1970 | 1978 | 1985 |
|---|---|---|---|
| CONSUMER | | | |
| Meat Products | 34 | 16 | 20 |
| Dairy Products | 9 | 6 | 32 |
| Bakery Products | 38 | 33 | 37 |
| Sugar and Sugar Confectionery Products | 36 | 17 | 38 |
| Miscellaneous Food Products | 30 | 25 | 28 |
| Alcoholic Drinks | 45 | 45 | 45 |
| Soft Drinks | 37 | 39 | 43 |
| Tobacco | 44 | 43 | 44 |
| Clothing and Made-up Textiles | 29 | 42 | 41 |
| Leather Footwear | 41 | 41 | 27 |
| Wood Products | 27 | 30 | 40 |
| Furniture | 43 | 38 | 26 |
| Printing and Publishing | 26 | 30 | 30 |
| Drugs and Medicines | 2 | 14 | 5 |
| Soap and Soap Products | 28 | 20 | 31 |
| Perfumes and Cosmetics | 42 | 44 | 42 |
| Matches | 30 | 25 | 28 |
| Radio and Television | 30 | 36 | 38 |
| Cameras and Projectors | 35 | 25 | 35 |
| Clocks and Watches | 25 | 25 | 22 |
| INTERMEDIATE | | | |
| Textiles | 20 | 32 | 19 |
| Cordage, Rope and Twine | 16 | 4 | 14 |
| Tanneries and Leather Products | 40 | 25 | 32 |
| Paper and Paper Products | 11 | 6 | 22 |
| Basic Industrial Chemicals | 13 | 3 | 2 |
| Fertilizers | 2 | 2 | 1 |
| Paints, Varnishes and Lacquers | 16 | 21 | 14 |
| Petroleum and Coal Products | 21 | 13 | 3 |
| Types and Tubes | 15 | 1 | 12 |
| Rubber Processing | 30 | 35 | 21 |
| Plasticware | 14 | 5 | 12 |
| Refrigeration and Household Equipment | 23 | 23 | 35 |
| CAPITAL | | | |
| Bricks and Tiles | 22 | 37 | 17 |
| Cement and Concrete Products | 10 | 34 | 25 |
| Glass Products | 16 | 6 | 5 |
| Iron and Steel Products | 16 | 19 | 22 |
| Non-ferrous Metal | 8 | 12 | 11 |
| Miscellaneous Metal Products | 5 | 9 | 5 |
| Metal Wires | 1 | 15 | 16 |
| Office Machinery | 23 | 23 | 18 |
| Non-Electrical Machinery | 6 | 10 | 5 |
| Electrical Equipment | 6 | 10 | 5 |
| Boat Building and Repairing | 2 | 22 | 4 |
| Motor Vehicle Assembly | 39 | 40 | 34 |
| Bicycle and Cycle Assembly | 11 | 17 | 5 |

alcoholic drinks. Generally, most of the least expensive activities were in the capital goods sector while majority of the most expensive activities were in the consumer goods sector. Though there are some elements of consistency in the ranking of some activities, their positions were generally not permanent except in alcoholic drinks.

The analysis at industrial group levels is shown in Tables 5.3 and 5.4. For the three years of analysis, all the production activities of the industries in the consumer goods sector fell within the category of the ten most expensive. On the other hand, all the production activities in the capital goods sector were in the category of the ten least expensive. The analysis of the domestic resource cost at the industry groups is highly inappropriate as decision making criterion since the industries include products with different production coefficients which make it impossible to identify efficient products hidden in inefficient industry groups.

The general pattern of ranking discussed above could be attributed to the frequent changing of industrial policies and incentives which made the costs of these activities to vary over the years. The activities of consumer goods industries with the highest protective measures and incentives turned out to be most expensive in terms of foreign exchange earning or saving. This raises the issue of whether these industries have not been over protected. It could also be that there is the abundant supply of the goods of these

TABLE 5.3

DOMESTIC RESOURCE COST FOR EIGHTEEN MANUFACTURING INDUSTRIES: 1970, 1978, 1985

| INDUSTRIES | 1970 | 1978 | 1985 |
|---|---|---|---|
| CONSUMER GOODS | | | |
| Food Products | 1.577 | 1.301 | 1.445 |
| Beverages and Tobacco | 2.534 | 2.847 | 2.851 |
| Wood Products and Furniture | 1.648 | 1.772 | 1.500 |
| Clothing and Made-up Textiles | 1.558 | 2.163 | 1.079 |
| Footwear-Leather | 2.002 | 2.063 | 1.395 |
| Printing and Publishing | 1.501 | 1.501 | 1.401 |
| Miscellaneous Manufacturing | 1.427 | 1.683 | 1.440 |
| INTERMEDIATE GOODS | | | |
| Paper and paper products | 1.250 | 1.100 | 1.300 |
| Textiles | 1.334 | 1.495 | 1.255 |
| Rubber and Products | 1.533 | 1.512 | 1.252 |
| Industrial Chemicals | 1.320 | 1.014 | 1.085 |
| Petroleum and Coal Products | 1.340 | 1.197 | 1.094 |
| Miscellaneous Intermediate Manufacturing | 1.388 | 1.202 | 1.243 |
| CAPITAL GOODS | | | |
| Nonmetal Mineral Products | 1.263 | 1.458 | 1.291 |
| Iron and Steel Products | 1.333 | 1.300 | 1.300 |
| Nonferrous metals | 1.197 | 1.196 | 1.188 |
| Engineering and Metal Production n.e.s | 1.149 | 1.149 | 1.150 |
| Machinery and Transport Equipment | 1.348 | 1.449 | 1.311 |

TABLE 5.4

RANKING OF MANUFACTURING INDUSTRIES BY DOMESTIC COST: 1970, 1978, 1985

| INDUSTRIES | 1970 | 1978 | 1985 |
|---|---|---|---|
| CONSUMER GOODS | | | |
| Food Products | 15 | 8 | 16 |
| Beverages and Tobacco | 18 | 18 | 18 |
| Wood Products and Furniture | 16 | 15 | 17 |
| Clothing and Made-up Textiles | 14 | 17 | 1 |
| Footwear-Leather | 17 | 16 | 13 |
| Printing and Publishing | 12 | 12 | 14 |
| Miscellaneous Manufacturing | 11 | 14 | 15 |
| INTERMEDIATE GOODS | | | |
| Paper and Paper products | 3 | 2 | 10 |
| Textiles | 7 | 11 | 8 |
| Rubber and Products | 13 | 13 | 7 |
| Industrial Chemicals | 5 | 1 | 2 |
| Petroleum and Coal Products | 8 | 5 | 3 |
| Miscellaneous Intermediate Manufacturing | 10 | 6 | 6 |
| CAPITAL GOODS | | | |
| Nonmetal Mineral Products | 4 | 10 | 9 |
| Iron and Steel Products | 6 | 7 | 10 |
| Nonferrous Metals | 2 | 4 | 5 |
| Engineering and Metal Production n.e.s. | 1 | 3 | 4 |
| Machinery and Transport Equipment. | 9 | 9 | 12 |

industries in the world market resulting in low foreign exchange earning. Furthermore, the activities of some consumer goods involved imported raw materials and inputs that further increased their cost of production to the economy.

The analysis clearly shows that there is the need for efforts to be channelled towards the activities of the capital goods sector because of its low domestic cost of foreign exchange generation.

## 5.3: The Structure of Effective Protection in the Nigerian Manufacturing Industries

### 5.3.1: Tariff Policy in Nigeria

Nigeria's tariff policy has not only been formulated to provide revenue for the government and also protect the local industries, it has equally been continuously used over the years to help correct the country's external trade disequilibrium.

Before 1970, there were three fairly recognisable periods in the development of Nigeria's tariff policy. The first which lasted until 1961 was when Nigeria kept her economy largely open with modest tariff rate system as sources of government revenue. Changes in the tariff policy was infrequent and determined primarily by revenue needs of the government. The second period which started around 1962 was when the tariff system was additionally determined by the need to protect and encourage the country's infant industries. The third period which

started about the end of 1967 was when external trade disequilibrium became an additional determinant of the level and structure of tariffs - this is not to say that some measure of disequilibrium was not known before 1967.

Since 1970, the relative importance of these three basic determinants of tariff policy (that is, revenue, protection and external disequilibrium) has been undergoing some changes. For instance, with the emergence of Petroleum in the Nigerian economy, the role of tariff as a major source of government revenue has declined. So also has its importance in external disequilibrium declined uptil the mid-1970s. On the other hand, the strong inflationary pressure of early and mid-1980s was instrumental to the downward revision of some tariff rates during the period.

The sophistication of tariff policy and consequently the differentiation of tariff structure began in 1964 and 1965. In 1964, the tariff structure was reclassified on the basis of the Brussels Tariff Nomenclature. Consequently, there was the introduction of multiple tariff rates for a large number of products in 1965. Finished products, raw materials and component parts, within the same product group had different tariff rates, with the rates on raw materials and components parts relatively low.

Uptil 1970, there was a definite upward trend in the tariff rates for all categories of products. This upward trend in the rates of tariff could be attributed to government's resolve to encourage the growth of local industries by providing newly established industries with

a degree of protection, at least until they are strong to favourably compete with the existing old ones. The tariff rate for all manufacturing industries in 1970 was almost maintained in 1978. It declined in 1985 due to the then prevailing economic conditions. In fact, the tariff rate which was 49.79 percent for all manufacturing industries in 1970, marginally declined to 48.51 per cent in 1978. By 1985, it declined to 44.90 percent.

5.3.2: Effective Protection: An Analysis

The estimates of effective protection presented in this section have been based on measures of effective protection derived in chapter Three. The major assumption behind this method is that the divergence between world market price and domestic market price is due only to tariff protection and in some cases the effect of excise taxes. In other words, domestic price equals world market price plus the tariff rate adjusted for excise duties. In estimating the 'net' nominal or effective protection given to domestic producers by the tariff structure, some adjustments were made for the extent of overvaluation. To calculate the extent of currency overvaluation, we have assumed in this study that the elasticity of supply of imports is infinite. This small country assumption is realistic in the sense that Nigeria can import as much as it wants of manufactured goods from the rest of the world without affecting its price. Among other relevant elasticities, a time series analysis of Nigeria's

foreign trade by Olayide[2] gave an estimate of 2.38 for the import demand elasticity for manufactured goods and 3.0 for the elasticity of supply for exports. The world demand and supply elasticities for the commodities have been estimated at 0.3 and 0.4 respectively.[3] Average tariff rates were 49.92 percent in 1970, 52,09 percent in 1978 and 42.62 percent in 1985, and the average rates of subsidy for exports were -5.0 percent in 1970 and 1978 and -3.0 percent in 1985. Apart from palm kernels and oil in 1970 and 1978 and groundnuts and oil in 1970, Nigeria's shares of its major export commodities were relatively low (see Appendix III). The obtained average export shares for Nigeria in the world market were 16.7 percent in 1970, 12.3 percent in 1978 and 8.0 percent in 1985. The values of Nigeria's exports were ₦877.0 million in 1970, ₦6,308.5 million in 1978 and ₦11,720.8 million in 1985. Imports stood at ₦756.4 million, ₦8,140.8 million and ₦5,536.9 million in 1970, 1978 and 1985 respectively (see Appendix IV). Using the assumptions and the estimates given above, rates of overvaluation of 23.4 percent, 26.6 percent and 10.0 percent were respectively calculated

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2. See, S.O. Olayide, "Some estimates of supply and demand elasticity for selected commodities in Nigeria's foreign Trade", Journal of Business and Social Studies, 1(1) 1968 pp. 1-9; J.A. Alade op. cit. p. 205.

3. See, B. Balassa, Trade Prospects for Developing Countries, Richard Irvin, Homewood 111, 1964 p. 208, T. Oyejide op. cit. p. 50; J. A. Alade op. cit. p. 205.

TABLE 5.5

NOMINAL AND EFFECTIVE PROTECTION: 1970, 1978, 1985

/PERCENTAGE/

| COMMODITIES | 1970 | | 1978 | | 1985 | |
|---|---|---|---|---|---|---|
| | NRP | ERP | NRP | ERP | NRP | ERP |
| CONSUMER GOODS | | | | | | |
| Meat Products | 66.67 | 67.39 | 25.00 | 23.75 | 30.00 | 29.60 |
| Dairy Products | 20.00 | 19.99 | 10.00 | 9.95 | 45.00 | 45.03 |
| Bakery Products | 75.00 | 75.84 | 50.00 | 50.12 | 50.00 | 50.21 |
| Sugar and Sugar Confectionery Products | 75.00 | 75.04 | 25.00 | 24.97 | 60.00 | 59.99 |
| Miscellaneous Food Products | 66.67 | 68.17 | 50.00 | 50.00 | 40.00 | 39.97 |
| Alcoholic Drinks | 150.00 | 152.39 | 200.00 | 202.47 | 200.00 | 204.06 |
| Soft Drinks | 75.00 | 75.67 | 100.00 | 100.26 | 100.00 | 101.05 |
| Tobacco | 150.00 | 150.17 | 200.00 | 200.23 | 200.00 | 200.38 |
| Clothing and Made-up Textiles | 50.00 | 55.84 | 100.00 | 116.30 | 60.00 | 70.91 |
| Leather Footwear | 100.00 | 100.22 | 100.00 | 104.26 | 40.00 | 39.76 |
| Wood Products | 50.00 | 50.16 | 50.00 | 50.14 | 60.00 | 60.22 |
| Furniture | 75.00 | 89.12 | 75.00 | 87.93 | 50.00 | 45.17 |
| Printing and Publishing | 50.00 | 50.14 | 50.00 | 50.10 | 40.00 | 40.11 |
| Drugs and Medicines | 10.00 | 10.47 | 20.00 | 20.00 | 15.00 | 15.00 |
| Soap and Soap Products | 50.00 | 50.14 | 30.00 | 29.89 | 40.00 | 40.02 |
| Perfumes and Cosmetics | 100.00 | 100.51 | 200.00 | 202.60 | 100.00 | 100.68 |
| Matches | 66.67 | 66.67 | 50.00 | 50.79 | 40.00 | 39.71 |
| Radio and Television | 66.67 | 66.67 | 75.00 | 75.93 | 60.00 | 60.71 |
| Cameras and Projectors | 75.00 | 75.00 | 50.00 | 50.00 | 50.00 | 50.00 |
| Clocks and Watches | 50.00 | 50.00 | 50.00 | 50.00 | 30.00 | 30.00 |
| INTERMEDIATE GOODS | | | | | | |
| Textiles | 33.33 | 33.34 | 50.00 | 50.05 | 25.00 | 25.01 |
| Cordage, rope and twine | 33.33 | 33.33 | 5.00 | 5.00 | 20.00 | 20.00 |
| Tanneries and Leather Products | 100.00 | 100.02 | 50.00 | 49.99 | 45.00 | 45.00 |
| Paper and Paper Products | 25.00 | 25.00 | 10.00 | 10.00 | 30.00 | 30.14 |
| Basic Industrial Chemicals | 33.00 | 31.98 | 5.00 | 1.40 | 10.00 | 8.50 |
| Fertilizers | 10.00 | 10.00 | 00.00 | 00.00 | 00.00 | 00.00 |
| Paints, Varnishes and Lacquers | 33.33 | 32.81 | 33.33 | 33.80 | 20.00 | 20.25 |
| Petroleum and Coal Products | 33.33 | 33.32 | 20.00 | 19.68 | 10.00 | 9.84 |
| Tyres and Tubes | 33.33 | 33.12 | 00.00 | -0.53 | 20.00 | 19.89 |
| Rubber Processing | 66.67 | 66.68 | 66.67 | 66.57 | 30.00 | 29.92 |
| Plastic Products | 33.33 | 32.99 | 10.00 | 9.48 | 20.00 | 19.83 |
| Refrigeration and Household Equipment | 40.00 | 39.71 | 40.00 | 40.63 | 50.00 | 50.79 |
| CAPITAL GOODS | | | | | | |
| Bricks and Tiles | 33.33 | 38.24 | 66.67 | 71.27 | 25.00 | 22.03 |
| Cement and Concrete Products | 25.00 | 24.78 | 50.00 | 52.78 | 30.00 | 31.61 |
| Glass Products | 33.33 | 33.33 | 10.00 | 9.76 | 15.00 | 15.00 |
| Iron and Steel Products | 33.33 | 33.33 | 30.00 | 30.14 | 30.00 | 30.14 |
| Non-ferrous metal | 20.00 | 19.69 | 20.00 | 20.13 | 20.00 | 19.92 |
| Miscellaneous Metal Products | 15.00 | 14.91 | 15.00 | 14.92 | 15.00 | 14.98 |
| Metal wires | 10.00 | 9.94 | 20.00 | 20.02 | 20.00 | 20.08 |
| Office Machinery | 40.00 | 40.00 | 40.00 | 40.00 | 25.00 | 25.00 |
| Non-Electrical Machinery | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 |
| Electrical Equipment | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 14.46 |
| Boat Building and Reparing | 10.00 | 9.99 | 33.33 | 33.38 | 10.00 | 9.98 |
| Motor Vehicle Assembly | 75.00 | 78.03 | 100.00 | 105.94 | 50.00 | 49.47 |
| Bicycle and Cycle Assembly | 25.00 | 24.95 | 25.00 | 24.93 | 15.00 | 14.99 |

NOTE: NRP = Nominal Rate of Protection
ERP = Effective Rate of Protection

TABLE 5.6

NOMINAL AND EFFECTIVE PROTECTION FOR INDUSTRY GROUPS: 1970, 1978, 1985

(PERCENTAGE)

| INDUSTRY GROUPS | 1970 | | 1978 | | 1985 | |
|---|---|---|---|---|---|---|
| | NRP | ERP | NRP | ERP | NRP | ERP |
| CONSUMER GOODS | | | | | | |
| Food Products | 57.35 | 57.64 | 30.11 | 29.93 | 44.35 | 44.34 |
| Beverages and Tobacco | 147.00 | 148.52 | 180.60 | 182.32 | 180.40 | 183.65 |
| Wood Products and Furniture | 56.93 | 60.95 | 62.78 | 69.45 | 55.14 | 52.90 |
| Clothing and Made-up Textiles | 50.00 | 55.84 | 100.00 | 116.30 | 60.00 | 70.91 |
| Footwear-Leather | 100.00 | 100.22 | 100.00 | 104.26 | 40.00 | 39.76 |
| Printing and Publishing | 50.00 | 50.14 | 50.00 | 50.10 | 40.00 | 40.11 |
| Miscellaneous Consumer Goods Manufacturing | 42.31 | 42.66 | 67.62 | 68.23 | 43.23 | 43.81 |
| INTERMEDIATE GOODS | | | | | | |
| Paper and Paper Products | 25.00 | 25.00 | 10.00 | 10.00 | 30.00 | 30.14 |
| Textiles | 33.33 | 33.34 | 49.28 | 49.33 | 24.69 | 24.70 |
| Rubber and Rubber Products | 53.31 | 53.23 | 51.54 | 51.23 | 25.37 | 25.32 |
| Industrial Chemicals | 33.00 | 31.98 | 5.00 | 1.40 | 10.00 | 8.50 |
| Petroleum and Coal Products | 33.33 | 33.32 | 20.00 | 19.68 | 10.00 | 9.84 |
| Miscellaneous Intermediate Manufacturing | 39.12 | 38.81 | 20.88 | 20.64 | 24.45 | 24.36 |
| CAPITAL GOODS | | | | | | |
| Nonmetal Mineral Products | 26.13 | 26.61 | 42.99 | 45.29 | 27.94 | 29.10 |
| Iron and Steel Products | 33.33 | 33.33 | 30.00 | 30.14 | 30.00 | 30.14 |
| Non ferrous metals | 20.00 | 19.69 | 20.00 | 20.13 | 20.00 | 19.92 |
| Engineering and Production n.e.s. | 15.00 | 14.91 | 15.00 | 14.92 | 15.00 | 14.98 |
| Machinery and Transport Equipment | 33.89 | 34.83 | 42.94 | 44.89 | 31.42 | 30.82 |

NOTE:- NRP = Nominal Rate of Protection

ERP = Effective Rate of Protection

range (though small), than the averages of the nominal rates of protection. For instance, in 1970 the lowest average effective rate of protection weighted by total supply was 14.91 per cent for engineering and metal production, while the highest rate was 148.52 per cent for beverages and tobacco. In 1978, it varied from 1.40 per cent for industrial chemicals to 182.32 per cent for beverages and tobacco and from 8.50 per cent for industrial chemicals to 183.65 per cent for beverages and tobacco in 1985. These results are generally consistent with the structure of protection exhibited by the individual commodity categories which showed a high level of tariff protection in 1970 and 1978 which mildly declined in 1985.

Nominal and Effective Protection: Sectoral Aggregates

A sectoral breakdown of all manufacturing industries into three categories - consumer goods sector, intermediate goods sector and capital goods sector - based on product use, brings out the biases of the tariff structure rather clearly (see Table 5.7). The table shows that in 1970, average nominal rate of protection for consumer goods sector was twice as high as that of intermediate goods sector and more than twice higher than that of the capital goods sector. Ranking the sectoral aggregates by nominal and effective rates gave similar results, with the consumer goods sector being the most favoured in terms of the relative incentive provided by protection, followed by the intermediate goods sector and finally the capital goods

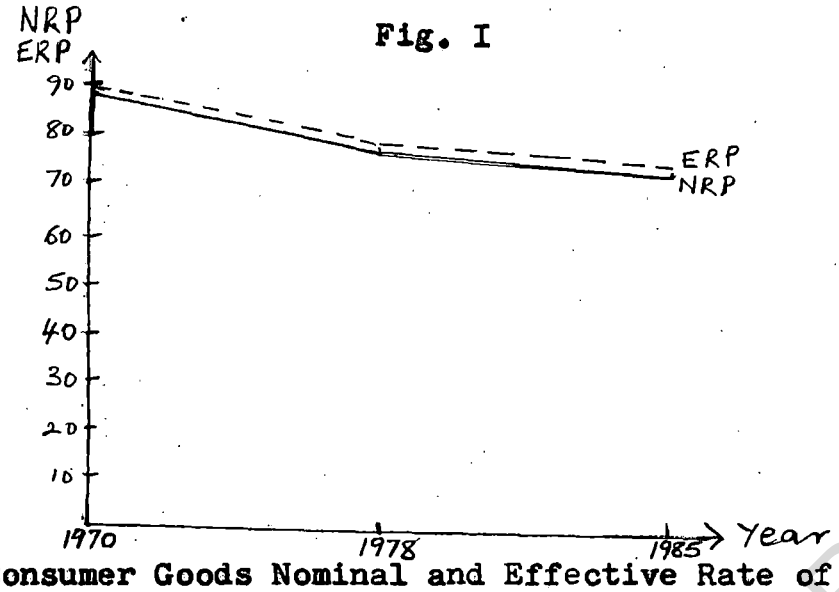
TABLE 5.7

NOMINAL AND EFFECTIVE PROTECTION FOR MAJOR INDUSTRIAL CATEGORIES (SECTORAL AGGREGATES) 1970, 1978,1985
(PERCENTAGE)

| INDUSTRIAL CATEGORIES | 1970 | | 1978 | | 1985 | |
|---|---|---|---|---|---|---|
| | NRP | ERP | NRP | ERP | NRP | ERP |
| Consumer Goods | 88.25 | 89.63 | 79.52 | 81.81 | 77.54 | 78.46 |
| Intermediate Goods | 36.61 | 36.47 | 33.84 | 33.71 | 24.64 | 24.54 |
| Capital Goods | 31.36 | 31.98 | 38.10 | 39.63 | 28.40 | 28.19 |
| All manufacturing | 49.79 | 50.50 | 48.51 | 49.96 | 44.90 | 45.12 |

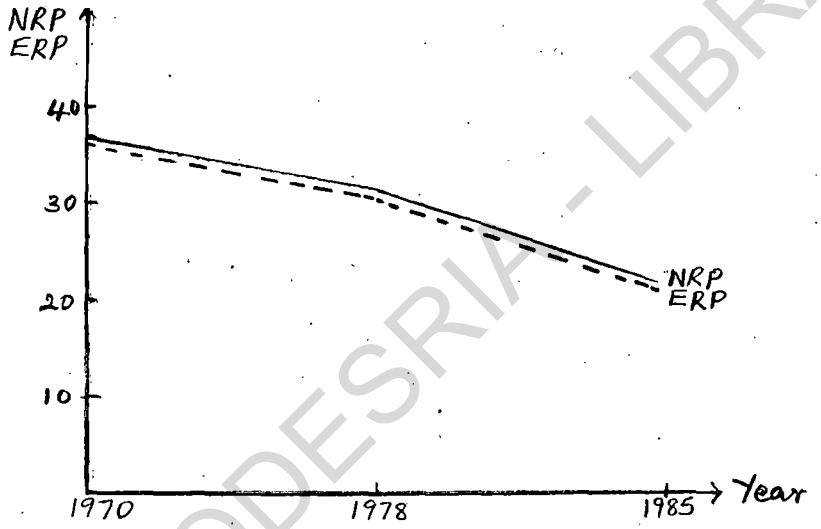
NOTE:- NRP = Nominal Rate of Protection
ERP = Effective Rate of Protection

Fig. I



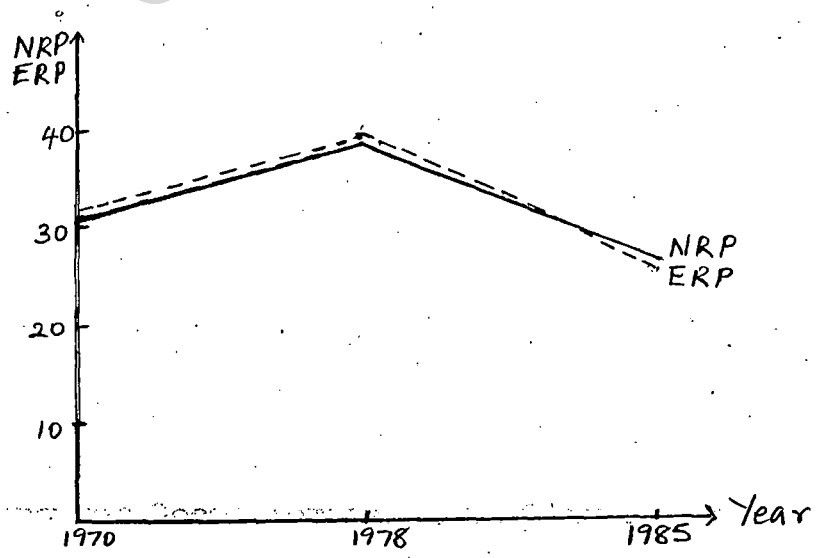

Consumer Goods Nominal and Effective Rate of Protection.

Fig. II




Intermediate Goods Nominal and Effective Rates of Protection.

Fig. III




Capital Goods Nominal and Effective Rates of Protection.

TABLE 5.8

NET NOMINAL AND NET EFFECTIVE PROTECTION: 1970, 1978, 1985

/PERCENTAGE/

| COMMODITIES | 1970 | | 1978 | | 1985 | |
|---|---|---|---|---|---|---|
| | NNRP | NERP | NNRP | NERP | NNRP | NERP |
| CONSUMER GOODS | | | | | | |
| Meat Products | 35.00 | 35.59 | -1.25 | -2.24 | 24.80 | 24.42 |
| Dairy Products | -2.80 | -2.81 | -13.10 | -13.14 | 39.20 | 39.23 |
| Bakery Products | 41.75 | 42.43 | 18.50 | 18.59 | 44.00 | 44.20 |
| Sugar and Sugar Confectionery Products | 41.75 | 41.78 | -1.25 | -1.27 | 53.60 | 53.59 |
| Miscellaneous Food Products | 35.00 | 36.22 | 18.50 | 18.50 | 34.40 | 34.37 |
| Alcoholic Drinks | 102.50 | 104.44 | 137.00 | 138.95 | 188.00 | 191.90 |
| Soft Drinks | 41.75 | 42.29 | 58.00 | 58.21 | 92.00 | 93.01 |
| Tobacco | 102.50 | 102.64 | 137.00 | 137.18 | 188.00 | 188.36 |
| Clothing and Made-up Textiles | 21.50 | 26.23 | 58.00 | 70.88 | 53.60 | 64.07 |
| Leather Footwear | 62.00 | 62.18 | 58.00 | 61.37 | 34.40 | 34.17 |
| Wood Products | 21.50 | 21.63 | 18.50 | 18.61 | 53.60 | 53.81 |
| Furniture | 41.75 | 53.19 | 38.25 | 48.46 | 44.00 | 39.36 |
| Printing and Publishing | 21.50 | 21.61 | 18.50 | 18.58 | 34.40 | 34.51 |
| Drugs and Medicine | -10.90 | -10.52 | -5.20 | -5.20 | 10.40 | 10.40 |
| Soap and Soap Products | 21.50 | 21.61 | 2.70 | 2.61 | 34.40 | 34.42 |
| Perfumes and Cosmetics | 62.00 | 62.41 | 137.00 | 139.05 | 92.00 | 92.65 |
| Matches | 35.00 | 35.00 | 18.50 | 19.12 | 34.40 | 34.12 |
| Radio and Television | 35.00 | 35.00 | 38.25 | 38.98 | 53.60 | 54.28 |
| Cameras and Projectors | 41.75 | 41.75 | 18.50 | 18.50 | 44.00 | 44.00 |
| Clocks and Watches | 21.50 | 21.50 | 18.50 | 18.50 | 24.80 | 24.80 |
| INTERMEDIATE GOODS | | | | | | |
| Textiles | 8.00 | 8.00 | 18.50 | 18.54 | 20.00 | 20.01 |
| Cordage, rope and twine | 8.00 | 8.00 | -17.05 | -17.05 | 15.20 | 15.20 |
| Tanneries and Leather Products | 62.00 | 62.02 | 18.50 | 18.49 | 39.20 | 39.20 |
| Paper and Paper Products | 1.25 | 1.25 | -13.10 | -13.10 | 24.80 | 24.93 |
| Basic Industrial Chemicals | 7.73 | 6.90 | -17.05 | -19.89 | 5.60 | 4.16 |
| Fertilizers | -10.90 | -10.90 | -21.00 | -21.00 | -4.00 | -4.00 |
| Paints, Varnishes and Lacquers | 8.00 | 7.58 | 5.33 | 5.70 | 15.20 | 15.44 |
| Petroleum and Coal Products | 8.00 | 7.99 | -5.20 | -5.45 | 5.60 | 5.45 |
| Tyres and Tubes | 8.00 | 7.83 | -21.00 | -62.87 | 15.20 | 15.09 |
| Rubber Processing | 35.00 | 35.01 | 31.67 | 31.59 | 24.80 | 24.72 |
| Plastic Products | 8.00 | 7.72 | -13.10 | -13.51 | 15.20 | 15.04 |
| Refrigeration and Household Equipment | 13.40 | 13.17 | 10.60 | 11.10 | 44.00 | 44.76 |
| CAPITAL GOODS | | | | | | |
| Bricks and Tiles | 8.00 | 11.97 | 31.67 | 35.30 | 20.00 | 17.15 |
| Cement and Concrete Products | 1.25 | 1.07 | 18.50 | 20.70 | 24.80 | 26.35 |
| Glass Products | 8.00 | 8.00 | -13.10 | -13.29 | 10.40 | 10.40 |
| Iron and Steel Products | 8.00 | 8.00 | 2.70 | 2.81 | 24.80 | 24.93 |
| Non-ferrous metal | -2.80 | -3.05 | -5.20 | -5.10 | 15.20 | 15.12 |
| Miscellaneous Metal Products | -6.85 | -6.92 | -9.15 | -9.21 | 10.40 | 10.38 |
| Metal Wires | -10.90 | -10.95 | -5.20 | -5.18 | 15.20 | 15.28 |
| Office Machinery | 13.40 | 13.40 | 10.60 | 10.60 | 20.00 | 20.00 |
| Non-Electrical Machinery | -6.85 | -6.85 | -9.15 | -9.15 | 10.40 | 10.40 |
| Electrical Equipment | -6.85 | -6.85 | -9.15 | -9.15 | 10.40 | 9.88 |
| Boat Building and Repairing | -10.90 | -10.91 | 5.33 | 5.37 | 5.60 | 5.58 |
| Motor Vehicle Assembly | 41.75 | 44.20 | 58.00 | 62.69 | 44.00 | 43.49 |
| Bicycle and Cycle Assembly | 1.25 | 1.21 | -1.25 | -1.31 | 10.40 | 10.39 |

NOTE: NNRP = Net Nominal Rate of Protection
NERP = Net Effective Rate of Protection

the free trade exchange rate, the level of protection offered to the individual industries became generally lower. In some cases, the rates of protection changed from positive or zero to negative values as observed mostly in 1970 and 1978. This shows that the exchange rate observed under protection overvalued the domestic currency as compared to the free trade situation, thereby making the effective rates calculated at this exchange rate overstating the extent of protection of individual industries. As shown in Table 5.8, the estimates of net nominal rates of protection in 1970, ranged from -10.90 per cent for boat building and repairing, metal wires, fertilizers and drugs and medicines, to 102.50 per cent for alcoholic drinks. In 1978, it ranged between -21.0 per cent for fertilizers and tyres and tubes and 137.0 per cent for alcoholic drinks, perfumes and cosmetics and tobacco. The lowest net nominal rate of -4.0 per cent was recorded for fertilizer while the highest net nominal rate of 188.0 per cent went for alcoholic drinks and tobacco in 1985. The estimates of net effective protection showed wider variations than the net nominal protection for the three years. For instance in 1970, the net effective rates varied from -10.95 per cent for metal wires to 104.44 per cent for alcoholic drinks. In 1978, the range was between -62.87 per cent for tyres and tubes to 139.05 per cent for perfumes and cosmetics while in 1985, the rates ranged from -4.0 per cent for

TABLE 5.9

NET NOMINAL AND NET EFFECTIVE PROTECTION FOR INDUSTRY GROUPS: 1970, 1978, 1985

(PERCENTAGE)

| INDUSTRY GROUPS | 1970 | | 1978 | | 1985 | |
|---|---|---|---|---|---|---|
| | NNRP | NERP | NNRP | NERP | NNRP | NERP |
| CONSUMER GOODS | | | | | | |
| Food Products | 27.45 | 27.69 | 2.79 | 2.64 | 38.58 | 38.57 |
| Beverages and Tobacco | 100.07 | 101.30 | 121.67 | 123.03 | 169.18 | 172.30 |
| Wood Products and Furniture | 27.11 | 30.37 | 28.60 | 33.87 | 48.93 | 46.78 |
| Clothing and Made-up Textiles | 21.50 | 26.23 | 58.00 | 70.88 | 53.60 | 64.07 |
| Footwear-Leather | 62.00 | 62.18 | 58.00 | 61.37 | 34.40 | 34.17 |
| Printing and Publishing | 21.50 | 21.61 | 18.50 | 18.58 | 34.40 | 34.51 |
| Miscellaneous Consumer Goods Manufacturing | 15.27 | 15.55 | 32.42 | 32.90 | 37.87 | 38.06 |
| INTERMEDIATE GOODS | | | | | | |
| Paper and Paper products | 1.25 | 1.25 | -13.10 | -13.10 | 24.80 | 24.93 |
| Textiles | 8.00 | 8.01 | 17.93 | 17.97 | 19.70 | 19.71 |
| Rubber and Rubber Products | 24.18 | 24.12 | 19.72 | 19.47 | 20.36 | 20.31 |
| Industrial Chemicals | 7.73 | 6.90 | -17.05 | -19.89 | 5.60 | 4.16 |
| Petroleum and Coal Products | 8.00 | 7.99 | -5.20 | -5.45 | 5.60 | 5.45 |
| Miscellaneous Intermediate Manufacturing | 12.69 | 12.44 | -4.50 | -4.69 | 19.47 | 19.39 |
| CAPITAL GOODS | | | | | | |
| Nonmental Mineral Products | 2.17 | 2.55 | 12.96 | 14.78 | 22.82 | 23.94 |
| Iron and Steel Products | 8.00 | 8.00 | 2.70 | 2.81 | 24.80 | 24.93 |
| Nonferrous metals | -2.80 | -3.05 | -5.20 | -5.10 | 15.20 | 15.12 |
| Engineering and Metal Production m.e.s. | -6.85 | -6.92 | -9.15 | -9.21 | 10.40 | 10.38 |
| Machinery and Transport Equipment | 8.45 | 9.21 | 12.92 | 14.46 | 26.16 | 25.59 |

NOTE:- NNRP = Net Nominal Rate of Protection

NERP = Net Effective Rate of Protection

TABLE 5.10

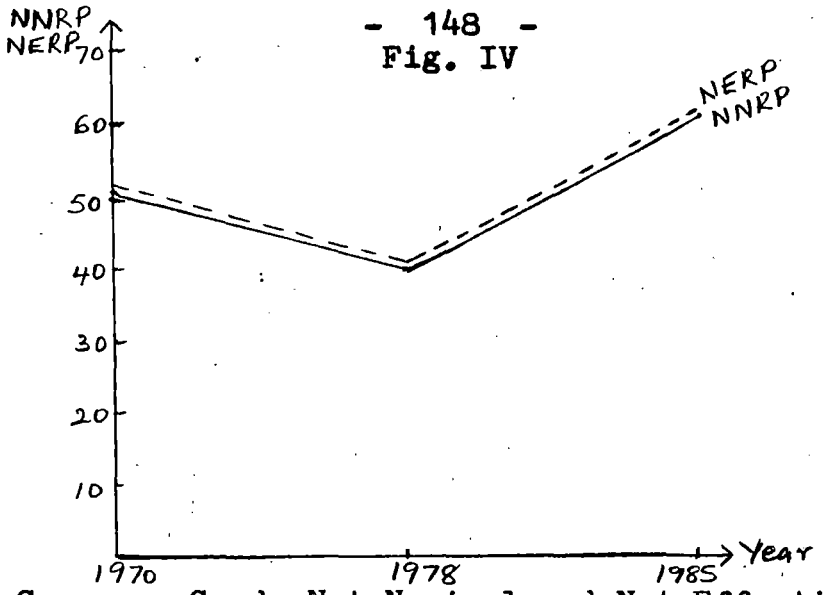
NET NOMINAL AND NET EFFECTIVE PROTECTION FOR MAJOR INDUSTRIAL CATEGORIES (SECTORAL AGGREGATES) 1970, 1978, 1985 (PERCENTAGE)

| INDUSTRIAL CATEGORIES | 1970 | | 1978 | | 1985 | |
|---|---|---|---|---|---|---|
| | NNRP | NERP | NNRP | NERP | NNRP | NERP |
| Consumer Goods | 52.48 | 53.60 | 41.82 | 43.63 | 61.56 | 62.40 |
| Intermediate Goods | 10.65 | 10.54 | 5.73 | 5.63 | 13.42 | 13.33 |
| Capital Goods | 6.40 | 6.90 | 9.10 | 10.31 | 16.84 | 16.65 |
| All Manufacturing | 21.33 | 21.91 | 17.32 | 18.47 | 31.86 | 32.06 |

Note:- NNRP = Net Nominal Rate of Protection

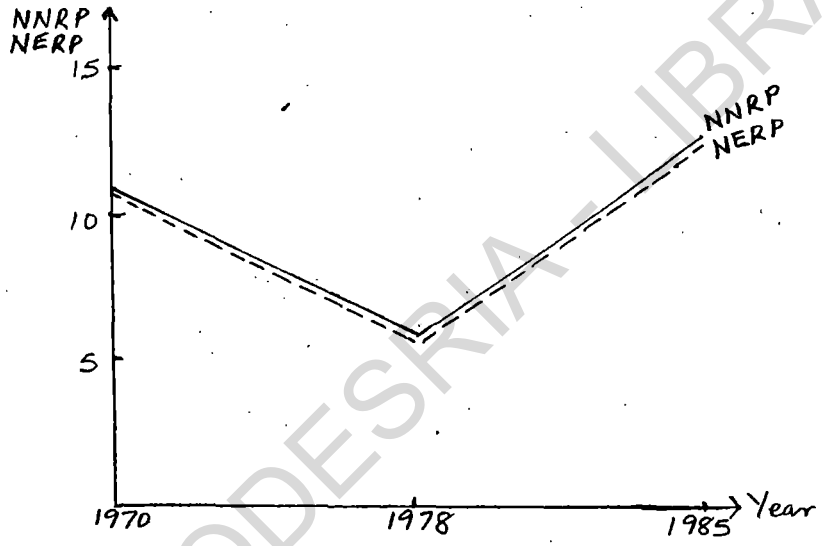
NERP = Net Effective Rate of Protection.

Fig. IV



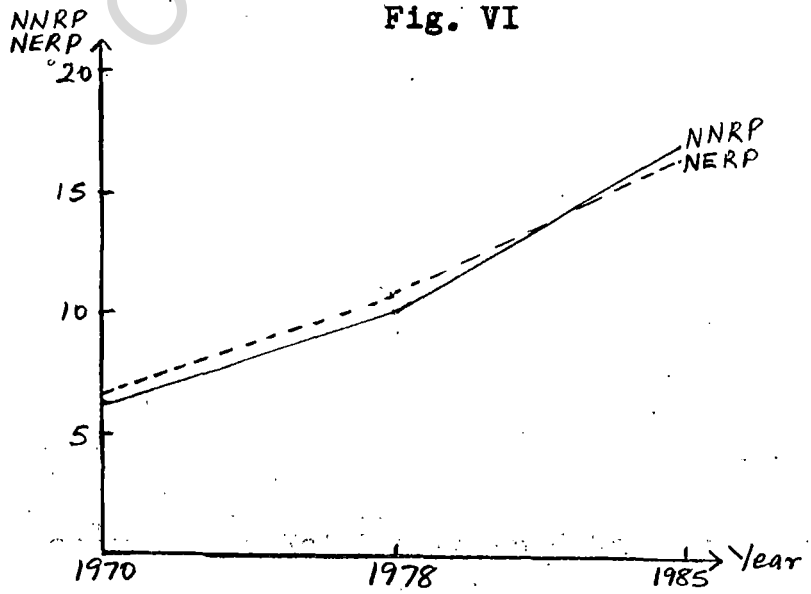

Consumer Goods Net Nominal and Net Effective Rates of Protection

Fig. V



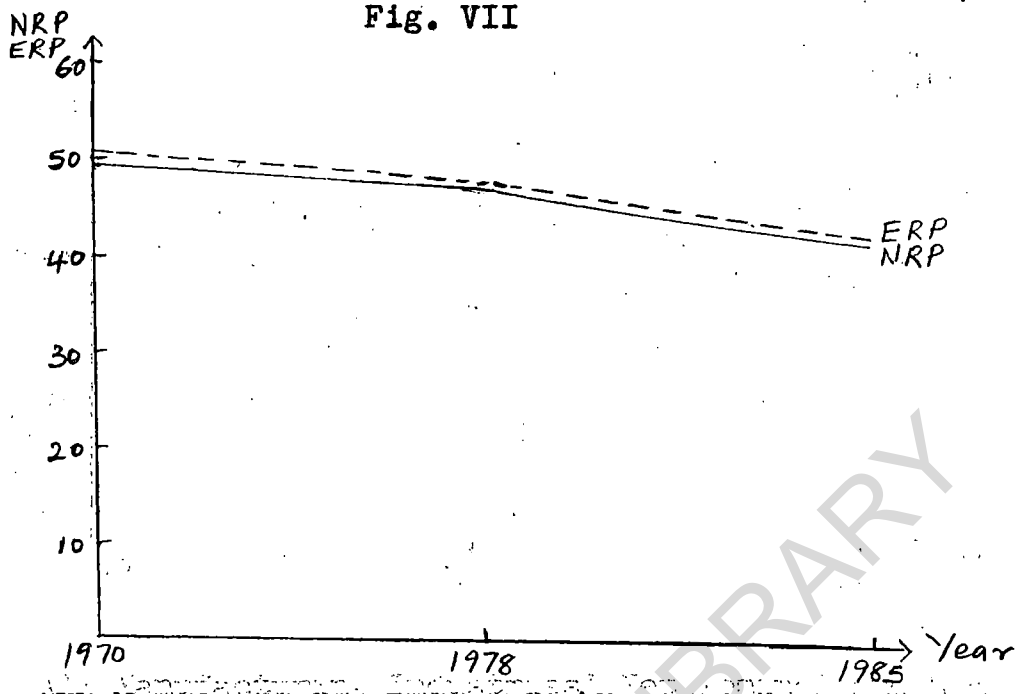

Intermediate Goods Net Nominal and Net Effective Rate of Protection.

Fig. VI



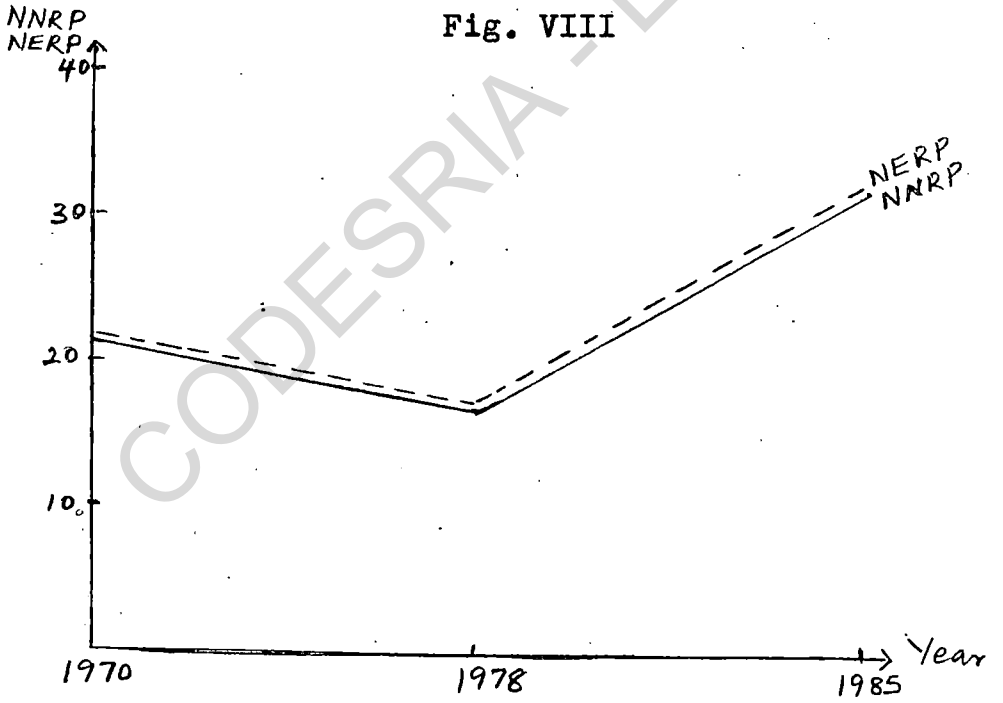

Capital Goods Net Nominal and Net Effective Rates of Protection.

Fig. VII




All Manufacturing Industries' Nominal and Effective Rates of Protection.

Fig. VIII




All Manufacturing Industries' Net Nominal and Net Effective Rates of Protection.

between the net nominal and net effective rates of protection. When the effective rate is greater than the nominal rate, it is positive escalation of the tariff structure. On the other hand, negative escalation of tariff is said to have occurred when nominal protection exceeds effective protection.

In this study, we observed that there were no perceptible differences between nominal and effective rates of protection. Only a mild degree of escalation of tariff structure was noticed. This could be explained by the imposition of excise duties on a fairly large number of locally produced goods. These excise duties to a large extent reduced the impact of the tariff rates. Coupled with this is the fairly high tariff rates imposed or levied on some of the material inputs. As shown in Table 5.5, the highest positive escalations were recorded in furniture in 1970, in furniture and clothing and made-up textiles for 1978 and clothing and made-up textiles in 1985. The highest negative escalations were recorded in the basic industrial chemicals in 1970 and 1978 and in bricks and tiles in 1985. Most of the commodities with positive escalations in 1970 and 1978 were the consumer goods industries. The cases of negative escalation showed more clearly the general direction of the policy of protection. Using the industry group classification (Table 5.6), clothing and made-up textiles had the highest

protective rates of capital goods were higher than those of intermediate goods sector. This we consider to be probably due to the recognition of the vital role of the capital goods sector in industrialization by the government.

Generally, the observed differential rates of protection among the manufacturing industries resulted from the combined effects of tariff rates, excise duties and the extent of over-valuation of the domestic currency.

# CHAPTER SIX

## THE EFFECTIVENESS OF THE TARIFF STRUCTURE

### 6.1: Introduction

The main aim of this chapter is to present the estimation results of the models specified in Chapter Three In other words, the concern of the chapter is an examination of the relationship between tariff structure and industrial development, and the extent to which the variations in industrial development have been affected by changes in the tariff structure. Perhaps there is the need to mention that the focus of the study is not towards the identification and estimation of those variables that might have influenced industrial development over the past years. Rather, the study is concerned with the extent to which measures of tariff protection have influenced industrial development. The recognition of the fact that variables such as the degree of openness of the economy (TDOP), the size of the domestic market (TSDM), the size of the plant (TSTP), average wage rate (AVWR), and the value added per employee (VAPE), could likely influence industrial development made their inclusion and estimation in our models as a corollary.

### 6.2: Estimation Procedure

In this study, two proxies have been used for industrial development. These proxies are Import Substitution and the Average Growth Rate of Domestic Production. We measured Import substitution as the ratio of domestic

production to total supply, where total supply is domestic production plus imports. Average Growth Rate of Domestic Production was calculated by adding the growth rates of domestic production of the years that make up the period and then divide by the number of years. In other words, it is the average of the sum of the growth rates of the domestic production of the years in that period. The Net Effective Rate of Protection (NERP) has been used as derived in Chapter 3 and estimated in Chapter 5. The growth in the size of the domestic market was estimated as the percentage change in domestic absorption of manufactured goods where domestic absorption is domestic production plus imports less exports. In the case of the degree of openness of the economy, it was calculated as the ratio of imports to absorption. Since the study is cross-sectional in nature, annual data have been used in all the variables. In all, twenty seven manufacturing industries have been used. A breakdown of these industries shows that thirteen are consumer goods industries while eight and six are intermediate and capital goods industries, respectively. The study covers the period 1970 to 1985 which is made up of sixteen years. It was not possible to include post 1985 data as such data were not available for use for most variables.

The regression models of our study used the ordinary least squares (OLS) method. The estimation of the equations

in our models gave summary statistics of standard errors of coefficients, the coefficients of explanatory variables, F- statistics, the coefficients of multiple determination, $R^2$ and the adjusted coefficient of multiple determination, $\bar{R}^2$.

The study did not test for auto correlation using the Durbin-Watson d statistics (D.W.) because of the use of cross sectional data. In fact auto-correlation is a problem specific to time series and does not arise in cross section data.[1]

The standard errors and F- statistic have been used to test for the significance of the coefficients of the explanatory variables. We used the coefficients of multiple determination, $R^2$ to examine the percentage of the total variation of the dependent variable explained by the regression plane, that is, by the changes in the explanatory variables. The higher the $R^2$ the more useful the model will be for policy purpose.

## 6.3: Empirical Results

The estimates of the Ordinary Least Squares Regression for the four models specified in Chapter Three are reported in Tables 6.1 to 6.4. Table 6.1 presents estimates of the equations in Model 1. Table 2 shows the results of the estimates of the equations in Model 11 while Table 6.3 reports the estimates of the equations of Model

1. See, A. Koutsoyiannis, Theory of Econometrics: An Introductory Exposition to Econometric Methods, London, Macmillan Press, 1977, p. 226.

111. The estimates of the equations in Model IV are presented in Table 4.

Model 1

In 1970 (Table 6.1), all the coefficients of the explanatory variables except that of the size of domestic market have the expected signs. The coefficients of the measure of tariff protection for 1970 ($NERP_{T1}$) are also significant at 5 per cent level of significance in all the equations. The parameter estimate of the coefficients of the size of the plant (TSTP), average wage rate (AVWR) and the size of the domestic market (TSDM) are statistically insignificant at 5 per cent level of significance while that of the degree of openness is statistically significant at 1 per cent level of significance. The F- statistics are also significant at (1,25) degrees of freedom for equation (1) and at (2,24) degrees of freedom for equations (2) to (6). This shows that a significant association exists between import substitution and the parameter estimates of the explanatory variables. The coefficients of multiple determination, $R^2$ are generally below 0.50 with the exception of that of equations (5) and (6) which are respectively 0.50 and 0.91. The 0.91 exhibited by equation (6) implies that 91 per cent of the total variation in import substitution is explained by the linear influence of tariff protection measure and the degree of openness of the economy.

In 1978 (Table 6.1) apart from the estimated coefficients of tariff protection measure of 1978 ($NERP_{T2}$) in

equations (2) to (7), the estimated coefficients of all the other variables have the expected signs. Against the negative relationship exhibited by $NERP_{T2}$, the sign of the coefficients of $NERP_{T1}$ indicates positive relationship with import substitution. Apart from equation (1), the coefficients of $NERP_{T2}$ are statistically insignificant at the 5 per cent level of significance. On the other hand, the coefficients of $NERP_{T1}$ in similar equations are statistically significant at the 5 per cent level of significance. Except the coefficients of the TDOP and AVWR, all the other coefficients are not significant statistically at 5 per cent level. The F- statistics of all the equations are significant at 5 per cent level of significance. With the exception of the coefficient of multiple determination, $R^2$ of equation (7) which is 0.91, the coefficients of multiple determination of all the other equations are generally below 0.50 meaning that the total variations in import substitution explained by changes in the explanatory variables are less than 50 per cent.

In 1985 (Table 6.1) the parameter estimates have the correct signs with the exception of $NERP_{T2}$, TSDM, and AVWR in some of the equations. The coefficients of the explanatory variables apart from those of $NERP_{T3}$ in equation (1), VAPE in equation (7) and TDOP in equation (8), are not significant at either 5 per cent or 10 per cent levels of significance. The computed F- statistics for all the equations except equation (4) are generally higher than the critical value of F at the 5 per cent level, meaning that

TABLE 6.1

ORDINARY LEAST SQUARES REGRESSION RESULTS FOR IMPORT SUBSTITUTION (IS): 1970; 1978; 1985

| Year and Equation | Constant | $NERP_{T1}$ | $NERP_{T2}$ | $NERP_{T3}$ | TSTP | TSDM | AVAR | VAPE | TDOP | $R^2$ | $\bar{R}^2$ | F-statistic |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | | | | | | |
| 1 | 0.318 | 0.0069 (0.0019) | | | | | | | | 0.45 | 0.43 | 13.62 |
| 2. | 0.300 | 0.0068 (0.0020) | | | 0.0001 (0.0004) | | | | | 0.46 | 0.40 | 6.62 |
| 3. | 0.253 | 0.0071 (0.0019) | | | | | 0.0950 (0.1056) | | | 0.47 | 0.42 | 7.16 |
| 4. | 0.300 | 0.0070 (0.0019) | | | | | | 0.0029 (0.0032) | | 0.47 | 0.42 | 7.18 |
| 5. | 0.417 | 0.0067 (0.0018) | | | | -0.0015 (0.0010) | | | | 0.50 | 0.45 | 8.12 |
| 6 | 0.864 | 0.0021 (0.0008) | | | | | | | -0.7803 (0.0660) | 0.91 | 0.89 | 114.45 |
| 1978 | | | | | | | | | | | | |
| 1 | 0.347 | | 0.0027 (0.0012) | | | | | | | 0.28 | 0.24 | 5.35 |
| 2 | 0.269 | 0.0058 (0.0023) | -0.0006 (0.0017) | | | | | | | 0.45 | 0.39 | 6.43 |
| 3. | 0.266 | 0.0056 (0.0025) | -0.0005 (0.0018) | | | 0.0001 (0.0007) | | | | 0.45 | 0.37 | 4.13 |
| 4. | 0.237 | 0.0053 (0.0024) | -0.0005 (0.0017) | | | | | 0.0028 (0.0032) | | 0.47 | 0.39 | 4.50 |
| 5. | 0.233 | 0.0054 (0.0024) | -0.0006 (0.0017) | | | | 0.0164 (0.0130) | | | 0.49 | 0.41 | 4.90 |
| 6 | 0.212 | 0.0059 (0.0023) | -0.0010 (0.0017) | | 0.0002 (0.0001) | | | | | 0.49 | 0.41 | 4.90 |
| 7 | 0.884 | 0.0026 (0.0010) | -0.0013 (0.0007) | | | | | | -0.8315 (0.0730) | 0.91 | 0.88 | 70.31 |
| 1985 | | | | | | | | | | | | |
| 1 | 0.366 | | | 0.0052 (0.0024) | | | | | | 0.26 | 0.22 | 5.26 |
| 2 | 0.390 | | 0.0018 (0.0040) | 0.0037 (0.0041) | | | | | | 0.26 | 0.19 | 3.48 |
| 3 | 0.351 | 0.0059 (0.0056) | -0.0002 (0.0044) | 0.0019 (0.0044) | | | | | | 0.30 | 0.20 | 3.12 |
| 4 | 0.328 | 0.0056 (0.0057) | -0.0001 (0.0042) | 0.0018 (0.0045) | 0.0002 (0.0005) | | | | | 0.31 | 0.16 | 2.54 |
| 5 | 0.459 | 0.0051 (0.0056) | 0.0009 (0.0042) | 0.0005 (0.0048) | | -0.0011 (0.0010) | | | | 0.34 | 0.20 | 2.89 |
| 6. | 0.792 | 0.0038 (0.0055) | -0.0020 (0.0044) | 0.0043 (0.0045) | | | -0.1138 (0.7108) | | | 0.39 | 0.26 | 3.39 |
| 7. | 0.138 | 0.0045 (0.0052) | 0.0007 (0.0041) | 0.0006 (0.0041) | | | | 0.0162 (0.0072) | | 0.44 | 0.33 | 3.90 |
| 8. | 1.016 | -0.0016 (0.0037) | -0.0004 (0.0026) | 0.0017 (0.0022) | | | | | -0.1211 (0.0202) | 0.74 | 0.64 | 12.64 |

Note: Figures in parentheses are standard errors.

tariff measures of 1978 and 1985. The second observed result is that, while the consideration of $NERP_{T1}$ in addition to $NERP_{T2}$ increased the coefficient of adjusted multiple determination from 0.24 to 0.39 in 1978, the consideration of $NERP_{T2}$ in addition to $NERP_{T3}$ made the coefficient of adjusted multiple determination to decline from 0.22 to 0.19 for 1985. This influential role of $NERP_{T1}$ on import substitution was due to the use of tariff protection of that year as an instrument of industrial development policy. The policy made the areas of investment which could be considered profitable to be clear to entrepreneurs. At this time, there was a greater variance among the tariff rates of the consumer goods and that of their material inputs. In fact, this was when the pull and push effects of the tariff structure on the movement of resources were emphasised. The observed negative relationship between $NERP_{T2}$ and import substitution in 1978 could be attributed to the consequences of over-dependence on the oil sector as the major source of revenue. By 1978, the country's revenue from the oil sector had started to dwindle, resulting in balance of payments disequilibrium. In an attempt to correct this, the government among other measures reviewed the tariff structure. The role of the tariff structure which in this regard was aimed at rectifying the balance of payments disequilibrium, greatly affected the perception of entrepreneurs with regard to areas of potential profitability.

At this time, apart from the fact that there was no great variance among the nominal tariff rates of the consumer goods and that of their material inputs, these rates were relatively high. Furthermore, the government levied excise duties on the locally produced goods. These coupled with the fairly high overvaluation of the country's currency which were not realised by the government reduced the estimates of the measure of tariff protection - i.e. net effective rate of protection. In fact, most of the selected manufacturing industries on which the analysis was based had negative net effective rate of protection in 1978. Hence, it is our view that the net effect of tariff structure, excise duties and the extent of over-valuation of the domestic currency must have been instrumental to the observed relationship between import substitution and the tariff measure of 1978. By 1985, even though there were no highly perceptible divergences between tariff rates on consumer goods and their material inputs, the rates were relatively low compared to those of 1978. Furthermore, the magnitude of the level of overvaluation of the domestic currency was lower resulting into moderate levels of net effective protection. In fact at this time, the government's use of the tariff structure as one of the tools to correct the balance of payments disequilibrium was relaxed, because of the positive results on the economy derived from the counter-trade policy. The overall effect of these developments assisted entrepreneurs in identifying

by changes in $NERP_{T3}$ was higher than that, jointly explained by $NERP_{T2}$ and $NERP_{T3}$. In fact, this is the opposite of remark (ii) made above.

Model II

The estimates of the coefficients of the equations of Model II for 1970, 1978 and 1985 are presented in Table 6.2. For 1970 (Table 6.2), the coefficients of the measure of net effective protection ($NERP_{T1}$) are positive and statistically insignificant for all the equations. Similarly except for equation (4) where the coefficient of TSTP is negative and statistically insignificant, the coefficients of the other explanatory variables in all the equations except equation (6) are positive and insignificant. The coefficient of the degree of openness of the economy as expected is negative and statistically significant at 5 per cent level of significance. Apart from equation (6) with significant computed F- statistics, all the other equations are found to be statistically insignificant meaning that the null hypothesis of equality of coefficients must be accepted. This supports the evidence that there is no significant association found between the average growth rate of domestic production and the parameter estimates of the explanatory variables of these equations. In terms of the proportion of variations in AGRDP explained by the changes in the independent variables, the coefficients of multiple determination, $R^2$ of all the equations, are unsatisfactory.

For 1978 (Table 6.2) just like in the case of import

TABLE 6.2

ORDINARY LEAST SQUARES REGRESSION RESULTS FOR AVERAGE GROWTH RATE OF DOMESTIC PRODUCTION (AGRDP): 1970, 1978, 1985

| Year and Equation | Constant | $NERP_{T1}$ | $NERP_{T2}$ | $NERP_{T3}$ | TSTP | TSIM | AVWR | VAPE | TDOP | $R^2$ | $\bar{R}^2$ | F-statistic |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | | | | | | |
| 1 | 2.245 | 0.1907 (0.3470) | | | | | | | | 0.11 | 0.08 | 1.30 |
| 2. | 2.187 | 0.1917 (0.3549) | | | | | 0.0086 (0.1979) | | | 0.11 | 0.03 | 1.15 |
| 3. | 2.133 | 0.1930 (0.3535) | | | | | | 0.1858 (0.6025) | | 0.12 | 0.04 | 1.19 |
| 4. | 2.875 | 0.2313 (0.3572) | | | -0.0467 (0.0745) | | | | | 0.12 | 0.05 | 1.34 |
| 5. | 0.982 | 0.2250 (0.3493) | | | | 0.1921 (0.1989) | | | | 0.15 | 0.05 | 1.64 |
| 6. | 7.497 | -0.2746 (0.3553) | | | | | | | -0.7501 (0.2787) | 0.34 | 0.27 | 4.81 |
| 1978 | | | | | | | | | | | | |
| 1. | 6.891 | | 0.0387 (0.1026) | | | | | | | 0.11 | 0.07 | 1.14 |
| 2. | 2.721 | 0.3067 (0.2198) | -0.1365 (0.1609) | | | | | | | 0.18 | 0.11 | 2.05 |
| 3. | 1.408 | 0.3134 (0.2347) | -0.1350 (0.1650) | | | | | | 0.0178 (0.1813) | 0.18 | 0.06 | 1.67 |
| 4. | 2.870 | 0.3083 (0.2265) | -0.1367 (0.1644) | | | | -0.0069 (0.1311) | | | 0.18 | 0.06 | 1.67 |
| 5. | 4.093 | 0.3032 (0.2249) | -0.1268 (0.1671) | | -0.0491 (0.1607) | | | | | 0.19 | 0.06 | 1.70 |
| 6. | -7.526 | 0.1523 (0.1836) | -0.0847 (0.1315) | | | | | 0.9142 (0.2503) | | 0.52 | 0.46 | 6.50 |
| 7. | -2.379 | -0.0072 (0.1647) | 0.0648 (0.1186) | | | 0.2451 (0.0476) | | | | 0.67 | 0.62 | 11.29 |
| 1985 | | | | | | | | | | | | |
| 1 | 3.664 | | | 0.2489 (0.4026) | | | | | | 0.12 | 0.07 | 1.38 |
| 2 | 5.506 | | 0.1379 (0.0607) | 0.1392 (0.0626) | | | | | | 0.29 | 0.22 | 3.81 |
| 3 | 5.413 | 0.1406 (0.8103) | -0.1332 (0.0684) | 0.1435 (0.0691) | | | | | | 0.29 | 0.18 | 2.81 |
| 4 | 6.815 | -0.0173 (0.9396) | -0.1327 (0.0696) | 0.1440 (0.0703) | | | | | 0.2555 (0.5114) | 0.30 | 0.15 | 2.37 |
| 5 | 3.146 | 0.2454 (0.9093) | 0.1425 (0.7204) | 0.1559 (0.0745) | | | 0.0586 (0.1172) | | | 0.30 | 0.15 | 2.37 |
| 6 | 4.291 | 0.2158 (0.8872) | -0.1223 (0.0711) | 0.1287 (0.0732) | | 0.1121 (0.1647) | | | | 0.31 | 0.16 | 2.44 |
| 7 | 4.443 | 0.0529 (0.8854) | 0.1391 (0.0695) | 0.1487 (0.0701) | 0.0631 (0.0819) | | | | | 0.31 | 0.17 | 2.48 |
| 8 | -0.252 | -0.2098 (0.6532) | -0.1549 (0.0512) | 0.1756 (0.0520) | | | | 0.4131 (0.0937) | | 0.67 | 0.59 | 8.30 |

Note: Figures in parentheses are standard errors.

substitution, the coefficients of the measure of tariff structure ($NERP_{T2}$) apart from equation (1) are negative and insignificant at 5 per cent level of significance. The coefficients of the tariff structure of the previous year of analysis ($NERP_{T1}$) are positive but statistically insignificant at 5 per cent level. The coefficient of TDOP in equation (3) is positive and insignificant while that of AVWR in equation (4) and TSTP in equation (5) have negative relationships and statistically insignificant. The observed positive relationship between TDOP and average growth rate of domestic production, though contrary to expectation, it could be accepted in an economy like that of Nigeria in which industrial activities depend on imported industrial inputs. In that case, the higher the degree of openness of the economy, the higher the growth rate of domestic production. So also is the case of AVWR where an increase in AVWR will invariably increase the cost of production, with productivity remaining the same, results in a decrease in the growth rate of domestic production. The coefficients of VAPE and TSDM have the correct signs and are significant at 1 per cent level of significance. The computed F- statistics for equations (1) to (5) are statistically insignificant at the 5 per cent level of significance. In equations (6) and (7), there is significant association between average growth rate of domestic production and the parameter estimates. The coefficients of determination, $R^2$ are also generally very low, for all the regression equations, with the exception of equations

(6) and (7) where they are respectively 0.52 and 0.67, indicating the weak explanatory power of the parameter estimates.

In 1985 (Table 6.2), the estimated coefficients of $NERP_{T3}$ are positive in all the equations and also statistically significant in all the equations with the exception of equations (1) and (6). The coefficients of the measure of tariff structure of the previous year of analysis ($NERP_{T2}$) are mainly negative and significant at 5 per cent level in equations (2) and (8). $NERP_{T1}$ which is the tariff protection of 1970 is statistically insignificant, with negative coefficients in some equations. The coefficients of all the remaining variables are positive and insignificant except VAPE which is positive and significant at 5 per cent level. The computed F- statistics for all the equations are insignificant at 5 per cent level, with the exception of equations (2) and (8). The coefficient of multiple determination, $R^2$ is generally low except in equation (8) where it is 0.67.

The above analysis shows that tariff protection to a large extent did not influence the average growth rate of domestic production. This observation could be due to some of the reasons advanced in Model 1. In addition, indicators of resource movements could be subject to certain biases. For instance, the average growth rate of domestic production could depend on the initial amount of domestic production in the base year. On the other hand, the observed relationship between measures of tariff

protection and average growth rate of domestic production may not necessarily mean that there was no growth in domestic production. In fact, there might have been growth in domestic production may be at a decreasing rate. Furthermore, the lack of significance of the coefficients of the measures of tariff production and other explanatory variables does not necessarily indicate the strength of the relationship. For example, in equation (5) of Model II for 1970 (Table 6.2) where $b_{11} = 23$, an increase in the measure of $NERP_{T1}$ by one unit would increase the expected annual rate of growth by 23 per cent. Thus, in analysing the size of the test, perhaps there is the need to consider whether or not statistical significance is observed or achieved at a desired level and not necessarily at some arbitrary level.



Model III

The parameter estimates of Model III for 1970-1978, 1978-1985 and 1970-1985 are presented in Table 6.3. For the sub period 1970-1978, the coefficients of the degree of openness of the economy (TDOP) for regression equations (2), (4) and (5) are as expected negative and statistically significant at 1 per cent level of significance. The coefficients of the change in the net protection ($\Delta$NERP) have negative signs but significant at 5 per cent level in equations (2), (4) and (5). The coefficients of the measure of tariff protection at the base year of the period ($NERP_{T1}$) have

TABLE 6.3

ORDINARY LEAST SQUARES REGRESSION RESULTS FOR IMPORT SUBSTITUTION (IS): 1970 - 1978, 1978 - 1985, 1970 - 1985

| Time Period and Equation | Constant | $\Delta$NERP | $NERP_{T1}$ | $NERP_{T2}$ | TSDM | TDOP | VAPE | AVWR | TSTP | $R^2$ | $\bar{R}^2$ | F-statistic |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1970 -1978 | | | | | | | | | | | | |
| 1 | 0.292 | -0.0024 (0.0016) | 0.0046 (0.0014) | | | | | | | 0.44 | 0.38 | 7.09 |
| 2 | 0.852 | -0.0013 (0.0006) | 0.0014 (0.0006) | | 0.00002 (0.00024) | -0.7925 (0.0598) | 0.0004 (0.0011) | | | 0.93 | 0.91 | 55.39 |
| 3 | 0.239 | -0.0025 (0.0018) | 0.0045 (0.0016) | | -0.00008 (0.00074) | | | 0.0155 (0.0935) | 0.0003 (0.0004) | 0.46 | 0.30 | 3.13 |
| 4 | 0.877 | -0.0013 (0.0006) | 0.0014 (0.0006) | | | -0.7963 (0.0609) | | -0.0106 (0.0304) | -0.00002 (0.00012) | 0.93 | 0.91 | 55.48 |
| 5 | 0.926 | -0.0013 (0.0006) | 0.0012 (0.0005) | | | -0.8037 (0.0586) | 0.0022 (0.0019) | -0.0586 (0.0496) | | 0.93 | 0.92 | 59.32 |
| 6 | 0.258 | -0.0025 (0.0018) | 0.0045 (0.0015) | | -0.0001 (0.0007) | | 0.0002 (0.0035) | | 0.0003 (0.0004) | 0.46 | 0.30 | 3.13 |
| 1978 - 1985 | | | | | | | | | | | | |
| 1 | 0.421 | 0.0029 (0.0026) | | 0.0037 (0.0016) | | | | | | 0.29 | 0.23 | 3.86 |
| 2 | 0.987 | -0.00001 (0.00021) | | -0.00001 (0.00007) | 0.00025 (0.00012) | -0.9817 (0.0091) | 0.0002 (0.0001) | | | 0.99 | 0.99 | 3546.72 |
| 3 | 0.041 | 0.0021 (0.0025) | | 0.0039 (0.0015) | 0.00472 (0.00274) | | | 0.0741 (0.0592) | 0.00009 (0.00013) | 0.47 | 0.31 | 3.42 |
| 4 | 1.003 | -0.00002 (0.00012) | | -0.00004 (0.00008) | | -0.9901 (0.0098) | | -0.0008 (0.0028) | 0.00001 (0.00001) | 0.99 | 0.99 | 2839.80 |
| 5 | 1.022 | 0.00002 (0.00011) | | -0.00011 (0.00008) | | 0.9901 (0.0085) | 0.0005 (0.0002) | -0.00882 (0.00440) | | 0.99 | 0.99 | 3495.91 |
| 6 | 0.233 | 0.0026 (0.0024) | | 0.0032 (0.0015) | 0.0045 (0.0027) | | 0.00382 (0.00318) | | 0.00010 (0.00013) | 0.47 | 0.31 | 3.38 |
| 7 | 0.995 | 0.00004 (0.00012) | -0.00014 (0.00018) | 0.00006 (0.00012) | 0.00026 (0.00013) | -0.9882 (0.0092) | | | | 0.99 | 0.99 | 3299.79 |
| 1970-1985 | | | | | | | | | | | | |
| 1 | 0.398 | -0.0001 (0.0019) | 0.0055 (0.0016) | | | | | | | 0.43 | 0.37 | 6.93 |
| 2 | 0.960 | 0.0001 (0.0006) | -0.0001 (0.0006) | | 0.0002 (0.0004) | -0.9044 (0.0632) | 0.0003 (0.0002) | | | 0.94 | 0.93 | 68.85 |
| 3 | 0.174 | 0.0003 (0.0020) | 0.0056 (0.0018) | | 0.0011 (0.0012) | | | 0.0659 (0.0497) | -0.00002 (0.00034) | 0.51 | 0.37 | 3.89 |
| 4 | 0.964 | 0.0001 (0.0006) | 0.00004 (0.00068) | | | -0.9083 (0.0637) | | 0.0058 (0.0161) | -0.00004 (0.00011) | 0.94 | 0.93 | 68.34 |
| 5 | 0.967 | 0.00093 (0.00060) | -0.00004 (0.00070) | | | -0.9090 (0.0643) | 0.0002 (0.0016) | 0.0024 (0.0286) | | 0.94 | 0.93 | 68.00 |
| 6 | 0.311 | 0.0004 (0.0021) | 0.0051 (0.0018) | | 0.0012 (0.0012) | | 0.00263 (0.00296) | | 0.00002 (0.00035) | 0.48 | 0.33 | 3.59 |

Note: Figures in parentheses are standard errors.

the expected signs and also statistically significant at 5 per cent level of significance. All the other variables exhibited the expected relationships though statistically insignificant. The computed F- statistics for all the equations are higher than the critical or theoretical value of F at 5 per cent level. The coefficient of determination, $R^2$ varied from one equation to the other depending on the additional explanatory variables on the two measures of net effective protection. An examination of these equations reveals that these high value of $R^2$ can be attributed to the influence of TDOP with very high t- values. A large part of this period, fell within when the tariff protection was used as an instrument of industrial development, with great divergence between the tariff rates on consumer goods and their material inputs. This tariff structure greatly influenced the degree of openness of the economy. The unexpected relationships and the non-significance of some of the coefficients of the non-tariff variables could be due to the ad hoc trade policies pursued by the government during this period.

During the sub-period 1978-1985, the coefficients of TDOP for regression equations (2), (4), (5) and (7) are as expected negative and in addition statistically significant at the 5 per cent level. Similarly, the coefficients of TSDM in equations (2) and (7) are positive and statistically significant at 5 per cent level. The coefficient of VAPE is

positive and statistically significant at the 5 per cent level. The meaning of this is that the flows of services into the manufacturing process from both human capital and physical capital have positive and significant effects on import substitution. The coefficient of AVWR in equation (5) is negative and statistically significant at 5 per cent level. With the exception of the coefficients of $NERP_{T2}$ in equations (1), (3) and (6) that are positive and statistically significant at 5 per cent level, the coefficients of the measures of tariff protection in all the other equations are mostly positive and statistically insignificant at 5 per cent level. The coefficient of TSTP has the expected sign but insignificant. The F-statistics for all the equations are statistically significant at 5 per cent level of significance. The coefficients of multiple determination, $R^2$ varied from one equation to the other depending on the additional independent variables on the measures of tariff protection. Generally, equations with TDOP recorded the highest values of $R^2$. This influential role of TDOP became possible because during the most part of this period, tariff rates were generally low, even though there were no great variance between the rates on consumer goods and their material inputs. In fact the low rates assisted in increasing the degree of openness of the economy in terms of the material inputs.

A close examination of the two sub-periods, in terms of performance using the available statistical methods revealed two distinct features:

Model IV:

The results of this model for 1970-1978, 1978-1985, 1970-1985 are reported in Table 4. For the sub period 1970-1978, (Table 6.4), the coefficients of the measures of tariff protection (i.e. $\Delta$NERP and $NERP_{T1}$) are positive and statistically insignificant in all the equations at 5 per cent level. The coefficients of TSTP, a measure of economies of scale is negative and statistically not significant at 5 per cent level. All the other variables have positive and insignificant coefficients at 5 per cent level of significance except TDOP in equation (5). The computed F-statistics are generally lower than the critical or theoretical values of F. Also, the computed coefficients of multiple determination, $R^2$ are low. Though data limitation might contribute to the unexpected result, we never the less believe that the emphasis goes beyond this. The positive relationship between TDOP and average growth rate of domestic production could be considered to be normal due to reasons earlier advanced in Model II.

In the sub period 1978-1985 (Table 6.4), the coefficients of $\Delta$NERP and $NERP_{T2}$ are mainly positive and generally not significant at 5 per cent and 10 per cent levels of significance in all the equations. Similarly, the coefficients of all the other variables in all the equations are positive but insignificant at 5 per cent level. The computed F- statistics for all the regression equations are generally insignificant at 5 per cent level.

TABLE 6.4

ORDINARY LEAST SQUARES REGRESSION RESULTS FOR AVERAGE GROWTH RATE OF DOMESTIC PRODUCTION (AGRDP): 1970-1978, 1978-1985, 1970-1985

| Time Period and Equation | Constant | ΔNERP | $NERP_{T1}$ | $NERP_{T2}$ | TSDM | TDOP | VAPE | AVM | TSTP | $R^2$ | $\bar{R}^2$ | F-statistic |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1970-1978 | | | | | | | | | | | | |
| 1 | 1.377 | 0.2289 (0.2654) | 0.1012 (0.2275) | | | | | | | 0.14 | 0.14 | 1.50 |
| 2 | -2.739 | 0.2438 (0.2751) | 0.2656 (0.2509) | | 0.0972 (0.1073) | 0.4796 (0.2696) | 0.2602 (0.5141) | | | 0.31 | 0.12 | 2.09 |
| 3 | -0.788 | 0.3334 (0.2846) | 0.1353 (0.2445) | | 0.1180 (0.1160) | | | 0.1526 (0.1459) | -0.3633 (0.5643) | 0.23 | 0.03 | 1.64 |
| 4 | -3.742 | 0.1704 (0.2602) | 0.3693 (0.2530) | | | 0.4973 (0.2736) | | 0.1411 (0.1366) | -0.2849 (0.5383) | 0.31 | 0.07 | 2.14 |
| 5 | -5.365 | 0.1514 (0.2592) | 0.3864 (0.2564) | | | 0.5447 (0.2709) | -0.5274 (0.8689) | 0.2414 (0.2295) | | 0.32 | 0.07 | 2.16 |
| 6 | 1.064 | 0.3185 (0.2896) | 0.0949 (0.2452) | | 0.0990 (0.1163) | | 0.2857 (0.5501) | | 0.3004 (0.5708) | 0.20 | -0.02 | 1.46 |
| 1978-1985 | | | | | | | | | | | | |
| 1 | 6.810 | -0.8510 (0.5505) | | 0.1850 (0.3400) | | | | | | 0.24 | 0.16 | 2.59 |
| 2 | -0.291 | -0.7678 (0.5461) | | 0.2620 (0.3644) | 0.1173 (0.6235) | 0.4477 (0.4673) | 0.1222 (0.7235) | | | 0.41 | 0.24 | 2.58 |
| 3 | 1.577 | 0.1031 (0.0508) | | 0.2509 (0.3424) | 0.8709 (0.6138) | | | 0.1767 (0.1327) | 0.0193 (0.0285) | 0.39 | 0.23 | 2.45 |
| 4 | -0.578 | -0.9945 (0.5805) | | 0.3305 (0.3995) | | 0.2617 (0.4717) | | 0.1496 (0.1369) | 0.0347 (0.0294) | 0.34 | 0.16 | 2.01 |
| 5 | 2.906 | 0.9411 (0.6068) | | 0.2469 (0.4516) | | 0.1337 (0.4701) | 0.0619 (0.1329) | 0.0689 (0.2446) | 0.0689 | 0.30 | 0.11 | 1.72 |
| 6 | 2.912 | 0.9281 (0.5364) | | 0.0866 (0.3318) | 0.8301 (0.6060) | | 0.9740 (0.7104) | | 0.0213 (0.0283) | 0.40 | 0.23 | 2.48 |
| 7 | 2.549 | -0.8707 (0.6271) | 0.5338 (0.9473) | -0.0419 (0.6512) | 0.7774 (0.7078) | 0.3530 (0.5158) | | | | 0.33 | 0.14 | 1.93 |
| 1970-1985 | | | | | | | | | | | | |
| 1 | 1.019 | -0.1596 (0.1758) | 0.0824 (0.1488) | | | | | | | 0.14 | 0.14 | 1.56 |
| 2 | -2.166 | -0.1423 (0.1720) | 0.2687 (0.1753) | | 0.0831 (0.1059) | 3.6190 (1.7572) | 0.4166 (0.2495) | | | 0.36 | 0.18 | 2.47 |
| 3 | -0.223 | -0.1822 (0.1937) | 0.0398 (0.1678) | | 0.0406 (0.1142) | | | 0.2218 (0.4728) | 0.3125 (0.3278) | 0.22 | 0.20 | 1.51 |
| 4 | -2.901 | -0.2137 (0.1711) | 0.2801 (0.1912) | | | 0.3499 (0.1789) | | 0.4578 (0.4522) | 0.3042 (0.3019) | 0.34 | 0.16 | 2.33 |
| 5 | -1.419 | -0.1826 (0.1685) | 0.2678 (0.1959) | | | 0.3319 (0.1803) | 0.4390 (0.4579) | 0.0836 (0.8029) | | 0.34 | 0.16 | 2.31 |
| 6 | 0.577 | -0.1816 (0.1900) | 0.0221 (0.1606) | | 0.0466 (0.1122) | | 0.2726 (0.2703) | | 0.2791 (0.3205) | 0.24 | 0.16 | 1.69 |

Note: Figures in parentheses are standard errors.

The coefficients of multiple determination, $R^2$ are equally generally low - below 0.45.

The results of the whole period (1970-1985) as reported in Table 6.4, show that the coefficients of ΔNERP are negative and statistically insignificant at 5 per cent level. On the other hand, the coefficients of $NERP_{T1}$ are positive in all the equation but statistically not significant in all the equations. All the other variables have positive but insignificant coefficients at 5 per cent and 10 per cent levels of significance, with the exception of TDOP in equation (2). The computed F- statistics for all the equations are statistically not significant at 5 per cent level. The coefficients of multiple determination are generally low with the highest value of 0.36 recorded in equation (2).

The observed unexpected relationships and the non-significance of the coefficients of some variables may not be unconnected with empirical problems. For instance, net effective rates of protection which were calculated for three points in time, 1970, 1978 and 1985, could not have indicated the structure of incentives for the period of study, especially when we consider the frequent changes in the structure of tariff in Nigeria. Therefore, the lack of relationship between the proxies for industrial development and the structure of protection may not mean that these proxies have not been influenced by the structure of protection. Furthermore, because of the poor data base and

high level of aggregation of the industries of analysis, industries such as sugar and sugar confectionery products and paper and paper products for which effective rates have been calculated, might have included a variety of products, some of which were used as inputs in their own industry. Some of these industries, for example those producing dairy products and alcoholic drinks might even have been producing both export and import competing products which responded differently to protection.

Put in summary form, the results of our findings are as follows:

(i) the regression analysis indicates that the measures of tariff protection differ from each other in the three years of analysis (1970, 1978 and 1985) in Models I and II.
In other words, the relationship between these measures and import substitution on the one hand and the average growth rate of domestic production on the other varied from one year of analysis of our study, to the other.

(ii) in the case of Models III and IV, the relationship between the measures of tariff protection and import substitution and average growth rate of domestic production during the two subperiods (1970-1978, 1978-1985) were not the same.

(iii) the models with import substitution as the dependent variable, that is Models I and III, performed relatively better.

(viii) that the measure of tariff protection in the base year of a sub period could influence the changes in the import substitution of that period. For example, the coefficients of the measure of tariff protection in the base year of 1970-1978 subperiod in Model III were positively related to import substitution and statistically significant at 5 per cent level of significance.

# CHAPTER SEVEN

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 7.1: Summary of Work

The main aim of this chapter is to summarise the findings of the study and then put forward some recommendations. The main issue of this study has been an economic analysis of the domestic resource cost and effective protection in selected Nigerian manufacturing industries for the period 1970-1985. As a follow-up, the study set out to appraise the domestic cost of foreign exchange saved or earned in the manufacturing industries, examine the structure of tariff and its bias, if any and also assess the extent to which the tariff structure has affected industrialization.

As a starting point, we reviewed the existing literature in Chapter Two. The review showed that the level of protection was highest in the consumer goods industries. Generally, the structure of tariff was different from one country to another and from time to time, depending on the economic conditions prevailing in a particular country at a point in time. In the case of domestic resource cost, we noted that, the mere fact of an industry being a net user of foreign exchange did not imply that it is socially undesirable.

In Chapter Three, we discussed the theoretical and methodological issues of the study. In the pursuit of the objectives of this study, two approaches were adopted. The first approach derived the formulae for effective rate

of protection and net effective rate of protection and also adopted one of the relevant and suitable existing formulae for calculating domestic resource cost. The second approach formulated models to examine the effectiveness of the tariff structure on industrialization. In other words, the approach attempted the building of simple models to explain variations in import substitution and average growth rates of domestic production, the proxies used for industrial development. A few number of variables, assumed could have significant impact on the dependent variables were included in the models.

In the assessment of the structure, growth and performance of the manufacturing industries in Chapter Four, we observed that the manufacturing sector recorded an average growth rate of 23.5 per cent during the period 1970-1984, with an average contribution of 7.4 per cent to the Gross Domestic Product during the same period. In terms of the structure, the manufacturing sector has been heavily biased in favour of low technology and light finished consumer goods and against intermediate and capital goods.

Chapter Five examined the structure of domestic resource cost and effective protection in the Nigerian manufacturing industries. In doing this, estimates of domestic resource cost and various measures of tariff protection were calculated for 1970, 1978 and 1985 using the methods of measurement discussed in Chapter Three.

The extent to which variations in import substitution

and average growth rate of domestic production have been affected by the measures of tariff protection formed the core issue of Chapter Six. To achieve this, the models formulated in chapter Three were estimated using the ordinary least squares regression analysis. The usual regression criteria of coefficient of multiple determination, $R^2$, standard errors and F-statistics were used to evaluate the regression coefficients.

Chapter Seven summarised the work, the findings and then made some recommendations.

## 7.2: Summary of Findings

Domestic resource cost and the tariff rate changes, with the protectiveness of the tariff structure have been analysed within the framework of an input-output system. The main highlights of these in the Nigerian manufacturing industries can be summarised as follows:

It was generally observed that activities in the capital goods sector had the lowest domestic resource cost in terms of foreign exchange saving or earning while those of the consumer goods sector with the highest protective measures recorded the highest domestic resource cost of foreign exchange saving or earning.

The high levels of tariff protection (nominal and effective) in 1970 and 1978 mildly declined in 1985, perhaps as a government measure of solving the problems of inflationary pressure and unemployment. Generally, the consumer goods sector was afforded the highest measures

the measures of tariff protection and import substitution and average growth rate of domestic production.

The effectiveness of the measures of tariff protection could go beyond a year as evidence in some models, though the unique number of years for adequate effectiveness could not be determined.

As a corollary, other variables, most especially the degree of openness of the economy greatly influenced the coefficients of multiple determination, $R^2$ in all the equations it featured in Models 1 and 111.

The unexpected relationships and the non-significance of the coefficients of some of the variables observed in certain models could be due to empirical problems earlier mention in Chapter Six. For instance, the net effective rates of protection which were calculated for the three years of analysis - 1970, 1978 and 1985 - could not have indicated the structure of protection for the period of study, especially when we consider the frequent changes in the structure of tariff in Nigeria and Carter's input-output table of the Nigerian economy on which the estimates are based, which is not free from errors. In fact, because of the poor data base and high level of aggregation of the industries of analysis, many industries for which effective rate have been calculated might have included a variety of products, some of which were used as inputs in their own industry. In some cases, indicators of resource movements could be subject to certain biases and some industries could even have been producing both export and import competing products which responded differently to protection. So the

lack of relationship between the proxies for industrial development and the structure of protection may not mean that these proxies have not been influenced by the structure of protection. Therefore, maximum caution has to be exercised before a conclusive statement could be made about the regression results.

Conclusions and Recommendations

In view of the analysis of this study and given the significant role that government can and does play in influencing tariff policy in an economy, the following are recommended:

There is the need for concerted efforts, to channel tariff protection toward industrial development, through the protection of identified specific key industries that are of vital importance in industrialization. The protection should be done on a temporary basis to avoid maintaining indefinitely activities which could be inefficient.

In the formulation of tariff policy, the tariff rates of the material inputs of some of the industries should either be reduced to the barest minimum or abolished. In fact, there is the need to determine that variance between the tariff rates on goods and that of their material inputs which will enhance the pull and push effects of tariff structure on the movement of resources.

Since the capital goods sector apart from playing a pivotal role in the industrial development of a nation, also relieves the foreign exchange constraint on growth,

eradicates technological and external dependence and has a relative capability of low domestic cost of foreign exchange generation, the bias of the tariff structure against the sector and in favour of consumer goods sector should be streamlined. In fact, the review of the level of protection afforded the consumer goods activities and the channelling of appropriate protective rates towards the activities of the capital goods sector should be considered by the government without further delay.

In order to avoid the discrimination of tariff protection against export sector of industries or export industries, usually arising from an overvalued domestic currency, the exchange rate of the domestic currency needs to be considered when formulating tariff policy. Furthermore, there is the need to either reduce or abolish taxes levied on manufactured exports.

Though the generation of revenue for the government is a cardinal objective of tariff policy, excise duties should be abolised for some of the goods so as to give perceptible differences between net nominal and net effective rates of protection - a sign of higher degree of protection - in the production of those goods. The overall long-run impact of higher degree of protection in terms of industrial development will eventually undoubtedly outweigh the immediate impact of revenue generation objective of tariff policy. In fact, the entrepreneurs should be made to invest these excise duties they would have paid, on

local sourcing of raw materials or research on local sources of their material inputs.

The observed pattern of escalation which is a feature of a country's early phase of industrialization needs a reconsideration since Nigeria's industrialization process has gone beyond the threshold of this phase. The effects of tariff rates, excise duties and the extent of overvaluation of the domestic currency should be coordinated to ensure that there is that appropriate protection for proper industrialization process.

Though changes in industrial policies are necessary, the frequency with which they are made should be curtailed, since the effects or results of some of the incentives manifest themselves in the long-run. Hence, the haphazard manner in which tariff rates are formulated by people of less expertise in tariff issues should be discontinued. Tariff policy formulation should be based on the outcome of research findings on appropriate protection.

Industrialization has a fundamental role in the process of economic development of any nation. Because of this, there is the need for the selective use of industrial incentives for the purpose of influencing the structure and character of investment in industries with high value added potentials or external economies, in addition to the system of protection.

The export of manufactures apart from the generation of foreign exchange, it also helps in the replacement of the diminishing momentum of import substitution in the

promotion of industrial development. Hence the Export Promotion Council should be made more effective in bringing together representatives of government, industry and trade. It should not only see itself as an institution concerned with advising the government on export policies and providing services and information to manufacturers and exporters, it should also effectively be made to assist small and medium size firms in their efforts to export. The lack of built-in incentives to export industries in the Nigerian tariff structure is a weakness that needs to be corrected if manufactured exports are to be developed.

Finally, the government should not only formulate policies, but as a follow-up, effectively monitor their implementations and make some adjustments when the need arises.

In conclusion, the study revealed that the consumer goods industries with the highest level of tariff protection, recorded the highest domestic resource cost in terms of foreign exchange earned or saved. This to some extent must have affected the pace and nature of industrial development in Nigeria. For meaningful industrial development, there is the need to review this high level of tariff protection. Hence the current deregulation policy of the government to our mind should be judiciously implemented.

The over-valuation of the domestic currency as revealed by the study manifested itself in the discrimination of tariff protection against the export sector or export industries and

consequently a hindrance to export promotion. To reverse this trend, there is the need for an appropriate exchange rate for the domestic currency. Hence we are of the view that the introduction of the floating exchange rate regime is most timely and appropriate. If properly managed, it will no doubt achieve an appropriate exchange rate for the domestic currency.

There is no pretence in this study that every question about domestic resource cost and effective protection in the Nigerian manufacturing industries has been answered. The model developed in this study, like any other model has its weakness. For instance, while the model does not discuss the role of non-tariff incentives, the treatment of lag structure is rather crude due to paucity of data. As already indicated in this study, our aim is not to formulate an econometric forecasting model but to produce a framework which can be used to examine the effects of government tariff policy on industrial development. With improvement on the data base of the country, we hope that further studies would concentrate on this aspect. Furthermore, any future work on effective protection and domestic resource cost in Nigeria should be done on a much more disaggregated, single-commodity basis rather than on commodity group basis or industry basis. This will undoubtedly reduce the averaging and weighting problems. Finally and most importantly, there is the urgent need for an up-dated and more detailed input-output table of the Nigerian economy. Such an input-output table will facilitate not only better effective rate of protection calculations but also all the other applications of an input-output table.

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APPENDIX I

VARIABLES IN REGRESSION MODELS

| INDUSTRIES | IMPORT SUBSTITUTION (IS) | | | | | | AVERAGE GROWTH RATE OF DOMESTIC PRODUCTION (AGRDP) | | | | | | NERP | | | ΔNERP | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 |
| 1. Meat Product | 0.996 | 0.562 | 0.984 | 0.547 | 0.850 | 0.824 | 73.85 | 579.81 | 13.21 | 346.90 | 97.79 | 207.78 | 35.59 | -2.24 | 24.42 | -37.83 | 26.66 | -11.17 |
| 2. Dairy Products | 0.053 | 0.191 | 0.255 | 0.271 | 0.211 | 0.234 | -15.05 | -5.03 | -2.03 | 120.87 | 23.33 | 79.97 | -2.81 | -13.14 | 39.23 | -10.33 | 52.37 | 42.04 |
| 3. Bakery Products | 0.921 | 0.456 | 0.994 | 0.749 | 0.895 | 0.898 | 207.56 | 28.31 | 23.00 | 78.76 | -4.54 | 64.79 | 42.43 | 18.59 | 44.20 | -23.84 | 25.61 | 1.77 |
| 4. Sugar and Sugar Confectionery Products | 0.451 | 0.281 | 0.124 | 0.398 | 0.186 | 0.251 | 0.97 | -22.28 | -44.46 | 45.94 | -13.24 | 20.61 | 41.78 | -1.27 | 53.59 | -43.05 | 54.86 | 11.18 |
| 5. Miscellaneous Food Products | 0.330 | 0.533 | 0.529 | 0.375 | 0.572 | 0.453 | 6.03 | 869.75 | 7.86 | 190.29 | 127.32 | 116.34 | 36.22 | 18.50 | 34.37 | -17.72 | 15.87 | -1.85 |
| 6. Alcoholic Drinks | 0.976 | 0.950 | 0.993 | 0.841 | 0.990 | 0.957 | 33.03 | 98.00 | -33.60 | 27.11 | 37.01 | 27.63 | 104.44 | 138.95 | 191.90 | 34.51 | 52.95 | 87.46 |
| 7. Soft Drinks | 0.974 | 0.739 | 0.998 | 0.771 | 0.968 | 0.931 | 18.18 | 38.41 | -21.30 | 66.17 | 32.99 | 51.31 | 42.29 | 58.21 | 93.01 | 15.92 | 34.80 | 50.72 |
| 8. Clothing and Made-up Textiles | 0.427 | 0.357 | 0.906 | 0.240 | 0.451 | 0.342 | 64.76 | 141.27 | 16.82 | 54.06 | 17.04 | 30.10 | 26.23 | 70.88 | 64.07 | 44.65 | -6.81 | 37.84 |
| 9. Leather Footwear | 0.760 | 0.641 | 0.985 | 0.557 | 0.863 | 0.757 | 16.27 | 84.78 | 125.10 | 70.99 | 67.30 | 68.29 | 62.18 | 61.37 | 34.17 | -0.81 | -27.20 | -28.01 |
| 10. Wood Products | 0.882 | 0.600 | 0.841 | 0.734 | 0.693 | 0.708 | 18.92 | -21.36 | 78.13 | 33.88 | 60.67 | 50.73 | 21.63 | 18.61 | 53.81 | -3.02 | 35.20 | 32.18 |
| 11. Furniture | 0.815 | 0.780 | 0.902 | 0.647 | 0.896 | 0.836 | 62.58 | 83.30 | 16.37 | 52.54 | 21.83 | 35.26 | 53.19 | 48.46 | 39.36 | -4.73 | -9.10 | -13.83 |
| 12. Printing and Publishing | 0.580 | 0.367 | 0.792 | 0.517 | 0.587 | 0.578 | 34.01 | -48.95 | -16.16 | 26.22 | 50.75 | 43.18 | 21.16 | 18.58 | 34.51 | -3.03 | 15.93 | 12.90 |
| 13. Drugs and Medicines | 0.021 | 0.269 | 0.632 | 0.184 | 0.346 | 0.306 | -31.25 | 71.25 | 107.16 | 87.96 | 63.30 | 76.68 | -10.52 | -5.20 | 10.40 | 5.32 | 15.60 | 20.95 |
| 14. Textiles | 0.480 | 0.545 | 0.872 | 0.447 | 0.713 | 0.627 | 5.69 | 6.28 | 45.06 | 23.96 | 18.77 | 22.47 | 8.00 | 18.54 | 20.01 | 10.54 | 1.47 | 12.01 |
| 15. Tanneries and Leather Products | 0.432 | 0.326 | 0.926 | 0.357 | 0.800 | 0.726 | -17.53 | 98.61 | 31.75 | 36.37 | 101.24 | 64.91 | 62.02 | 18.49 | 39.20 | -43.53 | 20.71 | -22.82 |
| 16. Paper and Paper Products | 0.233 | 0.280 | 0.479 | 0.268 | 0.386 | 0.355 | 69.05 | 17.62 | -23.39 | 37.03 | 64.76 | 52.11 | 1.25 | -13.10 | 24.93 | -14.35 | 38.03 | 23.68 |
| 17. Prints, Varnishes and Lacquers | 0.494 | 0.450 | 0.700 | 0.446 | 0.624 | 0.582 | -1.27 | 38.87 | -11.15 | 37.88 | 52.08 | 44.92 | 7.58 | 5.70 | 15.44 | -1.88 | 9.74 | 7.86 |
| 18. Petroleum and Coal Products | 0.601 | 0.212 | 0.235 | 0.423 | 0.787 | 0.714 | 41.16 | -55.65 | -103.97 | 196.42 | 42.08 | 135.01 | 7.99 | -5.45 | 5.45 | -13.44 | 10.90 | -2.54 |
| 19. Tyres and Tubes | 0.754 | 0.699 | 0.780 | 0.779 | 0.686 | 0.716 | 34.24 | 5.48 | 59.08 | 24.68 | 14.33 | 20.70 | 7.83 | -62.87 | 15.09 | -70.70 | 77.96 | 7.26 |
| 20. Rubber Processing | 0.435 | 0.129 | 0.132 | 0.237 | 0.116 | 0.159 | 20.47 | 15.70 | 17.73 | 32.62 | 8.33 | 21.49 | 35.01 | 31.59 | 24.72 | -3.42 | -6.87 | -10.29 |
| 21. Plastic Products | 0.284 | 0.243 | 0.519 | 0.297 | 0.473 | 0.446 | 45.35 | -20.13 | 8.21 | 47.58 | 53.05 | 54.55 | 7.72 | -13.51 | 15.04 | -21.23 | 28.55 | 7.32 |
| 22. Non-ferrous Metals | 0.297 | 0.223 | 0.116 | 0.277 | 0.115 | 0.162 | 68.65 | 20.75 | -6.96 | 88.10 | 49.65 | 73.09 | -3.05 | -5.10 | 15.12 | -2.05 | 20.22 | 18.17 |
| 23. Miscellaneous Metal Products | 0.600 | 0.455 | 0.729 | 0.525 | 0.650 | 0.628 | 4.49 | 1.62 | -1.16 | 31.34 | 13.40 | 24.23 | -6.92 | -9.21 | 10.38 | -2.29 | 19.59 | 17.30 |
| 24. Non-Electrical Machinery | 0.007 | 0.055 | 0.076 | 0.033 | 0.046 | 0.040 | 30.16 | 1.94 | 32.99 | 145.63 | 2.33 | 82.96 | -6.85 | -9.15 | 10.40 | -2.30 | 19.55 | 17.25 |
| 25. Electrical Equipment | 0.024 | 0.049 | 0.243 | 0.066 | 0.157 | 0.133 | 4.31 | 61.38 | -8.44 | 79.86 | 25.82 | 53.99 | -6.85 | -9.15 | 9.88 | -2.30 | 19.03 | 16.73 |
| 26. Boat Building and Reparing | 0.057 | 0.098 | 0.070 | 0.090 | 0.066 | 0.074 | - | -19.58 | 131.61 | 269.35 | 62.16 | 116.98 | -10.91 | 5.37 | 5.58 | 16.28 | 0.21 | 16.49 |
| 27. Motor Vehicle Assembly | 0.009 | 0.043 | 0.537 | 0.057 | 0.329 | 0.259 | -69.96 | -37.36 | 305.82 | 1691.57 | 334.35 | 1121.02 | 44.20 | 62.69 | 43.49 | 18.49 | -19.20 | -0.71 |

APPENDIX I CONTINUED

| INDUSTRIES | TDOP | | | | | | TSDM | | | | | | VAPE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 |
| 1. Meat Products | 0.005 | 0.887 | 0.016 | 0.453 | 0.150 | 0.176 | 92.98 | 239.63 | 9.61 | 351.92 | 87.57 | 226.7 | 1.818 | 31.270 | 22.408 | 6.602 | 20.833 | 16.193 |
| 2. Dairy Products | 0.947 | 0.809 | 0.745 | 0.729 | 0.789 | 0.766 | 58.52 | 12.37 | -11.55 | 43.28 | 2.07 | 24.60 | 3.901 | 17.610 | 15.234 | 19.942 | 17.011 | 18.076 |
| 3. Bakery Products | 0.079 | 0.545 | 0.006 | 0.251 | 0.105 | 0.102 | 148.52 | 151.57 | 20.89 | 80.67 | 45.76 | 58.79 | 1.839 | 5.699 | 21.987 | 3.815 | 9.440 | 7.804 |
| 4. Sugar & Sugar Confectionery Products | 0.549 | 0.719 | 0.876 | 0.602 | 0.814 | 0.749 | 21.70 | 13.45 | -26.42 | 40.24 | 0.96 | 21.33 | 1.501 | 13.074 | 4.400 | 7.575 | 11.529 | 8.873 |
| 5. Miscellaneous Food Products | 0.672 | 0.467 | 0.471 | 0.625 | 0.428 | 0.457 | 14.11 | 160.30 | 45.99 | 62.16 | 35.43 | 42.66 | 2.516 | 51.060 | 19.475 | 14.566 | 22.942 | 20.776 |
| 6. Alcoholic Drinks | 0.024 | 0.050 | 0.007 | 0.159 | 0.010 | 0.043 | 33.81 | 32.53 | -33.44 | 26.12 | 27.14 | 26.23 | 16.165 | 28.913 | 37.818 | 19.772 | 42.516 | 35.074 |
| 7. Soft Drinks | 0.026 | 0.261 | 0.002 | 0.229 | 0.032 | 0.069 | 21.32 | -6.53 | -22.33 | 78.21 | 19.51 | 54.15 | 4.606 | 8.384 | 12.980 | 8.016 | 12.631 | 11.464 |
| 8. Clothing and Made-up Textiles | 0.573 | 0.643 | 0.094 | 0.760 | 0.549 | 0.658 | 5.30 | 27.40 | 6.89 | 33.30 | -7.48 | 12.81 | 1.160 | 3.660 | 12.047 | 2.494 | 5.619 | 3.939 |
| 9. Leather Footwear | 0.240 | 0.359 | 0.015 | 0.443 | 0.137 | 0.243 | 21.21 | 12.39 | 100.38 | 44.44 | 51.18 | 49.81 | 1.609 | 6.081 | 30.168 | 3.625 | 7.879 | 5.913 |
| 10. Wood Products | 0.152 | 0.400 | 0.157 | 0.280 | 0.307 | 0.296 | 26.68 | -9.04 | 23.79 | 50.23 | 32.82 | 45.23 | 0.872 | 2.981 | 7.181 | 1.658 | 5.245 | 3.499 |
| 11. Furniture | 0.185 | 0.220 | 0.098 | 0.353 | 0.104 | 0.164 | 68.29 | 42.62 | 18.08 | 51.99 | 11.80 | 32.48 | 0.843 | 42.849 | 6.452 | 2.558 | 6.238 | 4.532 |
| 12. Printing and Publishing | 0.423 | 0.633 | 0.208 | 0.483 | 0.413 | 0.422 | 51.42 | -29.89 | -3.69 | 32.52 | 15.68 | 26.00 | 1.332 | 4.496 | 8.361 | 3.253 | 6.422 | 5.160 |
| 13. Drugs and Medicines | 0.980 | 0.732 | 0.368 | 0.817 | 0.654 | 0.695 | 42.34 | 33.18 | 74.33 | 35.71 | 19.01 | 27.51 | 0.543 | 22.773 | 41.847 | 9.094 | 27.134 | 20.404 |
| 14. Textiles | 0.520 | 0.455 | 0.128 | 0.553 | 0.287 | 0.373 | 27.76 | 12.23 | 35.92 | 23.92 | 10.74 | 18.06 | 1.856 | 3.797 | 13.519 | 2.185 | 6.910 | 4.546 |
| 15. Tanneries and Leather Products | 1.154 | 0.850 | 0.075 | 1.052 | 0.212 | 0.312 | 160.00 | 23.48 | 42.89 | 105.07 | 47.90 | 81.59 | 1.131 | 4.644 | 18.486 | 3.076 | 11.361 | 8.968 |
| 16. Paper and Paper Products | 0.767 | 0.720 | 0.720 | 0.521 | 0.732 | 0.614 | 8.645 | 68.21 | 14.79 | 5.94 | 34.34 | 16.77 | 3.146 | 8.250 | 13.554 | 5.744 | 10.656 | 8.874 |
| 17. Paints, Varnishes and Lacquers | 0.506 | 0.550 | 0.300 | 0.554 | 0.376 | 0.418 | 6.04 | 28.00 | 1.05 | 33.16 | 18.55 | 26.33 | 5.050 | 15.214 | 18.517 | 11.281 | 19.589 | 16.388 |
| 18. Petroleum and Coal Products | 0.400 | 0.867 | 0.803 | 0.653 | 0.225 | 0.307 | 20.92 | -11.47 | 51.44 | 33.99 | 1.44 | 20.55 | 86.960 | 34.54 | -4.853 | 64.551 | 88.019 | 84.835 |
| 19. Tyres and Tubes | 0.243 | 0.301 | 0.220 | 0.221 | 0.314 | 0.284 | 52.88 | 27.67 | 79.40 | 27.05 | 17.55 | 22.32 | 5.090 | 10.538 | 38.528 | 8.291 | 18.062 | 13.125 |
| 20. Rubber Processing | 0.565 | 0.871 | 0.868 | 0.763 | 0.884 | 0.841 | 43.32 | 111.31 | 168.10 | 43.79 | 28.91 | 32.13 | 1.047 | 2.814 | 4.521 | 1.774 | 2.837 | 2.140 |
| 21. Plastic Products | 0.716 | 0.757 | 0.482 | 0.703 | 0.528 | 0.554 | 65.84 | 65.84 | 11.28 | 11.21 | 38.86 | 18.19 | 30.25 | 2.392 | 14.822 | 3.937 | 9.597 | 8.085 |
| 22. Non-ferrous Metals | 1.011 | 0.848 | 0.901 | 0.889 | 0.935 | 0.931 | 75.96 | 36.91 | 430.68 | 91.55 | 50.00 | 74.19 | 1.347 | 15.062 | 10.589 | 9.243 | 8.734 | 8.431 |
| 23. Miscellaneous Metal Products | 0.400 | 0.547 | 0.271 | 0.476 | 0.352 | 0.373 | 27.25 | 20.96 | 6.25 | 35.13 | 14.70 | 25.30 | 2.166 | 5.550 | 13.289 | 3.830 | 9.865 | 7.363 |
| 24. Non-Electrical Machinery | 0.993 | 0.945 | 0.924 | 0.967 | 0.955 | 0.960 | 134.13 | 7.01 | 53.96 | 52.06 | 2.70 | 30.63 | 1.434 | 12.761 | 17.342 | 11.103 | 12.943 | 12.307 |
| 25. Electrical Equipment | 0.976 | 0.951 | 0.757 | 0.934 | 0.843 | 0.867 | 87.54 | 57.99 | 39.85 | 39.51 | 4.39 | 20.80 | 1.882 | 9.022 | 15.400 | 7.269 | 13.548 | 11.786 |
| 26. Boat Building and Reparing | 0.943 | 0.902 | 0.934 | 0.910 | 0.935 | 0.927 | 194.44 | -44.47 | 236.33 | 64.11 | 30.64 | 51.66 | 1.457 | 2.942 | 6.174 | 2.844 | 3.977 | 3.403 |
| 27. Motor Vehicle Assembly | 0.991 | 0.957 | 0.427 | 0.943 | 0.671 | 0.741 | 94.74 | -23.74 | 71.42 | 51.07 | 18.81 | 39.61 | 1.454 | 13.771 | 40.045 | 8.534 | 32.485 | 27.327 |

APPENDIX I CONTINUED

| INDUSTRIES | AVWR | | | | | | TSTP | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 | 1970 | 1978 | 1985 | 1970-1978 | 1978-1985 | 1970-1985 |
| 1. Meat Products | 0.574 | 2.193 | 3.488 | 1.096 | 3.654 | 2.941 | 87.727 | 329.750 | 630.429 | 122.725 | 572.189 | 262.566 |
| 2. Dairy Products | 0.640 | 2.685 | 4.771 | 1.782 | 3.791 | 3.109 | 43.333 | 191.833 | 149.625 | 100.125 | 194.327 | 147.866 |
| 3. Bakery Products | 0.359 | 1.024 | 1.908 | 0.594 | 1.992 | 1.587 | 37.908 | 52.951 | 23.062 | 28.349 | 28.055 | 27.486 |
| 4. Sugar and Sugar Confectionery Products | 0.482 | 2.687 | 3.385 | 1.328 | 3.159 | 2.011 | 445.917 | 514.133 | 152.882 | 370.856 | 285.521 | 317.127 |
| 5. Miscellaneous Food Products | 0.648 | 2.732 | 3.889 | 1.348 | 4.403 | 3.975 | 75.000 | 192.00 | 185.474 | 108.733 | 227.755 | 192.295 |
| 6. Alcoholic Drinks | 1.028 | 2.461 | 5.473 | 1.915 | 4.023 | 3.353 | 370.429 | 665.875 | 455.450 | 388.583 | 585.349 | 498.224 |
| 7. Soft Drinks | 0.440 | 1.785 | 3.743 | 1.247 | 3.159 | 2.644 | 108.500 | 585.714 | 210.167 | 201.299 | 248.033 | 225.138 |
| 8. Clothing and Made-up Textiles | 0.347 | 1.342 | 2.774 | 0.842 | 2.375 | 1.562 | 220.375 | 425.513 | 99.613 | 140.135 | 136.085 | 121.877 |
| 9. Leather Footwear | 0.637 | 1.147 | 4.624 | 1.105 | 2.561 | 1.945 | 202.417 | 308.231 | 127.900 | 151.199 | 272.265 | 197.570 |
| 10. Wood Products | 0.461 | 1.253 | 2.445 | 0.846 | 2.442 | 1.675 | 99.558 | 64.190 | 32.930 | 64.282 | 63.831 | 64.031 |
| 11. Furniture | 0.379 | 17.567 | 2.038 | 0.965 | 2.571 | 1.835 | 53.667 | 92.463 | 41.806 | 50.867 | 57.869 | 53.302 |
| 12. Printing and Publishing | 0.691 | 1.922 | 3.000 | 1.355 | 2.696 | 2.160 | 63.627 | 59.853 | 93.907 | 62.659 | 62.047 | 62.402 |
| 13. Drugs and Medicines | 0.622 | 2.065 | 5.791 | 1.626 | 5.230 | 4.025 | 89.857 | 95.833 | 105.829 | 68.318 | 98.376 | 85.734 |
| 14. Textiles | 0.471 | 1.495 | 3.413 | 0.976 | 2.808 | 1.900 | 614.100 | 1139.306 | 703.967 | 582.080 | 857.728 | 674.368 |
| 15. Tanneries and Leather Products | 0.492 | 0.949 | 3.000 | 0.789 | 3.248 | 2.555 | 117.364 | 120.350 | 145.808 | 87.699 | 226.741 | 158.166 |
| 16. Paper and Paper Products | 0.786 | 2.185 | 3.147 | 1.458 | 3.426 | 2.459 | 61.333 | 110.833 | 78.067 | 76.540 | 102.444 | 90.845 |
| 17. Paints, Varnishes and Lacquers | 0.687 | 2.987 | 4.369 | 2.010 | 4.303 | 3.565 | 44.400 | 287.667 | 286.000 | 82.400 | 311.590 | 199.620 |
| 18. Petroleum and Coal Products | 3.029 | 2.674 | 6.163 | 2.767 | 6.107 | 5.510 | 151.750 | 973.333 | 283.143 | 185.027 | 315.743 | 222.858 |
| 19. Tyres and Tubes | 0.973 | 3.006 | 7.076 | 1.745 | 5.124 | 3.369 | 258.360 | 324.913 | 415.625 | 259.849 | 475.512 | 322.327 |
| 20. Rubber Processing | 0.333 | 0.979 | 1.840 | 0.592 | 1.690 | 1.026 | 118.467 | 186.921 | 94.921 | 116.504 | 153.851 | 140.032 |
| 21. Plastic Products | 0.496 | 1.992 | 3.663 | 1.255 | 3.317 | 2.737 | 153.909 | 219.231 | 132.174 | 141.877 | 148.748 | 142.171 |
| 22. Non-ferrous Metals | 0.443 | 1.986 | 6.313 | 1.115 | 2.504 | 1.746 | 236.000 | 159.750 | 49.524 | 111.246 | 76.522 | 87.921 |
| 23. Miscellaneous Metal Products | 0.587 | 2.184 | 3.595 | 1.261 | 3.416 | 2.499 | 169.436 | 237.385 | 100.801 | 172.118 | 174.940 | 170.048 |
| 24. Non-Electrical Machinery | 0.552 | 1.485 | 4.182 | 1.360 | 3.224 | 2.795 | 66.571 | 210.579 | 119.565 | 108.163 | 177.444 | 142.251 |
| 25. Electrical Equipment | 0.491 | 2.462 | 5.137 | 1.530 | 3.815 | 3.155 | 112.400 | 248.375 | 182.813 | 151.311 | 276.671 | 220.455 |
| 26. Boat Building and Reparing | 0.500 | 2.072 | 4.011 | 1.146 | 3.300 | 2.111 | 89.000 | 139.571 | 60.500 | 111.917 | 72.108 | 86.667 |
| 27. Motor Vehicle Assembly | 0.498 | 3,057 | 3.674 | 1.532 | 3.188 | 2.804 | 89.600 | 213.100 | 427.286 | 119.651 | 525.846 | 375.821 |

Note: Explanation of variables, presented in Chapter 6, Section 6.2.

Source: The variables IS, AGRDP, TDOP, TSIM, VAPE, AVWR, TSTP have been computed from the Federal Office of Statistics, Industrial Survey of Nigeria, various issues and Review of External Trade, various issues. For the measures of protection, See Table 5.8.

APPENDIX II

DISAGGREGATED INPUT-OUTPUT TECHNOLOGY MATRIX: 1959-1960

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Meat Product | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 2. Dairy Products | 0.0065 | - | 0.0131 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 3. Bakery Products | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 4. Sugar and Sugar Confectionery Products | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 5. Miscellaneous Food Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 6. Alcoholic Drinks | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 7. Soft Drinks | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 8. Tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 9. Clothing and Made-up Textiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 10. Leather Footwear | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0017 | 0.0017 | 0.0000 | 0.0001 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 11. Wood Products | 0.0172 | 0.0000 | 0.0046 | 0.0023 | 0.0023 | 0.0017 | 0.0017 | 0.0000 | 0.0000 | 0.0000 | - | 0.5235 | 0.0000 | 0.0000 | 0.0026 |
| 12. Furniture | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0026 |
| 13. Printing and Publishing | 0.0000 | 0.0000 | 0.0056 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 |
| 14. Drugs and Medicines | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 |
| 15. Soap and Soap Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - |
| 16. Perfumes and Cosmetics | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 17. Matches | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 18. Radio and Television | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 19. Cameras and Projects | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 20. Clocks and Watches | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 21. Textiles | 0.0046 | 0.0000 | 0.0092 | 0.0000 | 0.0000 | 0.0044 | 0.0044 | 0.0005 | 0.2108 | 0.0000 | 0.0006 | 0.0001 | 0.0016 | 0.0000 | 0.0000 |
| 22. Cordage rope and twine | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 23. Tanneries and Leather Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.1079 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 24. Paper and Paper Products | 0.0172 | 0.0003 | 0.0046 | 0.0000 | 0.0000 | 0.0017 | 0.0017 | 0.0005 | 0.000 | 0.0001 | 0.000 | 0.0000 | 0.0007 | 0.0000 | 0.0118 |
| 25. Basic Industrial chemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0138 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 26. Fertilizers | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 27. Paints, Varnishes and Lacquers | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 28. Petroleum and Coal Products | 0.0025 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0094 |
| 29. Tyres and Tubes | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30. Rubber Processing | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0035 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 31. Plastic Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 32. Refrigeration and Household Equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0009 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 33. Bricks and Tiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 34. Cement and Concrete Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35. Glass Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 36. Iron and Steel Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 37. Non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 38. Miscellaneous Metal Products | 0.0145 | 0.0000 | 0.0103 | 0.0000 | 0.0000 | 0.0180 | 0.0180 | 0.0009 | 0.0002 | 0.0008 | 0.0034 | 0.0032 | 0.0033 | 0.0000 | 0.0074 |
| 39. Metal Wires | 0.0000 | 0.0009 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0239 | 0.0000 | 0.0010 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 40. Office Machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 41. Non-Electrical Machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 42. Electrical Equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 43. Boat Building and Repairing | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 44. Motor Vehicle Assembly | 0.0149 | 0.0003 | 0.0015 | 0.0000 | 0.0000 | 0.0020 | 0.0020 | 0.0001 | 0.0000 | 0.0001 | 0.0002 | 0.0001 | 0.0008 | 0.0000 | 0.0019 |
| 45. Bicycle and Cycle Assembly | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

APPENDIX II CONTINUED

| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Meat Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 2. Dairy Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 3. Bakery Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 4. Sugar and Sugar Confectionery Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 5. Miscellaneous Food Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 6. Alcoholic Drinks | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 7. Soft Drinks | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 8. Tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 9. Clothing and Made-up Textiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 10. Leather Footwears | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0012 | 0.0008 | 0.0001 |
| 11. Wood Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0012 | 0.0008 | 0.0001 |
| 12. Furniture | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 13. Printing and Publishing | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 14. Drugs and Medicines | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 15. Soap and Soap Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 16. Perfumes and Cosmetics | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 17. Matches | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 18. Radio and Television | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 19. Cameras and Projects | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 20. Clocks and Watches | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 21. Textiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0013 | 0.0025 | 0.0001 |
| 22. Cordage rope and twine | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 23. Tanneries and Leather Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 24. Paper and Paper Products | 0.0024 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0012 | 0.0008 | 0.0001 |
| 25. Basic Industrial Chemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 26. Fertilizers | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 27. Paints, Varnishes and Lacquers | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 |
| 28. Petroleum and Coal Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0008 | 0.0000 | 0.0000 | 0.0000 | 0.0117 | 0.0000 | 0.0000 | - | 0.0000 | 0.0002 |
| 29. Tyres and Tubes | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 |
| 30. Rubber Processing | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - |
| 31. Plastic Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 32. Refrigeration and Household Equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 33. Bricks and Tiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 34. Cement and Concrete Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35. Glass Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 36. Iron and Steel Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 37. Non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 38. Miscellaneous Metal Products | 0.0106 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0070 | 0.0000 | 0.0007 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0515 | 0.0136 | 0.0007 |
| 39. Metal Wires | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 | 0.0008 | 0.0157 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 40. Office Machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 41. Non-Electrical Machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 42. Electrical Equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 43. Boat Building and Repairing | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 44. Motor Vehicle Assembly | 0.0058 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 0.0313 | 0.0000 | 0.0000 | 0.0048 | 0.0075 | 0.0046 |
| 45. Bicycle and Cycle Assembly | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Meat Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 2. Dairy Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 3. Bakery Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 4. Sugar and Sugar Confectionery Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 5. Miscellaneous Food Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 6. Alcoholic Drinks | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 7. Soft Drinks | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 8. Tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 9. Clothing and Made-up Textiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 10. Leather Footwear | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0005 | 0.0000 |
| 11. Wood Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0938 | 0.0000 |
| 12. Furniture | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 13. Printing and Publishing | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 14. Drugs and Medicines | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 15. Soap and Soap Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 16. Perfumes and Comestics | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0007 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 17. Matches | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 18. Radio and Television | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 19. Cameras and Projects | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 20. Clocks and Watches | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 21. Textiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0005 | 0.0000 |
| 22. Cordage rope and twine | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 23. Tanneries and Leather Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 24. Paper and Paper Products | 0.0000 | 0.0000 | 0.0067 | 0.0000 | 0.0000 | 0.0000 | 0.0004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 25. Basic Industrial Chemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0032 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 26. Fertilizers | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 27. Paints, Varnishes and Lacquers | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 28. Petroleum and Coal Products | 0.0000 | 0.0000 | 0.0695 | 0.0000 | 0.0000 | 0.0000 | 0.0032 | 0.0002 | 0.0052 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0046 | 0.0000 |
| 29. Tyres and Tubes | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30. Rubber Processing | 0.0184 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 31. Plastic Products | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 32. Refrigeration and Household Equipment | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 33. Bricks and Tiles | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 34. Cement and Concrete Products | 0.0000 | 0.3696 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35. Glass Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 36. Iron and Stel Products | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 37. Non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0021 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 38. Miscellaneous Metal Products | 0.0037 | 0.0033 | 0.0072 | 0.0000 | 0.0000 | 0.0000 | 0.0058 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0029 | 0.0021 | 0.0000 |
| 39 Metal Wires | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 40. Office Machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 41. Non-Electrical Machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 42. Electrical Equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 | 0.0000 |
| 43. Boat Building and Repairing | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0000 | 0.0000 |
| 44. Motor Vehicle Assembly | 0.0000 | 0.0017 | 0.0013 | 0.0000 | 0.0000 | 0.0000 | 0.0032 | 0.0014 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 0.0009 |
| 45. Bicycle and Cycle Assembly | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - |

SOURCE: Carter, A. J., An Input-Output Analysis of the Nigerian Economy 1959-1960, 2nd Printing, 1966.

## APPENDIX III

## SHARES OF NIGERIA'S EXPORTS OF MAJOR PRODUCTS IN WORLD EXPORTS: 1970, 1978, 1985

(PERCENTAGE)

| Major Commodities | 1970 | 1978 | 1985 |
|---|---|---|---|
| Palm Kernels and Oil | 51.49 | 25.35 | 10.30 |
| Groundnuts and Oil | 26.88 | - | - |
| Cocoa | 16.60 | 15.36 | 9.00 |
| Cotton | 0.30 | * | - |
| Rubber | 1.20 | 0.65 | * |
| Crude Petroleum | 3.87 | 7.97 | 4.75 |
| Average Export Share | 16.7 | 12.3 | 8.0 |

Sources:- (i) United Nations, Commodity Trade Statistics (Various Issues)

(ii) United Nations, Yearbook of International Trade Statistics (Various issues)

(iii) United Nations, World Energy Supplies (Various issues).

(iv) International Monetary Fund, International Financial Statistics, (Various issues).

Note:- *Indicates "Negligible" (less than 0.3 percent)
- Indicates "No Exports"

APPENDIX IV

(a) Value of Nigeria's Exports

| Years | ₦(million) | US$ (billion) |
|---|---|---|
| 1970 | 897.0 | 1.240 |
| 1978 | 6,308.5 | 9.960 |
| 1985 | 11,720.8 | 12.548 |

Sources:- (i) Federal Office of Statistics, Review of External Trade, 1979, 1982, 1987

(ii) International Monetary Fund, International Financial Statistics, 1989.

(b) Value of Nigeria's Imports

| Years | ₦(million) | US$ (billion) |
|---|---|---|
| 1970 | 756.4 | 1.059 |
| 1978 | 8140.8 | 12.821 |
| 1985 | 5536.9 | 8.877 |

Sources:- (i) Federal Office of Statistics, Review of External Trade, 1979, 1982, 1987.

(ii) International Monetary Fund, International Financial Statistics, 1989

APPENDIX V

RATES OF INDIRECT TAXES (EXCISE DUTIES) 1970, 1978, 1985
(PERCENTAGES)

| COMMODITIES | 1970 | 1978 | 1985 |
|---|---|---|---|
| Meat Products | 5 | - | 5 |
| Dairy Products | 10 | - | - |
| Bakery Products | 10 | 10 | 5 |
| Sugar and Sugar Confectionery Products | 5 | 10 | 5 |
| Miscellaneous Food Products | - | 10 | 5 |
| Alcoholic Drinks | 30 | 30 | 30 |
| Soft Drinks | 10 | 10 | 5 |
| Tobacco | 30 | 20 | 50 |
| Leather Footwear | - | 5 | 5 |
| Furniture | 15 | 10 | 10 |
| Drugs and Medicine | 5 | - | - |
| Soap and Soap Products | 10 | 5 | 5 |
| Perfumes and Cosmetics | 10 | 25 | 20 |
| Matches | 5 | 5 | 5 |
| Radio and Television | 10 | 5 | 10 |
| Textitles | 5 | 10 | 5 |
| Tanneries and Leather Products | 10 | 5 | 5 |
| Paper and Paper Products | - | - | 5 |
| Paints, Varnishes and Lacquers | 15 | 5 | 5 |
| Petroleum and Coal Products | 15 | 10 | 5 |
| Tyres and Tubes | 10 | 5 | 5 |
| Plasticware (Plastic Products) | 5 | 10 | - |
| Bricks and Tiles | - | 5 | - |
| Cement and Concrete Products | 5 | - | - |
| Refrigeration and Household Equipment | 5 | 10 | 5 |
| Glass Products | - | 10 | - |
| Iron and Steel Products | - | 5 | 5 |
| Non-ferrous Metal | - | - | 5 |
| Miscellaneous Metal Products | - | 10 | 5 |
| Metal wires | 5 | 5 | - |
| Electrical Equipment | - | - | 5 |
| Motor Vehicle Assembly | - | - | 5 |
| Bicycle and Cycle Assembly | - | - | 5 |

SOURCE:- Federal Government of Nigeria, Federal Official Gazette, Supplement, (Various issues)